



FERTILITY DECLINE IN A TRADITIONAL SOCIETY:

THE CASE OF BALI.

by

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## ABSTRACT

In the late 1970s a number of reports indicated that the Indonesian Family Planning Program had contributed to a rapid and substantial fertility decline in Bali. The high fertility setting in Bali into which the program was introduced around 1970, did not appear to be conducive to a small family norm and thus to such a fertility decline. Socially, Bali was still effectively traditional; economically, there had been little development in the areas usually considered, in demographic transition theory, prerequisite for fertility decline.

This thesis describes a village study undertaken to examine the questions of the apparent changes in fertility, and the apparent dramatic rise in family planning use; and if such changes were verified, to attempt to elucidate the underlying reasons. The study is based primarily on a survey of 1,088 ever-married women aged 15 to 54 years in three villages in the traditional regency of Klungkung, Bali.

The findings are that fertility in these villages had indeed fallen dramatically, from a total fertility rate of 6.5 in the late 1960s to 3.5 in the late 1970s. During this period family planning prevalence had increased from less than 5 percent to around 50 percent of eligible couples. The analysis indicates that almost all the fertility decline was the result of program family planning use. The virtual absence of differentials in both fertility and family planning use led to a conclusion emphasizing the critical importance of Balinese cultural factors in the rapidity of the uptake of family

planning, and the subsequent change in fertility behaviour. While credit is given to the family planning program for efficient implementation, the conclusion is that the Balinese communities readily accepted the concept of family planning and fertility limitation as a potentially fruitful approach to alleviate the current problems of limited resources, particularly land, and to achieve the aspirations stemming from the modernizing changes of recent years.

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## CHAPTER 1

### 1.1 INTRODUCTION

In 1969 the Indonesian government established a family planning program which was implemented initially on the islands of Java and Bali only, containing between them about two-thirds of the country's population.

Since that time, data on numbers of family planning acceptors, and on fertility levels, have suggested a substantial decline in fertility coinciding with the operation of the program. The changes have been particularly dramatic in the case of Bali.

Before the introduction of the family planning program, the level of marital fertility in Bali was the highest of the six provinces which make up Java and Bali. In the late 1960s, the crude birth rate was estimated at around 40 per 1,000, (Table 1.2), the total fertility rate at 5.8 (Table 1.3), and there was little evidence of much use of either modern or traditional birth control. By 1976, the World Fertility Survey data indicated that some 39 percent of Balinese married women of childbearing age were using contraception, that the crude birth rate had fallen some 10 percentage points to about 29 per 1,000, and the total fertility rate had fallen by about one third to 3.8. This latter figure was obtained by Sinquefield using the current pregnancy status method (1). If this figure proved to be correct, then Bali's fertility would have been the lowest of any province in

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(1) See chapter 5 (5.2.5) for discussion of the reliability of this method.

Indonesia; however there was some doubt cast on this figure, not only by criticisms of the method itself, but also by the alternative figure of 4.9 for 1975 calculated by Hull using the Last Birth method on data from the 1976 Intercensal Survey (Supas II), (see chapter 1.4 for details).

TABLE 1.1

COMPARISON OF ELIGIBLE POPULATION AND CURRENT USERS  
FROM BKKBN-Bali, and BKKBN-Jakarta, Third quarter 1980.

	BKKBN-BALI	BKKBN-JAKARTA
Number of Elcos	301,248	---
Number of MWRA	---	365,307
Total Current Users	225,848	185,668
Prevalence Rate	74.97 %	50.83 %

Prevalence Rate: Current Users as a percentage of Elco's/MWRA.

Elcos: Eligible Couples (Currently married women, 15-44).

MWRA: Married Women of reproductive age, 15-44.

Source: BKKBN, Bureau of Reporting and Documentation, Jakarta,  
Monthly Statistics.

BKKBN, Bali, Quarterly Report Triwulan III, 1980.

It should be noted that from 1976 onwards, the provincial office of the National Family Planning Coordinating Board (BKKBN) was releasing contraceptive prevalence figures based on fieldworker reports from their newly introduced community based 'Sistem Banjar' distribution system. These figures were usually somewhat higher than the figures from the central office of BKKBN in Jakarta based on distribution data (see Table 1.1 and chapter 4), and throw some doubt on the validity of the prevalence levels of current use being claimed by the provincial office of BKKBN in Bali. Since the 1976 Intercensal

survey, there had not been any surveys against which the figures could be checked.

#### 1.1.1 CLAIMS FOR SUCCESS OF FAMILY PLANNING PROGRAM IN BALI

Both the fertility level data and the family planning prevalence data seemed to be accepted almost without question by many observers, and gave rise in the mid to late 1970s to a number of extremely optimistic articles, particularly in the more popularized population journals (see Panel 1).

#### PANEL 1

(a) the International Fertility Research Program's publication

##### Taking Family Planning to the World's Poor:

(the family planning program in Bali)...may well be the most successful in any part of Asia. Fifty-four percent of all eligible couples now use some contraceptive method: 70 percent use IUDs; approximately one-fifth use pills; and the remainder either use condoms or have been sterilized. In 1970 the birth rate in the island was 43 per 1,000, but by 1976 it had fallen to approximately 26 .  
(Potts, M., et al., 1977:a-1).

(b) in the Ford Foundation publication, Cycle:

(Bali) happens to be the setting for one of the most exciting and demographically successful family planning programs in the world.  
(Peet, N. and C., 1977-8:1).

(c) the IPPF's journal, People:

Within just eight years, Bali has neatly stepped out of the vicious circle of poverty and overpopulation.  
(Harrison, P., 1978:14).

(d) and International Family Planning Perspectives:

..a behavioural and demographic transition of remarkable proportions seems to be emerging. (Meier,G.,1979:63).

Regardless of whether or not all of these claims were justified, especially when compared with countries like Taiwan, Korea and Singapore, there can be little disagreement that up to the end of the 1970s the results, in terms of prevalence rates and apparent fertility decline, had been quite impressive.

The apparent achievements of the national family planning program in Bali were viewed, understandably, with some pride by the Bali provincial family planning program office. They pointed out that in March 1977, compared to the national average of 35 percent of eligible couples using some kind of contraceptive, the level in Bali was 56.5 percent. The head of the program in Bali, Dr. I.B.Astawa noted that this was nearing the national target for family planning acceptors of 60 to 70 percent for the year 2000 (1977:28).

1.1.2 LEVELS OF DEVELOPMENT IN BALI

The success of the program in Bali was seen as boding well not only for the rest of Indonesia, but also for other poor, rural developing countries. The reason for this optimism was that in Bali, unlike the modernizing countries of East Asia the decline in fertility had occurred without accompanying signs of major economic development. Per capita income, investment and levels of small business activity, often taken as indicators of economic modernization, remained relatively low in Bali.

Such a situation where fertility falls in the absence of major social and economic change is not entirely new. Recent decades have produced evidence which show the classical demographic transition theory of Notestein as not being capable of defining a precise threshold of modernization which would enable reliable predictions to be made as to when the fertility of a population would be ready to fall. Although development variables such as industrialization, urbanization and education usually appeared to play an important role preceding fertility decline, there were sufficient exceptions throughout the Western world to undermine the place of these variables as essential precursors. The only feature that did seem to be common to most examples of fertility decline was a shift in economic, social and political functions from the family to larger, specialized (non-familial) institutions.

The magnitude and rapidity of fertility declines in some developing countries in recent times have further illustrated the deficiencies of the demographic transition theory. The patterns of development variables at the time fertility started to fall have been so varied (and different from the variations seen earlier in the West) that it has been very difficult to isolate the important factors. For example, while all these developing countries have had a family planning program in operation for varying periods of time prior to the decline, some have been well on the way to becoming industrialized at the time fertility started falling (eg., Taiwan, Korea). In others the government had introduced strict measures to discourage high fertility (eg., China, Singapore). Some had near universal literacy (eg., Barbados). In some (often islands) the economy was heavily dependent on one or two vulnerable exports (eg., Mauritius). In many



the social and economic position of women was unusually good (eg., Thailand), conversely, where the position of women was not good (as in many Muslim countries) fertility has not fallen markedly. In virtually all transitional countries however, mortality had fallen from the traditionally high levels prior to the fertility decline. And in some (eg., Sri Lanka), mortality had declined very steeply.

To make more difficult the task of understanding recent fertility declines using classical demographic transition theory is the fact that the circumstances of present day pre-transition societies differ from Western pre-transition societies. Today most societies have mass media and communication networks as well as modern, Western-style education systems of varying degrees of coverage, and through these, exposure to Western lifestyles and technology. These countries also have the opportunity to avail themselves of family planning programs with a wide range of modern contraceptives. However, researchers continue to try to identify those social and economic variables which appear to be related to the onset of fertility decline. Recent studies have implicated some variables which appear to be inversely related to fertility levels (Adelman and Morris, 1966; Kasarda, 1971; Ekanem, 1972; and Mauldin and Berelson, 1978). These variables usually include education, per capita income, urbanization, industrialization or degree of modernization.

However, if we examine the seven variables chosen by Mauldin and Berelson in their detailed attempt to elucidate the 'Conditions of Fertility Decline in Developing Countries, 1965-75', the island of Bali scores rather poorly in virtually all of them. The seven variables were chosen for their ability to satisfy simultaneously 'the

two criteria of substantial relevance and substantial availability' (Mauldin,W.Parker and Berelson,B.,1978:99) and are listed in Panel 2 with levels in Bali around 1971.

## PANEL 2

VARIABLE	LEVEL IN BALI
EDUCATION	
(a) Adult Literacy	Males (10+)=62 % Females (10+)=34 %
(b) School enrolments:	
-Primary (7-12)	Males-64 % Females-49 % Total-57 %
-Secondary (13-18)	Males-35 % Females-16 % Total-25 %
HEALTH	
(c) Life Expectancy (birth)	About 50 years
(d) Infant Mortality Rate	(i)Late 1960s =127 per 1,000 (ii)Early 1970s =100 per 1,000
ECONOMY	
(e) % Adult Males in Non-Agricultural labour	26.7 % of total labour force
(f) GNP per capita	US\$100-140 (1971)
URBANIZATION	
(g) % Popn. in cities of 100,000+	5 % (Capital city only)

Sources: (a),(b),(e),(g) - 1971 Census  
(c) - McDonald,P.F.,(1979)  
(d) (i) - McDonald,P.F.,(1979)  
(ii) - Gardiner,P.,(1979:4)  
(f) - Astawa et al.,(1975:86)

The levels of each of these variables, with the possible exception of education, are indicative not of a modern but a traditional society. Demeny has generalized that these two types of society are readily distinguished in that 'in traditional societies fertility and mortality are high. In modern societies fertility and mortality are low. In between, there is demographic transition' (1968). While Bali, at the time the family planning program began, certainly fell into the former category it is useful to look at a broader definition of a traditional society, such as that used by Coale (1973:64). The levels for Bali in 1971 are enclosed in parentheses in the following definition: 'A society was traditional if less than 30 percent of its population lived in urban settlements of more than 20,000 persons (6 percent), if fewer than 50 percent of females 6 to 13 were enrolled in school (42 percent), and if more than 60 percent of the labour force was engaged in agriculture, fishing or forestry (67 percent of total). High fertility and mortality could be defined as a total fertility of over 5.0 (5.8 in 1967-70), and an expectation of life at birth for women of less than 60 years (about 50 years);' (1973:64).

While the shortcomings of the demographic transition are well recognized in defining thresholds of transition, discussed below (section 1.2), the characteristics listed above firmly categorize Bali as demographically 'traditional' at the time the family planning program was introduced in 1970.

The question of whether Bali would have been classified in the 1960s as traditional in an anthropological sense involves examination of the changes in social, economic and political structure that have

occurred during this century.

While anthropologists are reluctant to give an all-encompassing definition of a traditional society, it is possible to list certain features which might be expected to distinguish traditional and modern societies. These are family structure; community structure and networks of support and obligations; political structure, in particular the role of the royal families; and the nature of employment opportunities. In reference to Bali, Hildred Geertz stated that 'present-day Balinese social structure has one very general property which affects political processes in certain crucial ways: it is essentially traditional in form and function' (1959:24), but she goes on to emphasize that while traditional, 'Balinese social structure has a great deal of flexibility in adapting to the modern world' (ibid,24). These matters will be discussed in some detail in chapter 2 where it will be argued that with the possible exception of the political structure, Balinese society in the 1960s was still traditional in a functional sense.

### 1.1.3 OTHER FACTORS SUPPORTING HIGH FERTILITY IN BALI

As described by Astawa et al., a number of other factors also might be expected to support high fertility, or at least not be conducive to fertility decline:

..the people are noted for their devotion to religious practices and the arts rather than to more worldly concerns.

..the Balinese constitute a religious and ethnic minority in Indonesia, whereas the family planning program is part of the national Indonesian program rather than an indigenous one.

..there was little evidence of much practice of contraception before the program.

..ever since the program has been in operation, the ideal family size has remained close to four children, (according to the 1973 Fertility-Mortality Survey it was 3.8).

..traditional Balinese law excludes daughters from inheritance, thereby placing pressures on couples to have at least one surviving son.(1975:93)

#### 1.1.4 FACTORS DISCOURAGING HIGH FERTILITY IN BALI

On the other hand, there were also features which might be expected to discourage high fertility. The island is small and densely populated with a people who are very reluctant to outmigrate; availability of potential new agricultural land is severely limited, and the inheritance system of equal division amongst all sons has resulted in minimal rice plot sizes, while the potential for further intensifying rice production is limited, (see Hull,1978:4). Regarding values and costs of children, many tasks in which children would assist the family in other agricultural societies, eg., harvesting, are performed by community groups of adults; and the sequence of compulsory ceremonies early in a child's life impose an often considerable financial burden on the parents.

The list of variables and points presented above emphasizes economic factors rather than cultural and social factors. Thus, before proceeding, it would be useful to review the various economic and sociological theories of fertility which later will be drawn upon in attempting to elucidate the important factors behind the recent fertility decline in Bali.

## 1.2 REVIEW OF THEORIES OF FERTILITY DECLINE

### 1.2.1 DEMOGRAPHIC TRANSITION THEORY

The classical demographic transition theory started out as a description of phases of demographic development (Landry,1945;Blacker,1947) observed in the past history of many developed countries. This was later developed by Notestein (1953), Davis (1955) and others into a reasonably satisfactory framework within which to fit the experiences of the different countries which had undergone at least the early stages of fertility decline.

Apart from the simplest explanation, that fertility decline was a response to a preceding decline in mortality, the explanation offered by Notestein emphasized the changes connected with economic development. Basically, he said that increases in such macro-level variables as urbanization, industrialization and education resulted in a move away from the family or community as the centre of economic, social and political functions, toward larger, more specialized institutions. In consequence the functions of, and costs of children changed, particularly with regard to education.

The shortcomings of the theory have been increasingly apparent over the years as evidence has accumulated from European countries. Not only does the theory not describe the process of demographic change very well, but it has not proved possible to isolate the specific levels of the combinations of development variables which were essential precursors to the European fertility declines. Hence the theory was deficient as a tool to predict when the fertility of a population would be ready to fall.

Initially it seemed that this 'threshold hypothesis', that is, the hypothesis that countries entering the stage of fertility decline might lie within a relatively narrow range according to a battery of social and economic indicators, might prove a fruitful path, but European countries often differed widely in levels of industrialization, urbanization and education at the time of the onset of fertility decline, (see Coale, 1973).

Detailed studies of the European cases did indicate that while fertility declines were roughly associated with economic development and rising per capita income, in some areas linguistic and cultural differences rather than economic or educational differences were found to be more important in explaining variance in marital fertility (2).

#### 1.2.2 SOCIOLOGISTS' FRAMEWORK FOR THE STUDY OF FERTILITY

Kirk (1971) also drew attention to the importance of cultural factors in the determination of fertility by arguing that the study of cases of fertility decline should concentrate on 'cultural regions', such as Latin America, East and Southeast Asia, Muslim countries, African countries and so on, to try to reduce the heterogeneity of circumstances among cases studied. The importance of considering cultural constraints and social norms will reappear later in distinguishing some of the different theories of fertility, although this was also implicit in the framework of eleven 'intermediate variables' devised by Davis and Blake (1956). Freedman (1975) has constructed a model for the sociological analysis of fertility levels

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(2) See Leasure (1963) for his study of 49 provinces of Spain, also Lesthaeghe and Van de Walle (1976) on Belgium.

where environmental factors and social and economic structure (including family planning program activity) act on fertility via the Davis-Blake series of 'intercourse', 'conception' and 'gestation' variables. Many of these intermediate variables are said to operate via their effect on norms.

This framework has proved very useful in facilitating the systematic study of fertility, because as Davis and Blake have stated 'such factors would be those through which, and only through which, cultural conditions can effect fertility' (1956:211). That is, the intermediate variables are necessarily the proximate determinants through which any change in fertility must take effect.

Returning to the concept of a 'threshold', Coale concluded that the process of fertility decline 'was more complex, subtle and diverse than anticipated' by the theory (1969:19), and later hypothesized that rather than decline being precipitated by the attainment of a threshold, three preconditions must be fulfilled for the sustained decline of marital fertility, namely:

1. Fertility must be within the calculus of conscious choice, that is, beliefs and norms should not forbid family planning, or should not favour very large families.
2. Reduced fertility must be economically and otherwise advantageous for couples.
3. Effective techniques of fertility reduction must be available.



The first of these preconditions highlights one of the basic differences between the economic theories and the sociological theories of fertility decline, namely the concept of personal choice. The experience in Western Europe of rapid adoption of fairly primitive means of contraception (coitus interruptus, condoms) and abortion, to lower fertility when social change had altered the number of children that couples wanted, led to the view that the concept and the means of birth control have always been present within societies, becoming manifest only when the need arose. However this assumption is now being questioned by some writers (eg., Freedman, 1979:8). Knodel has argued that the concept of fertility limitation within marriage was not present amongst the majority of the populations which later underwent transition. That the concept was an innovation springing from a minority in response to certain development changes, is supported by the accelerating, 'take-off' nature of many of the declines in European countries, and possibly also by the similar timing of many declines in culturally similar regions, suggesting a rapid diffusion of new ideas within such regions. Freedman (1979:10) suggests that a further piece of evidence supporting the possibility of an independent effect of the concept of family size limitation is the rapidity with which the practice of family planning has spread, and fertility has declined in many developing countries in recent years. This is not to suggest that the introduction of the concept of family planning was the trigger to fertility decline in any society, only that it is a precondition, as are social norms which do not favour very larger families.

The power of social norms is given considerable emphasis by Bourgeois-Pichat:

fertility in preindustrialized societies...is determined by a network of sociological and biological factors and when the network is known, the result can be predicted. Freedom of choice by couples is almost absent. The couples have the number of children that biology and society decide to give them. (1967:163)

This sociological view does not inevitably conflict with the economic view that people tend to act in such a way as to maximize their utility (or welfare or satisfaction), but it does suggest that their actions are subject to varying degrees of cultural and normative constraints which can determine what people view to be their welfare, and which can change as the society passes through the demographic transition.

There are many factors which may affect fertility norms: for example, strong corporate unilineal kin groups (see Lorimer et al., 1954:152); the degree of formal social structure; and the degree of development or complexity of the religion adhered to by a society.

An important consideration in fertility theory is the extent to which reduced fertility must be economically and otherwise advantageous for couples. Such a precondition implies that fertility behaviour is seen to be rational. In 1976 Caldwell put forward a restatement of the demographic transition theory which dismissed an earlier assumption of irrational behaviour by pre-transition populations. At the same time, Caldwell dismissed the assumption that industrialization and urbanization are preconditions of demographic transition. Instead he argued (a) that in all societies, regardless

of type or stage of development, fertility behaviour is rational, and (b) that the decline of fertility is the consequence of emotional and economic nucleation of the family, which is not necessarily linked to economic modernization but can be precipitated through Westernization, being transmitted especially through modern education systems and the media.

### 1.2.3 WEALTH FLOWS THEORY

In what is called the 'wealth flows theory' (Caldwell, 1982:333), the argument is that in both primitive societies and traditional societies the more children the head of the family has (within limits) the wealthier and more powerful he is likely to be as the direction of intergenerational wealth (ie., income and labour services) flows from children to parents: the benefits derived from the efforts of the children exceed the costs to the parents for the children. In modern societies (post-transition) the direction of this flow of wealth is reversed as children cost their parents rather more than the parents can normally hope to receive (economically) in return from the children. Caldwell claims that this reversal of the flows of wealth between generations depends on the change in family structure from the extended type to the nuclear type, a change which can occur before industrialization or urbanization (as occurred in Europe). He does not claim that economic factors alone determine fertility behaviour otherwise post-transition couples would not have any children. He argues that they do so for psychological reasons stemming from the emotionally isolated nature of nuclear families, just as pre-transition couples limit their fertility below the natural maximum for psychological, social and physical reasons.

While few would deny that the spread of the concept of the Western nuclear family pattern might well alter views on family size, some writers question the emphasis given to this factor in isolation. Freedman (1979:6) cites the case of Taiwan where family planning acceptance rose, and fertility fell rapidly to low levels for largely economic reasons, but this transition was apparently not preceded by the development of a Western nuclear family pattern.

Caldwell later argued in a 1980 paper that mass education is the primary determinant of the timing of the onset of the fertility transition through its effect on the family economy, that:

the direction of the wealth flow between generations is changed with the introduction of mass education, at least partly because the relationships between members of the family are transformed as the morality governing those relationships changes (1980:225).

It is not just the direct costs of schooling, and time lost from work that Caldwell emphasizes, but also the change in attitude to parents that occurs when children receive schooling. Children become more aware of their rights, and proceed to demand, and consume, a greater share of family resources. Thus, parents are less able to direct, and benefit from, their children's activities (1982:347).

Caldwell's theory provides something of a marriage of economic and sociological approaches to the study of fertility. While some writers long ago recognized the interaction between personal fertility preferences based on perceptions of the utility of children and the social constraints acting upon and forming those perceptions (see Freedman, 1961-62:40), in general the economic theories largely ignored the effects of social norms on individual choice, while the sociological theories avoided use of the concept of utility and

utility maximization.

There has been a considerable growth in recent years in the economic literature concerning the determinants of fertility. However Jones cautions that many writers, particularly the demand theorists, have applied their theories largely to Western, urbanized, industrialized societies and have virtually ignored the question of their applicability to 'the realities of peasant life in developing countries' (1976:11).

#### 1.2.4 THE DEMAND THEORY OF FERTILITY

The 'new household economics' or 'demand theory' which is derived largely from the writings of Becker (1960,1965), states that children are viewed by couples more or less as consumption goods. That is, there can be an indifference curve for children just as there can be for other consumption items (cars, radios, etc.)(Becker,1960). The inference from this is that as income rises so will fertility as the supply of children is increased. Becker argued that the often observed negative relation between income and fertility was a consequence of the direct relation between income and contraceptive knowledge and effectiveness superimposed over the positive association between income and fertility. When the decision-making unit, usually the married couple, attempts to maximize its utility in consumption, it has to balance up the rewards of having children against the demands that rearing children will make on the time of the couple and consequent 'opportunity costs', eg., if the mother is forced to stop work. There are also the more direct costs such as the costs of the children's education weighed against other consumer items which could

be purchased instead.

The implication of this theory is that children are viewed as 'inferior goods', that is, a relatively readily obtainable product which is used by poor people until they become rich enough to obtain alternative, higher quality consumption goods, at which point their consumption of the inferior goods declines. This view of children as 'inferior goods' was found to be rather unsatisfactory by many economists as well as sociologists (see Blake later this section), partly because it is inconsistent with the expected positive relation between income and fertility. However various refinements were made, such as the introduction by Becker (1960) of the concept of 'quality' of children. As the income of a couple rises so does the quality (and therefore the 'price') which they consider appropriate for their children. As a couple's income rises, this increase in parental aspirations for their children's standard of living increases the effective cost of children. It is this offsetting effect of income on aspirations which is said to explain how the observed negative relation between fertility and income is masking an underlying positive relation.

The opportunity costs also tend to be higher for better educated mothers who are more likely to come from higher income strata (Mincer, 1963). The importance attached to loss of mother's time through childrearing illustrates well the context to which the demand theory was directed. It does not readily adapt to the situation in rural areas in many developing countries where mothers can take their children with them to work in the fields or to the market, or they can readily find 'babysitters' from within the extended family to care for

the child during the day, or indeed they can often work at home.

Partly because sufficient appropriate data have not been collected to adequately test these microeconomic theories of fertility, the range of variables found to explain significant parts of the variance in completed family size at the level of the individual couple has been disappointingly narrow and predictable: education of both men and women, wages of both men and women, family income and infant mortality (Schultz,1976). Thus there has been virtually no new light thrown on what we already knew from classical demographic transition theory.

Jones (1976:18) has examined in some detail the applicability of the household model in explaining fertility behaviour in low-income countries, presenting a number of key reasons why the household model is not yet 'at home' in low-income settings. Briefly, these reasons are:

first, 'child-care assistance with an almost zero opportunity cost is commonly available within the household. Moreover, many market activities in which women engage can satisfactorily be combined with child-care';

second, 'the variants of the demand theory of fertility where the price effect depends on the value of the mother's time are highly culture bound';

third, 'the concept of "household utility maximization" is even further divorced from reality in many developing countries...because of household structure and the network of mutual obligations with kinfolk' (ie., outside the

immediate household);

fourth, 'in many developing countries, children's role as "consumer durables" is outweighed by their role as productive agents and as a source of security';

fifth, 'in many developing countries the "supply constraint" looms large. There is a section of every population whose "natural fertility" is below their desired fertility';

finally, 'people do not have access to methods of birth control that are sufficiently reliable to enable them to have approximately the number of children they want'.

#### 1.2.5 TASTES AS A FACTOR IN FERTILITY BEHAVIOUR

Although this latter deficiency is being overcome in many developing countries now, nevertheless there will always remain certain financial, psychic and/or physical costs associated with the use of contraception, and this needs to be taken into account in the theory. A further, and often criticized shortcoming of the demand theorists has been their reluctance to confront the problem of tastes and incorporate this important factor into the process of (economically) 'rational decision-making'. It is this problem which Leibenstein (1974, 1975) has approached, partly due to dissatisfaction with the price effect explanation for the negative relation between income levels and fertility.

He argues that rising income results in changes in tastes for both children and for other goods which compete with children. As income rises with consequent elevation of social status, the costs of



childbearing are, to a degree, imposed by the new socio-economic reference group of the parents. The parents do not make entirely independent, 'economically rational' decisions in this regard. Leibenstein also argues that the effect of higher education results in lower fertility, not through higher opportunity costs to the mother, as suggested in earlier versions of demand theory, but through changes in tastes. It could be argued that Leibenstein is assuming too great an effect of changes in social status and tastes, particularly in the context of developing countries where prestige is often not linked to income or wealth, but to religious purity, for example. Also the costs of rearing a child in a poor society may not necessarily be much greater for a wealthy family than for a poor family, compared to other expenditure.

#### 1.2.6 EASTERLIN'S FRAMEWORK FOR FERTILITY ANALYSIS

While Easterlin notes that the demand oriented economic theory of fertility behaviour based on consumer choice has definite shortcomings (1975:54), he believes that systematic analysis of fertility behaviour will prove most fruitful using a more comprehensive economic framework based on this theory but incorporating the principal concepts of demographers and sociologists, and that it must be applicable to a wider variety of circumstances than has so far been the case. To the demand for children and the costs of fertility control, Easterlin adds a third set of fertility determinants, those shaping the potential output, or supply of children, and also advocates a more balanced treatment of subjective (taste) considerations (p.57). Easterlin considered that tastes could be different for individual families, social strata, denominations or ethnic groups, as well as being open

to change over time (see Hawthorn below (p.27) for comparison of tastes and norms).

By expanding the framework to include the possibility of a shift in output independent of demand conditions, demographic concepts such as 'natural fertility' and subfecundity can be incorporated into the analysis. In Easterlin's comprehensive framework, the determinants of fertility are seen as working through one or more of the following:

- (1) the demand for children,  $C_d$ , the number of surviving children parents would want if fertility regulation were costless;
- (2) the potential output of children,  $C_n$ , the number of surviving children parents would have if they did not deliberately limit fertility;
- (3) the costs of fertility regulation, including both subjective (psychic) costs and objective costs, and time and money required to learn about and use specific techniques.

The immediate determinants of the demand for children are income, the price of children relative to goods, and subjective preferences for children compared to goods. The potential output of children depends on natural fertility and the survival prospects of a baby to adulthood. The costs of fertility regulation include subjective costs as well as the time and money necessary to learn about and use specific techniques.

In demonstrating the difference between his 'output' interpretation and the 'demand' interpretation of a positive income-fertility relation (as has been noted by Hull, 1976 and other

writers), Easterlin shows how the addition of the  $C_n$  (potential output) function takes account of natural fertility, subfecundity, and changes in social conditions. Tastes are accounted for in the location of the indifference or 'constant-satisfaction' curves on the indifference map. Unfortunately Easterlin does not indicate on the indifference map the shape of the  $C_n$  (potential output) function in the context of a negative income-fertility relation, although he does illustrate a number of alternative paths in which the motivation to regulate fertility might develop during the course of modernization.

The models can include such situations as fertility declining together with, or even preceding mortality decline. However the most realistic model shows that as economic and social modernization progress over time, and the potential output of children edges above the desired number of children (i.e., with rising natural fertility due to improved maternal health, etc.), the motivation to regulate fertility is initially not great enough to offset the costs associated with contraception ('people's basic inertia', Jones, 1976:30), and the actual number of children continues to be governed by natural fertility. However, a point is reached at which the loss in welfare due to unwanted children begins to exceed that associated with the costs of fertility regulation(3). At this point a threshold is reached (Kirk, 1971) and fertility regulation commences, although leaving a residual of unwanted children as long as the costs involved in such fertility control remain positive.

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(3) Easterlin does not consider that unwanted pregnancies are simply the consequences of lack of contraception information, as supposed by Becker, but hypothesizes that people are more or less universally aware of methods of fertility control. They may, however, consider the available methods sufficiently unpleasant or dangerous to risk pregnancy rather than use them.

Easterlin incorporates the view that modernization results in a fundamental change in the mechanisms determining fertility. That prior to reaching the threshold of fertility control, childbearing is a matter 'taken for granted', that pre-modern fertility behaviour, while rational at the individual level, is under 'social control'. Modernization, however, changes the situation to a point past the threshold where decision-making is more at the household level, ie., under 'individual control'. With due regard to Easterlin's caution that 'such sweeping distinctions are never fully satisfactory' (p.62), there remains a concern that Easterlin's framework, in its attempt to incorporate a wide range of factors influencing fertility, may not permit sufficient specificity of those factors within particular settings.

Jones argues (1976:31) that fertility theories and models will have to be designed with particular cultural and social settings in mind if understanding is to be increased. He also suggests that if Caldwell's 'intergenerational wealth flows' view of fertility is correct, economists will have to emphasize less the application of consumption theory to fertility, and more the application of investment theory, in particular investment in human capital, for example through education. Jones also proposes that risk and uncertainty could usefully be integrated into an economic theory of fertility determination (p.34), emphasizing the point that many inhabitants of the developing world are more concerned with risk minimization, or survival, than with profit maximization. In fact, Cain in his recent study of fertility differences between Bangladesh and India, emphasizes the value of children as sources of insurance in high risk environments (1981:435).

### 1.2.7 SOCIOLOGISTS' RESPONSE TO THE ECONOMIC THEORY OF FERTILITY

As mentioned earlier, a number of non-economists, particularly sociologists, have strongly criticized the economic theory of fertility for viewing children as analogous to consumer durables. Blake (1968) offers five reasons why such an analogy is not valid. The first reason is that there are often strong social pressures to marry and start a family, caring for children in a satisfactory manner. Parents are thus not entirely free to choose the number of their children. Secondly, parents are not able to choose the quality of their children as this depends on factors (eg., genetic) other than education and care. Thirdly, if parents are not satisfied with the number and quality of their children, they are not free to change or dispose of them as they might wish. Fourth, parents are obliged to provide certain standards of care for their children, they are not free to use (or abuse) their children as they wish. This is relevant particularly where education is compulsory. Fifth, the costs of children have been misinterpreted by economists such as Becker (1960) because their models produce a positive relation between income and fertility which is most unlikely. Blake thus concludes that:

fertility is determined by the characteristics of the family and the general norms and values attributed to the concept of family in the given society, and the more fundamental changes of fertility are caused by the changes of the institution of family; therefore a theory of reproductive motivation is at the same time a theory of the family and society (1968:24).

This view is consistent with Duesenberry's earlier criticism of Becker's assumption that parents are free to choose how much they spend on children. Duesenberry argued (1960) that in fertility decisions a couple is circumscribed by the social conventions of their

reference group. Easterlin, however, later (1969) claimed that by introducing tastes into the economic model of fertility, economists had thereby accounted for what sociologists call norms.

Blake has persisted with this heavy emphasis on the explanation of fertility behaviour by norms and values in her recent evaluations of the fertility decline in the United States (1967,1974). Although norms have long been central to the sociological theory of fertility (if such can be said to exist) (4), and are undoubtedly present and operative in each society and population group, Hawthorn (1970:115) points out that norms are not necessarily accepted by all members of the society. He also claims that norms are not the same as 'tastes' in economic theory, which are closer to what sociologists understand by 'values', thus any sociological theory of fertility must take values and goals into account, though not considered in themselves as causes of fertility levels. Hawthorn's main concern is that any explanation of fertility by norms or values is insufficient in itself, but to be useful should be followed by the explanation of how those norms, etc., evolved or are evolving (5).

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(4) See Freedman's description of the circumstances under which norms come into being:

'when many members of a society face a recurrent common problem with important social consequences they tend to develop a normative solution for it. This solution, a set of rules for behaviour in a particular situation, becomes part of the culture, and the society indoctrinates its members to conform more or less closely to the norms by implicit or explicit rewards and punishments.' (1963:222)

Freedman added an extra dimension to the issue of values and goals by introducing the hypothesis that:

under modern conditions ideas and aspirations for a different way of life transcending what is actually available are also important in motivating lower fertility.

(1979:3)

That is, one of the effects of present-day worldwide communication networks is that couples in poor societies may develop values and goals which in reality are impossible for them to attain, but which lead to them modifying their behaviour as if such goals were within their grasp.

To summarize, the classical demographic transition theory has been found somewhat limited in its ability to explain and predict fertility decline in a number of European countries, and in many Third World countries.

In the attempt to update the theory, the emphasis has been polarized into two major camps, that of the 'utility' model of the economists, and the 'normative' model of the sociologists. The utility model implies that human behaviour, including fertility behaviour, is an expression of people's preferences among available alternatives; that each individual consciously assesses what is 'best' for him, even though this choice may sometimes be in conflict with what is 'best' for society. The normative model, on the other hand, while admitting a degree of individual choice, emphasizes that

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(5) As defined by Hawthorn, 'norms' are prescriptions present in society; 'values' are expressions of the desirability of certain things and phenomena; 'goals' are similar to but less general than values, more related to individual couples, expressing something they would like to attain (1970:115).

such choices are made within a variety of social constraints. These 'norms' have been internalized over a long period and, in effect, eliminate many possible alternative choices from the total range. That is, the individual has a 'free' choice within a restricted range.

Both these approaches have their critics and refinements have been made in the attempt to make them more comprehensive. Recent attempts to introduce the concept of taste into the economic theory are a step in the right direction, as is the recognition that any explanation of fertility by norms is incomplete without an explanation of the evolution of those norms.

The 'wealth flows' theory is one example of such an attempt to integrate aspects of economic and sociological theories, and take into account the very different circumstances of pretransitional societies in the late twentieth century compared to European societies before their fertility declined. The variety of patterns and circumstances shown by countries recently undergoing fertility decline has cast some doubt on the capacity of any one current theory to be both comprehensive enough and specific enough to adequately explain these phenomena.

This completes the review of theories of fertility which, naturally, will be referred to in the course of the analysis of the survey data, and the subsequent explanation of the results.



### 1.3 RECENT ATTEMPTS TO EXPLAIN THE BALI FERTILITY DECLINE

To return now to the specific case of Bali, a number of writers have searched for the social and cultural factors unusual to Bali which might help explain why the National Family Planning Program had been more successful there than elsewhere, at least until recently, when some other provinces have attained similar prevalence levels of current use of contraception.

The factor which was most often picked out and presented as being the key to success was the role of the unit of subvillage or hamlet organization known locally as the banjar (see chapter 2.1.1, p.57 for description). This was around the time when community-based contraceptive distribution programs were demonstrating in countries such as Thailand, Sri Lanka, Korea and Colombia, that non-clinic based family planning programs could achieve wider coverage successfully if they utilized existing social networks.

Paul Harrison wrote in the IPPF publication, People:

The banjars of Bali...have become the principal vehicle for family planning. Their astonishing success is an object in how to integrate family planning with key social institutions. (1978:14)

The specific role of these social units in family planning acceptance remains unclear. Is it that the banjar simply provide a grass roots level distribution system or is it that the banjar can apply social pressure to its members as implied in the statement by Freedman and Berelson: 'the village (banjar in Bali) has a corporate character facilitating collective action on common grounds' (1976:28) If the latter, were the banjar council members who issued the instructions responding purely to Government orders, indeed could

they? Does this show a proper understanding of the role and limitations of the banjar council and leader? Or was family planning viewed as beneficial in itself, to the banjar or the village, as suggested by the Peets:

..the Balinese have obviously decided that family planning is a serious matter and that population limitation is beneficial not only to individual families but also to the community as a whole. (1977:8)

The former view is closer to that suggested by McNicoll in his paper on 'Institutional Determinants of Fertility Change', where he claims that one consequence of the communist uprising in the mid-sixties was that members of the military and others who came across from Java to re-establish order, produced a strengthening of the administrative system which enabled easier implementation of government programs at the village level:

this (local) administrative system emerged greatly strengthened, a major contributor to this strength being its capacity to mobilize and work through the constituent hamlets ... free of significant countervailing political or social interests. (1980:10)

although McNicoll does later qualify this with '...and low fertility clearly enough served the community's (qua community) own economic interests.' (1980:11)

This implication of strong administrative and political pressures on couples to accept family planning in Indonesia has received support recently from a report by Murdijanto Purbangkoro on the 'special drives' in three villages of East Java in 1977. While he states 'that a majority of special-drive acceptors in all villages but Tulungrejo perceive that coercion was employed is important' he qualifies that with 'unfortunately, the term coercion is not easily defined',

referring to the view of many poor people in fatalistic cultures, that they are very much subject to the forces of destiny or fate. In this context being forced to take an action does not necessarily imply pressure by another individual or institution, (Purbangkoro,1978:67-68).

There is no doubt, however, that pressure to accept family planning has been applied fairly directly in some parts of Indonesia at certain times, although as Freedman et al. point out 'a possible socially coercive element in the program could not be so successful if there were not latent, if ambivalent, motives for family limitation in the situation' (1981:11).

It is a little ironic that some writers, while on one hand emphasizing the importance of social and cultural factors unique to Bali in explaining the high acceptance of family planning, on the other hand concluded that the Bali experience could readily be extrapolated to other, quite different societies. Harrison, for example, concluded his description of the 'success story' with 'It spells hope for Asia, showing that ANY POOR RURAL SOCIETY can adopt a small-family norm even before it begins to develop in other ways.' (1978:14) - (This writer's emphasis).

Fortunately there were, at the same time, some rather more detailed examinations of the factors which appeared to be of importance in explaining the program's success in Bali. The notable studies were that by the program's head in Bali, Dr.I.B. Astawa and others (1975); and that by Hull,Hull and Singarimbun in 1977, followed by a detailed examination in 1978 by Terence Hull.

There has been a tendency to simply compile a list of characteristics of Balinese culture and society which distinguish Bali from other places, particularly Java, without really attempting to evaluate their relative importance in explaining events in Bali. Thus it is one of the aims of this study to try to determine which factors have been of importance in the context of family planning acceptance and fertility decline in the study population.

The factors given greatest prominence by Astawa et al., tended to be, understandably, those implicating the well organized structure of the family planning program, sensitively tuned to its social environment.

The factors emphasized by Astawa were:

(a) the ratio of population to clinics is somewhat lower in Bali than in the other provinces at 2,253 persons per clinic, (see Hull, Hull and Singarimbun, 1977:26);

(b) the program has heavily emphasized the IUD as the method of choice, and this method has considerably better continuation rates than, say, the pill which is the main method used in Java;

(c) the budget for the program has been higher in Bali than in other provinces in terms of expenditure per eligible couple (Astawa et al., 1975:87);

(d) information has been disseminated through a great variety of different bodies ranging from women's organizations, religious organizations, down to the banjar organization which has apparently played such an important role in the uptake and use of family planning in Bali;

(e) apart from its role in informing the community members of the benefits of using family planning, the banjar was also used as a community level infrastructure to distribute contraceptives; to monitor performance of the banjar members regarding use of contraception, and to encourage those who were not using but were eligible, to accept family planning;

(f) a system of fieldworkers was instituted to identify eligible couples and to motivate them to accept family planning, also to maintain the record keeping system. There were 231 fieldworkers for all Bali, about one for each four or five villages, on average.

Astawa also mentioned a number of cultural factors, in particular religion, suggesting that Bali Hinduism is more receptive to family planning than Islam; also the fact that Balinese women are traditionally industrious, often working outside the home in farming or labouring jobs, therefore they are more receptive to arguments about the practicality of having fewer children to handle. Other factors implicated were: the traditional naming system, whereby most Balinese children are given a birth order name taken from a repeating cycle of four; the land tenure system, whereby most farming families receive directly the benefits of their work and thus feel a greater degree of control over their lives than if sharecropping; birth attendants have traditionally been male in Bali, thus there is supposedly not the embarrassment usually felt by women when being examined by a male doctor, eg., for IUD insertion; finally, there is a widespread openness in discussion of reproductive matters.

Astawa's emphasis on the effect of program effort is also supported, to a degree, by the data of Freedman et al., who found, in their analysis of factors related to contraceptive practice in Java-Bali, that region (province) was the most important predictor of modern contraceptive use (1981:9). While recognizing that regions may 'differ culturally in ways that affect fertility independently of the other demographic and social variables considered in this and other studies' (p.14), they also point to the fact that program effort has varied throughout Indonesia, and that such effort together with mobilization of local leadership to recruit acceptors, has been quite strong in Bali (p.14). Although these are unsatisfactory measures of program effort, the fact that the rank order of clinic availability matches the rank order of contraceptive prevalence levels, with Bali topping both, is consistent with the claim that program effort plays an important role. A more recent study by Khoo using the same combined data source examined the role of program effort indicators in greater detail (1981:15). These indicators were numbers of clinics, doctors, midwives, administrative personnel and fieldworkers per 1,000 ever married women. Khoo concluded that while 'Region still appears to be important as a factor affecting both program input and contraceptive use,...regional differences remain even after controlling for community-level differences in the number of program clinics and workers relative to population' (1981:15).

In their 1977 Population Bulletin article on Indonesia's family planning program, Hull et al., in trying to explain the high latent demand for contraceptive services, also touched on two cultural characteristics. These were the 'high proportion of Balinese women who work outside the home at laborious jobs, including construction

and roadwork'; and the fact that 'much agricultural land is worked collectively for the benefit of all members, thus there is little need for a nuclear family to increase its "labour force" through childbearing.' (1977:28)(6).

The examination of cultural factors was extended by Hull in his 1978 paper entitled 'Where Credit is Due'. In this paper he listed five points that 'call into question the notion that Bali was, in the late 1960s, either a child-centered or an intensely traditional society. Instead the culture put little stress on the need to achieve economic, social or personal goals through childbearing. In contrast to virtually all other ethnic groups in Indonesia, Balinese could attain economic security and a large measure of personal fulfilment without children because of the effectiveness of non-familial groups.' These points were:

firstly, that individuals belong to a wide range of groups organized for work, religious observance, or recreation, and membership of such a variety of groups gives the individual a substantial amount of flexibility and allows individual initiative.

Secondly, Bali has a tradition of marriage by capture, or elopement (see chapter 2), interpreted by Hull to indicate that the initiation of proceedings, and partner selection, is done by the young people themselves, rather than by the older, parental generation. Hull suggests that this situation allows a more rapid change (delay) in age at marriage. There is not much

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(6) It should be noted that this is not the same suggestion as that of Astawa, who emphasized the benefits to the nuclear family rather than to the community.

evidence, however, to indicate what mean age at marriage was in earlier times, and what changes had been taking place (see chapter 5).

Thirdly, the Balinese child is not raised as the precious possession of its parents, but as a small member of the extended family so the 'costs' and 'benefits' of childbearing are distributed among the members of the family compound, and hence do not fall solely on the shoulders of the biological parents.

Fourthly, population pressure is now more acute than in most other parts of Indonesia, with little prospect of intensifying cropping further, and with poor job prospects outside of agriculture. Young people are concerned about their futures, and that of their children.

The fifth and final point is the effect of the 'rapid pace of social change' reflected in the introduction of Western-style schooling; modernization of transportation and communication; the penetration of the central government into the community; and of course the introduction of artifacts of modern society, such as radios, rice hulling machines, plastic housewares etc.

The conclusion was that 'the environment encountered by the family planning program in 1969 was thus highly conducive to a remarkable success.' (Hull, T.H., 1978:5)

He goes on to say :

Who deserves credit for the fertility decline? It is obviously not sufficient to cite the government's policies and program, for while these provided the very necessary contraceptive supplies, they did not create the demand to restrict fertility. Small family norms were rather a product of Bali's unique traditional institutions which



structured productive and family relations, and the modernizing forces of education, and economic and political change. (Hull, T.H., 1978:6)

In their discussion of the patterns of use of contraception throughout Java-Bali, Freedman *et al.*, also emphasize a number of the same points as Hull but they differentiate between the relative importance of different factors on the various strata of the society:

modernization may work to increase contraceptive use among higher status groups; sheer Malthusian pressure coupled with aspirations arising out of access to outside influences including the information and services of the family planning program may increase contraceptive use among the poor (1981:15).

The concept of Malthusian pressure, also implied in Hull's fourth point, raises the issue of 'island status' as an explanatory factor. This is a notion that a community required to live within a restricted space is more aware of 'having nowhere to go', i.e., of its physical limits, and thus tends to exert a special control over fertility. However, Mauldin and Berelson (1975:11) point out that such a response may not derive from island residence as such, but from the population density associated therewith, for islands are on average relatively densely populated.

In a study of island states in the Caribbean and the Pacific, Cleland and Singh (1980:969) found 'modest' support from the Caribbean data for the view that island status is linked to an early demographic transition, independent of intervening, socio-economic factors, but for the Pacific the situation was the reverse, with high fertility persisting despite improved standards of living. It should be noted that Bali is not an island state, and there is the possibility of transmigration to other provinces of Indonesia, even if such a

prospect is not viewed favourably by many Balinese.

Hull (in his fifth point mentioned above) is the only writer to really emphasize the possible role of 'modernization' in the social rather than the economic sense. As described in section 1.2, Caldwell has attached great importance to the effects on fertility behaviour of Western style education, increased communications, mass media and consequent exposure to different value systems. This is an area which will need to be discussed in some detail in later chapters, particularly in the light of the timing of the fertility decline. In other words, even if there did long exist a number of cultural factors conducive to a fertility decline, as Freedman and Berelson point out 'it is not clear why they should operate at this time' (1976:28), that is, at the precise moment the family planning program came into effect.

Thus the situation is that a poor, rural society, showing few signs of economic development and other changes often considered prerequisite for fertility decline, has demonstrated an apparent rapid and widespread acceptance of family planning and subsequent dramatic fertility decline.

Up to this point attempts to examine the reasons for this somewhat unexpected situation have dwelt, on the one hand upon aspects of the vigorous family planning program, and on the other hand on a variety of special social, cultural and economic conditions in Bali at the time the program commenced. Thus the purpose of this thesis is to investigate, and try to evaluate, the relative importance of these and other factors in explaining the fertility decline.

While national censuses and large scale surveys are useful and necessary in determining how widespread is any change in fertility, and national family planning program data can show certain characteristics of those using contraception, neither type of data can be used to devise anything but speculative explanations for such changes as they usually do not gather adequate data on what motivated the respondents to act as they did. It is necessary to have available from individual respondents, detailed, reliable data on fertility and family planning (past and present), particularly reasons for acceptance of family planning; education; occupation; economic status; aspirations for children, etc.; if any satisfactory examination of such a decline is to be carried out, and any advance made in refining current theories of fertility.

#### 1.4 MACRO-LEVEL DEMOGRAPHIC EVIDENCE FOR FERTILITY DECLINE

This section will examine the available data upon which claims for a substantial fertility decline in Bali have been based. Before examining the recent (macro-level) demographic evidence for a fertility decline it is necessary to look briefly at rates of population growth in the past. The population estimates from the nineteenth century and early twentieth century vary considerably (see Table 1.2a) and could not be considered very reliable.

The earliest systematic population estimate (for 1815) was that of Sir Thomas Stamford Raffles who used the unusual, and very dubious, method of extrapolating the total population from the number of males who had had their teeth filed, (Raffles, 1830:App.K., ccxxxii) (7). The resulting figure of about 800,000 was about one sixth of the estimated population of 5,000,000 for Java at that time, (Nitisastro, 1970:19), and was not inconsistent with other estimates of the period (Table 1.2a). The Java figure, on the other hand, was probably too low at that time. In 1980 Java's population of around 91 millions was about 36 times greater than that of Bali.

Throughout the nineteenth century other observers, both British (Moore) and Dutch (Helms, Van Eck and Van Eijsinga), estimated the population of Bali as between 700,000 and 1,000,000. Even by the mid nineteenth century, Bali was considered to be densely populated. Crawford concluded that even low estimates of Bali's population size:

..makes the relative population half again as much as Java, or near 480 to the square mile, being the greatest density of population throughout the whole Malayan and Philippine Islands. (Crawford, J., 1856:197)

Nevertheless, in spite of the relatively high density of population, village records indicate that at the beginning of the twentieth century, the average peasant family owned approximately one hectare of good land, irrigated or dry (Hanna, W., 1975:97).

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(7) Raffles makes no mention of where he obtained the figure of 215,000 males whose teeth had been filed. But on the grounds that tooth-filing immediately precedes puberty, and age at marriage is early, he assumes that most of those whose teeth have been filed have 'entered into family connections'. Assuming four persons to a family, this gives a population of over 800,000 for all Bali. This is almost certainly an over estimate.

TABLE 1.2a

## POPULATION ESTIMATES and CENSUS COUNTS, BALI, 1815-1980.

YEAR	POPULATION	SOURCE
1815	800,000	Stamford Raffles, Sir Thomas
1830	700,000	Moore, J.H.
1849	892,500	van Eck
	988,000	van Eijsinga
	1,000,000	Helms
1908-28	1,000,000	Dutch Administrative Records
1914	1,207,030	Dutch Administrative Records
1920	947,233	Dutch 'Census' Report
1930	1,101,393	Dutch Census
1940	1,321,114	Dutch Official Figure
1945	1,430,975	Dutch Official Figure
1949	1,540,834	Dutch Official Figure
1961	1,782,529	National Census
1971	2,120,099	National Census
1980	2,469,731	National Census

Sources: (1815) Raffles, 1983;  
 (1830, 1849) Hanna, 1971

TABLE 1.2b

## RATES OF POPULATION GROWTH, BALI.

(Calculated from figures in Table 1.2a)

PERIOD	RATE (Percent per annum)
1920-1930	1.51 %
1920-1961	1.56 %
1930-1961	1.58 %
1961-1971	1.67 %
1971-1980	1.70 %

However by 1978 the population was just under 2.5 millions and

..this has resulted in the average Balinese family's farmland holding of one hectare in 1900 shrinking to perhaps 0.3 hectare today. (Poffenberger, M. and M.Zurbuchen, 1980:24)

In 1930, the first official Dutch census of Bali gave a figure of 1,101,393 suggesting a relatively slow rate of population growth up to that time (1.5 % per annum between 1920 and 1930). Indeed, thereafter the rate of growth did not increase greatly (see Table 1.2b), reaching a maximum of 1.7 % per annum between 1971 and 1980, although some writers have suggested otherwise:

..between 1930 and 1971 the rate of population growth in Bali took a sharp upswing,.... the control of endemic and epidemic diseases such as smallpox, cholera, malaria, and others had a major impact on mortality levels throughout the island, as did the growing availability of modern medical treatment. (Poffenberger, M., 1981:12) (8).

Poffenberger went on to suggest that:

the rate of population growth increased continuously, keeping pace with Java, and reaching approximately 2.35 percent per annum in 1971. (1981:13).

Despite claims to the contrary, the Bali population has in fact grown steadily at a relatively low rate throughout the present century. Unfortunately it is not possible to determine whether or not fertility and mortality levels have changed within this period as there is reliable data only for 1961 onwards (see Table 1.3), however this period covers the introduction and operation of the family planning program.

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(8) In fact the growth rate from official census data was only 1.6 % per annum from 1930 to 1971, (see Table 1.2b).

TABLE 1.3

## ESTIMATES OF CRUDE BIRTH RATES, Late 1960s to 1976, Bali.

Source and Years	CBR
1973 F-M Survey 1965-70	41
1971 CENSUS 1967-70	42
1976 SUPAS I 1971-75	37.6
1976 WFS 1967-71	39
1972-73	36
1976 a) constant marital fertility, changing marital patterns	37-38
b) changing marital fertility, constant marriage patterns	29
c) changing marital fertility, and marriage patterns	28

(SOURCES: Sinquefield and Sungkono, 1979:46  
For SUPAS I, CHO et al., 1979:21)

NOTE: CBRs are calculated using appropriate ASFRs and estimates of population.

CBRs for the late 1960s use 1970 estd. popn. figures.

CBRs for 1972-73 use 1973 popn. estimates.

and CBRs for 1976 use 1976 popn. estimates.

1976:

a) 1967-71 ASFR estimates and 1976 Supas I proportions currently married to generate ASFRs (constant fertility).

b) 1976 est. of ASFRs and 1971 Census estimates of proportions currently married to generate ASFRs (constant marriage).

c) 1976 est. of ASFRs and 1976 Supas I est. of proportions currently married to generate ASFRs (changing marriage patterns and marital fertility).

#### 1.4.1 ESTIMATION OF FERTILITY

Before examining the fertility estimates it is necessary to point out the possible pitfalls of estimates derived from census and survey data. In using the 'Own Children' method to estimate age specific fertility rates and subsequently total fertility rates and crude birth rates, there can be problems of misstatement by mothers of the age of their children and themselves. Errors in the mother's age do not result in substantial error in total fertility estimates, but errors in the children's ages can result in significant spurious changes in fertility. For this reason fertility 'own children' estimates were not made for single years prior to the 1971 Census, but rather for groups of years (two, three or five year periods) (Cho et al., 1979:6). The second problem is that of underenumeration of the population of certain ages. Underenumeration of children less than one year is found in most censuses, and for the 1971 Indonesian census one estimate of the undercount of children under one year of age was about 40 to 45 percent (Cho et al., 1979:5 citing a report of Keyfitz to the Indonesian Central Bureau of Statistics, 1972). While Hugo (1975) found some evidence of underenumeration of young men in the 1971 census, generally speaking underenumeration did not appear to be a great problem in age groups other than children under age four.

Fertility estimates based on pregnancy history data such as that in the 1973 Fertility-Mortality Survey and the 1976 Intercensal Survey also appear to be subject to error in the form of inaccurate recall by mothers of dates of children's births and deaths. In both the above surveys the pattern of annual births showed a dramatic decline in the two years prior to the survey, apparently an artifact due to mothers



overestimating the ages of very young children, (McDonald et al.,1976:60). That such a shift can also occur at later ages has been indicated by Potter (1977) in his analysis of pregnancy histories for Fiji. Events that occurred ten to fifteen years before the survey were to a considerable extent reported as having occurred in the more recent period of five to nine years before the survey. Such misreporting would inflate the level of fertility for the period five to nine years prior to the survey and indicate a decline in fertility for the earlier period that was not real.

Finally, estimates derived using the Last Birth method (Hull,1978) rely on accurate recall of exact dates of birth of young children (infants). Very young babies, and older children can easily be correctly included or excluded in the 'under one year' category, but errors arise when the child is about one year but the mother cannot recall the exact age. For surveys where numbers of children in single year age groups are often quite small, substantial errors are possible using this method.

#### 1.4.2 FERTILITY ESTIMATES

##### 1.4.2.1 Overall Fertility

The data presented in Table 1.3 show some consistency for the late 1960s, with different sources giving a crude birth rate of around 41 per 1,000. However, for the 1970s there is considerable variation with source. For the first half, the figure from Supas I (37.6 for 1971-75) is close to the figure from the World Fertility Survey (Supas III) of 36 per 1,000 for 1972-73, but for 1976 the figures given vary greatly depending on the assumptions made about changes in marriage

patterns and marital fertility. The most likely scenario is one in which marriage patterns have remained constant (at 1971 Census levels) but marital fertility has fallen. This produces an estimated crude birth rate of 29 per 1,000 which does not seem unreasonable considering the prevalence rate of contraceptive use was estimated at 39 percent currently using in 1976, although it does imply a rapid decline in the preceding two or three years.

As might be expected, data on total fertility rates also show a decline, and indeed it is these figures which have been the basis for the claims of a dramatic fertility decline in Bali. An estimated total fertility rate of 3.8 was obtained for Bali, 1976, from the World Fertility Survey data by Jeanne Sinquefield (Table 1.4a).

There are serious doubts however, about the accuracy of the current pregnancy status method (see chapter 5.2.5). In addition, the size of the WFS (Supas III) sample for Bali was rather small at 893 women. The Last Birth method estimate by T.H.Hull was based on the larger sample from Supas II but this method is also open to error of recall of exact date of birth of the child, as described above. Examination of Table 1.4b casts further doubt on the more recent Bali estimates as the disparity between the two sources is very considerable for Bali although for the other five provinces the figures are in close agreement. When compared to all the other estimates for the early 1970s, the estimate of 3.8 for the total fertility rate in 1976 for Bali looks suspiciously low.

TABLE 1.4a

## ESTIMATES OF FERTILITY FOR BALI.

## TOTAL FERTILITY RATES

PERIOD	SOURCE	TFR
1965-70	F-M SURVEY	5.9
1967-70	CENSUS 1971	5.8
	SUPAS I	5.8
	SUPAS II	(5.7)*
1971-75	SUPAS I	5.1
	SUPAS II	(4.9)*
1972-73	SUPAS III	5.3
1975	SUPAS II (Last Birth)	5.2
1976*	SUPAS III	4.9
	(Curr.Preg.)	3.8
	SUPAS III (Linear Proj.)	4.3 §

(SOURCE: Freedman et al., 1981:4 and  
Sinquefield and Sungkono, 1979:45  
for ( )\* figures.)

§: Projected linear decline based on estimates from  
1976 IFS for 1967-71 and 1972-73.  
The figure is a December 1976 estimate, to match the  
pregnancy status estimate.

TABLE 1.4b

COMPARISON OF ESTIMATED TFRs FOR JAVA-BALI,  
FOR 1975 (Last Birth Method)  
AND 1976 (Current Pregnancy Method)

PROVINCE	1975 (Last Birth)	1976 (Curr.Preg.)
Total Java-Bali	4.6	4.5
West Java	5.1	5.3
Central Java	4.3	4.4
Yogyakarta	4.2	4.4
East Java	4.0	3.9
Jakarta	4.5	4.5
BALI	4.9	3.8

(SOURCES:1975 data from SUPAS II,calculated by  
Last Birth method, with adjustments by T.H.Hull  
Freedman et al,1981:4.

1976 data from SUPAS III, calculated by Sinquefield  
Sinquefield and Sungkono,1979:45)

The data on age specific fertility rates from the 1971 Census and 1976 Intercensal Survey (Supas I and II) for Bali do not indicate clearly which age groups have undergone a decline, (Table 1.5). There is considerable variation between sources for the same period, although referring to the same source (ie.,either Supas I or II) for comparison of the periods 1967-70 and 1971-75, suggests a slight decline across virtually all age groups. For the age group 15-19 in the period 1967-70, the 1971 Census figure of 134 per 1,000 is very high compared to the Supas II figure of 79 per 1,000 for the same period. The high Census figure is a consequence of very high marital fertility in that age range (736 per 1,000 , Table 1.7a). The Supas figure appears more probable.

TABLE 1.5

AGE SPECIFIC FERTILITY RATES and  
TOTAL FERTILITY RATES, BALI.

PERIOD	AGE							TFR
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
CENSUS-1971	15-19	20-24	25-29	30-34	35-39	40-44	45-49	TFR
1961-63	146	261	267	204	155	93	---	5.63
1964-66	156	273	285	213	143	77	---	5.74
1967-70	134	298	300	229	137	67	26	5.83
(1961-1970)	144	279	286	217	144	76	(26)	5.73
F-M SURVEY								
1965-70	113	291	296	215	166	93	12	5.93
SUPAS I								
1967-70	107	265	286	220	157	84	37	5.78
1971-75	95	249	254	198	124	69	32	5.10
SUPAS II								
1967-70	79	236	285	234	169	89	39	5.65
1971-75	87	259	243	206	139	78	42	5.27

(SOURCES: CENSUS 1971-Estimates of Fertility and Mortality in Indonesia, based on the 1971 Census, Central Bureau of Statistics, SP76-L02, Table 1.2, p.2.  
F-M SURVEY-Preliminary Report, Bali, Table II.5, p.9, Lembaga Demografi, Universitas Indonesia, 1974.  
SUPAS I and II-National Academy of Sciences 'Indonesia Panel Report' by Cho,L.J. et al., Tables 1,2, forthcoming.

When the situation prior to the family planning program is examined in terms of the Coale Index of fertility (Coale,1965), it appears that overall fertility for Bali ( $I_f=0.488$ ) for the period 1965-70 (from FM survey data), was lower than for West Java, Sumatra and Sulawesi, but higher than for Central and East Java. Bali combined lower proportions married ( $I_m=0.701$ ) than any of the other

regions mentioned with marital fertility ( $I_g=0.696$ ) which is higher than in any province of Java, though lower than in Sumatra and Sulawesi.

#### 1.4.2.2 Marital Fertility

Thus in 1965-70 marital fertility for Bali (0.696) fell into the category of Henry's 'Natural Fertility', which ranges from 0.64 to 1.0 (Henry, 1961). In the 1973 Fertility-Mortality survey the regions which fell into the range of natural fertility were West Java, Sumatra, Sulawesi and Bali. Bali, however, was the only region whose marital fertility level was consistent with natural fertility but whose pattern was not, (Table 1.6).

TABLE 1.6

PATTERN OF MARITAL FERTILITY IN BALI COMPARED  
WITH HENRY'S PATTERN OF NATURAL FERTILITY, 1965-70

AGE GROUP	NATURAL FERTILITY (HENRY)	BALI MARITAL FERTILITY
15-19	---	1.084
20-24	1.000	1.000
25-29	.935	.844
30-34	.835	.616
35-39	.685	.463
40-44	.349	.261

(SOURCE: Jones, 1977, Table 5, p.36)

Jones, while recognizing that Bali had very high marital fertility rates at the younger ages, attributed the fact that these levels were not maintained at the older ages to the 'relatively widespread practice of contraception', (1977:38). There was as far as we know, very little use of contraception at that time, and the fact that the pattern of marital fertility in Bali was not consistent with that of 'natural fertility' was more likely the effect of late age at marriage producing a very high rate of marital fertility in the 20-24 age group which is used as the index for this pattern. For the second half of the 1960s, Bali had the highest age specific marital fertility rate at age 20-24 of the six provinces of Java-Bali (Sinquefield and Sungkono,1979:47). It was the late age at marriage in Bali that held overall fertility (If equals 0.488) well below its potential.

For the second half of the 1960s the age specific marital fertility rates from the 1971 Census, the 1973 F-M survey, and the 1976 WFS match well in the age groups 25 to 34, but below 25 the 1976 WFS figures are lower than those from the other two sources, and above age 35, the Census figures fall below the other two sources, (Table 1.7a). However, the value of Coale's index of marital fertility,  $I_g$ , is the same for the FM survey and the WFS data. After 1971, the pattern of ASMFRs shows a marked decline in all age groups but proportionately greater for women over 30. This is the expected pattern where family planning is taken up primarily for reasons of limiting births as has been the case in Bali.

The values of the Coale-Trussell 'm' index of fertility control also reflect the increasing use of family planning during the 1970s. Taking one source, the 1976 Indonesian Fertility Survey data for women

aged 20-44, 'm' has increased from 0.20 in the late 1960s to 0.50 in 1976. The difference between the IFS figure and the figures from the other two sources for 1967-70 is largely due to the lower ASMFR for age 20-24 in the IFS.

TABLE 1.7a

ESTIMATED AGE SPECIFIC MARITAL FERTILITY RATES  
GENERAL FERTILITY RATES OF MARRIED WOMEN, AND  
COALE'S INDEX OF MARITAL FERTILITY (Ig),  
based on 1971 Census, 1973 FMS and 1976 WFS for Bali.

ASMFR, by age	1973 FMS	1971 CENSUS	1976 WFS		
	1965-70	1967-70	1967- 1971	1972- 1973	1976*
15-19	464	736	378	373	519
20-24	417	433	384	369	298
25-29	352	357	341	356	277
30-34	257	269	262	235	117
35-39	193	160	198	124	74
40-44	109	83	146	115	58
45-49	u	34	u	0	74
GMFR (15-44)	309	u	286	263	200
Ig (Coale)	.696	u	.692	.642	.446
Coale- Trussell's 'm':	+0.37	+0.35	+0.20	+0.29	+0.50

1976\*: Uses pregnancy-status method  
(SOURCE: Sinquefield and Sungkono, 1979:47)  
Values of 'm' for women 20-44, except for 1971 Census (20-49).

This pattern of declining fertility is also consistent with the changes in Marital-Duration Specific Fertility Rates which show an increase in marital fertility during the first five years of marriage in Bali, between the periods 1967-70 and 1971-75 (Table 1.7b), but a decline in longer marital fertility for women married more than five years.



TABLE 1.7b

MARITAL-DURATION SPECIFIC FERTILITY RATES  
(BIRTHS/1,000 EVER MARRIED WOMEN/YEAR)

PERIOD	Years Since First Marriage				EVER-MARRIED TFR
	0-4	5-9	10-14	15+	
1967-70	314	317	262	108	6.02
1971-75	340	291	213	99	5.64
(%) Difference	+8.3	-8.2	-18.7	-8.3	-6.3

(Source:Hull and Singarimbun,1982:15)

In conclusion then, Bali has undergone an increase in the rate of population growth during the twentieth century, although this rate has been kept below 2 percent per annum by relatively high mortality rates, and late age at marriage restraining overall fertility levels. Nevertheless the available evidence suggests that fertility was high before the beginning of the family planning program around 1970, and has dropped markedly, though the actual extent is uncertain. Consistent with this situation has been a dramatic increase in the prevalence of use of modern contraceptive methods, although again, there are inconsistencies in the levels according to different sources.

This thesis will be concerned with determining past and present levels of fertility and contraceptive use for a village population in rural Bali. Thereafter the role of contraceptive use as a factor in the fertility decline will be examined, in comparison to other possible factors. Finally, assuming that contraceptive use proves to have been a major factor in the fertility decline, hopefully a satisfactory explanation can be devised as to why a predominantly poor, rural society such as that in Bali should accept family planning to such an unexpected degree.

## CHAPTER 2

### BALI'S SOCIAL AND ECONOMIC SITUATION, PAST AND PRESENT.

This chapter is concerned with the setting in Bali into which the family planning program was introduced. One of the questions arising from the rapid decline in Balinese fertility since 1970 is whether a latent demand for the means of family limitation existed before the introduction of the program, or whether the program itself changed people's attitudes toward children and changed their family size norms in a few short years. If there was a latent demand for family planning, was it a consequence of recent social or other changes, or had it long been present, remaining latent either because the available means of birth control were considered unsatisfactory or because the concept of birth control was not yet present in society? Also, was the faster pace of fertility decline in Bali compared to most parts of Java due to factors in the setting or to differences in implementation of the family planning program?

Any attempt to examine these questions requires a familiarity with social and economic organization in Bali, both past and present; any changes being examined in the light of their possible effect on attitudes to childbearing and family limitation. As Bali is still primarily an agricultural society, the relationship between the people and the land is of particular interest here. This relationship will be seen to underlie a number of aspects of social, economic and political organization in Bali.

## 2.1 BALINESE SOCIAL STRUCTURE

There has been some disagreement amongst Bali scholars about the form of the 'traditional Balinese village'. Some writers have suggested that the few remaining pre-Hindu villages (eg., Trunyan and Tenganan) have preserved the true form which has elsewhere undergone marked changes since the arrival of the Hindu aristocracy in the exodus of Javanese nobles, priests, soldiers and artisans that followed the collapse of the kingdom of Majapahit in the early sixteenth century. The prevalent view has been that the state, composed largely of descendants of the Javanese royal families, was superimposed upon the 'patriarchal communism' of the existing, self-contained village. This imported state structure was pictured as parasitic and exploitative, often trying to impose its influence upon the unwilling inhabitants of the autonomous dorpsrepubliek (village republic).

The accuracy of this 'oriental despotism' view has recently been challenged by Geertz in a detailed elucidation of the symbiotic relation between the precolonial negara, the Balinese state, and its subjects. Geertz argues that while the above view of the state would have been very comforting to the colonial Dutch who had just displaced the indigenous aristocracy in the early part of this century, in fact the negara was neither a tyranny nor a hydraulic bureaucracy, nor even very much of a government. It was instead an organized spectacle, a theatre state designed to dramatize the ruling obsessions of Balinese culture: social inequality and status pride (see Geertz, 1980:25).

Whatever the true relation between the state and its subjects, there were locally based political forms, to a large degree independent of the state, which played a predominant role in (1) the ordering of the public aspects of community life, (2) the regulation of irrigation facilities, and (3) the organization of popular ritual. For each of these tasks there were separate (though not unrelated) institutions specifically directed toward their fulfilment : the hamlet (banjar), the irrigation society (subak), and the temple congregation (pemaksan) (Geertz,1980:47). Together with these major forms were a number of organizations also with specific functions and normally non-political: kin groups (dadia), voluntary organizations (seka), and so on. The result is not a territorial corporate unit coordinating most aspects of life, as peasant villages have commonly been described, but a compound of overlapping and interlocking distinct corporate groups, each based on a different principle of social affiliation. It is this multiple, composite nature of Balinese village structure which makes possible its high degree of variation while maintaining a general format (see Geertz,1959:991).

#### 2.1.1 THE BANJAR

The hamlet, or banjar, is basically a residential unit. The members of one hamlet live side by side with each other, although it is not uncommon for some members of another hamlet from the same village to have their houses interspersed amongst those of the first. The hamlet is, however, much more to its members than just shared residence. It is a public corporation regulating a wide range of community activities. In those areas for which it is responsible, it has virtually total power, in other areas, it has no power.

The banjar is closely involved in most aspects of a person's life, virtually from the time of birth until his spirit finally departs from this earth. In the words of Geertz, the following description of banjar function and jurisdiction is still applicable today, with the exception of certain legal activities such as judging suspected criminals:

The hamlet was responsible for public facilities (road building and maintenance; the construction and upkeep of hamlet meeting houses, granaries, cockpits, market places, and cemeteries), for local security (night watch; the apprehension, judgement, and punishment of thieves; the suppression of violence), and for the settlement of civil disputes (inheritance conflicts; arguments about various sorts of traditional rights and obligations; contractual disagreements). It regulated the transfer of personal property (except for rice fields) and controlled access to houseland which, in most cases, it held corporately. It legitimized marriage and divorce; administered oaths; conferred and withdrew the rights of citizenship in itself; enforced a number of sumptuary laws designed to keep status relationships in order; and organized various sorts of collective work activities, both religious and secular, conceived to be of general rather than merely individual significance. It sponsored certain public feasts, supported certain common aesthetic pursuits, performed certain, mainly purificatory, rites. It could tax and fine, it could own property, and it could invest in commercial ventures. In brief, perhaps the bulk of Balinese government, in the

strict sense of the authoritative regulation of social life, was carried out by the hamlet, leaving the state free to dramatize power rather than to administer it. (Geertz, 1980:48-49).

The functioning of each hamlet is regulated by a council (krama banjar) to which membership is compulsory for all 'adult' males residing in the hamlet. Adulthood however, is defined differently in different areas across the island, but generally comes with marriage. The variations on that theme include becoming an adult on the birth of one's first child, or less frequently, on the death of one's father. The system of retirement also varies, although commonly a father retires at the time his youngest son marries, the son thus becoming eligible for membership of the banjar council. The unit of banjar membership is the kuren (hearth or kitchen), or household, which is usually a conjugal family as there is need of both males and females for the various temple duties. Within a houseyard there may be only one household or several, residence therein and the duty to worship in the houseyard temple being transmitted by the principle of patrilineage: from father to son. That is, the heads of the component households in a houseyard live there because their fathers lived there before them, not just because they are all members of a patrilineage.

The banjar council usually holds a meeting (Sangkep) once every thirty five days on an auspicious day of the calendar, although some banjar meet as infrequently as once a year, particularly in those areas such as north Bali where the strength of the banjar has declined over the years since Dutch settlement during the nineteenth century.

At these meetings decisions are normally arrived at by consensus or unanimous agreement, under the guidance of the headman, the Kelian Banjar. The Kelian is elected by the members for a fixed period such as five years, although he may be re-elected if the members choose. He may also be dismissed early from the post if unsatisfactory. The headman has no authority independent of the council, but is responsible for carrying out its decisions, collecting taxes and fines for the banjar treasury, and generally organizing duties for the members. At times this can be something of a burden as active banjar seem often to be in the process of raising funds to build a new meeting hall (Bale banjar), or possibly a school building or improving roads or drainage ditches for the hamlet. Non-attendance at banjar meetings is met with a fine, and persistent refusal to fulfil banjar obligations can be dealt with by social ostracism which is viewed by most Balinese as a fate worse than death.

In the 1975 book, Kinship in Bali the Geertz wrote that the Perbekel, or headman of the government village, was the lowest rung of the central Indonesian government administration. Since then, however, there has been a process of what might be called 'Dinasization' in which the vast majority of banjar have not only a traditional headman, the Kelian Banjar, but also have an administrative headman, the Kelian Dinas. The latter receives a regular salary from the government (Rs 17,500 (A\$25) per month in 1980) although he is still elected by the banjar members, while the Perbekel is not. The primary function of the Kelian Dinas is not the arranging of traditional duties (cremations, etc.) but rather the administrative procedures of the hamlet, such as passing onto members information about new government programs, and the consequent

monitoring of those programs, the program of most interest in this context being the Family Planning program introduced to Bali in 1969. Data on registration of births and deaths, and in- and out- migration from the hamlet is also supposed to be recorded by the Kelian Dinas. To make clear the distinction between the two types of kelian, sometimes the Kelian Banjar is known as the Kelian Adat (local leader in matters of custom). Some banjar also have a Kelian Pura, responsible for maintenance of the temples of the banjar.

The membership of the banjar usually numbers between 50 and 100 heads of households, averaging about 80 to 90. If the banjar grows much larger than this it may fragment into several smaller banjar, or it may less frequently become a fully fledged village (desa).

#### 2.1.2 SUBAK (IRRIGATION SOCIETY)

One of the most important aspects of Balinese life fell outside the jurisdiction of the banjar: wet rice agriculture.

As the traditional varieties of Balinese rice can be grown at any time of the year, but rainfall is mainly restricted to the wet season from November to April, it has been necessary for Balinese farmers to devise a rather sophisticated type of agricultural association in order to make best use of limited resources, especially water. The membership of these irrigation societies or subak is composed of all individuals who own, or rent, or have sharecropping rights to plots of wet rice land (sawah) which receive water from the same source (usually a dam and its canal). Three typical subak in the vicinity of the study villages comprised around 100 hectares each and had around 350 to 400 members. Records go back to the first millennium A.D. of



kesuwakan, the forerunner of the present day subak.

The functions of the subak are to build and maintain a major dam and sluice on a river along with its set of canals, tunnels, aqueducts and lesser sluices. There may be very large numbers of these canals dividing and branching off to different plots of sawah as the system must ensure that each farmer's sawah receives water that has come directly from the source without first passing through the sawah of another farmer.

Due to the steeply sloped nature of many of the ravines and river courses, the source river for a subak may have to be dammed well back upstream and the water carried along gently sloping canals to the plots of sawah. These lengthy canals, sometimes passing through tunnels hewn out of rock, must be maintained carefully and guarded against water theft.

Another function, of special importance when water is scarce in the dry season, is the control of timing of the planting and other steps in the cultivation process, which require the allocation of water.

Finally, and perhaps most important in the eyes of its members, each society is responsible for the religious rituals and observances in the various agricultural temples of the subak, which are necessary for the success of the crop. Geertz states that it is the 'sacred aspect' of the subak which gives it its strong authority over its members, for any transgressions or omissions of duty are held to be spiritually threatening to all the members and their crops. There are, however, also financial fines attached to transgressions of subak

law (awig-awig subak), even expulsion for persistent and serious offenders.

Because the subak is based purely on the fact that its members own (or use) adjoining plots of land (fed by the same source) then the members may well reside in different villages, and indeed an individual may well be a member of several different subak simultaneously. The subak is, and always has been, quite separate from the village level government structure in Bali. It has been said, for example, that when the present day Provincial Government attempted to introduce changes in the canal system to reduce duplication, and to synchronize planting to reduce wastage of water, it found that it could not enforce such changes (Geertz and Geertz, 1975:20). The government does seem to have been more successful in ensuring that farmers no longer plant the traditional rice varieties but instead plant the new rice which Balinese generally find less palatable. A sanction in some areas is that if a farmer is found growing any Beras Bali, the water to his rice fields will be cut off.

The internal politics of the subak are quite egalitarian in that decisions are generally reached by consensus, each member having one vote regardless of the size of landholding and irrespective of the caste or status of the man or woman in the community at large. The head of the subak, the Kelian Subak, and other officers are chosen by election, or rotation.

It could be said then, that the subak has evolved as a highly efficient association, large enough to perform the various building and maintenance tasks required for year round wet rice cultivation,

but small enough to reach decisions by consensus and make best use of resources available to it. It has the advantage of being separate from village government structures and the vested interests that accompany them.

The subak has almost certainly played a vital role in protecting areas of sawah and preventing their conversion into land for housebuilding as population pressures on existing villages have increased. For example, the last forty years have seen a doubling of the population in Bali but virtually no net loss of sawah to house land (see section 2.4.1). Although of course one can see signs of new buildings along the tourist routes and expansion of urban areas into former sawah, new sawah has also come into being in compensation.

Before the Land Reform Act of 1960 the situation was basically a landlord-tenant relationship with much of the sawah being owned by a small number of wealthy landlords, usually Satria caste, though also by commoners. Some individuals owned hundreds of hectares. However, with Land Reform, ownership of sawah was limited to 7.5 Ha, and dry land to 9 Ha, for any one individual. With changes of this sort, regardless of how desirable and necessary they might be, the result over time tends to be that size of landholdings decreases, as opposed to the situation under landlordism whereby, as population increases, the size of farms stays much the same but the number of landless farmers increases. This is particularly so in societies where the inheritance system is like that in Bali, namely that family land is divided equally amongst all living sons and any daughters who are not yet married.

### 2.1.3 TEMPLE CONGREGATION

The third politically important institution in the desa system is the temple congregation, or pemaksan. Usually this group consists of a number of cooperating congregations which support together a set of related temples. The temples of the desa adat are known collectively as the Kahyangan-Tiga(1). There are hundreds of such sets of temples in Bali, with membership ranging from fifty up to several thousand families. The three temples concerned in any particular locality are the Pura Puseh, or origin temple, theoretically the temple built at the time of the first settlement of the area; the Pura Dalem, or graveyard temple for the spirits of the local dead; and the Pura Bale Agung, or 'great council temple' (council of the gods), dedicated primarily to maintaining the fertility of the surrounding rice fields. At the first two of these, temple festivals are held once in every 210-day Balinese year (oton), at the third once in a lunar year, the specific days depending on the tradition of the individual temples.

However it must be cautioned that 'whatever the Balinese village may or may not be, it is not simply definable as all people worshipping at one set of Kahyangan-Tiga, because people so obligated to worship commonly form a group for no other social function - political, economic, familiar, or whatever.' (Geertz, 1959:993). Another definition which distinguishes an 'administrative' village from a 'real' village, or desa, is that a 'real' desa is one 'which possesses an "adat": a body of customary law, usually unwritten and

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(1) Kahyangan-Tiga means literally 'the three great temples'.

derived from "historical" memory, which serves to define not only the relations between segments of the village but the village itself' (Lansing,1974:2). Hence, although the desa adat has a most important religious significance for its members, it does not generally hold a great deal of social importance, in terms of social obligations among members, as do its components the hamlets or banjar.

Evidence from official documents from early Java indicate that before the arrival of Hindu culture on Bali, the desa adat was the political unit, and all traditional indigenous power rested in the desa authorities, (Goris, 1960:292). However the desa adat lost much of this power to the princes when they began to take control of administrative matters and ownership of land. During this process, many of the desa became divided into smaller communities within the desa, namely the banjar. It must be said that there is some question about the reliability of the early records and thus about the relative power of the desa over the banjar. Geertz, for example, emphasizes the joint roles of the desa and the banjar:

Together, this triad (banjar, subak and temple congregation or desa adat) of corporations forms, and so far back as we have reliable historical data has always formed, the political heart of the desa system. (Geertz,1980:53).

The various banjar of a village still participate in the maintenance and function of the Kahyangan-Tiga temples and contribute to the village festivals.

When the Dutch took control of Bali at the beginning of this century, they found the desa divided into many small spheres of influence: the princes, the desa chiefs, the banjar heads, and so forth. In place of this complicated arrangement the Dutch sought to

create a more rational territorial government, creating Government districts headed by Dutch officials assisted by the former landlords. They preserved the prince (Regent), the Punggawa (subdistrict administrator), and the Perbekel (village headman) to see that taxes were paid. Finding the desa-banjar relationship incompatible with Western management, they redivided the villages so that adjacent hamlets were grouped into a unit (the perbekelan) called the government desa or village, headed by a Perbekel. The traditional lines of allegiance between hamlets, the sphere of the desa adat, or any other such ties, were often ignored in delimiting these new units, which were formed according to territorial proximity and ease of access. Consequently the government village or desa usually consists of parts of several desa adats, and any single desa adat will be distributed among several government desa. At this time in Bali there are 564 government desa (under a perbekel), but about 1,456 desa adat.

For the sake of completeness, it is necessary to briefly describe the non-political, voluntary organizations or clubs, the seka.

#### 2.1.4 THE SEKA

The Balinese have considerable skills when it is necessary to perform some task or function requiring more than a few people. It is in this context that the seka or club (seka meaning 'to be as one') comes into being. It is composed of people who have a common task or duty to perform, and the life of the seka is usually only sufficiently long to complete the task, thereafter the seka will be disbanded. In certain cases, eg., a gamelan orchestra, the seka may exist for quite a long period of time.

Within the seka the members all have equal rights and duties, irrespective of position or status outside; in fact, the groups are sometimes composed intentionally in such a way as to crosscut other allegiances, thereby avoiding cliques forming within the seka. This follows from the general principle underlying the seka, 'an independent group for every purpose, and only one purpose for every group' (Geertz, H. and C., 1975:30).

Examples of the sekas one might find in a village are Seka-Gong, -Kidung and -Legong concerned with music, dance and drama; those concerned with the cultivation of rice : Seka-Manyi (harvesting), -Numbeg (hoeing), -Memula (transplanting), -Bajak (ploughing), -Mejukut (weeding), -Nigtig (threshing); Seka-Tajen for arranging the all important cockfights; Seka-Tuak (drinking coconut palm wine); as well as those for thatching roofs or protecting crops from rodent attacks.

#### 2.1.5 SOCIAL STRATIFICATION

In earlier discussion of the state, the role of the aristocracy was briefly mentioned. It is appropriate at this stage, to examine more closely the nature of social stratification, and the relationship between the aristocracy and the commoners.

Balinese society is notable for its stratification into ranked descent groups, or penaksaan which are commonly classified into four wangsa (literally: colours) - Brahmana, Satria, Wesia and Sudra - according to an ideology similar to the Indian caste system, with a formal division of spiritual and political authority between Brahmana and Satria respectively.

The Hindu-Balinese nobility, the first three groups mentioned above, are supposed to originate directly from the gods. According to legends, the Brahmanas sprang out of the mouth of Brahma, the Satria from his arms, and the Wesia from his feet. Perhaps the reason why the common people look upon their nobility with such respect is that they still have an unshaken belief in their divine origin. The true Balinese religion consists mainly in the worship of the family ancestors, with the patriarch-founder of the village as the communal god. Thus it was easy for the conquerors to establish their own dead kings as ancestral gods, since they, too, descended from canonized kings and holy men who were in turn descendants of the highest divinities. This fitted perfectly with the Balinese idea of rank and with their cult of ancestors, (Covarrubias,1937:54).

Although it seems that Bali was already extensively Hinduized by the end of the first millennium A.D., the Hindu caste system as it is found in Bali today, was not firmly implanted until after the conquest by the famous Javanese General Gadjra Mada in 1343. This was followed, on the collapse of the Majapahit Empire based in Java in 1515, by a further influx of many thousands of Majapahit Hindu priests, nobles, soldiers, artists and artisans who fled from Java to Bali to escape their Muslim conquerors. They brought with them a vast store of religious lore and classical literary manuscripts, and - so the court chronicles declare - established themselves as Bali's cultural political elite (Geertz,H. and C.,1975:9).

During this period the island was divided into vassal territories (some eight small 'feudal' kingdoms) paying tribute to the local princes under the title 'raja' who were given control.



Before this the original inhabitants had long lived under a class system of their own. They had their ranks, with a sort of aristocracy that combined government and priesthood.

Although the Balinese themselves use the word kasta (meaning caste) when discussing different title groups in the community, Geertz makes the point that the term 'caste' is in some ways misleading when applied to Balinese social organization:

While the Balinese terms for some of the customs concerned and some names for ranks have been borrowed from India, the actual system is quite different. There is no intricate division of labour(2), no reciprocal exchange of goods and services according to ascribed membership in different status groups. The titles are not generally associated with occupations and, with the exception of the Brahmana priests, possession of a title never entails exclusive right to an occupation. There are very few customs of ceremonial avoidance between persons of different title, (and, with the exceptions of foods which have been offered to ancestral gods in certain rituals and which may be later consumed only by the worshipper and his family, there are no restrictions on commensality between holders of different titles).  
(Geertz and Geertz, 1975:25)

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(2) Although there is mention of pollution associated with certain occupations if practised within the village, such as indigo-dyers, pottery-, palm sugar- and arak-makers. The first are said to belong to a special caste, the pamesan - an undesirable fate, apparently.

Possibly because caste and occupation are not linked in Bali, the Balinese make great distinction between pure or ascribed status (one's prestige based on inherited title) on the one hand, and political power (achieved status), as measured by the possession of subjects or of office, on the other. Within one title group, Satria for example, different families may be treated with different degrees of respect according to their power within the village.

Wealth, talent, and personal behaviour are also irrelevant to social rank and to the degree and type of deferential behaviour one merits. Though titles are treated with utmost seriousness, there are extensive areas of social life which are unaffected by them and by the relative prestige of the participants. The main fields in which title has impact are etiquette and marriage. Seating arrangements, posture, and style of speech are all directly affected by the relative ranks of the titles of the actors. Marriage is sharply regulated by title. If it is at all possible one should marry someone of the same or equivalent title, and in no case may a woman marry a man with a title lower than that of her father. In earlier times, when a woman of the gentry (high caste) married beneath her the punishment was death or banishment to distant Jembrana or the little penal island of Nusa Penida. Today it may mean ostracism by her family, by the gentry, and by her village as a whole, although Hobart suggests that some recent cases of hypogamy have gone unpunished (1978:309).

Gentry and commoners live side by side, although there are some hamlets which are composed exclusively of one or the other. Everyday social intercourse between gentry and commoners is usually unaffected by prestige differences, as long as the forms of etiquette (mainly use

of the appropriate language level (3)) are observed. However, in certain respects the attention of the gentry is turned outward and away from the village, toward the affairs of gentry in other villages or in the court, while commoners' interest is turned inward onto strictly local matters. In many areas gentry, particularly those of high title, do not participate in hamlet council decisions or projects, but hold themselves aloof, (Geertz and Geertz 1975:22).

In fact their system of social stratification as a whole is best understood neither as an arrangement of bounded social groups (a 'caste' system), nor as a fluid ordering of persons according to their economic resources (a 'class' system), but rather as several overlapping series of ranked honorific titles, (Geertz and Geertz, 1975:89-90). As mentioned earlier, the pivotal distinction, symbolically, between gentry and commoners in Bali is that the former must always be addressed by their title, and the latter, while they do actually have inherited titles, may never be addressed by them.

The members of the hamlet council (krama banjar) are, so far as legal rights are concerned, all absolutely equal citizens; decisions are only taken after reaching unanimous agreement, and their leaders are never considered to be more than representative of the common

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(3) Balinese has in common with Javanese its use of the so-called 'vocabularies of courtesy'. The Balinese determines his choice of words according to the social relation between the person he is speaking to or speaking about and himself. One employs the ordinary, common language when speaking with intimates, equals, or inferiors; polite terms must be used as soon as one begins to speak to one's superiors or to strangers; and 'deferential' terms are obligatory in all cases when one is so bold as to speak of parts of the body or the acts, possessions, or qualities of important people. The Balinese sum up the last two vocabularies under the term alus (fine or noble). (Swellengrebel, 1960:8).

will. Thus, to be a member of the hamlet council places the gentry in a difficult situation, for their title reflects a claim, however weak, to political and social superiority, a claim to membership in an exalted and nonlocalized aristocratic community above and outside the hamlet, (Geertz and Geertz, 1975:90).

## 2.2 MARRIAGE and REPRODUCTION

### 2.2.1 MARRIAGE:

Covarrubias claimed that: 'a Balinese feels that his most important duty is to marry as soon as he comes of age and to raise a family to perpetuate his line.' (1937:122). Data on proportions remaining unmarried would seem to support this view, marriage being almost universal. But, as with everything in Bali, marriage customs vary from district to district and from caste to caste, although Boon notes that 'a given type of marriage cannot properly be said to characterize a particular social status because alternative marriages are themselves devices for asserting status.' (1977:121). He goes on to state that :

While both patriparallel-cousin marriage norms and mock capture rites are important in Bali, each must be understood as part of a set of options, including:

- (1) individualized unions supported by literate and folk traditions of romantic love,
- (2) alliances across groups commensurate with political and economic opportunities,

(3) temple group endogamy (including patriparallel-cousin unions and less genealogically precise unions) reflecting beliefs in ancestral demands to demonstrate ascendant status. (Boon,1977:121).

NGEROROD (Marriage by kidnapping or elopement):

This method (known as kawin lari or 'marriage on the run') remains popular amongst Balinese, partly because of the opportunity for a melodramatic, but usually unsuccessful, pursuit by the girl's father and friends. A more fundamental reason for this practice is the conflict set up by the existence of numerous subcastes amongst the commoner (Sudra) caste or title group. Just as hypogamy (4) is forbidden between the major castes, namely, Brahmana, Satria, Wesia and Sudra, so it is considered undesirable by the subgroups within the Sudra caste. The difference in the latter case is that there is often disagreement as to the relative ranking of the subgroups. It might be that within the Sudra caste there are subgroups A and B each considering their group to have the higher relative status. If a man of subgroup A wishes to marry a woman from subgroup B such a marriage would be considered a case of hypogamy by subgroup B, but would be acceptable to subgroup A. Thus if subgroup B permitted such a match without protest they would be admitting that they were, by implication, of lower status than subgroup A. Thus a satisfactory mechanism whereby the Sudra subcastes can intermarry without having to genuinely confront the issue of relative status, is to act outraged if one of their women is 'kidnapped' by a member of a supposedly lower

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 (4) Hypogamy is the situation where a woman marries a man of lower caste than herself.

status group (Geertz,1967:225).

Another circumstance where it is advantageous for the parents of both boy and girl to enact ngerorod is when the marriage is not strictly endogamous. In such a case the parents of the potential husband do not consider themselves as part of the same ancestor group as the parents of the potential wife, and according to Balinese custom they do not normally wish to recognize the affinal bond that would be formed by the marriage. By feigning outrage at the match both parents can avoid extending their kin obligations outside their ancestor group. (Boon,1977:124).

Normally the 'kidnapping' is arranged well in advance by the boy and girl, with the knowledge of the boy's family and carried out with the assistance of a few friends. This is followed by a period in hiding, often in a nearby village, while the girl's father is informed of his daughter's intention to marry. It is here that consummation results in 'the small legalization' (masakapan alit), provided the correct offerings are present. Then the more elaborate public ceremony masakapan will normally follow within forty two days of the kidnapping, and after any ransom money has been paid to the girl's family, though this is uncommon. If the father will not accept the youth as his son-in-law, because of a difference in caste, for example, then the father declares that he disowns his daughter. This means that the family does not wish to know anything more about the girl and that the couple can carry out the marriage independently.

Hull has suggested that this form of elopement reflects a high degree of independence and personal choice in mate selection amongst young Balinese, however the above explanations indicate that the

parents are very often involved in the process. In the 1978 Marriage study(5), some 71 % of ever married respondents stated that they had experienced this type of marriage (elopement), the proportion varying little across the age range of respondents. When asked why they had married in this way, 88 % of the males and 80 % of the females responded that they had done so because of social pressure. Of the remainder, 11 % of males and 18 % of females said because of economic reasons, namely that it was cheaper than a conventional marriage ceremony.

It is interesting that an allowance was made for this type of marriage in formulating the new marriage law, in that in Bali, registration may take place after the elopement and marriage rather than ten days before the marriage, as is required for non-Balinese (Katz and Katz,1978:313).

On occasions where a girl is abducted against her will (melagandang), the consequences could be severe for the man if caught unless the girl decides to remain with him. Such occurrences are mostly confined to the past when raids sometimes took place in search of women from neighbouring villages.

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(5) Forthcoming publication by Rimbawan Dayuh (1982).

MAPADIK:

This type of marriage has, in the past, involved prearrangement by the parents while the boy and the girl are still children, the marriage being performed as soon as possible after the girl's first menstruation and before they fall in love with someone else. However this is rare, and the more usual form is the marriage of grown boys and girls of the nobility, with their agreement, although it is very likely that some guidance towards a suitable choice of partner is involved, as marriage within the caste is of considerable importance for the Triwangsa. Covarrubias states that mapadik marriage is in general the old-fashioned, respectable way for the feudal aristocracy to marry and perhaps originated with them.' (1937:150).

MASAKAPAN:

This is the ceremony that will take place to legitimize a marriage by free choice, or one by kidnapping after the various families concerned have adjusted to the situation. It must take place on a propitious day, be conducted by a priest, either high priest (pedanda), or village priest (pemangku), and of course the appropriate offerings must be made, and the established procedure followed.



### 2.2.2 AGE AT MARRIAGE

The first menstruation of a girl (nyacal) is regarded as a significant stage in the life cycle of a female, worthy of a ceremony; and for a high caste girl it indicates that she is now of marriageable age. This is not to say that she will be married off immediately, although there is often concern that she may fall into the hands of a commoner and disgrace her family and herself.

The adolescent period between coming of age and the time of marriage (teruna) is described as 'that age of virginity' (Mershon, 1937:137), but in fact this may well not be the case. Apart from the high castes, the average Balinese do not consider virginity to be of great importance, and there is, very often, premarital sexual activity, although this is not to be considered as promiscuity because the penalties for premarital or extramarital births can be severe. If a woman has an illegitimate child, she will be fined, but if the parents are living together the child, known as Astra or Bebinyat, may go to the temple; if however, the father does not live with the mother the child may not go to the temple, a very severe sanction. Normally the couple may live together in what is viewed as a trial marriage (gendak), the marriage being later legitimized before the public and the gods.

Age at marriage in Bali is quite late relative to some other parts of Indonesia, for example Java. Covarrubias states (without source) that at the time of writing (1936) the average marriageable age was eighteen for boys and sixteen for girls. According to the 1971 Census the average age at marriage (SMAM) for girls in Bali was 21.8, and according to the Indonesian Fertility Survey of 1976 the

mean age for girls was 22.4 (Hull, Hull and Singarimbun, 1977:27). Both these figures are substantially higher than the median age for females of 18.9 years obtained by the 1978 Marriage survey. As discussed in chapter 5, available data does not indicate unambiguously any change in age at marriage in recent times in Bali.

In 1974 a new Indonesian marriage law was promulgated, establishing strict controls on polygamy; minimum age at marriage; consent and divorce. A 1978 review of the effects of this law suggested that in Bali the effect on age at marriage of raising the minimum marriage age to 19 years for men, and 16 years for women, had been negligible as Balinese generally married later than these ages, (Katz and Katz, 1978:314). A somewhat different explanation of the absence of an effect of the new marriage law in Bali is that presented by McDonald and Kasto who state that the experience gained from their 1978 marriage survey suggested that the marriage law was not being implemented in Bali:

As marriage in Bali is adequately controlled by the banjar, the traditional community grouping, it is felt that registration of marriage is unnecessary except for government officials. (1978:1).

They also state a further reason for ineffectiveness:

..in respect of awareness of the law in the villages surveyed, we can state unequivocally that knowledge of the existence of the law is, with the exception of village leaders, almost zero. (1978:2).

Finally, there is the Indonesia-wide problem of lack of official proof or record of date of birth for a large proportion of the population, though this is less of a problem among contemporary adolescents than formerly.

## 2.2.3 POLYGYNY

In the past polygyny was believed to be relatively common amongst royal families, but Covarrubias claims that even in 1936, the great majority of Balinese - about ninety five per cent - had only one wife. This is supported by data from the 1930 Census which indicated that 3.8 % of married men had more than one wife at that time (Volkstelling,1930). Commoners are said to have believed that polygamy constituted a violation of custom and religion, usually practising it only for humanitarian reasons, such as the provision of a father for the children of a widow (Kusuma,1976:48). But it was certainly not uncommon for members of the nobility (who comprised only 5 to 10 percent of the population) to have had many wives. Indeed the present Kelian Desa Adat of Banjarangkan, Klungkung, indicated how the situation has changed when he described, somewhat wistfully, how his grandfather had had two hundred wives, his father had had seventeen but he could only manage five. In the past, as now, the number of wives a man had reflected his wealth as it was usual to house the different wives in different houses, or different parts of the same houseyard (6).

A significant change that came with the marriage law is that the husband must obtain the approval of his current wife (wives) and a court before taking another wife. Nevertheless the present Dewa Agung of Klungkung has some forty five wives in his Puri, this regency probably being the most traditional in Bali. For all Bali, however,

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(6) This situation has probably been altered somewhat by the Land Reform Act of 1960 which reduced the land holdings of many of the princes, traditionally the main group practising polygyny.

the prevalence of polygyny is probably no higher than it was in 1930. The most recent data, from the 1973 Fertility-Mortality survey are presented in a different form, namely the proportion of women stating that their husbands had at least one other wife. For Bali in 1973 the figure was 6.8 percent, but this naturally includes some double counting of polygynous husbands. Depending on the average number of wives per polygynous husband, the prevalence of polygyny was probably about 3 percent in 1973, that is only slightly less than in 1930. This absence of change was also suggested by Katz and Katz, 'the new law, therefore, has made very little difference in Bali regarding polygamy' (1978:312).

Polygyny is not only a simple reflection of a man's ability to support a number of wives, but probably more commonly is the result of an inability of the first wife to bear children. The general attitude in these cases is that the woman is the cause of the infertility and a second wife may prove more fruitful. In many cases the first wife will involve herself in the selection of the second wife, in fact this may be a relative such as her younger sister.

#### 2.2.4 DIVORCE

The old laws relating to divorce were uncomplicated and fairly liberal, favouring men as was the Islamic way. Writing in 1936, Covarrubias said: 'a man may claim divorce if his wife is sterile, quarrelsome, or lazy, but a woman has also the right to divorce an impotent man, or one who has some occult illness, is cruel to her, or fails to support her.' (1937:158). A woman who wanted a divorce simply left her husband's home, although he may have tried to bring

her back by force. The divorce was performed by the village authorities (in whose judgement the case rests) by minor ceremonies. Since the new marriage law, however, men as well as women must petition the court for a divorce, and both sexes are required to give 'sufficient reasons' supporting this petition.

Within Indonesia, however, divorce is least common in Bali of all the provinces, as can be seen from the 1971 Census, the 1973 Fertility-Mortality Survey, and the 1976 Indonesian Fertility Survey. Although the divorce laws are relatively simple, there are complicating factors which may account for the relative infrequency of divorce in Bali. These factors include the type of marriage, the presence of dowered land, and the existence of offspring. A barren wife who was captured from outside is simply sent home, if her family will have her. The children of a divorced outsider-wife belong to the husband's group, but any such rule is subject to many qualifications which vary across local spheres of customary law. Divorce in a group-endogamous marriage would place great strain on the collateral bond; ordinarily, the husband continues supporting his family spouse and takes a second outsider-wife for his pleasure (see Boon, 1977:96). In other words, there are numerous social reasons why divorce is strongly disapproved of in Bali, and these ensure a low rate of divorce regardless of the divorce laws.

Another practice which presumably reduces the pressures for divorce in cases where a couple is childless, is that of adoption or 'borrowing' of children from, usually, another branch of the family. Also where a couple have a daughter but no sons, they may arrange for the man who marries their daughter to live in their houseyard and

fulfil the duties of a natural son (sentana marriage).

#### 2.2.5 CONCEPTION

Questions concerning sexual and reproductive matters are discussed freely and from an early age children naturally become familiar with such matters. Covarrubias found that most of the people he talked to had a correct idea of the physiology of reproduction, or at least of conception: 'they said that the man's seminal fluid (semara, named after the god of love), coming in contact with the "female semen", turns into blood in the womb, forming a ball which, fed by the woman's own blood, eventually takes human form and develops into a child.' (1937:123).

A similar, though different concept is presented by Jane Belo in 'The Balinese Temper' whereby the woman is supposed to have within her a manik (or 'gem'), which upon being repeatedly 'hit' during sexual intercourse, grows larger and larger until it becomes a child, (Belo,1970:102). After the birth of the child she will get a new manik. This view implies a triggering function for the sperm of the man, but does not imply any contribution of characteristics from the male side (7). However both these concepts, along with that described by Weck (1937) whereby the egg is entered by both Buta and Tuhan (demons and gods) simultaneously at the time of conception, imply that

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(7) This is somewhat different from the popular legend of the creation of Kala, to whom Siva gave birth alone by producing a single drop of semen, rather like the 'homunculus' idea held by early biologists. However it was necessary for the sperm to be repeatedly hit by the arrows of the gods before it became alive.

the child comes into being at the time of conception. This is consistent with the feeling that induced abortion even at a very early stage is salah (against the laws of the gods; sinful). As in many places, menstrual regulation is not considered to infringe these laws because there is still doubt as to whether conception has taken place. One member of the staff of the Bali Family Planning program explained that the conceptus does not become a living being until it has undergone a number of cell divisions, and it is during this very early period that menstrual regulations are performed. This is a modern, scientific view, not held by all Balinese of course.

#### 2.2.6 MENSTRUATION

In the past the time of menstruation involved the powerful taboo of pollution (sebel) whereby the woman was forbidden to go to the temple, into the ricebarn or the kitchen, or to the well. She was not permitted to prepare food and most certainly not offerings. And in a commoner household there would often be a separate room for the woman to sleep in, away from her husband, or else the husband would sleep at a friend's house during this time. In the house of a nobleman the wife would be required to sleep far from her husband. This aversion to menstrual blood apparently stems from the belief that a man can be bewitched, losing his will to a woman who can anoint his head with menstrual blood, thereafter he will be perpetually henpecked by the woman.

The present day situation seems less rigid with regard to such domestic activities as cooking and fetching water, although the taboos on making offerings, and against entering any temple including the

houseyard temple are still strictly enforced. This particular taboo is of some importance when evaluating the common side-effects of IUD use, namely longer menstrual periods, and breakthrough bleeding.

#### 2.2.7 NAMING SYSTEM

As Geertz explains in some detail in 'Person, Time and Conduct in Bali', 'there are six sorts of labels which one person can apply to another in order to identify him or her as a unique individual:...(1) personal names; (2) birth order names; (3) kinship terms (4) teknonyms; (5) status titles (usually called 'caste names' in the literature on Bali); and (6) public titles. ...These various labels are not, in most cases, employed simultaneously but alternatively, depending upon the situation and sometimes the individual' (1966:13).

In this context we were interested primarily in Birth Order names for the purposes of completing the pregnancy history section of the survey questionnaire. Also the use of kinship terms can result in difficulties in matching individuals with their 'official' names on, for example, the records of the Family Planning Program, partly because people may not be known in their own banjar by that name, and are therefore difficult to locate.

The first type of name or label is that which is automatically bestowed on a child (even a stillborn child) from the moment of birth according to whether it is the first, second, third, fourth, etc., member of a sibling set. The usual names for Sudras (male or female) are Wayan (meaning eldest) for the first born; Made (or Nengah, meaning middle child), Nyoman (meaning youngest), and Ketut (meaning



literally 'follower' or extra). For fifth born the cycle starts again with Wayan, sixth born, Made, and so on. For high caste children there are also names which follow the caste (status) title but cannot be so readily related to a particular order. For example, a first born high caste boy might be called Cokorda Gede or Raka; if the former, the secondborn might be Cokorda Raka, if the latter, the second born may be Cokorda Rai. Names for lower birth orders include Anom and Alit but are used for both third or fourthborn depending on what names have already been used for older siblings.

Once a Sudra couple give birth to a liveborn child their birth order names cease to be used outside the immediate family (and the Government registers) and are replaced by the practice of tekonomy. Parents take the title 'Father/Mother-of- first child's name' (in fact the personal name of the child, which otherwise is rarely referred to). Hence if the firstborn child's personal name is Sukrig, his or her father's name will become Pan Sukrig, and the mother will be known as Men Sukrig, these names being retained after the births of later children - at least until grandchildren appear, usually even if the child dies at a very early age.

With high caste parents the system is very often different, at least for members of the Satria and Wesia castes. The mother will drop her birth order name and take the title Biang, meaning simply 'mother', but without the name of the child being included. Naturally she continues to use her caste title at the beginning of the name. When she becomes a grandmother, the name Biang will change to Niang. The high caste male will usually not change his name to indicate parenthood, or grandparenthood, although 'Aji' is sometimes used.

When a Sudra couple become grandparents, they are entitled to use for grandfather the word 'Pekak' (often abbreviated to 'Kak'), and for grandmother the word 'Dadong' (abbreviated, to 'Dong'). Both great-grandparents and great-grandchildren are known by the term 'Kumpi'. This change is sometimes delayed in practice, because it is at the level of Pan and Men that individuals are generally active in the community. While a person remains active in that way, there is some reluctance to change his or her title. Commonly the grandparents will wait until their youngest son produces a grandchild, then taking the name of that grandchild, as it is often the youngest son who will take responsibility for the houseyard in which the grandparents live. Thus they maintain a direct descent link with their male children and male grandchildren on a residence basis. Also the person's peers will naturally tend to continue to use the name by which the person has been known to them for a considerable time. Geertz quotes an example in 'Kinship in Bali' of a very old fellow who was known as Pan Membah by his age-mates, as Kak Sukana by the majority of the middle-aged villagers, but as Kumpi Puri by the children who played with his great grandchild Puri and saw him from that viewpoint.

Other circumstances where names may be changed are sickness, illfortune and marriage. The personal name which a person receives after birth is sometimes replaced by another if the individual becomes ill. It is believed that the name is in some way causally associated with the illness and a priest or balian will select another which may be less displeasing to the spirits causing the illness. If a child has died it is not uncommon for that birth order name to be skipped for future children. In some areas of Bali, especially in the east, both the man and woman may change their names at the time of marriage.

### 2.3 POLITICAL STRUCTURE

As mentioned above, the arrival of the aristocracy from Java resulted in the division of Bali into eight kingdoms under the control of a king, or 'raja'. The kingdom was divided into territories, each under a local prince or lord. The political system, with the raja at the top, was linked to the individual villagers through the 'Perbekel system'. The perbekel was the state official responsible for ensuring implementation of the lord's instructions to the villagers, amongst other duties.

This system remained virtually unchanged until the conquest of south Bali by the Dutch in 1908. Thereafter the power of the indigenous ruling families was reduced gradually, first by the imposition of a 'rationalized' colonial administration, and later by the limitation of land holdings under the Indonesian Land Reform Laws in 1960. However despite these changes, the aristocracy still maintain their hold on power through public office in many areas.

Although the Dutch rationalized the administrative system, in effect they basically renamed many of the former subdivisions, with the exception of the village. The former kingdoms became local administrative centres, kabupaten, and each kabupaten was divided along more-or-less pre-existing lines, into kecamatan, perbekelan, and banjar; although the groupings of banjar to form a village were in a number of cases reorganized according to proximity, rather than by taking traditional allegiances into account. However the Dutch administrative policy towards the Balinese was generally lighthanded, indeed they went to some lengths to ensure that there was as little interference as possible from outside Bali. Foreign commercial

ventures and Christian missionary activity were not permitted. Nevertheless the system had been altered, and it was altered even more after the Revolution which saw the expulsion of the Dutch and the growth of an independent Indonesian nation. During this post-Revolution period, villages were further reorganized in the attempt to ensure that the leaders at all administrative levels could be depended upon to carry out the designs of the national government of President Sukarno.

The 1950s and early 1960s, however, saw increasing fragmentation and politicization of communities, with the growth of parties from both ends of the political spectrum. The attempt to satisfy the various and competing demands, and the enthusiasm for rapid change that often follows independence, resulted eventually in the bureaucracy being unable to function satisfactorily, and the President resorted more to stirring rhetoric than sound administrative guidance, (Emmerson, 1978:88ff).

Late 1965 saw an attempted coup, apparently by the Communists, which resulted in a murderous backlash by the military and Islamic extremists. In Bali the violence was particularly savage, with estimates of 40,000 to 80,000 killed. At the end of this confrontation, the now somewhat smaller Communist party was banned; President Sukarno was no longer in office; and one of the generals involved in suppressing the coup (Suharto), took over as head of the 'New Order' military government.

The 'New Order' government acted quickly to restore a functioning administrative system. It did this by making considerable use of active or former members of the armed forces in all levels of

government down to village headmen. Hull and Singarimbun state that by 1973, 84 percent of the Regency heads in Indonesia's most populous province, East Java, were military appointees. (1982:30). In Bali, according to McNicoll:

The military and members of Muslim youth organizations coming across from East Java took a prominent role in the island's local administration over succeeding months. With slowly returning normality, this administrative system emerged greatly strengthened, a major contributor to this strength being its capacity to mobilize and work through the constituent hamlets...free of significant countervailing political or social interests. (1980:10).

The situation after 1965 was, then, significantly different from the earlier period in that the government, having power firmly in its grasp, could implement its plans effectively down to the sub-district and village level. President Suharto also differed from his predecessor in turning for advice and guidance to outside aid agencies and international organizations such as the United Nations.

It also happens that this was the period of great growth of population programs in the developing world. Substantial increases in population growth rates had awakened considerable concern regarding the prospects for development of many of the world's poorer nations. The development of the oral contraceptive pill a short time earlier made the prospect of effective national population control programs appear feasible. It was in these favourable circumstances that the Indonesian national family planning program came into being (see chapter 3).

## 2.4 ECONOMIC STRUCTURE

### 2.4.1 AGRICULTURE

The most striking element of the Balinese landscape is the ever present irrigated ricefield, the sawah. One has the impression that virtually every available piece of ground to which it is possible to bring water, is utilized to grow rice. These irrigated terraces have yielded rich harvests of rice since at least the ninth century A.D. from which time there is a royal edict referring to the undagi pengarung or irrigation tunnel-builders (Swellengrebel, 1960:11), and in an 11th century edict there are references to the irrigation associations now known as Subak.

In fact the Balinese landscape varies considerably from region to region. A mountainous ridge of volcanic origin crosses the island from east to west. To the south is a gentle decline towards the Indian Ocean - the densely populated territory, known as central Bali to the Balinese, where the art and culture of Bali flowered. In the north, there is a sharp drop to the narrow strip of fertile land which nourishes the regency of Buleleng. The area of central Bali, cut through by many river valleys running from north to south, is a fertile sawah (wet rice land) region. The mountain range runs from the west via Gunung Batu Kau ('the coconut-shell mountain', 2,276 m), and the central highland and lake country with Gunung Batur (1,717 m, a volcano which has wrought great destruction on the island at various times, notably in 1917 and 1927), to Gunung Agung ('the great mountain' or 'home of the gods', 3,142 m), in the east. The eastern tip of Bali is the point where 'the tigers end'. In 1869, A.R. Wallace discovered that the flora and fauna typical of Asia end

in Bali, while the earlier, more primitive biological forms found in Australia begin to appear in the neighbouring island of Lombok, a few miles to the east.

Though agriculture has been declining in importance, both in terms of labour force (67% in 1971 down to 61% in 1976) and of regional income (66% in 1971 down to 53% of Gross Regional Domestic Product in 1976), it is still the mainstay of the economy of Bali, (Bendesa and Sukarsa, 1980: 32). Over four-fifths of agricultural households cultivate sawah, and half of these cultivate less than 0.5 hectares.

#### 2.4.1.1 CHANGES IN IRRIGATED LAND

In 1950, some 30 percent of Bali's land area comprised unproductive wasteland and large tracts of inaccessible forest reserves, mainly in the western end of the island. Of the remaining 70 percent of the surface which was under cultivation at that time, only 26 % (96,000 Ha.) consisted of wet ricefields, 41 % of non-irrigated fields (about one-third of them planted with maize, one-third with beans and tubers, and one-seventh with rice), 7 % of coffee gardens, and 17 % of coconut groves, (Swellengrebel, 1960:10), (see Table 2.1).

TABLE 2.1

## LAND USE IN BALI AROUND 1950 AND 1970.

LAND USE	1950		1970		
	Hectares	%	Hectares	%	
Sawah	96,000	17	Sawah	74,500	13
Dry land agric. and annual crops	178,300	32	Dry land agric. and annual crops	152,200	27
Estates	89,100	15	Estates	124,800	24
Forests	123,700	23	Forests	81,000	14
Other land	74,500	12	Other land	112,200	20
TOTAL	562,000	100 %		548,400	100 %

Source: Daroesman, 1973:33

The figure obtained by the Udayana University research team of 74,500 hectares of sawah for 1970 (Table 2.1), suggests a substantial decline in the twenty years to 1970. Daroesman acknowledges that encroachment of urban areas and extension of village land needed for housing could account for some loss of sawah, along with the 1963 eruption of Mount Agung, which covered more than 7,000 Ha. of sawah and nearly ten times that area of dry land with volcanic debris (8), and also damaged irrigation works to other areas. However other data throw doubt on this decrease of over 20,000 Ha. The alternative sources suggest that the area planted to sawah remained fairly steady at around 100,000 Ha. per year (Daroesman, 1973:34). Indeed, figures from the Central Bureau of Statistics show that the total area of sawah in Bali in 1978 was 98,269 hectares (BPS, 1980:24).

If the figure of 100,000 Ha. is accepted, the area of sawah had apparently not decreased but also it had not increased, leading

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(8) Nearly 7% and 18% respectively of the island's total cultivated area.



Ravenholt to remark on the population pressures:

Balinese farmers are affected critically by the fact that the present area of sawah, or irrigated rice fields, totalling about 96,000 hectares is only slightly larger than it was in 1930, judging by available accounts. (1973:119-220).

This concern is supported by the fact that population density per hectare of sawah increased by some 50 percent, from about 16 persons per Ha. in 1954, to about 24 persons per Ha. in 1970.

These figures may be misleading however, as although the area of sawah (irrigated land) appears to have stayed fairly steady at around 100,000 Ha per year since 1940 (Daroesman 1973:33), the area of sawah that can be double-cropped has increased considerably as a result of irrigation projects that, up to 1978 had increased the supply of water available during the dry season (May-October) so that almost half the sawah had semi-technical irrigation. The additional irrigation has made possible the planting of a second rice crop on three-quarters of the sawah during this dry period, when the sawah would otherwise be fallow or planted with secondary crops.

This raises the question of ways of improving productivity from the sawah which is not currently double-cropped. At present, there is no sawah with full technical irrigation, and the irrigation system in its present state does not have the potential for supporting a major expansion of irrigated land (sawah). The customary irrigation systems, excellent for the time when they were constructed, are now inadequate, even with the improvements that followed the coming of the Dutch administration in 1908. Nearly all are constructed as 'run of the stream' diversion dams although the mountain sides are sculptured

into innumerable deep ravines. Almost none of these has been dammed to provide storage capacity for the dry season months from late April through October. There is a problem resulting from the fact that the ravines fall so steeply. Even a large, high-wall dam will have only a short backwater, thus relatively little storage capacity. On the other hand, there appears to be potential for irrigation involving pumping water up from the subterranean water table.

Ravenholt has pointed out that the numerous springs which flow year-round at various points, usually below the lower escarpment on the island's profile, hint at the water resources within the mountains behind. As most of these springs are too low to feed into the irrigation channels they are not used currently. However it does seem that the underground water-table, fed by the 2.5 - 3 metres of precipitation that falls annually on the mountain tops, might well provide the potential for a considerable increase in water available for irrigation 'and allow the main rice granary in south Bali to produce probably two or even three rice crops where now water is sufficient often only for one good crop'. (Ravenholt 1973:220). The potential increase in rice production from such improvements would, naturally, depend on their extent, although figures for elasticity (9) of rice yield with respect to irrigation show Bali as being markedly ahead of other major rice growing areas of Indonesia (Mears, 1980:45). Mears notes, however, that the efficiency of the traditional management system, the subak, accounts for much of the difference between Bali and, say, Java. Daroesman also emphasizes the potential benefits of sinking a few deep wells, equipped with pumps and storage

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(9) This elasticity measures the percent increase in average yield for each percentage increase in total area irrigated.

tanks, particularly in the dry western parts and the north-east coast of the island (1973:46).

The importance of water in increasing rice production is illustrated by the experience of those increasing numbers of farmers who are having to turn to cultivating the marginal uplands. In 1969, upland rice - unirrigated - was planted on 13,758 hectares yielding about 1.3 tons of stalk padi per hectare on the average. This can be compared to per crop yields of harvested, undried stalk padi from sawah in 1969 which averaged over 3 tons per hectare.

#### 2.4.1.2 PROSPECTS OF INCREASING FOOD PRODUCTION

In the history of pre-mechanized agriculture few societies have ever achieved the high levels of productivity characterised by wet rice farming in Bali, which in itself is one of the most efficient and productive forms of agriculture known to man. With traditional technology the Balinese peasant could produce twice as much rice on his land as his neighbour the Javanese farmer (Hanna, 1976:96), whose techniques are by no means unsophisticated.

How have the Balinese done it? It appears that four factors are central to their traditional success as rice farmers. These include the fertility of the volcanic soil; a highly complex technology and corresponding knowledge which allows the Balinese to make maximal use of environmental systems and resources; an organizational system (subak) capable of coordinating use of manpower and resources; and genetic strains of rice selected over thousands of years for their disease resistance, productivity and appearance.

Ravenholt refers to an explanation by the late pioneer geographer of Southeast Asia, Robert Pendleton, who said that 'wet rice cultivation in diked padi fields was the only form of traditional agriculture that halted the otherwise rapid erosion of fertility through action of high heat and humidity on most tropical and often lateritic soils.' (Ravenholt 1973:217).

No doubt the padi fields in Bali have benefited from time to time from the influx of nutrients carried down by those streams and rivers which originate high on the volcanic slopes, where they pick up volcanic ash and other forms of mineral-rich tephra. But much more important has been the new micro-environment created in the flooded padi fields. Particularly on the more acid soils, the pH was raised (made more alkaline) thus 'unlocking' more mineral nutrients for plant use.

Also, given the primitive ploughs and other implements available then and still in use now throughout most of Southeast Asia, a flooded padi field facilitated through 'puddling' a quality of soil preparation not possible in dry fields. Weeding is facilitated in flooded padi as the seedlings of rice are transplanted at an age of 3 to 4 weeks from the seed beds and have a 'headstart' on the weeds; also it is easier to pull weeds from wet soil than from dry when they do appear. Some algae which form a scum on the top of the water in the padi are able to fix nitrogen from the air into the water for plant absorption.

It has already been mentioned that Balinese farmers have selected new strains of the traditional rice varieties for their disease resistance, productivity and beauty, and as it happens these strains

of Beras Bali tended to be largely non-photosensitive, allowing planting and harvesting at all seasons of the year. This is in contrast to most of Asia where the predominantly photosensitive varieties of rice must be planted in the appropriate season in order to flower, hence the farmers are locked into seasonal cycles thereby being more vulnerable to fluctuations in rainfall.

Hence, before the introduction of the new high yielding varieties of rice, predictability of yields from the system of year-round wet-rice cultivation in Bali had buffered the populations against the famines that can result from crop failures in other parts of the world.

a) BIMAS - It is in the area of rice strains that the most noticeable changes have taken place over recent years, certainly as far as the individual Balinese is concerned.

Prior to 1970, there was a certain amount of construction of new dams and other irrigation works, mainly by the Government, but also by local groups. This was an attempt to increase the productivity of the land, resulting from the concern that production was not keeping pace with population growth. In 1966/67 the government began to intensify its program to increase agricultural production (BIMAS or 'mass guidance'). The program was based around the introduction of new high yielding varieties (HYV's) of rice developed initially at the International Rice Research Institute in the Philippines.

Because of the nature of these new HYV's the changeover involved the introduction of petrochemical fertilizers, insecticides and other pesticides for application during the preparation and growth stages of

the rice, and use of Japanese-made, rubber rolled hulling mills. These are capable of recovering some 68% milled, polished rice (beras) from dried unhusked grain padi, compared to about 50% recovery when milling is performed by hand pounding with a wooden mortar and pestle, which however is more nutritious than polished rice as it retains some of the bran, (Ravenholt, 1973:220).

Another factor which has been necessary for the implementation of the program, has been the making available of credit to farmers to purchase the new inputs necessary for the successful growth of the new varieties. The area of both irrigated sawah and unirrigated land over which agricultural credit is available has expanded from 15,200 Ha in 1968/69 when some 39,000 Ha of sawah were under the BIMAS/INMAS program, to some 135,300 Ha. in 1978 when approximately two-thirds of the 100,000 Ha of sawah in Bali were under the program.

As a result of this program, average rice production per hectare increased from 3.3 tons per hectare in 1961 to 4.0 tons/Ha. in 1969, and to 4.8 tons/Ha. in 1973, (Soedjatmiko et al.,1976). In the following year, a prolonged drought and the explosion of the wereng disease (leaf hopper pest) reduced overall production, bringing to light two of the vulnerable aspects of the new HYV rice strains.

b) MECHANIZATION - Agricultural labour in Bali has always been, and largely still is, hand labour, although ploughing is performed with cattle or water buffalo, and reliance on only the simplest of tools. In 1972 Hanna stated that 'since Bali suffers from an excess rather than a surplus of labour, there is no plan to introduce mechanization even to the degree which is possible on the minute holdings into which

the land is divided.' (1972:8). This, however, seems not to be the case a few years later.

Hull cites an example from the rural Dynamics Project in Bogor, Java, where it was found that tractors already sold or on order under an ambitious plan by a tractor import firm, would provide the capacity to cultivate far more than the total arable land of Bali. (Hull, T.H., 1978:4). In 1977 there were already 268 of the two-wheel tractors, and 3 of the four-wheel tractors in Bali, (Purwadi et al.,1979).

This replacement of the traditional cattle-drawn ploughs (bajak) by hand-tractors is discussed in Astika's article on effects of the new rice technology in which he states that:

in 1975, privately-owned hand-tractors were introduced for the first time and by 1977 were used by 20% of the farmers (in his sample of 108 in Abiensemal, Badung) in place of the traditional cattle-drawn plow. (1978:48).

Astika also made the interesting point that they were only used for ploughing in preparation for the dry-season crop, not the wet, when preparation of the soil for a second crop must take place as quickly as possible. Presumably for reasons of cost, these tractors were being used primarily by the larger land owners, as is the case in Java. Despite the plans of the importers, and the rapid acquisition of tractors for use on rice lands outside Java and Bali, their introduction has met considerable social resistance in Bali, (see Mears,1981:320 re Sinaga). Such resistance is mainly due to an awareness that there is no shortage of agricultural labour in rural Bali, as was the case, for example, in Taiwan and South Korea when they were industrializing. Because there is little alternative

employment for rural workers, agricultural labourers' wages have remained low, but even so there is a concern that such 'tractorization' will replace many more jobs as the tractors can prove more economical for the farmer just as mechanical rice hullers have replaced many jobs formerly performed by women. Cain estimates that 1.2 million jobs in Java alone have been lost to these hullers (1980:134).

The tractors threaten the jobs of the men, and Sinaga has calculated that the introduction of one tractor in normal use (65 Ha./year) replaces 2,210 man-days of human labour per year if replacing cultivation by hoe, or 650 man-days per year if replacing a combination of plough and hoe. This represents a potential shift of more than Rp. 1 million per tractor per year away from the pockets of labourers, (Sinaga,1978:104). One of the advantages that the tractor has over its human counterpart is its capacity to prepare an area of land considerably quicker, and this is becoming of increasing importance as pressure is put on farmers to follow the kerta-masa system of synchronized planting over a short period in order that large areas of rice are at the same stage of growth at the same time. The purpose is to try to prevent the wereng (leaf hopper) pest from finding suitable breeding sites in the rice stems. However this requires a limited cultivation period of only 15 to 21 days, compared with 21 to 75 days in the past with the traditional varieties of rice (Hamid,1980:21).

The trend to double cropping also aggravates the seasonal nature of demand for agricultural labour as at the time when the sawah should be cultivated for dry season crops, the labourers are still completing



the wet season harvest.

To put the effect of tractorization in Bali into perspective, if the 271 tractors (see above) in 1977 each displaced 650 man-days of agricultural labour this would be equivalent to about three or four labourers per tractor, minus the one who operates the tractor, thus about 550 to 800 jobs being replaced out of an agricultural labour force estimated at 568,000 in 1976 (Bendesa and Sukarsa,1980:32), or about 0.1 percent of total agricultural labourers. At the macro-level this is clearly a negligible displacement effect, even though it may not be seen as such by agricultural labourers.

c) OTHER CROPS - As farmers steadily push their fields up the unstable slopes, growing corn and other annual crops on slopes where in a few years erosion will have washed away much of the top soil, there is concern with the decline in the area of forest reserve, ravines and wastelands. The combination of forest clearing for agricultural purposes, for supplying wood to wood-carvers making artefacts for the growing numbers of tourists, for firewood used in cremations, and as fuel for the increasing number of lime kilns which supply the booming construction business in the tourist areas, resulted in a decrease in the area of forest from some 123,700 Ha (23% of total land area) in 1950 to 81,000 Ha (14%) in 1970 (this figure includes 27,721 Ha devoted to coffee crops) (Daroeman 1973:33).

The effect of this is not yet clear but scientists at Udayana University in Bali have calculated that the area of forest cover should be doubled to 30% of the island to restore the earlier moisture pattern upon which the productivity of the sawah is so dependent,

(Ravenholt 1973:222).

d) RICE CONSUMPTION - In his 1972 article 'Population and Rice', Hanna claimed that conditions were deteriorating in Bali as: 'prior to 1945 Bali exported 8,000 - 12,000 tons of rice each year; today (1972) it seeks to import 8,000 - 12,000 tons. The provincial government therefore calls upon the central government for the 'injection' into the Balinese market of about 1,000 tons of rice per month in order to keep the retail price below Rp. 45 per kilogram,' (1972:1). Bendesa and Sukarsa, however, claimed that Bali in 1980 was self-sufficient in rice since only one to three thousand tons were imported annually for purposes of price stabilization (1980:41). This latter statement appears to be the more reliable as Mears indicated that in the period 1974/75 to 1978/79 annual imports of rice averaged only 847 tonnes, and this was affected partly by the need to assist in overcoming the poor harvest which occurred in 1977, (Mears,1981:32). In fact, during that period Bali began exporting rice again. Starting in 1974/75 with 6,300 tonnes, by 1978/79 it was sending 35,300 tonnes to other provinces, in particular Jakarta and Kalimantan. This statement must be qualified, however, by the point that:

although 'self-sufficient' in rice, many Balinese cannot afford to eat rice all year round, as can be seen from the estimates of production of cassava and maize. Especially since 1973 cassava has been an important food crop; its quite high production in 1974 and 1975 was probably due to the relative decline of the rice crop in those years because of the wereng problem. (Bendesa and Sukarsa,1980:41).

By 1978, local production minus exports to other provinces left sufficient rice (376,822 tonnes) for about 160 Kg. per person per year in Bali. This is not substantially less than the 500 gms per day per person considered ideal by the Balinese, according to Hanna

(1972:1).

In summary, rice production in Bali seems to be roughly keeping pace with population growth. Even though total area of wet rice growing land does not appear to have increased to any extent over the last forty years, there have been increases in production through increased irrigation and through use of high yield varieties (HYV) of rice.

Regarding prospects for the future, the present irrigation system appears to be operating at close to the limit of its capacity, although there is the prospect of tapping underground water sources using wells and pumps. It is probable that increases in available water, particularly in the dry season, would be reflected in increased rice production. It is also the case, however, that much of the gain in production as a result of a switch from traditional to HYV rice occurs in the first ten years, thereafter further production gains are considerably more difficult to obtain. Bali now seems to be at that stage where further rice yield increases will be much more elusive than in the past decade.

#### 2.4.1.3 OUTMIGRATION

An obvious outlet for landless Balinese unable to obtain land, would be outmigration to a part of Indonesia where agricultural land is plentiful. The government transmigration program offers transmigrants an area of two hectares of arable land of which 0.25 hectare is supposed to be already cleared for a house. Such an area, if suitable for wet rice production, would provide a very satisfactory existence for the average Balinese farmer. Indeed there are stories

of farmers who have done well enough in Sulawesi or Kalimantan to be able to fly back to Bali at regular intervals. There are also less positive tales of uncleared land, lack of water, no housing, etc. But on the whole the Balinese have not responded enthusiastically to the transmigration program.

According to the 1971 Census, the total number of Balinese living in other Indonesian provinces was 38,689 or 1.8 % of the total Balinese population. This is equivalent to just over one year's natural population increase. While part of the explanation is the limited capacity of the transmigration program to transport large numbers, and to prepare land adequately, there are also cultural factors inhibiting movement away from Bali.

In a study of Balinese transmigrants to Parigi in Central Sulawesi, Gloria Davis noted that Christians were overly represented largely because of a difference in attitude compared to the Hindus:

..nine-tenths of the families to move to Parigi were Christian. Hindus viewed migration as an alternative only if all others had failed, Christians viewed migration as an opportunity for improvement (1976:170).

In characterizing the dichotomy noted by the Balinese themselves, that the Hindus were knit into traditional communities which they could not, or would not, leave, while the Christians were experienced migrants who characterized themselves as open to change, Davis listed

some of the characteristics of the Hindus as follows:

- (1) Conventional (afraid of the unknown)
- (2) Only know traditional ways
- (3) Identify with their villages and village adat (law);
- (4) Tied to one place, physically, socially, spiritually;  
dislike change;
- (5) Subscribe to traditional temples and kin relationships -  
discouraged from leaving them;
- (6) Little experience outside natal villages.

(Davis,1976:169)

Another factor is the practice of the religion. When the first group of twelve families were imported to Parigi by the Dutch in 1905 in the hope of inspiring the locals to increased crop production, the Balinese were under Dutch protection and could preserve their religious rituals and traditional attitudes and practices. But after the war and revolution they no longer had such protection and had to make considerable adjustments to local conditions, including some marriages to non-Balinese, use of a different language, and a change from traditional law to government regulation (Davis,1974:2). Similar fears are held today by potential Balinese transmigrants, although the precedent of numbers of satisfied fellow Balinese has reduced their apprehension somewhat.

## 2.4.2 SOCIO ECONOMIC CHANGE

### 2.4.2.1 ROLES OF, AND VALUE OF CHILDREN IN BALINESE SOCIETY

The role of very small children is reflected in the fact that Balinese believe that the child is 'a god' or at least is guided in its actions by a god within him. For this reason he is not responsible for his actions and treated very leniently, with no obvious signs of discipline from elders. This characteristic of Balinese children is frequently commented on by Westerners who find it puzzling that these children, who appear not to be externally disciplined, are so well behaved and responsible in their actions, and indeed it is quite unusual to see (or hear) a Balinese child cry, even when placed in quite trying circumstances.

This apparent disinterest by the parents is a reflection of the view that even children are individuals as are adults, just needing a little more care until they become independent. And in fact as soon as they are old enough to walk they will be left to the care of older children, especially older sisters. When they are three or four years commonly they will spend the day roaming the village with friends, in what Covarrubias called the 'childrens' republic' (1974:132). This leaves both parents free to work, the women often working outside the household. This should not be viewed simply as neglect of the children in order for mothers to return to the workforce, but as a reflection of the general attitude to the independence of children from an early age. That is, even amongst 'non-working' mothers this pattern is observed. A striking example of this is to see groups of quite young children watching a wayang kulit (shadow puppet) show well into the night, sometimes till morning, without any sign of parental

presence, though naturally adults are in attendance.

This early independence does not mean that children are not expected to contribute to the work of the household, indeed it is usual for girls to be given the care of their younger siblings at quite an early age. They will also help their mothers with cooking, carrying, selling in the market, fetching water, and washing clothes. Slightly older girls may often be seen performing jobs in their own right, this being compatible with a schooling system that operates in shifts so that children attend either mornings (7am-11am) or afternoons (1pm-5pm).

From quite an early age boys will be given responsibility for family animals, shepherding ducks to and from the rice fields, taking the cattle or water buffalo to be washed at the river at sunset. If the father is a craftsman, the sons may become apprentices.

Children of both sexes assist in jobs such as weeding of the rice fields; however the major aspects of rice cultivation such as field preparation, planting and harvesting are all performed by adults, usually groups from the banjar of the parents, although the children are permitted to follow the harvesting team and keep for themselves any rice grains missed by the harvesting team. These activities are, naturally, similar to those listed by White in his study of the economic activities of Javanese village children (White, 1975:136).

In later life children are expected to contribute in various ways to the running of the household. For example, if they have work they may give cash to the parents, particularly towards ceremonial and educational expenses for younger siblings. They may also be called

upon to fulfil some of the banjar obligations, in place of the father, or with the father. The girls, at least until they marry and leave home, will spend a considerable amount of their time making the various offerings both for the housetemple and for the variety of banjar and village temples at which the family worships.

The sons also have a role in the arrangement of the parents' cremations, a most important duty to be performed according to Hindu belief. The banjar may take much of the responsibility for this, such that a couple without sons will normally be sure of being cremated in the appropriate manner. These roles will be discussed in greater detail in chapter 7, however as the concern of this chapter is social and economic change, it is essential to describe some of the changes that have occurred in education, particularly over the last decade.

#### 2.4.2.2 EDUCATION

In Bali in 1971, the proportion of 7 to 12 year olds attending school was 57 percent, but by 1980 this figure was up to 87 percent (10). This proportion was nearly double that of 44 percent recorded in the 1961 Census for Bali, Nusatenggara and Maluku combined. This was in accordance with the aim of the second five-year plan (REPELITA II) to have 85 percent of children in this age range in school by 1979.

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(10) It should be noted that these figures may be misleading in that it is not uncommon for the age range of pupils in a class in primary school to extend over six or seven years, eg., pupils in class I can range from six to twelve years. Thus the number of primary school pupils in 1980 was the number of children aged between six and seventeen years who were attending primary school. This figure was equivalent to 87 percent of the estimated total number of children aged seven to twelve in the country.



The attitude of the Balinese to the value of education and literacy is not straightforward. In the past, the stores of written knowledge were kept in the form of palm-leaf books called lontar or rontal, which were preserved and copied by the owning families over generations. These texts contained the Hindu myths such as Mahabharata and Ramayana, as well as 'mantras and other ritual formulae, (as well as the outlines of a theology that, based on the worship of Siwa as manifested in Surya the sun god, could be regarded as monotheistic)' (Forge,1981:3); also the genealogies of royal families and histories of kingdoms (Bababs), and the various calendars so essential to Balinese ritual. As Forge points out, the superiority of the Brahmanas was based not just on birth but also on their possession of, and ability to read and understand these texts (1981:3). And to a degree, the power of the Satria kings was supported by their patronage of the Brahmana high priests (Pedandas), and their ownership of such texts, even if they could not read them personally. Thus there was a situation where a small group of select individuals kept a strong hold on the stores of the society's written knowledge. The fact that they not only did not encourage but actually discouraged the masses from gaining direct access to it, has been interpreted as reflecting a low regard for schooling:

The emphasis on literacy and schooling were contrary to the values of traditional Balinese religion, which as Geertz has emphasized is primarily concerned with orthopraxy rather than orthodoxy (Forge,1981:3).

In fact this emphasis was contrary to the interests of the Balinese priests, rather than to Balinese religion (11) as has been demonstrated by the growth of a body, Parisada Dharma Hindu Bali (PDH Bali), concerned with the preservation of Balinese religion and

culture. This body evolved through the fears of the Balinese Hindus that their religion would be classed as a 'religion of ignorance' together with some of the animist religions of Eastern Indonesia, leaving only Islam and Christianity as acceptable to the (new) Ministry of Religion. PDH Bali has published many books and pamphlets on religion and generally this movement towards wider availability of religious writings brought about a change of attitude among many Balinese (especially in the towns) to the benefits of literacy. It must be said that in the past the strength of the oral tradition was such that there was little need to be literate. The Hindu epics were all well known to the illiterate villagers through the dances which most would have attended dozens, if not hundreds of times. To some degree this situation still holds. There is no suggestion that the effect of movements such as the PDH has been mainly to encourage people to read the sacred texts, but rather to make them aware that literacy is within the grasp of those other than members of the Brahmana caste.

Thus it is only recently that education has become a realistic possibility for the majority. Apart from changing attitudes, the availability of schools has also been a major factor, and it is only since the revolution that these facilities have become widespread. The Dutch in the period of their administration, did not build schools in Bali to the extent that they did in Java, thus it should not be surprising that in 1971 the literacy rate in Bali (47.6%) was substantially lower than that for Indonesia as a whole (60.1%). Table

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 (11) This could be viewed as analogous to the situation of the use of Latin by the priests of the Catholic church in order to retain control of the sacred texts.

2.2 shows how recent is widespread literacy, where older age groups have very much lower rates than younger people. In 1971, while 62.1% of Balinese aged 20 to 24 were literate, only 19.2% of 50 to 54 year olds were literate.

TABLE 2.2

## PROPORTIONS LITERATE, BOTH SEXES, BALI, 1971

AGE	% LITERATE
15-19	72.5
20-24	62.1
30-34	43.2
40-44	27.5
50-54	19.2

(SOURCE: BPS, Ser.E, No.14, p.59)

TABLE 2.3

## NUMBERS OF SCHOOLS, PRIMARY AND SECONDARY, 1971 AND 1979/80.

SCHOOL TYPE	NUMBER-1971	NUMBER-1979/80
PRIMARY	1,240	1,830
JUNIOR SECONDARY	162	237
SENIOR SECONDARY	60	107
TOTAL	1,462	2,174

(SOURCE: Statistik Persekolahan SD, Propinsi Bali  
Department of Education and Culture.)

Clearly, large numbers of Balinese children are now obtaining some schooling, at least at primary level. As mentioned above, the proportion of 7 to 12 year olds attending school has risen from less than 50 percent in 1961, to 57 percent in 1971, and up to 87 percent by 1980. The number of primary schools grew from 1,240 in 1971 to 1,830 in 1979/80, many (551) of the new schools having been built under the instructions of the President (INPRES schools) during that period. During the same period, the numbers of both junior and

secondary schools increased by 50 percent (see Table 2.3). The primary (S.D.) schools are virtually all government operated, although it is not uncommon for local communities to have contributed to their construction. There are no tuition fees although there are other expenses including books and writing materials, and uniforms (12).

Tuition fees for junior secondary schools (SMP), at which tuition fees are charged at a rate of about Rs.150 per month (US\$0.25) for a Government school, or RS.750 per month (US\$1.25) in a private (Swasta) SMP, of which there are many, just as there are many senior secondary schools, tertiary academies and universities. The tuition fees at senior secondary school (SMA) are about Rs.500 (US\$0.85) per month at a government school, and Rs.1,500 per month (US\$2.50) at a private (Swasta) school.

In a discussion of the effects of schooling, the Hulls point out that not only does schooling demand some of the child's time which would otherwise be used in work at home or in productive employment, but schooling leads to changes in the relationship between children and adults, particularly when the parents are illiterate (1977:872). The Hulls also pointed out that the content of the schools' teaching programme and the mass media project images of comfortable, middle-class families where the 'women are shown as housewives rather than traders or labourers' (1977:873) and children are shown as

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(12) It is common practice, at least in Bali, for primary school students to have three different uniforms. On Monday and Tuesday, an all white uniform; on Wednesday and Thursday, a grey and white uniform; and on Friday and Saturday, a brown and orange uniform. While this ensures that the children change their uniforms frequently, it surely adds considerably to the costs of educating children. Sports clothes are also often required for the children.

'seldom doing anything other than "standard" housework like washing, carrying water and caring for younger siblings. The realities of lower class village life are seldom portrayed' (ibid.).

It is not only the aspirations of the educated children that are changing, there have also been changes in the aspirations of adults resulting from increased availability of, and demand for consumer goods. These range from modern versions of old implements such as plastic buckets for carrying water, aluminium cooking pots replacing fired clay pots, to quite new items such as battery cassette recorders, radios, motor cycles and Western style clothes. As well as household goods there have been major changes in access to distant areas, especially cities. The growth in numbers of vehicles used for transport of both goods and people has been extraordinary. In 1971, the number of registered pick-up trucks in Bali was 506, by 1977 the number was 3,627. In the same period the number of motor cycles increased from 5,053 to 40,777 (Bali, Kantor Sensus dan Statistik, 1978:90). Such reasonably priced transport facilities have introduced many rural dwellers to the city environment which previously they may never have been able to visit. Despite the ready availability, however, not all make use of it. Parker found, in 1980, that a substantial proportion of the older female inhabitants of Nyalian village, some 12 Km. west of the Kabupaten capital, Klungkung had never visited it (Parker, personal communication, 1981).

There is no doubt that such changes in availability of goods involves a shift of the production process from the individual family, or neighbouring artisans, to factories located some way away. There is some doubt though, at least in the case of Bali, that the

suggestion of the Halls that changing tastes or values are 'pushing people to abandon traditional relationships and ways of doing things for the sake of entry into the modern world' (1977:878). This will be discussed further in the final chapter.

#### 2.4.2.3 TOURISM

It should be clear from the examination of the agricultural situation (section 2.4) that for the majority of families, prospects for the next generation do not look promising in agriculture. Yet children are still looked upon as the most likely reliable source of support for parents in old age, and education is viewed as a means toward that end. Thus the question arises as to where these educated children are going to find employment.

The economic situation in Bali has been well reviewed in articles by Daroesman (1973) and Bendesa and Sukarsa (1980). The data they present very much emphasizes the growth of the tourist industry and associated services as the most promising source of employment in the foreseeable future, although other sectors of the economy such as industry and trade now occupy substantial numbers of workers (see Table 2.4).

While agriculture still occupied the majority of the work force in 1976 (61 percent) the growth in absolute numbers was only 16 percent in the five years since 1971 (13), compared to growth rates of

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(13) This takes into account differences in definition which led to many more women being included as economically active in the 1976 Labour Force survey, compared to the 1971 Census.

172 percent in industry, 62 percent in services, and in transport and trade 56 and 43 percent respectively. One area of manufacturing that Bendesa and Sukarsa emphasize as a potential growth industry for females is textile manufacture (1980:46). This increased quite markedly over the decade of the 1970s despite strong competition from Japanese manufacturers. It is worth noting that while many women in Bali are economically active and often play a pivotal role in small scale trading, in fact they are precluded from a number of the areas opening up in the growth of the tourist industry. Traditionally, Balinese women may not become woodcarvers, painters, metalsmiths or musicians, and this has not changed. There are, of course, many other aspects of the tourist industry which are open to them.

TABLE 2.4

INDUSTRIAL DISTRIBUTION OF THE LABOUR FORCE, BALI, 1971 and 1976.

INDUSTRY	1971		1976	
	( '000)	%	( '000)	%
Agriculture	489	67	568	61
Mining	---	-	4	-
Industry	42	6	117	13
Electricity, gas, water	-	-	-	-
Construction	18	3	24	3
Trade	77	11	110	12
Transport	9	1	14	2
Finance	1	-	1	-
Services	61	8	99	11
Other	35	5	-	-

Sources: Biro Pusat Statistik, 1971 Population Census, Bali;  
Sakernas (Labour Force Survey), 1976.  
From Bendesa and Sukarsa, 1980:32.

The tourist industry is certainly viewed by many Balinese as a possible source of employment for educated young people, particularly if they speak English. Many youngsters who consider that education has entitled them to higher status work than in the fields, gravitate

to the capital city and nearby tourist areas in hope of obtaining suitable employment. Not only Balinese, but also other Indonesians, particularly Javanese hawkers continue to swell the numbers searching for work in the tourist industry, despite the Balinese government's 'closed island' policy introduced in 1973.

The potential of the tourist industry is somewhat uncertain. A government commissioned report by a French consultant team in 1969, the SCETO Report, or 'Master Plan', made numerous estimates of numbers of tourists and hotel rooms up to 1984. Based on this, the government (in 1973) expected that by 1984, 750,000-1,000,000 foreign tourists should be visiting Bali annually, ten times the 1973 flow. However, in 1979, the actual number of tourist arrivals was only about one quarter of the expected 467,000 (SCETO estimate), although the number of available rooms was close to the projected 4,000. Assuming full room occupancy (clearly too optimistic), and using the estimate that hotels employ about 2-2.5 persons per room, the number of persons employed in hotels would be 8,000-9,000. Including smaller hotels, the total might come to 12,000. Inflating by 50 percent Daroesman's estimate of 12,000-16,000 occupied in 1973 in tour and travel agencies, restaurants, artshops, as professional artists and in the handicraft industry (1973:60), we arrive at an estimated number of 30,000-36,000 employed directly in the tourist industry. The SCETO Report assumed that indirect employment generated by tourism was expected to be in a ratio of 3:1 to direct employment. This yields a total figure 120,000-145,000 in direct and indirect employment generated by the end of the 1970s. Assuming that 75 percent of this employment is in Badung (as did Daroesman in her 1973 article), this accounts for 50 to 70 percent of the Badung work force, but only 3-5



percent of the work forces in the other seven kabupaten (regencies). It is relevant to note that a 1979 report from the Bali Governor's office gave an estimate of about 7,000 persons employed directly in the tourist industry at that time. (Bendesa and Sukarsa,1980:38).

Thus in terms of actual employment opportunities, tourism really affects only Badung and the slow down in tourist arrivals during the 1970s casts some doubt on future capacity to absorb substantial numbers of workers.

The potential negative effects of large scale tourism have been given considerable attention by Bali scholars. While agreeing that there have been changes in certain aspects of life for those involved in tourism, McKean argues persuasively that 'traditional roles have not been entirely replaced or substituted with those found in the capitalistic West ...Some social units have gained greater cohesion while simultaneously profiting from the tourist industry' (1978:98).

In proposing that culture is not the static entity that many anthropologists - and tourists - assert, McKean suggests that, in the light of the absence of local resources and with little prospect of successful industrialization, 'it appears that economic prosperity might be based on cultural production - the establishment of a truly "post-industrial" service industry, which is at least in part what tourism offers' (p.101). While admitting the dangers of becoming a hypocritical 'fake culture', he argues that Balinese society might well be able to adapt to such a role with minimal dislocation and without greatly sacrificing traditional social bonds.

## CONCLUSION

In summary, the examination of Balinese social structure shows no evidence that there has been any significant change in social relations, either at the family or village level. While it must be said that there is a serious lack of in-depth source material in the area of family structure, there is no indication of marked increases in family nucleation, nor in changes in patterns of marriage, both of which might be considered as indicators of social change and modernization. There has, however, been a dramatic increase in educational facilities and in literacy, particularly for girls.

Economic changes refer mainly to agriculture, and there is no indication of either marked improvement or deterioration in economic circumstances at the individual level, rather there seems to be an equilibrium where increases in rice production are roughly keeping pace with population growth, at least for the moment. Even taking into consideration the rapidly growing, but localised tourist industry, there seems little prospect of major growth in employment opportunities in the immediate future.

## CHAPTER 3

### FAMILY PLANNING IN BALI

#### 3.1 INTRODUCTION

Until the early nineteen fifties, the concept of family planning using modern contraceptives and services was virtually unknown in Indonesia. The 'Old Order' government (prior to 1965) associated national strength with large numbers of inhabitants, and indeed held a pronatalist policy based on the view that the country could cope with a population of 250 millions. It was believed that any excess of population on Java and Bali (with two-thirds of the people on seven percent of the land), could readily be accommodated by transfer of people to the Outer Islands, mainly Sumatra and Kalimantan.

This transmigration policy had been in existence since 1905 (while Indonesia was still under Dutch control), and had proved quite unsuccessful. In the fifteen year period between 1950 and 1965, fewer than half a million people were moved to other islands. The population of Java grew by around eighteen millions during that period. The necessary infrastructure simply did not exist to transfer sufficient numbers of people to keep pace with the growth of Java's population (Nitisastro,1970). Also there have been doubts raised whether the Outer Islands, having soils of much lower fertility than the volcanic islands of Java and Bali, could support significant additional population burdens (Missen,1972).

In addition to the pronatalist attitude of the government in the 1950s, the term 'birth control' had something of a negative connotation in the public mind, as being contrary to basic human rights. So it was with some caution that several groups of concerned women and doctors established small organisations aimed primarily at the improvement of the health of mother and child, but also including the possibility of contraception. Such groups were the Family Welfare Foundation (Y.K.K. in Indonesian) in Yogyakarta in 1952, and a postnatal care program in the Central Hospital in Jakarta, started in 1953 and later expanding to other cities and towns. Finally, the Indonesian Planned Parenthood Association (I.P.P.A. or in Indonesian, P.K.B.I.) was established in December 1957 by members of the Indonesian Physicians' Association.

Due to lack of government support, the Association was forced to operate only within clinics. Nevertheless the climate was becoming more favourable and the association of family planning with maternal and child health rather than birth control was probably crucial to the continued existence of the Association: '(President Sukarno) as self-appointed champion of women's rights, could not very well oppose mothers' welfare and left PKBI alone.' (Mustoffa, 1981:16).

In 1966 the 'New Order' government came into being under the leadership of President Suharto, and with this change came a new attitude to family planning. Partly as a consequence of the fact that growth of the Gross National Product had just kept pace during the 1960s (2% per annum) with population growth (1.9% per annum), the President issued a Decree in 1968 instructing the Minister of Welfare to establish the National Family Planning Institute (NFPI) as a

semi-governmental body to promote and coordinate family planning activities. The NFPI used government facilities: clinics, paramedical personnel, and the mobile information unit of the Department of Information. Family planning was included in the first national Five Year Development Plan (REPELITA I) in 1969, and the following year the President issued a new Decree assuming full responsibility, and the National Family Planning Institute was replaced by the National Family Planning Co-ordinating Board (N.F.P.C.B., or B.K.K.B.N. in Indonesian). The Indonesian Planned Parenthood Association, which had pioneered family planning activities in Indonesia, was by this time integrated into the NFPCB, and although it had transferred most of its clinical activities to the Ministry of Health, it continues in the field of training of personnel, information services and research.

The objectives of the National Family Planning Coordinating Board program were to:

- \* bring about a 50% decrease in the total fertility rate of Indonesian women by the year 2000, compared to the level of 5.2 children per woman in 1971;
- \* recruit in the first five year plan (beginning in the fiscal year 1969-70) 6 million new acceptors with the goal of averting 1.7 million births;
- \* decrease in the same 5 years the growth rate of Indonesia by 0.8%, from the level of 2.6-2.8% prevailing in 1970.

Dr. Suwardjono Suryaningrat and his assistants (in particular Dr. Haryono Suyono) decided that Java and Bali were the two strategic areas which must be tackled first, as they contained two-thirds of the population.

For the first five year plan their strategy was:

first, to mount a large scale information campaign among various social and religious groupings;

second, mounting a large scale distribution campaign of contraceptives through family planning operations in the field;

and third, preparing and training an adequate number of family planning fieldworkers. (Mustoffa,1981:16)

In the second five year plan (REPELITA II), beginning 1974, ten additional provinces joined the six from Java and Bali in the program. In REPELITA III, starting 1979, the remaining eleven provinces were brought into the program so that it covered the entire nation.

Initially, family planning services were provided in mother and child health clinics in combination with the normal M.C.H. services. As the number of 'acceptors' grew, these clinics were opened twice a week solely for family planning services. Later this passive approach was replaced by a more active policy of motivating those who came for MCH care and by visiting MCH clients at their homes. This led to the appointment of family planning fieldworkers (P.L.K.B. in Indonesian) who were responsible for motivating acceptors both to accept initially, and to continue using family planning.

In the early days of the program, when the family planning service was primarily administered through the clinics, the intra-uterine device (I.U.D.) was the most widely promoted method as it was considered the simplest and cheapest method. As the network of

fieldworkers was built up, the emphasis was shifted to oral contraceptives and condoms which did not require the presence of medical personnel for client examination, as with the IUD. In Bali however the IUD remained the most widely used method.

Further details of the structure of the national BKKBN program can be found in the Technical Report Series published by the BKKBN central office in Jakarta.

### 3.2 HISTORY AND ORGANIZATIONAL STRUCTURE OF THE NATIONAL FAMILY PLANNING PROGRAM IN BALI.

The earliest organized family planning activities began in 1961 with the establishment in Bali of a branch of the Indonesian Planned Parenthood Association (PKBI). From this time until the National Family Planning Institute was set up in 1969, this private organization (PKBI) was the only source of family planning services. Because of limited resources the PKBI's success was not great in terms of numbers of acceptors. It is estimated that during this entire period less than 9,000 acceptors were recruited in Bali (about 3 percent of the eligible population) (Astawa,1980). Only a limited range of methods were made available. A West German gynaecologist working in the Dept. of Obstetrics of Sanglah Hospital, Denpasar, introduced the metal Grafenberg ring (IUD) in the late fifties, but only about fifty women accepted this method. In 1963, the PKBI introduced the Lippes Loop as a pilot project at Sanglah Hospital. In the two years of the project, 1963-65 there were 325 IUD insertions, the acceptors consisting mostly of paramedical personnel and local

women.

After the reorganization of the PKBI and the NFPI in 1970 to form the BKKBN, the situation changed somewhat in response to the involvement of the government. The BKKBN in Bali now coordinates the activities of four government and four private agencies ('implementing units'). In addition to the Health Ministry which has primary responsibility for providing clinical services, and the Information Ministry which was given principal responsibility for providing information and motivational inputs, the government implementing units include the Armed Forces (for military personnel and dependants) and the Ministry of Religious Affairs (for motivational efforts directed toward religious leaders). The private agencies consist of the PKBI, which maintains some clinics and assists in training; and three religious organizations - Dharma Dutta (Hindu), the Indonesian Council of Churches (Christian), and Muhammadiyah (Muslim) - which serve to involve religious leaders and facilities in the program.

The Dharma Dutta Foundation is sponsored by the Pathfinder Fund, and there is a sterilization program which is sponsored by the International Project of the Association for Voluntary Sterilization (IPAVS). Also, in the private field, an important contribution to family planning in Bali has been the practice of menstrual regulation by some private medical practitioners (Astawa, 1980:7).

In 1975, Dr. I.B.Astawa, Head of BKKBN, Bali, stated that 'the two most important components of the program are clinical services and information/motivation activities' (1975:87). At that time the program maintained 150 clinics in Bali (one for every four villages or 2,200 eligible couples) most of which were staffed by one trained



midwife (bidan), one assistant midwife (pembantu bidan), and one clerical worker. Also at that time there were only 109 physicians in Bali, and about 70 of those were living in the capital city, Denpasar, and thus were not readily available for work in the village clinics. Because of this situation, the family planning program employed only 45 doctors, of whom four were women. The majority of IUD insertions and prescriptions of oral contraceptives are carried out by the nurses, all of whom are trained in IUD insertion.

During 1972-73, each clinic was open for family planning services for an average of 67 hours per month (about three hours per day). Doctors were available for only about one-fourth of this time; the remainder of the clinic staff, however, were on duty during all clinic hours, (Astawa et al.,1975:87).

### 3.2.1 VILLAGE FAMILY PLANNING

By 1974 there was some concern about maintaining program momentum, and increasing program activity in lagging areas. Discussions between Jakarta and the provincial BKKBN offices concluded that:

..the program would have to move out of the clinic if it were to avoid the supposed 'plateauing' that has bedevilled other large national family planning programs. In order to attract younger, lower parity women into the program, services would have to be made more convenient, more readily available and integrated into the way of village life. (Suyono et al.,1976:13).

Part of the motivation for this change of emphasis away from the clinic was 'to simplify contraceptive resupply in order to prolong contraceptive use with the pill and the condom' (ibid.,13). However,

as the Bali program is largely an IUD program, less emphasis has been placed on contraceptive resupply, and more on recruiting new acceptors and maintaining those already in the program.

Bali's system was planned somewhat differently from the village family planning systems on Java. In Bali it revolves around the banjar, or the sub-village unit of which there are over 3,700 with an average population of some 670 (see chapter 1). The banjar family planning system included not only contraceptive resupply, but also a registration and mapping system in which family planning users were supposed to be followed up monthly and their status noted on a prominently displayed banjar map.

Also in 1974 the provincial BKKBN began training fieldworkers and banjar heads in family planning tactics at the local level. As Hull, Hull and Singarimbun described the aims:

As they became more aware of birth control issues, it was hoped banjar members would help each other to deal with side effects, identify potential acceptors, and, through community pressure, encourage non-users to accept birth control. ..The contraceptive situation is discussed at each monthly meeting of household heads. If an apparently fertile couple are not trying for a pregnancy and are also not contracepting, the husband will be questioned. (1977:25-28).

### 3.2.1.1 Village Contraceptive Distribution Centres (VCDCs)

This addition to the program was established in 1975 and is the most recent of BKKBN's efforts to overcome the problem of 'plateauing' which eventually confronts all family planning programs. Thus the contraceptives are sent out from the clinic to the village contraceptive depot. The depot is either in a villager's home or a village administrative office and is run by a village volunteer or a

member of the village administrative staff. This person is linked to the clinic with the assistance of the fieldworker, and the depot's job is to ensure that contraceptives are available to eligible couples in the village, as well as to provide information about family planning. The supply route was through the clinic in order that the flow of contraceptives, and data on acceptors, would be kept within the clinic's service statistics system so that activities could be monitored and controlled.

In December 1975, there were some 1,800 such VCDCs at the banjar level, as well as the 152 family planning/health clinics. By December 1976, all 3708 banjars were said to have a VCDC operating, and all were reporting quarterly to the provincial BKKBN office. As the VCDCs took more of the family planning load the number of family planning sessions in the clinics declined somewhat from 1,949 (9,472 hours total) in December 1973, to 1,304 (6,973 hours total) in December 1976. During this period the number of clinics stayed constant, though by December 1981 there were 159 clinics operating throughout the island.

#### 3.2.1.2 Fieldworkers

Fieldwork is administered separately from clinic services. In Bali in 1980 the total number of fieldworkers was 231, one for every 1,250 eligible couples. This number had stayed constant since 1975. They are grouped into 51 teams of four or five workers, each team (one team per kecamatan or district) being supervised by a group leader (Pemimpinan Kelompok or P.K.). The group leaders are in turn assigned to eight regency supervisors. And the regency supervisors are in turn

directed by one provincial coordinator.

Fieldworkers are not required to work fixed hours, instead each is given a monthly quota of new acceptors. They must travel their allotted territory by bicycle or on foot in search of potential new acceptors. These may be women who have just given birth to their first child, or women with children who have recently moved into the area. They are also expected to visit all eligible couples in the registers about once in three months to check their current status, and remotivate them if they have dropped out. Originally, their task was basically to refer interested couples to the clinic, or to make appointments for the next visit of clinic staff to a convenient place such as the banjar hall, or kelian banjar's house. However, over recent years the fieldworkers have been given responsibility to distribute contraceptives directly to couples, ie., condoms and foam tablets, and to resupply oral pills.

Although the fieldworkers are usually working in their own area, there can be difficulties. They may be perceived as government officials coming to pressure the couples into accepting family planning when they don't want it. The system of targets of acceptors may put the fieldworkers in a situation of conflict with the regional administration who may not understand the particular circumstances of the couples in the area. Some consider their area is excessively large compared to other fieldworkers, access to couples varying greatly with the terrain. Sometimes they are called upon for advice regarding contraceptive side-effects, which they are ill-equipped to give owing to limited training.

Most fieldworkers (79%) are married men, about half are aged 20-24 years, the remainder being somewhat older, and most have finished high school (Astawa et al., 1975:87). Fieldworkers are recruited from the local village and are required to have completed at least junior high school, and be a minimum age of eighteen years. The training of fieldworkers is done in the Provincial Training Centre and goes on for three weeks (two weeks theory and one week in the field). Morale, however, has often been low amongst PLKBs, resulting in a rapid turnover, about 30 % per annum in 1981, and some difficulty in finding new recruits largely because of the government's continuing reluctance to upgrade their status from temporary workers to that of permanent civil servants, with its accompanying job security and retirement benefits (see Hull et al., 1977:9). But as of July 1981 fieldworkers throughout Indonesia have achieved permanent civil servant status, and hopefully this will alleviate some of the problems.

#### 3.2.1.3 Sistem Banjar

The Bali office of the National Family Planning Program incorporated the subvillage unit, the banjar, into the program for several reasons. Firstly, to try to institutionalize the small family norm into the community, using the banjar meeting and leaders as the medium. Secondly, the banjar system was needed to accumulate the statistics for recording acceptors and current users each month. Thirdly, the system was an ideal supply route for contraceptives throughout the rural areas, where the 150 clinics could not possibly have been adequate.

When Sistem Banjar began it took some time to organize reporting from all the banjars. In the first quarter of 1976 only 1,848 banjars were surveyed and of those 1,690 (or 91.5%) returned reports. But by the fourth quarter of that year all 3,708 banjars were surveyed and all reported.

The system operates by each banjar head (Kelian Dinas) completing a register ('Elco-Register') of names and other details for each 'eligible couple' in his banjar.

The information included in the register is:

- ..Name of woman
- ..Age of woman
- ..Name of husband of woman
- ..Date on which she accepted F.P.
- ..Number of children ever born alive (total)
- ..Number of children still living (male and female)
- ..Number of new born children within the current year (M/F separate)
- ..Contraceptive status for the current month,  
specifying method used;not yet accepted;pregnant;or dropped out.

Normally this 'Elco-Register' would be kept by the banjar head and updated when he hears of some change of status occurring to a couple in his banjar. At the end of each quarter the family planning fieldworker will take the register to his 'office' (usually at the local health clinic if there is one) and write up the quarterly report (Laporan Triwulan). This is sent to the Group Leader for the kecamatan for summarizing and forwarding to the provincial office where the reports are published, data being aggregated to kecamatan level.

#### 3.2.1.4 Banjar Maps

The banjar head (Kelian Dinas) is also required to draw a map of his banjar with each 'house' representing one eligible couple, although there may be more than one such couple in a houseyard or compound.

Each eligible couple is indicated by a numbered square which is outlined by a colour to indicate current status, for example, IUD users are outlined in blue; pill users in red; condom users in green; users of other methods (currently pregnant women, outmigrants, deaths, etc.,) are all indicated by the system of colours and symbols, except for never users which remain blank. This allows rapid viewing of the current user situation and of the number of method changes, although to determine when these occurred it is necessary to refer to the number in the Elco-Register. In order to perform these family planning duties, the kelians receive three days training in the Provincial Training Centre of BKKBN in Denpasar.

A recent paper by Khoo using the integrated Supas II and III data from the 1976 Intercensal Survey (Supas) of Indonesia (see Freedman et al.,1981:3), examines the role of factors such as different program strength in the various provinces of Java-Bali in relation to levels of contraceptive use (Table 3.1). This analysis shows that, of the six provinces, Bali had, in 1976, the most favourable situation in regard to numbers of clinics, midwives, fieldworkers and program administrative personnel per 10,000 ever married women (EMW). Bali was second only to Yogyakarta in numbers of doctors per 10,000 EMW.

TABLE 3.1

VARIOUS MEASURES OF F.P. PROGRAM EFFORT  
FOR RURAL REGENCIES, BALI and JAVA-BALI, 1975-76.

MEASURE OF PROGRAM EFFORT:	NUMBER	
	BALI	JAVA-BALI
Clinics/10,000 EMW	4.3	(1.8)
Doctors/10,000 EMW	1.3	(0.7)
Midwives/10,000 EMW	4.4	(1.8)
Administrative Personnel/10,000 EMW	4.2	(1.6)
Fieldworkers/10,000 EMW	6.4	(4.2)

(Source: Khoo, 1981:Table 2.)

It is of interest, however, that Khoo concluded from this analysis that:

there is no strong relation between contraceptive use and program input as measured by the number of clinics and workers...regional differences remain even after controlling for community-level differences in the number of program clinics and workers relative to population (1981:15).

This question of the role of the program infrastructure will be examined in more detail later in the thesis.

### 3.2.2 BUDGET

For the Indonesian fiscal year 1979-80, Bali was to receive 516 million Rupiah as its share of the national family planning budget, from the government. This amounts to 2.9 percent of the total budget although in terms of married couples of reproductive age (MCRA) Bali accounts for only 1.7 percent of the total. Hence if the budget is expressed as Rupiahs per MCRA, Bali receives Rs. 1,423 per MCRA, the



largest amount of any province and considerably more than the Indonesian average of Rs. 570, and the average for the six provinces of Java-Bali of Rs. 653 (Table 3.2) (1).

In 1973-74, the cost per eligible couple was higher in Bali than any of the other five provinces in the program at the time (from 50% to 250% more), although, when the high rate of acceptance in Bali is taken into account, the difference in cost per acceptor in 1973-74 was only slightly higher in Bali than in the other five provinces:

TABLE 3.2

## ACCEPTOR COSTS 1973-74, BY PROVINCE.

1973-74	PROVINCE	COST PER ACCEPTOR (US\$)
	Jakarta	13.63
	West Java	13.15
	Central Java	12.31
	Yogyakarta	12.72
	East Java	7.81
	BALI	14.78
	Java-Bali	11.02

Source: Soedarmadi and Reese, 1975.

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(1) It must be remembered that the budget listed above is that available from the Government of Indonesia (G of I), which in fact makes up only part of the total available resources for family planning in any particular year. For example, in 1979-80, the G of I provided US\$ 28.9 million while other funding agencies provided an additional US\$ 5.1 million (World Bank), US\$3.5 million (UNFPA), and USAID promised US\$ 18.2 million as grant or loans in the form of contraceptives; and other donors promised some US\$ 2.5 million, (USAID, 1980).

## 3.2.3 TARGETS

The targets for new acceptors for Bali are reassessed each year, depending on the total number of new acceptors achieved at the end of the previous year (Table 3.3).

TABLE 3.3

ANNUAL TARGETS AND ACHIEVEMENT FOR NEW ACCEPTORS, BALI.		
YEAR	TARGET	ACHIEVEMENT (as % of target)
1972	50,000	81.1 %
1973	60,000	81.2 %
1974	50,000	87.4 %
1975	52,000	86.8 %
1976	39,000	116.5 %
1977	41,000	109.8 %
1978	41,000	109.4 %
1979	39,000	109.3 %
1980	45,000	94.7 %

(Target as of April, beginning of fiscal year;  
Achievement as of end of fiscal year-March following year).

(Source: BKKBN Bureau of Research and Evaluation,  
Monthly Statistics, Jakarta)

From 1976 the achievement level increased suddenly. Although it is tempting to assume that this was due to the introduction of the Sistem Banjar of family planning distribution and reporting during that year, in fact the rise was due to the lowering of the targets. For example, the 116.5 % achievement in 1976 is equivalent to 45,000 new acceptors, just as was the 86.8 % achievement in 1975 (see Figure 3.A for steady levels of monthly new acceptors). The BKKBN argument would be that the numbers of new acceptors would have declined had not the Sistem Banjar been introduced, and this may well have been the case.

### 3.2.4 RESULTS OF THE FAMILY PLANNING PROGRAM

The most relevant measure of the program's effectiveness in promoting contraceptive use in Bali is the increase in the prevalence rate over time.

The sources of such data are primarily the monthly Service Statistics Reports from the Bureau of Research and Evaluation of BKKBN central office in Jakarta, and, since the establishment of Sistem Banjar in 1976, the quarterly reports from the BKKBN provincial office in Bali. It can be seen in Table 3.4 that these two sources present rather different rates for Bali for the same periods. The reasons for these differences are partly the different systems involved in estimating current users, and partly in the definition of the eligible population. This will be discussed further in chapter 4. The figures from the Jakarta office are based on numbers of pill cycles, condoms, vaginal tablets distributed; numbers of IUDs inserted; tubectomies performed, etc., with assumptions being made about continuation rates for pill and IUD users. On the other hand, the BKKBN Bali figures are intended to reflect current use levels derived by the fieldworkers actually asking the current status of the eligible couples at regular intervals, with updating through couples notifying their Kelian Dinas of changes of status between fieldworker visits.

In the 1970s, there have also been three major surveys in Bali which have inquired about use of contraception. These were the Fertility-Mortality Survey in 1973, the World Fertility Survey in 1976, and the 1979 Socio-economic survey (Susenas). The prevalence rates for currently married women aged 15-44, using program methods,

are presented in Table 3.4 for comparison with the BKKBN figures for the same time.

TABLE 3.4

PREVALENCE RATES OF PROGRAM CONTRACEPTIVE USE  
FROM DIFFERENT SOURCES, BALI, 1971-1981

FISCAL YEAR	BKKBN SOURCE		SURVEY
	JAKARTA BKKBN	BALI BKKBN	
1971-72	6.6 %		
1972-73	15.3 %		19.4 % --FMS(15-44)
1973-74	22.3 %		
1974-75	27.1 %		
1975-76	32.0 %		33.3 % --WFS(15-44)
1976-77	35.5 %		
1977-78	42.8 %	61.4 %	----- (Jul-Sept.1977)
1978-79	46.0 %	73.5 %	----- (Jul-Sept.1979)
			48.5 % --(SUSENAS,Early 1979)
1979-80	49.8 %	75.9 %	----- (Mar.1980)
1980-81	53.7 %	76.3 %	----- (Oct-Dec.1980)
1980-81	53.7 %	76.3 %	(Oct-Dec.1980)

Note: The Jakarta data are for the end of each financial year, eg., the figure for 1975-76 is for March 1976.

Source: Jakarta data - Bureau of Reporting and Documentation  
Monthly Statistics, BKKBN, Jakarta.

Bali data - Provincial Office Quarterly Reports,  
BKKBN, Denpasar.

FMS data - FM Report, 1974:50

WFS data - BPS, Vol.II, Tables 2.3.3A

Susenas data - BPS, 1980, Vol.I and II, Table 9.1.1

Calculated by subtraction of Java  
from Java-Bali figures.

The prevalence rates from the surveys are consistent with the levels estimated in Jakarta for the same periods. However the level of 73.5% from the Bali BKKBN office for third quarter 1979 is much higher than the 46.0% of eligible couples using a program method, or the 48.5% currently using, from the 1979 Susenas survey. Because the levels from the Bali BKKBN office are derived by questioning eligible couples about current family planning status, they can include users

of modern methods obtained outside the program, although in Bali this is quite a small number, whereas the levels emanating from central office in Jakarta concern use of program methods only.

Leaving aside the differences between rates from the two BKKBN sources, the more conservative Jakarta office figures show a dramatic increase in level of current use from less than five percent in 1971 to 53.7% ten years later.

#### 3.2.4.1 Methods Used

Before the introduction of the family planning program in 1970, there appears to have been very little use of traditional contraception. The levels of current use of 'folk' and traditional methods (2) combined, were 2.2 % in the 1973 FM survey, 0.8 % in the 1976 WFS (no 'folk'), and 1.0 % in the 1979 Susenas survey (half 'folk' and half traditional) (calculated from Table 3.5). While there is always the likelihood that these methods are often underreported in such surveys, the levels appear to be low. It is not possible to deduce more about levels in the past as there are no published data from any of these surveys on ever use of these methods. There are, however, a number of unsupported claims that traditional methods, in particular abortion, have been widely used by Balinese women in the past. Jacobs, writing in 1883 stated confidently:

Every woman knows a number of abortifacients and there is no doubt that they are often used. Hence it happens that so few illegitimate children are born (although most of the daughters of this very voluptuous tribe practise

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(2) The WFS definitions were that 'folk' methods included herbs, uterus inversion, massage and others (abortion); traditional methods were abstinence, rhythm, withdrawal and douche.

prostitution). And not only unmarried women have recourse to these specifics. (Cited in Ploss et al.,1935:498)

Jacobs went on to describe the Chinese medicine (called pengeret) that was to be drunk if a woman fell pregnant.

Another, more recent unsupported reference comes from Poffenberger: '...there is evidence that the Balinese practised delayed marriage and induced abortion to some degree' (n.d.,10). On the other hand, there are some data from Edmondson, an anthropologist who worked for 22 months in east Bali (similar area to Poffenberger), which suggest that of a closely studied sample of 94 ever-married women, about one quarter (n=23) had undergone a traditional abortion at some time in their lives. About 5 percent (n=5) claimed to have had an abortion in the previous 12 months. Edmondson states that 'the major traditional method of fertility control used in the village is uterine massage...used in conjunction with herbal medicine.'(n.d.:8). This type of massage abortion is widely known throughout parts of Southeast Asia, particularly Thailand and Malaysia. Whether this high incidence of abortion can be extrapolated to all Bali is another matter as such practitioners are often few in number but known over a wide area. For example, one informant of this writer had, some years ago, travelled from the town of Ubud in central Bali to a village in eastern Bali (close to where Edmondson has worked) in order to be aborted. She stated that there was a reputable abortionist in that area, and it was preferable to travel a considerable distance to obtain the services of an 'expert' than to risk an 'amateur' operation. In this case the abortion was performed by insertion of a piece of thin branch from the sirih bush (the leaves chewed with betel nut and lime) into the cervix. This method is said to bring about

uterine contractions within about 24 hours, resulting in expulsion of the contents of the uterus. That such caution was probably wise is illustrated by an incident in 1979 where an old man was imprisoned in Denpasar for causing the death of a young woman whom he had attempted to abort using a bicycle wheel spoke. The spoke had penetrated the uterine wall of the woman. The fact that the old man was blind may have contributed to the tragedy.

There is, however, anecdotal evidence from one of Bali's leading obstetricians that such 'backyard' abortions are on the decline. This doctor has, for some time, been responsible for attempting to repair the consequences of these operations, although he does not perform abortions himself, nor does he permit them to be performed in the provincial hospital, Denpasar. He has noted a marked decrease in the numbers of such botched abortions since the ready availability of family planning, although this has also coincided with the introduction of facilities for menstrual regulations on the island. At the time of the survey there were at least three doctors in Denpasar regularly performing menstrual regulations. One of these doctors estimated that about 3,000 or more such operations were being performed annually by himself and his colleagues. This was despite the illegality of the operation in the eyes of the Islamic authorities in Jakarta. Some doctors in the regency hospitals also performed menstrual regulations on Family Planning Program users who had fallen pregnant.

While it is extremely difficult to state with any certainty that abortion was probably not widespread in the past, (the extravagant nature of Jacobs' remarks must cast some doubt on his claims), and

that other traditional and folk methods do not appear to have been used to any substantial extent, that must be the conclusion drawn from the examination of the limited available literature and from anecdotal evidence. This conclusion is also supported to some degree by the very high rates of marital fertility which existed prior to the 1970s as indicated by Hull et al.: 'reluctance to use such traditional birth control methods as abstinence or abortion kept fertility high right up to the advent of modern contraceptive methods' (1977:28).

To move now on to modern contraceptives, the figures for 1976 for prevalence rates of program methods are very similar from BKKBN (32.0%) and the WFS (33.3%), though the method mixes are noticeably different. This is also true of the 1979 Susenas survey and the 1979 BKKBN figures. Table 3.6 shows method mixes for new acceptors and for current users for the same points in time. As the proportions of current users having an IUD is greater than the proportions accepting an IUD, and for pill users less than for pill acceptors, it is clear that BKKBN Jakarta assume considerably higher continuation rates for IUD acceptors than for pill acceptors. Indeed, this is acknowledged to be the case and is an important reason why the Bali provincial office of BKKBN chose to 'push' the IUD over other methods (Astawa, et al., 1975:95). However, the comparison of proportions using each method can be seen (Table 3.5) to vary considerably between the survey figures and the BKKBN monthly statistics, even though the overall prevalence levels match. This suggests that the assumptions used by BKKBN Jakarta, regarding method continuation rates, tend to overestimate the actual IUD continuation rates and underestimate actual pill continuation rates.



TABLE 3.5

DISTRIBUTION OF CURRENT USERS BY METHOD USED,  
FOR MARRIED WOMEN AGED 15-44 YEARS, BALI.

SOURCE-YEAR	Pill	IUD	Condom	Other Modern	Total Tradl.	Prevalence Any (Program) Method
FMS-1973	12.0	77.0	1.4	-u-	9.5	23.0% (19.4%)
WFS-1976	14.1	70.3	10.9	3.1	1.6	39.3% (33.3%)
BKKBN-1976	9.4	85.5	2.6	2.4	N.A.	(32.0%)
SUSENAS-1979	16.1	64.9	3.0	4.3 (+10.7*)	1.1	(48.5%)
BKKBN-1979July	9.1	82.2	3.6	4.9	N.A.	(46.0%)
BKKBN-1981July	8.1	82.2	3.3	6.4	N.A.	(53.7%)

N.A.:not applicable, only program methods recorded.

-u- :unavailable

\* :more than one method being used.

Sources: as for TABLE 3.4

TABLE 3.6

DISTRIBUTION OF NEW ACCEPTORS AND CURRENT USERS, BY METHOD,  
DIFFERENT YEARS, BALI.

NEW ACCEPTORS	Pill	IUD	Condom	Foam Tabs.	Inj	Other	Total
March 1976	33.7	42.6	21.9	0.3	---	1.6---	100 %
September 1976	21.0	61.3	13.7	0.5	0.1	3.5	100 %
March 1981	17.5	63.5	-- 10.7 --	--	2.7	5.3	100 %

CURRENT USERS

March 1976	10.9	82.2	5.0	0	0	1.9	100 %
September 1976	9.4	85.5	2.6	0	0	2.4	100 %
March 1981	8.1	80.9	3.8	0	0.5	6.4	100 %

Source: BKKBN Jakarta Monthly Statistics

### 3.2.4.2 New Acceptors

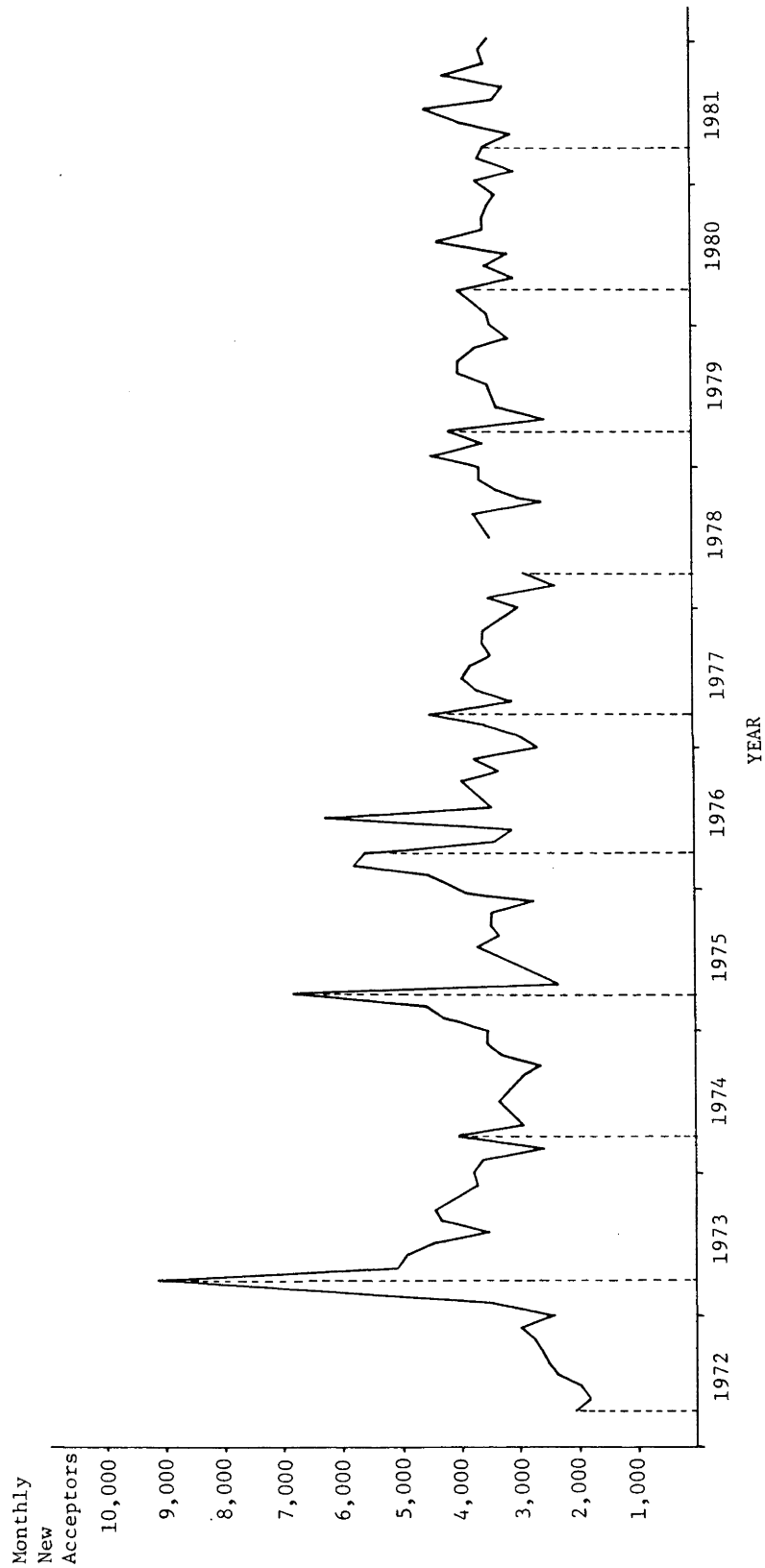
The differences between the distributions of new acceptors according to method for March and September 1976, illustrates one of the problems which beset a program which has targets for the number of new acceptors obtained within a fiscal year. The pressure of provincial offices to attain their particular target tends to result in a marked increase in numbers of acceptors in the month or two before the end of the year, (see Figure 1, Hull et al., 1977:16).

The monthly variation in new acceptors for Bali is shown in Figure 3.A, where February and March of each year show a rise, sometimes to 50% over the usual three to four thousand per month. These months correspond to the end of the fiscal year in Indonesia. This end-of-year rise was most pronounced in early 1973 (rising to a peak of 9,000 in March) following the 'Special Drive' which started in December 1972. The pattern differs from that for Java which also shows distinct troughs in September and October which roughly correspond to the Muslim fasting month in these years.

In the five years from September 1976, the prevalence rate has risen from 32.4% to 57.2%, but through that period the distribution of new acceptors and current users according to method has changed very little, apart from the annual fluctuations described above. Also the number of monthly acceptors has changed little, usually being between three and four thousand.

FIGURE 3-A

NUMBERS OF MONTHLY NEW FAMILY PLANNING ACCEPTORS - BALI



Source: BKKBN Monthly Statistics Jakarta

TABLE 3.7

CURRENTLY MARRIED WOMEN 15-49 CURRENTLY USING  
ANY CONTRACEPTIVE METHOD, 1973, 1976 AND 1979.

AGE GROUP	1973 FMS	1976 WFS	1979 SUSENAS
15-19	2.0	15.8	18.4
20-24	13.3	31.9	36.3
25-29	23.1	47.3	55.8
30-34	33.5	58.7	62.6
35-39	27.7	40.8	52.0
40-44	21.1	23.0	40.5
45-49	6.5	16.7	24.1
15-44	23.0	39.1	48.5

Sources: 1973,1976-Sinquefield and Sungkono,1979:51.  
1979-Susenas Survey, BPS,1980 Table 9.1.1

There has been a modest increase in the proportions accepting IUDs from around fifty percent of acceptors in 1973 and 1974, to around sixty four percent in 1981. This shift has been occurring as mean age and mean parity of acceptors has been declining, that is, younger women are being gradually drawn into the program (see below). The data in Table 3.7 for proportions by age using contraception show a greater increase in the younger age groups than in the old between 1973 and 1976, but a greater increase among the older couples between 1976 and 1978/79. This may be explained as a possible cohort effect where the young age groups using contraception in the early 1970s have now moved into the older age groups, although prevalence is still highest in the 30-34 age group.

The available data on characteristics of new acceptors in Bali (Table 3.8) supports the above statement that family planning is being accepted by younger, lower parity women. The median age of new acceptors in 1971 was 29.6 years but by late 1976 this median had

declined by two years. In early 1979 the median age was still 27.5 years (Table 3.8, column A). The shift to younger acceptors is also reflected in the increasing proportions under 30 years of age (Table 3.9, row A). In the early days of the program, about half of the acceptors fell into this category, but by the late 1970s the proportion under 30 had increased steadily to 66 percent (1978-79).

If age at marriage has not substantially increased (see chapter 5), and family planning is not generally available to nulliparous women, it would be expected that as median age of new acceptors decreases, so would median parity. That this is the case is demonstrated by the data in Table 3.8 which show that median parity has fallen by about one child, from 3.8 in 1971 to 2.9 in 1979. This decline is again reflected in the proportions of new acceptors having two or less children. This proportion increased from 28 percent in the early 1970s to 52 percent in early 1979 (Table 3.9, row B). The explanation for the decline in mean age of users is that the program initially attracted the older, high parity women wanting to limit births. Later, younger women wanting to space pregnancies were also attracted to use family planning. There can, of course, also be an effect of declining completed fertility in that women wanting no further births will tend to be, on average, younger and of lower parity when fertility levels have dropped.

TABLE 3.8

MEDIAN AGE AND PARITY OF NEW ACCEPTORS  
OF FAMILY PLANNING, 1971-79, BALI.

PERIOD	A)MEDIAN AGE	B)MEDIAN PARITY
1971 (Apr-Jun)*	29.6	3.8
1973 (Oct-Dec)*	28.7	3.2
1976 (Oct-Dec)**	27.5	2.6
1979 (Jan-Mar)***	27.5	2.9

Sources: \* - Astawa, *et al.*, 1975:89, Table 4.

\*\* - Soetedjo and Parsons, 1977, Table 7, page 14.

\*\*\* - Uluan Singkat Ciri-Ciri Akseptor, BKKBN, Jakarta.

TABLE 3.9

CHARACTERISTICS OF NEW ACCEPTORS OF FAMILY PLANNING,  
1971-72 TO 1978-79, BALI.

	1971 -72	1972 -73	1973 -74	1974 -75	1975 -76	1976 -77	1977 -78	1978 -79
A) % LESS THAN AGE 30 YEARS	51	53	55	58	61	62	63	66
B) % 2 OR LESS CHILDREN	-- 28 --		35	37	48	46	48	52
C) % LESS THAN 6 YEARS SCHOOL	66	70	71	63	63	64	N.A.	67
D) % HOUSE HEAD OCCUPATION: FISHING, FARMING, LABOUR, UNEMPLD.	79	85	87	82	85	87	N.A.	87

Source: Uluan Singkat Ciri-Ciri Akseptor, BKKBN, Jakarta,  
1971-72 to 1977-78.

Soetedjo and Parsons, 1977, Table 10, for FY 1978-79.

In regard to the education of acceptors, the data in Table 3.9, row C indicate little change in the proportions of new acceptors having less than six years schooling during the 1970s, though there

was an upward fluctuation during 1972-74. It was during this period that an 'Extra-Drive' was made by the family planning program to bring the less accessible and more 'resistant' couples into the program (Astawa et al., 1975:89). Acceptor drives of this kind were soon found to result in shorter continuation rates (Tjitarsa et al., 1975) and were not repeated. Thus by 1977-78 the proportion of women with less than completed primary education was two-thirds, as was the case in 1971-72. The proportion (64 %) was markedly higher than the 52 percent for the general population in 1976-77. This pattern is also reflected in the occupational category of the head of household. While in the first year or so there was an increase in the proportion from manual occupations (fishing, farming and labouring), this proportion remained steady at around 85 percent from 1972-73 through until 1978-79. The reason for the initial change was that whereas in the early years of the program, the acceptors were more likely to come from the more elite groups and government employees who could more easily be reached through existing information channels, later years saw an expansion of the program network through the introduction of fieldworkers, travelling medical teams and village contraceptive distribution centres which have made information and supplies more accessible to the less well-off social groups and those in more remote villages.

It should be clear from the above description that the implementation of the national family planning program in Bali has been multi-faceted with an early recognition that the clinic infrastructure with its relatively limited coverage needed to be supplemented by establishing supply routes and depots of contraceptives in villages and hamlets.

On the administrative side, the Sistem Banjar approach provided rapid flow of current prevalence data both upward to kabupaten and province administrative levels, and down to the fieldworkers and village headmen. This feedback of current status was cleverly augmented by appealing to the Balinese penchant for competition among banjars with rewards for the village headman of the most successful banjar, in terms of contraceptive prevalence (3). In fact the program was promoted quite openly as being Balinese rather than national, with family planning posters not only written in the Balinese language but depicting scenes, such as a woman feeding pigs, which are peculiar to Bali. There has been considerable pride taken in the belief that Bali had consistently maintained the highest family planning prevalence levels of any province, until East Java and Yogyakarta displaced it recently.

The decision by BKKBN, Jakarta to allow provincial offices considerable flexibility in designing and operating the family planning program in their areas has undoubtedly facilitated this parochial but successful promotion of the concept that the program is 'by Balinese, for Balinese', even if there have been non-Balinese working within it. This appears to have successfully forestalled any substantial negative reaction from the populace who may otherwise have viewed such a program as external interference. As mentioned in chapter 1, religious minorities at times view family planning programs introduced by the majority as a possible attempt to gradually eliminate them. This suspicion seems to have been avoided in the case of the Bali Hindus.

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(3) These rewards include a trip to Jakarta to receive a certificate of achievement from BKKBN.



CHAPTER 4  
COMMUNITY LEVEL STUDY

It is appropriate at this point to restate the aims of the project:

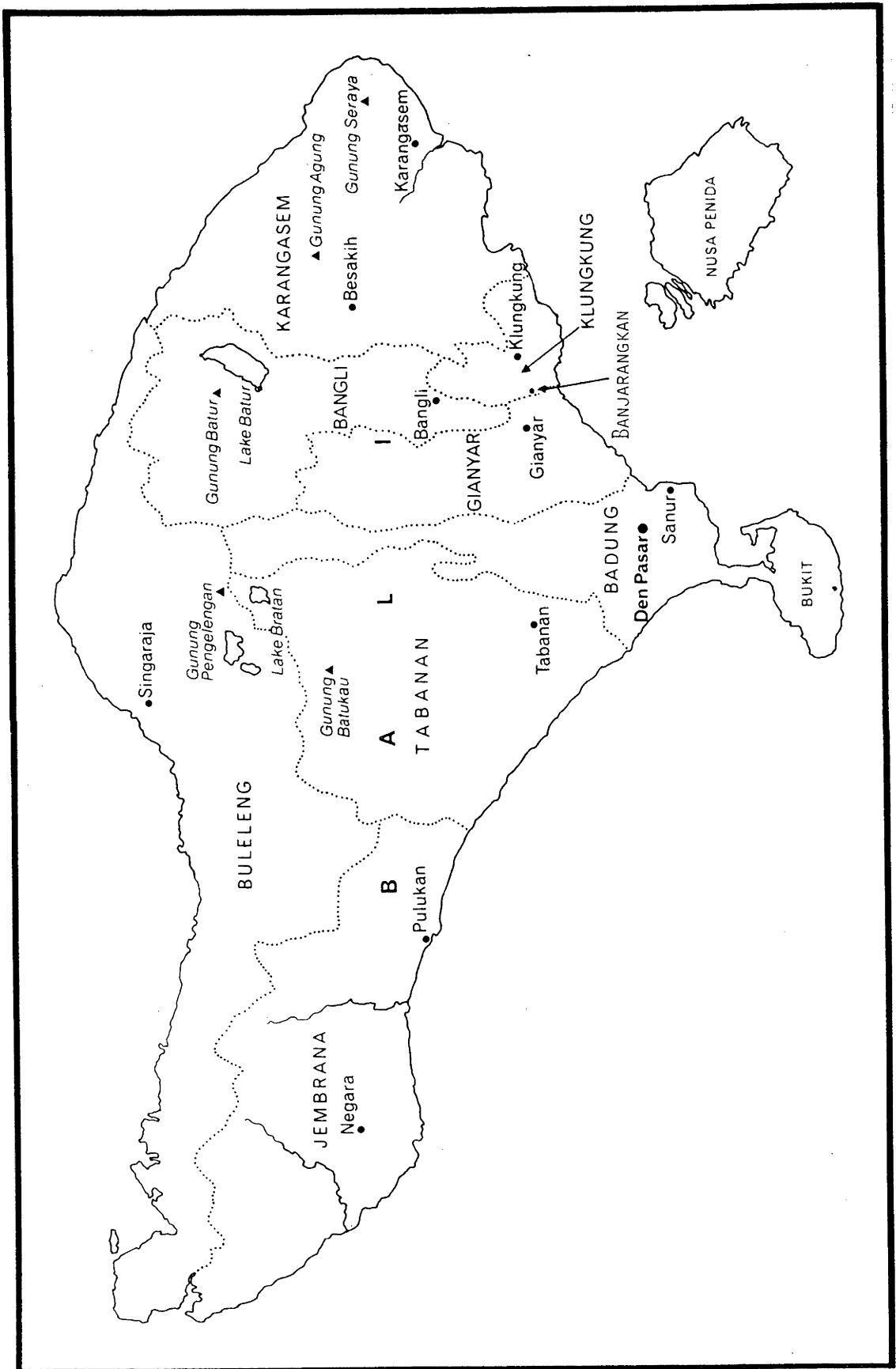
(a) The available figures for family planning usage suggest that a remarkable increase in the use of modern contraceptives has taken place in Bali since the National Family Planning Program was established there in 1969. There has been, however, some inconsistency in the figures coming from the BKKBN at province level and those from Jakarta (central office). Some observers have cast doubt on the validity of the figures released from BKKBN Bali.

The first aim of this study then, is to check the validity of the figures from the BKKBN registers with the data from a village level survey. The survey data will be matched against the records in the Elco-Registers for the same couples (chapter 4).

(b) Apart from the increased use of family planning, there has also apparently been a significant decline in fertility levels in Bali. However there are no reliable data since the 1976 Intercensal survey (Supas), and there is some uncertainty even about that data, particularly Supas III (World Fertility Survey).

The second aim then, is to estimate the magnitude of this fertility decline in the study area, and to attempt to come to an understanding of the factors that have contributed to it, in particular the role of the National Family Planning Program (chapter 5).

Map of the Province of Bali.



(c) Irrespective of the accuracy of the various sets of available figures for family planning practice in Bali, it is clear that there has been a high uptake of family planning there, in circumstances where such acceptance was somewhat unexpected, according to traditional demographic theory (see chapter 1).

The third aim, then, is to attempt to elucidate what factors have been important in precipitating this rapid acceptance of family planning (chapters 6, 7 and 8).

#### 4.1 SELECTION OF THE STUDY AREA

##### 4.1.1 KABUPATEN LEVEL

The first stage in selecting a study area was choosing the regency or kabupaten, of which there are eight. They do, however, vary considerably. Apart from the geomorphological variation described in Chapter 2, there are social differences due to an influx of Javanese into western Bali, and now living in the regencies of Buleleng (north) and Jembrana (west); the result being a change in the traditional religious composition of the areas. Buleleng, having been the first area occupied by the Dutch in the 1850s, is somewhat different from south Bali also in terms of strength of the banjar. The traditional organization into banjars, so widespread in the south, is less common in the north, where the village is usually the basic unit of community organization.

To the eastern end of Bali, in the regency of Karangasem, there are also relatively large aggregations of Moslems who migrated into the area after many Balinese left following the disastrous eruption of the volcano Gunung Agung in 1963. This regency is now one of the poorest of the eight.

The central regency of Tabanan is the richest rice growing area, and as a result the inhabitants are relatively well off. Also, as it is close to the capital city, Denpasar, modernizing influences are common in the area.

Regency Badung contains the capital city, Denpasar, and all the associated administrative offices and facilities that go with being the Provincial capital, such as universities, factories, communications, and government offices. Badung is also the centre of the tourist industry at Sanur and Kuta. With over 20 % of its population in the island's only city, Denpasar, Badung could not be considered typical. It was also considered desirable to avoid model Family Planning banjars - an example being banjar Sedang in Badung where the Kelian Dinas claimed a contraceptive prevalence rate of 98 percent in late 1980. He proudly showed guests a Visitor's Book containing complimentary comments by visitors from a variety of family planning funding agencies.

Hence there is a variety of reasons why these five regencies cannot be considered as areas suitable for the aims of this study. This leaves Gianyar, Bangli and Klungkung which might be considered as such. Gianyar is currently a relatively wealthy regency with good rice growing land. It is also very much on the tourist route from Sukawati in the south-west (now almost a suburb of Denpasar) through

to Ubud, the centre of the newer styles of Balinese painting, and the major inland tourist centre. Bangli is a long, narrow regency extending from the fertile areas around Bangli town to the very mountainous, remote areas of Kintamani in the north, where water for irrigation is scarce and the climate is unsuitable for rice growing, leaving mainly dry field crops such as cloves, coffee, vanilla, corn, tobacco, etc. The inhabitants of these hill areas tend to be poor, and the area is inaccessible.

This leaves the regency of Klungkung, which in many ways is typical of traditional Bali. It is often said to be the most conservative regency and it still has a strong, close-knit Puri headed by the Dewa Agung (who would formerly have been the Raja or king). Many of the royal family are now ensconced in government administrative positions, the old royal family networks being maintained in the attempt to retain power under the new system of national government. The town of Klungkung is visited by many tourists wishing to see its famous old courthouse, and although it is on the route both to the mountains and to the eastern end of the island, it has not been affected in the same conspicuous ways that Badung and Gianyar have. Klungkung town has good access to the capital, Denpasar, the 45 Km. trip taking about 45 minutes by bus. Being one of the larger regency centres it has a large hospital, numerous schools and a number of administrative offices.

#### 4.1.2 KECAMATAN LEVEL

An important factor in the selection of Klungkung was the fact that there were some data available on fertility levels for one of the four kecamatan or subdistricts, for the period 1974 to 1977. This was the result of the Sample Vital Registration Project (SVRP) run by the Central Bureau of Statistics in ten project centres throughout Indonesia. Of the fifty one kecamatan in Bali, the only one included in the SVRP study was Banjarangkan in Kabupaten Klungkung. Banjarangkan contained thirteen villages and about 28,000 inhabitants at the time of the project. The SVRP data indicated that fertility was quite low in Banjarangkan at that time (TFR = 3.3 in 1977), and the marriage data from that project indicated that changes in marriage patterns did not explain the low fertility; marriage patterns were similar to those for all Bali. This was considered important because it was necessary to choose an area where fertility had definitely declined in order to investigate the causes underlying such a decline.

The kecamatan of Banjarangkan was quite typical of all Bali in terms of its family planning usage according to the data from BKKBN, Denpasar, which showed that 75.2% of all eligible couples were currently using family planning, compared to the all-Bali level of 75.9%, for the first quarter of 1980. The method composition was slightly different with greater reliance on the IUD and less on the pill in Banjarangkan than over all Bali. Apart from the data which were available from the SVRP project, it was hoped that birth certificates would still be available for the births which occurred during the three years of the project. It was intended that these certified dates would be compared to the answers given by mothers

according to their recollections of birth dates for their children born during the same period, as a method of assessing accuracy of recall of dates by mothers. This was of interest because an attempt was to be made to determine exact (to the day) dates of birth for all children under five years using the overlapping calendar system so important in Balinese ritual and ceremony. The SVRP also provided a means to crosscheck data on infant mortality for the period 1974-77.

The question arises whether the low level of fertility in kecamatan Banjarangkan was a recent phenomenon or the result of some long entrenched factors. Evidence from the national Censuses of 1961, 1971 and 1980 suggests that while the annual growth rate of the population was lower than that for Bali as a whole, it was considerably higher during the period 1961-71 than for the period 1971-80 (see Table 4.1). Part of this decrease in annual growth rate may, of course, have been due to outmigration, although apparently that has not been great.

TABLE 4.1

POPULATION and GROWTH RATES, 1961-1980, KLUNGKUNG.  
POPULATION

YEAR	Kabupaten Klungkung	Kecamatan Banjarangkan	Study Villages	All Bali
1961	127,814	27,716	6,638	1,782,529
1971	139,307	31,038	7,459	2,120,091
1980	148,746	32,705	8,117	2,469,724

GROWTH RATES (Per Annum)  
(Calculated from figures above)

PERIOD	Kabupaten Klungkung	Kecamatan Banjarangkan	Study Villages	All Bali
1961-1971	0.86 %	1.13 %	1.17 %	1.73 %
1971-1980	0.73 %	0.58 %	0.94 %	1.70 %

(Sources: Kabupaten, Kecamatan and All Bali figures from offices of Central Bureau of Statistics; Village figures from 1980 Census returns hand tabulated at district level.)

## 4.1.3 VILLAGE LEVEL

The selection of the villages to be studied was based on examination of the SVRP data for birth rates for each village for the period 1974-77, and the BKKBN data from the Elco Registers for percentage of couples currently using family planning, as well as factors such as variety of socio-economic settings, access to clinics, distance from main road, etc.

The result of the examination of the SVRP data, which are not given here, was that three contiguous villages, Banjarangkan, Tusan and Bakas were selected for study. These three villages provided a wide range of birth rates (fertility levels) and a wide variety of proportions using family planning at the time of selection, although not so wide at the time of the birth rate data (Table 4.2). Of the four field workers responsible for the thirteen villages in the kecamatan (SVRP excluded two villages), one covered Banjarangkan and Tusan, and a second covered Bakas, amongst other villages. The latter village was interesting in that very dramatic increases had taken place in proportions using family planning over a relatively short period, not only in the village of Bakas but also in the three other villages covered by the same fieldworker (Nyalian, Getakan and Aan).

TABLE 4.2

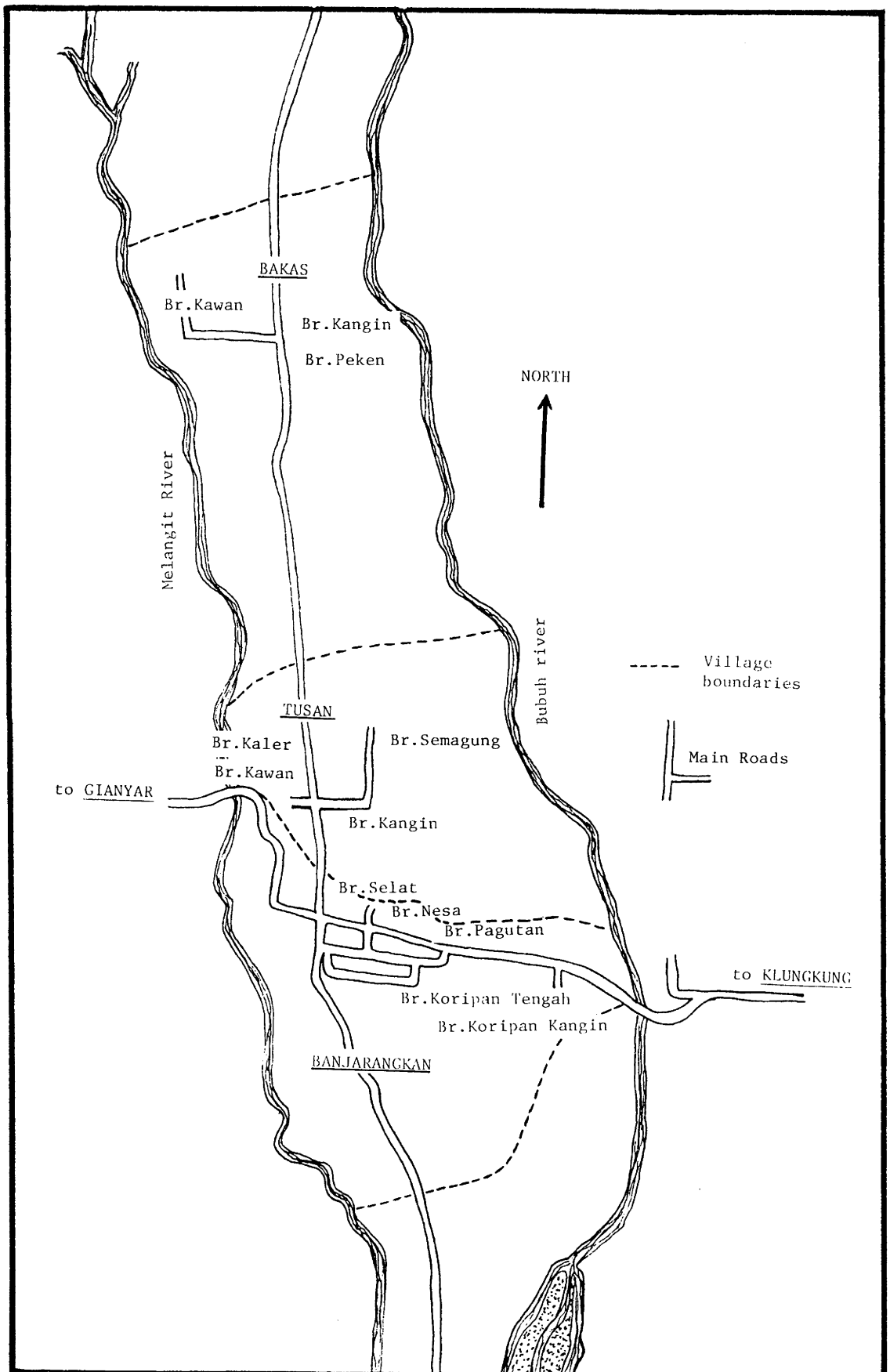
BIRTH RATES from SVRP Study, and  
FAMILY PLANNING PREVALENCE, For Study Villages.

VILLAGE	Annual Crude Birth Rate(/1,000) 1977	Percent Couples Currently Using Family Planning			
		1976	1977	1978	1979
Banjarangkan	22.2	66.7	73.9	74.3	72.9
Tusan	30.2	61.4	58.5	63.9	66.0
Bakas	36.1	50.9	68.5	80.2	87.0

(Sources: Birth rates from Klungkung office of CBS;  
F.P. prevalence rates from Sistem Banjar registers)



Map of the study villages, Banjarangkan, Tusan and Bakas.



#### 4.2 DESCRIPTION OF THE STUDY AREA

The kecamatan of Banjarangkan is furthest west of the three kecamatan of Kabupaten Klungkung which lie on mainland Bali; the fourth kecamatan is Nusa Penida, an island off the south coast of Klungkung, formerly used as a penal colony. The kecamatan of Banjarangkan is long and narrow and extends some 15 Km. north from the coast into the hilly areas where it abuts onto Kabupaten Bangli. Like many districts in Bali it is quite narrow east to west (4 Km.) and is bordered on both east and west boundaries by substantial rivers, the Melangit to the west, and the Jinah to the east. It is also divided centrally by the river Bubuh.

The water for irrigating all the rice fields attached to these villages comes from the three rivers, although not all the water from these rivers goes to the villages, for example about half of the water of the Melangit is divided equally between Banjarangkan and its western neighbour, Kabupaten Gianyar. This particular river which now forms the border between Gianyar and Klungkung has, in the past, been the site of conflict between the two regencies (formerly Kingdoms), and Banjarangkan was at one time taken into the kingdom of Gianyar (Hanna, 1972:70).

As mentioned earlier, the regency of Klungkung is recognised as being probably the most conservative of the eight regencies in Bali. From the middle of the sixteenth century it was the political centre in Bali as the kingdom of Gelgel, until the fall of the great kingdom in the early 17th century. The royal family of Klungkung, headed at present by the Dewa Agung, is regarded very highly amongst royal families in Bali. The Dewa Agung has some forty five wives, most of

whom rarely leave the puri (palace compound), and the traditional forms of courtesy concerning relative elevation etc., are still strictly maintained by visitors to the Dewa Agung, whereas these have been dispensed with in many other, more modern puris. Before the upheavals of 1965-66 Klungkung was probably the most strongly Nationalist regency in its politics, supporting the Partai Nasional Indonesia as opposed to the Communist party, the major alternative political party of the time.

The role of the royal families in relation to the commoners has undoubtedly changed since the arrival, first of the Dutch, then of the Indonesian state. However in Klungkung the traditional networks are still strong and are partly reflected in the occupation of senior government positions by members of the royal families. In the three villages studied, the village headmen, or Perbekels, were all of high caste: in Banjarangkan, an Anak Agung (Satria); in Tusan, an Ida Bagus (Brahmana); in Bakas, a Cokorda (Satria). A number of their assistants also belonged to the high castes. This is not to suggest that the royal families have simply substituted one form of power for another, since the Land Reform Act of 1960, which attempted to redistribute large landholdings, altered the relationships between the high caste and the commoners who formerly worked their lands (1).

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(1) Geertz (1968:107-120) examined the attempts by a number of royal families in Tabanan, Bali, to preserve their power through economic activity since their political prestige had waned. Geertz noted (1968:123) that while these royal businesses were not run according to normal management principles, they may if they survive, provide employment and fulfil the purpose of maintaining princely power.

#### 4.2.1 THE THREE VILLAGES

Apart from the fertility levels and levels of contraceptive practice, the three villages chosen differ considerably. Banjarangkan and Tusan are similar in some aspects, such as the distribution of occupations, but differ in other ways in that the inhabitants of Tusan are less well off than those of Banjarangkan, though they fare better according to most indicators, than do the inhabitants of Bakas.

##### 4.2.1.1 BANJARANGKAN VILLAGE

Comprising two formerly separate villages, Banjarangkan and Koripan (about 1.5 Km. apart), this village is large, having a total population of 3,400 in 1980. It is made up of five banjars containing 598 Kepala Keluarga or heads of household, and is situated on the main road from Gianyar to Klungkung in the east, no house being more than two Km. from this main road. It is the administrative centre for the kecamatan, having a Camat's office, Police Station, a bank branch, a branch of the Department of Education and Culture, and a number of substantial shops selling consumer goods, cement, building materials, etc. Also the main banjar shows movies about once a week in the banjar hall.

As indicated in Table 4.3a, three quarters of the inhabitants have access to electricity, though only 27 percent actually make use of it, apparently because of the expense involved. In terms of materials used for house construction, Banjarangkan makes greater use of modern materials for walls and floors than the other two villages, (Tables 4.3b and 4.3c).

TABLE 4.3a  
DISTRIBUTION OF HOUSEHOLDS ACCORDING TO ACCESS TO PUBLIC  
ELECTRICITY SUPPLIES, ACCORDING TO VILLAGE.

ELECTRICITY	VILLAGE			
	BANJARANGKAN	TUSAN	BAKAS	COMBINED
Do have	27.2	7.9	0	15.0%
Don't have, but available	47.8	21.4	4.8	29.8%
SUBTOTAL:	75.0	29.3	4.8	44.8%
Don't have, unavailable	22.6	65.2	92.6	51.7%
No data	2.4	5.6	2.6	3.6%
TOTAL:	100.0	100.0	100.0	100.0%

(Source for Tables 4.3a,b,c and d is 1980 survey)

TABLE 4.3b  
HOUSEWALL MATERIALS, ACCORDING TO VILLAGE.

HOUSEWALL MATERIAL	VILLAGE			
	BANJARANGKAN	TUSAN	BAKAS	COMBINED
Brick(Earth)	65.9	71.2	88.3	72.4%
Cement	30.7	23.3	6.1	23.0%
Other	3.4	5.5	5.6	4.6%
TOTAL	100 %	100 %	100 %	100 %

TABLE 4.3c  
HOUSEFLOOR MATERIALS, ACCORDING TO VILLAGE.

HOUSEFLOOR MATERIAL	VILLAGE			
	BANJARANGKAN	TUSAN	BAKAS	COMBINED
Earth	35.2	40.8	64.1	43.2%
Cement	63.4	56.4	33.8	54.8%
Other	1.4	2.8	2.1	2.0%
TOTAL	100 %	100 %	100 %	100 %

The difference is particularly marked when the proportion having earth floors is compared in Banjarangkan (35.2 %) and Bakas (64.1 %). It is probably safe to assume that most inhabitants would prefer a cement floor over earth, if given the choice, though modern materials are not preferred for all aspects of construction. For example, a thatched grass roof is often preferred to a tile roof, and can be more expensive. Another indirect indicator of economic status is the types of food consumed.

TABLE 4.3d

## FOOD CONSUMPTION, ACCORDING TO VILLAGE.

	BANJARANGKAN	VILLAGE TUSAN	BAKAS	COMBINED
A) MAIN DAILY FOOD (STAPLE):				
% EATING:				
RICE (PURE)	38.1	15.4	17.7	26.2 %
RICE + CASSAVA	59.9	84.6	82.3	72.9 %
SWEET POTATO+ CASSAVA	2.0	0	0	1.0 %
B) SPECIFIC FOODS (Eaten other than at ceremonies)				
% EATING:				
CHICKEN or DUCK	23.2	4.1	1.7	12.2 %
FISH	98.4	99.2	100.0	99.0 %
FISH EACH DAY	29.1	65.8	40.3	43.8 %
OTHER*	63.8	49.0	61.9	58.5 %
(OTHER*: Protein supplements such as-Egg; pork; beef; fish paste; eels; milk; tahu; tempe;)				

In Table 4.3d, it is clear that a greater proportion of Banjarangkan inhabitants eat pure rice rather than rice mixed with some other cheaper food, also almost one quarter eat either some chicken or some duck each day. Again, it can safely be assumed that these patterns indicate the preferred foods, provided finances permit.

SCHOOLS: Desa Banjarangkan is well supplied with schools, having two primary schools of the normal type (S.D. Negeri) as well as one built on the instructions of the President (S.D. Inpres),(2). There is also a large junior secondary school (S.M.P.) which attracts students from many of the neighbouring villages. There is no senior secondary school, students having to travel the four Km. into the town of Klungkung.

The presence of educational facilities in Banjarangkan is reflected in the proportions of both men and women who have received at least some education. While the 20.5 percent of women who have completed primary school in Banjarangkan is low, it is considerably higher than the proportions in Tusan (12.6 %) and Bakas (8.2 %) (Table 4.4). The proportions of males having completed primary school (47.6 %) is nearly two and one half times that for females (20.5 %) (Table 4.5), though in Bakas, the difference is a factor of five (40.2 % for males compared to 8.2 % for females).

HEALTH: On the main road there is a PusKesMas or public health clinic which is run by a full-time nurse (bidan) with the help of an assistant (mantri kesehatan). Apart from dealing with health problems, the nurse also acts in a family planning capacity, mainly

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(2) The latter operates in the buildings of the S.D. Negeri in the afternoon.

distributing oral pills and inserting IUD's. A doctor visits the clinic about once a week. This clinic also acts as the 'office' for the family planning fieldworker for the village.

TABLE 4.4

## RESPONDENT'S EDUCATION, ACCORDING TO VILLAGE.

EDUCATION	VILLAGE			
	BANJARANGKAN	TUSAN	BAKAS	COMBINED
% SOME PRIMARY	44.1	42.5	32.0	41.0 %
% COMPLETED PRIM	20.5	12.6	8.2	15.4 %
% SOME/ALL JUN. SECONDARY	9.5	5.5	3.4	7.0 %
% SOME /ALL SEN. SECONDARY	4.2	3.1	1.7	3.4 %
% SOME/ALL UNIV./ACADEMY	0.8	0.6	0	0.6 %
% ADULT LITERACY CLASSES	0	2.2	0	0.7 %
% NO SCHOOLING	55.9	57.5	68.0	59.0 %

(Note: These percentages are cumulated as all those who have reached secondary school have, by definition, passed through primary school.)  
(Source: 1980 survey)

TABLE 4.5

## RESPONDENT'S HUSBAND'S EDUCATION, ACCORDING TO VILLAGE.

EDUCATION	VILLAGE			
	BANJARANGKAN	TUSAN	BAKAS	COMBINED
% SOME PRIMARY	78.8	77.8	75.7	78.5 %
% COMPLETED PRIM.	47.6	41.6	40.2	43.9 %
% SOME/ALL JUN. SECONDARY	22.1	19.1	14.7	19.4 %
% SOME/ALL SEN. SECONDARY	9.3	8.2	8.2	8.6 %
% SOME/ALL UNIV./ACADEMY	2.6	1.6	0.8	1.8 %
% ADULT LITERACY CLASSES	0	1.9	0	0.6 %
% NO SCHOOLING	21.2	22.2	24.2	22.2 %

(Note: these are cumulated percentages.)  
(Source: 1980 survey)



WATER: Both washing and drinking water are carried up from the Melangit river a little to the west of the centre of the village. The drinking water is taken from a spring next to the river and fetches a higher price than river water when sold by the girls and women whose occupation it is to carry such water in plastic buckets to the village for sale to the village inhabitants.

SAWAH (Wet rice land): The two areas which make up the village, namely, Banjarangkan and Koripan, differ quite visibly in terms of the apparent wealth of the inhabitants as reflected in household construction, and particularly in the appearance of the temples and the Bale Banjars (meeting halls). This is partly for historical reasons, the landowning royal families having lived in the village of Banjarangkan, which now is the administrative centre of the kecamatan, and also because the sawah is well supplied with water.

The main subak (irrigation society) associated with the village of Banjarangkan is Subak Delod Banjarangkan, which at 282 Ha. is the largest in the kecamatan, and well supplied with water from dam (bendungan) Delod Banjarangkan. As a result of this adequate water supply, the cost of class I sawah in this subak is between Rs 100,000 and 150,000 (US\$ 160-240) per Are (100 sq. metres). This can be compared to sawah in the neighbouring villages of Tusan and Bakas which do not have a satisfactory water supply and where the best sawah sells for between Rs. 40,000 and 70,000. The fact that water supply in Banjarangkan is not totally satisfactory is reflected in the fact that class I sawah in Takmung, the next village a few Km. to the east of Banjarangkan, sells for Rs. 200,000 per Are as the water supply is even better.

TABLE 4.6  
LAND OWNERSHIP OF SAWAH BY RESPONDENT OR HER HUSBAND,  
ACCORDING TO VILLAGE.

SAWAH OWNED	VILLAGE			
	BANJARANGKAN	TUSAN	BAKAS	COMBINED
No sawah	75.4	68.2	47.6	67.1%
1-19 Are	9.6	9.6	26.4	13.1%
20-29 Are	4.5	8.8	14.7	8.1%
30-89 Are	8.1	11.2	10.9	9.8%
90+ Are	2.4	2.2	0.4	1.9%
TOTAL	100 %	100 %	100 %	100 %

Of those owning sawah:

1-19 Are	38.8	30.2	50.8	39.9%
20-29 Are	18.2	27.6	27.7	24.6%
30-89 Are	33.1	35.3	20.7	29.6%
90+ Are	9.9	6.9	0.8	5.9%
TOTAL	100 %	100 %	100 %	100 %

(Source: 1980 survey)

TABLE 4.7  
LAND RENTAL OF SAWAH BY RESPONDENT OR HER HUSBAND,  
ACCORDING TO VILLAGE.

SAWAH RENTED	VILLAGE			
	BANJARANGKAN	TUSAN	BAKAS	COMBINED
No sawah	74.8	63.0	59.3	67.6%
1-19 Are	6.5	3.8	16.5	7.7%
20-29	8.9	12.1	17.7	11.9%
30-89 Are	9.4	19.7	6.5	12.2%
90+ Are	0.4	1.4	0	0.6%
TOTAL	100 %	100 %	100 %	100 %

Of those renting sawah:

1-19 Are	25.9	10.3	40.5	23.7%
20-29 Are	35.4	32.7	43.5	36.6%
30-89 Are	37.1	53.3	16.0	37.7%
90+ Are	1.6	3.7	0	2.0%
TOTAL	100 %	100 %	100 %	100 %

(Source: 1980 survey)

Data in Table 4.6 indicate that the proportion of Banjarangkan residents owning some sawah is low at 24.6 percent, compared to Bakas with 52.4 percent. However, on examining the area owned by those who do own sawah, it can be seen that those in Banjarangkan tend to have larger plots, for example ten percent own 90 or more Are compared to less than one percent in Bakas.

The pattern of sawah rental is similar in the three villages to the pattern of ownership except that the proportion in Bakas who were renting (40.7 %) is not as large as the proportion owning sawah (52.4 %) (Table 4.7). It can be seen in Table 4.8a that the proportion of farmers who own sawah is greatest in Bakas (58.1 % compared to 40.4 % and 49.6 % for the other two villages), even though their plots are smaller, on average, than those in the other villages.

The type of rice grown in subak Delod Banjarangkan is virtually all 'Beras Baru' or the new high yielding varieties, usually IR-36, (some P-4; P-5; P-30; IR-28). There is one rice slip (rice hulling factory) in Banjarangkan requiring only about three men to operate it.

OCCUPATIONS: the occupations available for males are predominantly agricultural, either working their own land or sharecropping someone else's land or simply working as a cash paid farm labourer (see Tables 4.8a and 4.8b).

TABLE 4.8a  
HUSBAND'S PRIMARY OCCUPATION, ACCORDING TO VILLAGE.

OCCUPATION	VILLAGE			
	BANJARANGKAN	TUSAN	BAKAS	COMBINED
Farmer*	31.7	36.4	74.5	42.4%
Labourer	33.3	36.2	10.8	29.5%
Government employee	15.4	10.1	8.2	12.1%
Driver/conductor	5.1	3.0	0	3.4%
Carpenter	2.4	4.1	0.4	2.6%
Private employee	2.4	1.9	1.3	2.0%
Businessman	0.4	3.0	0.4	1.3%
Rooftile maker	1.2	1.4	0	1.0%
Other	8.1	3.9	4.4	5.7%
* % Farmers owning sawah (Source: 1980 survey)	40.4	49.6	58.1	49.7%

TABLE 4.8b  
HUSBAND'S SECONDARY OCCUPATION, ACCORDING TO VILLAGE.

OCCUPATION	VILLAGE			
	BANJARANGKAN	TUSAN	BAKAS	COMBINED
Labourer	11.2	10.4	21.1	13.1%
Farmer	6.1	8.2	8.2	7.3%
Government employee	0.2	0.3	5.2	1.3%
Carpenter	0.8	0.8	3.0	1.3%
Businessman	0.8	0.8	0	0.6%
Craftsman	0.2	0.3	0.4	0.3%
Other	4.7	4.4	1.0	3.7%
No second occupation (Source: 1980 survey)	76.0%	74.8%	61.0%	72.4%

TABLE 4.9  
RESPONDENT'S OCCUPATION, ACCORDING TO VILLAGE.

OCCUPATION	BANJARANGKAN	VILLAGE TUSAN	BAKAS	COMBINED
(a) % Who do any work which brings them an income:	57.9	72.9	63.2	64.1%
(b) % Who do any REGULAR work which brings an income:	35.2	34.0	30.3	33.7%
Of those working (a):				
% in farming (58.2% regular)	8.8	12.4	6.2	9.6%
% labouring (33.6% regular)	47.7	45.1	61.0	49.5%
% shop seller (94.7% regular)	3.5	3.0	0.7	2.7%
% market seller (70.9% regular)	27.0	32.0	23.3	28.1%
% Govt. employee (96.0% regular)	4.2	3.4	2.7	3.6%
% making mats/oil/ bricks/cotton etc. (81.0% regular)	6.0	0.4	2.1	3.0%
% travelling seller cakes/water/cotton (77.8% regular)	2.5	3.0	2.1	2.6%
(Source: 1980 survey)				

There are also substantial numbers of labourers working outside agriculture: in construction, road maintenance, quarrying, and roof-tile manufacture. However, as the administrative offices are located in the village, over fifteen percent of the males are employed in the civil service. Also there are significant numbers employed privately in the numerous small businesses and enterprises such as bemo (taxi-van) driving along the busy route from Klungkung to the capital, Denpasar.

For the women of Banjarmasin, the description of economic activity is less straightforward. Table 4.9 indicates that 57.9 percent of the women do some work which brings them an income, but only 35.2 percent are working regularly. Thus while the major occupation group is labouring (47.7 %) only 33.6 percent of these women are working regularly. The rest pick up work periodically, at harvest time in particular. After labourers, next in importance is the category pedagang or trader (27.9 %), however most of these are either women who work each day at some kind of street stall selling a great variety of goods (such as cigarettes, cool drinks, fruit, headache tablets, offerings or peanuts) or they may be women who set up a stall at the market which is conducted every three days, usually in the banjar hall. On the other two days these women may follow some other occupation or they may work around the houseyard. As might be expected, the most regular type of occupation is civil servant (96.0 % regular), although even in Banjarmasin only 4.2 percent of women are employed in this way.

One alternative source of employment in the village after agriculture is work in the factories which make roof tiles (genteng). There are three of these factories in Banjarmasin where the soil is suitable for making these tiles(3). In 1979 this industry employed only seventeen individuals according to the Potensi Desa, the local record/register of facts and figures about the desa, compared to 1,200 employed in farming. This figure seems much too low based on observations at the factories, nevertheless there is not a great

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(3) Each man makes about 300 tiles per day, which sell for Rs. 20 each. The salary is Rs. 10,000/month, a fairly typical rate for such work, though clearly only a small part of the profit of the factory owner.

potential for absorbing unemployed young people. Many young people in the later stages of their schooling respond to questions as to their post-school future by saying that they will try to find work in the genteng (roof-tile) factories as they cannot possibly buy any land. They may, however, hope to inherit part of the family land at a later time, the system of inheritance (waris) being equal division of the father's land amongst all the sons and any daughters who are not yet married and are still living with their parents.

#### 4.2.1.2 TUSAN VILLAGE

Like Banjarangkan, the second village in the study area, Tusan (pop. 2,973 in 1980), is now made up of two formerly separate villages, Tusan and Sema Agung (the Great Cemetery!). The three banjars that make up 'down-town' Tusan are virtually contiguous on their southern borders with the main western part of Banjarangkan. There is no open space between these two villages where they meet on the Tohpati road which heads north from Banjarangkan. The inhabitants of the eastern part, Sema Agung, are relatively poor in comparison to the villagers to the west, although even in west Tusan the water supply for the sawah is inadequate, as indicated by the price differentials between Banjarangkan and Tusan (see above).

SCHOOLS: There are two schools in Tusan, both of primary standard, one S.D. Negeri and one S.D. Inpres. There are no secondary schools, secondary students having to attend the S.M.P. (junior) in Banjarangkan, or the S.M.A. (senior) in Klungkung.

The educational attainment of both the respondents (Table 4.4) and their husbands (Table 4.5) is a little less than for residents of Banjarangkan village, and a little more than the residents of Bakas village.

OCCUPATIONS: As in Banjarangkan, the primary occupations for males were in agriculture (36.4%) and as labourers (36.2%), followed by work in the civil service (10.1%). As in Banjarangkan, there is a wide range of minor occupations which absorb the remaining 17 % of the men.

For the women, the primary source of employment is labouring, both regular and irregular. There are a number of women employed regularly in Tusan in the asphalt works which supplies materials for road maintenance in the surrounding area. The second major source of employment is the three day market which serves the surrounding district (including Banjarangkan). Apart from the market stalls and the regular sellers whose modest stalls line the main street, the market place becomes filled every three days with women surrounded by baskets of fruits, vegetables, spices, fish, cooking utensils, etc.,

There is also a certain amount of work for the women (and children) in the dry-land fields which are common in Tusan and Bakas. Farming, however, does not absorb as many women as it does in Bakas, as only 32 % of the Tusan couples own sawah, and 27 % rent sawah. These two villages currently have to share limited water from a common source and overcome this problem by alternating the supply, one village receiving all the water throughout one year, the other village receiving none at all until the following year when they swap. When no water is available for the village the residents must plant dry crops such as dry rice, sweet potato, cassava, corn, peanuts, and



certain leafy vegetables in the dry rice fields. This type of food production does not involve the same kinds of organization as does wet-rice production; for example the planting and harvesting or picking of these crops is done by members of the family, including children, and not necessarily by special groups at particular times.

It is intended that a larger capacity dam will eventually be built on the central river Bubuh to enable both Tusan and Bakas to receive water simultaneously throughout each year, or part of a year, sufficient for both to grow wet-rice.

BANJARS: the two modern banjars in Tusan have combined resources and built a fine, modern Bale Banjar (meeting hall) which is also used by the third banjar Tusan Kangin (east), although it still has its own Bale Banjar which stands dilapidated and unused.

Situated about half a Km. to the east of the main Tohpati road, the banjar of Sema Agung is relatively isolated and rather poor. While its subak receives water from a separate dam (Dam Sema Agung) this is insufficient to irrigate much of the adjacent land which is planted with vegetables of various kinds as described above. Banjar Sema Agung has its own rather modest Bale Banjar.

#### 4.2.1.3 BAKAS VILLAGE

The village of Bakas lies 3.5 Km. north of Banjarangkan and 3 Km. north of Tusan on the Tohpati road. It is the smallest of the three study villages having a population in 1980 of 1,744. Bakas must share irrigation water with Tusan and hence relies on growing a variety of vegetables rather than producing rice from sawah every

year. There is, however, a rice slip for hulling the rice when it can be grown. There will be further discussion later of the significance of growing crops other than rice in the context of the activities of children (chapter 7).

OCCUPATIONS: Bakas is almost entirely a farming village. Three-quarters of the respondents' husbands work as farmers, even though they don't all own sawah, and a further 10.8 % work as labourers either in construction or on someone else's farm. There are fewer alternative occupations in Bakas compared to the villages closer to the main road. There is, however, a small number of civil servants (8.2 %), mainly working in the Perbekel's office.

Bakas does not have a large market every three days as does Tusan, although there are some small street stalls selling the usual goods such as fruit, cigarettes, drinks, etc. These occupy less than one third of the local women (Table 4.7).

Although all three villages are only a few kilometres from the southern coast of Klungkung regency, virtually none of the men work as fishermen, this being restricted to those who live in the villages that actually border the coast.

SCHOOLS: There is only one primary school in Bakas. This does not appear to have affected educational attainment for males as much as for females. The proportion of husbands obtaining at least some primary schooling was close (75.7 %) to that for the other villages. However, the proportion of women having received some primary schooling was only 32.0 %, considerably lower than in the other two villages (see Tables 4.4 and 4.5). For both respondents and their

husbands, the proportions going on to higher levels of schooling were lower in Bakas than in either of the other villages.

#### 4.2.2 FAMILY PLANNING

The villages of Banjarangkan and Tusan are both served by the same male fieldworker, (M.B.), who lives in Banjarangkan and is also responsible for the village of Negari in the south, between Banjarangkan and the sea.

The village of Bakas is served by a different male fieldworker, (M.P.), who is also responsible for the villages of Nyalian, Getakan, and Aan. This fieldworker is a resident of Bakas and has to work largely out of his home as the clinic in Bakas is a satellite clinic and open only occasionally. The Bakas clinic shares a nurse with the large clinic in Tusan.

There is an Elco Register for each of the banjars, and this is held by the Kelian Dinas although the fieldworker uses these registers regularly in order to write his three-monthly report, summarizing the current contraceptive status of the eligible couples in his area.

### 4.3 SURVEY METHODOLOGY

#### 4.3.1 STUDY POPULATION:

As indicated in chapter 1, the purpose of this study is to examine the role of family planning in the apparent fertility decline in Bali, and to try to elucidate the factors involved in the dramatic uptake of modern, program family planning at the village level. As the purpose is not to estimate levels of family planning usage or fertility for all Bali, there is no attempt at achieving a representative random sample, thus a village level study is considered satisfactory.

However in order to have a sufficiently large study population for obtaining reliable fertility estimates (for the past as well as present) it was considered necessary to survey about 1,000 respondents, the definition of which was any ever-married woman between the ages of fifteen and fifty four years. The purpose of including the five year age group beyond the normally accepted reproductive span is to include some women who had completed most of their childbearing before the introduction of the family planning program. It was expected that amongst a study population of this type, there would be very few divorced women, though a number of widows. As a result of this it was decided to cover the three contiguous villages of Banjarangkan, Tusan and Bakas having between them 932 eligible couples (currently married women 15-44), according to the BKKBN registers, plus a number of women who since they were first entered in the registers had become ineligible by exceeding the age limit, or through widowhood or divorce. By including these women, as well as instructing the interviewers to inquire if the household

included any other ever-married women 15-54 when they were interviewing, it was considered that close to 1,000 respondents would be available for interview.

The usual method of locating and enumerating potential respondents is to conduct a census of the study area, visiting each household and enquiring as to the characteristics of the occupants. Thereafter all occupants fulfilling the requirements to be a respondent would be revisited by the interviewing team with the survey questionnaire. However, in this case, it was not considered necessary to conduct a separate preliminary census as there were what appeared to be complete registers of all eligible couples residing in the villages (banjars) compiled first in 1976 by the Kelians Dinas and the PLKB's for the operation of the Sistem Banjar project of the family planning program. It was assumed that these registers were complete for eligible couples (being all currently married couples where the woman's age is between fifteen and forty-four years), thus the only potential respondents for this survey who would not be included in the registers would be those women who had been widowed or divorced before 1976 and who were under age fifty at that time. Data on current marital status from the 1973 Fertility-Mortality Survey suggested that this would amount to fewer than five percent of the total ever married women aged between 15 and 54 in 1980. Thus for the reasons that such a pre-survey census would probably be little more comprehensive than the existing registers, and that time and finances were somewhat limited (see next section), it was decided not to conduct a census of households before the survey.

A further reason for using the Elco Registers was that they were directly linked to the detailed maps of the banjars that had been compiled by the Kelian Dinas of each banjar and the corresponding fieldworker, and it was intended to use these maps to locate the respondents. Also one of the main aims of the survey was to evaluate the reliability of the family planning data, in which case the intention was to survey those couples who were included in the Elco-Registers and compare their current family planning status from the survey with that recorded in the registers.

#### 4.3.2 TIME RESTRICTIONS:

As mentioned above the time available to conduct the survey was somewhat limited. This was due to the prospect of the 1980 National Census which would be in the field from September 20th to October 31st, and it was believed that the Central Bureau of Census would not appreciate having a survey running concurrently. Also, of course, it is one of the universal unwritten rules of survey methodology that one should not be in the field during such an important event as a national census, or perhaps even in the month or two preceding it. Hence it seemed essential to have the survey completed by the end of August at the latest.

Another limitation arose close to the time of surveying and that was related to the change in the timing of the academic year whereby the local university (Udayana) in Denpasar was in the process of changing from an academic year linked with the calendar year, to one linked to the academic year of United States and Europe which ends in June. This affected the survey as all interviewers were students at

that university and for some time before the survey it had been understood that those 'Scripsi' students writing theses would be free for the entire calendar year. However this proved not to be the case, and they were obliged to return to lectures at the end of July. This effectively limited the survey period to the month of July. It was not feasible to commence earlier as time for preparation was insufficient. The writer arrived in Bali in mid-February, and a certain amount of time was required to become accustomed to the area; to select the study area; to find suitable interviewers; to prepare maps and lists of respondents; to pretest the questionnaire after translating it; print the questionnaire; and finally to train the interviewers. Considerable time was also required for the administrative side, seeking permission from all levels of the bureaucracy from the Governor down to the banjar heads.

#### 4.3.3 INTERVIEWER TEAMS:

Because of the time restrictions it appeared to be necessary to have a total of eighteen interviewers, as opposed to the small team of eight that had been planned in the early stages. On the basis of discussions with other members of the Demography Dept, A.N.U., who had conducted surveys in Indonesia it appeared that an interviewer might average a little less than three interviews per working day and they would normally work six days per week, totalling about fifteen interviews per week over four weeks of the month of July, or sixty each. Hence for a total of 1,000 respondents it would be necessary to use eighteen interviewers. Because of these numbers it was decided to use three supervisors, one for each team of six interviewers. On this basis it was possible to allocate a team to each of the three

villages; each team working simultaneously and having an allocation of some 300-335 respondents to interview during the time available.

The interviewers were a mixture from the Medical Faculty (4th and 5th year students; 1 female, 10 males) and from the Arts Faculty - Department of Anthropology (4th year or Doctorandus students, roughly equivalent to Master's students; 4 females, 2 males); and the supervisors were one lecturer from the Anthropology Dept., and two lecturers from the Dept. of Public Health, in the Medical Faculty (one was the head of that Dept.).

The system of payment of interviewers was not on the basis of a fee per interview as this is normally believed to lead to excessively fast and careless interviewing, but rather on the basis of time. After an estimate had been made of the number of interviews that they could complete at a comfortable pace, with hopefully some inducement to probe behind superficial responses and follow up interesting statements, they were told that they would be paid a fixed amount for one complete month and they were expected to complete their quota of interviews in that time. If they wanted to work seven days per week and finish earlier, or work more than six hours a day that was their decision, although any unsatisfactory questionnaires would be returned and would have to be corrected by the interviewer in his/her own time.

In practice the system turned out to operate little differently from that of payment per interview as they received a fixed amount of money for a fixed number of interviews and the time taken was up to them.



#### 4.3.4 QUESTIONNAIRE DESIGN:

The core of the questionnaire is the woman's pregnancy history which takes the relatively new form of a Life History Matrix (Lauro,1979:134). There are also sections on other relevant factors.

The sections are :

- 1) economic background;
- 2) education of both husband and wife;
- 3) knowledge and ever-use of family planning;
- 4) marriage, pregnancy and family planning history using the Life History Matrix; and exact ages of children under five years;
- 5) family planning - attitudes, ideal family size, and side effect of contraceptive use; and finally
- 6) value of children.

These sections will now be outlined in more detail:

- 1) The economic section does not include any questions on income as this variable is notoriously difficult to measure reliably unless a great many details are collected. For this study it was not considered worthwhile to devote such an amount of interview time to gathering this information, so indirect measures of economic status were used: household ownership and possessions; house structure; occupation of both husband and wife; food consumption; and land ownership and rental.

There were still some problems with these measures as the concept of 'ownership' of an object is often rather flexible, especially within the household. The exact amount of time spent in a particular type of work was also sometimes quite difficult to determine; for example, a woman might 'regularly' sell fruit in the market but if the market is held only once in three days the definition of 'regular' in

this case will be different from that for a woman who sells drinks every day in a street stall.

2) Education of both husband and wife is asked in terms of the exact level of schooling completed. Anyone who had primary school or less was asked a separate question as to whether they could i) read, and ii) write, for example a simple letter.

3) The section on knowledge and ever-use of family planning was derived directly from the Indonesian version of the World Fertility Survey wherein methods, both modern and traditional, were listed singly, with a detailed definition which the interviewer would read if the respondent was not familiar with the names (eg loop or spiral). The respondents were asked if they had ever heard of the method, and only if the answer was 'Yes' were they then asked if they had ever used such a method. There was an unexpected slight problem in a few cases as some women did not recognize any of the names of the various methods but at the same time said they were using family planning - only after questioning in regard to the location of this unseen object was the interviewer able to determine which method it was (this occurred only with the loop).

Another problem which arose, and which was more a shortcoming of the interviewers, was that while some of the methods were well known in Java, for example abstinence and withdrawal, they were supposedly not so in Bali. Some of the interviewers were rather reluctant to even suggest that a Balinese couple would consider practising abstinence or withdrawal, and it was difficult to ensure that the interviewers inquired about one or both of these methods. Interpretation was also sometimes a problem where, for example, it is

customary for a Balinese woman to avoid intercourse for 42 days after the birth of a child as she is 'unclean', and although this is technically 'abstinence' it was rarely mentioned by either the respondents or the interviewers yet it is practised by virtually all (Hindu) women. In the World Fertility Survey, abstinence was defined as going without sex for several months or longer to avoid getting pregnant, thus the abovementioned case falls outside this definition.

4) The next section on marriage, pregnancy history and family planning history was somewhat difficult to organize in the questionnaire as the Life History Matrix (LHM) approach is rather new and experience as to how best to coordinate instructions with the matrix chart itself is limited (Lauro, D., 1979:134ff; Perlman, J.E., 1976:265-7). In the end there were four pages of instructions on how to fill out the LHM for the respondent and another four pages for filling out the second chart for children currently under five years of age (L5Y). Included within the first set of instructions were some questions regarding polygyny of the husband, but as the interviewers very quickly learned how to fill out the LHM they did not thereafter they did not refer to the instructions. This meant that they often skipped over those pages and consequently missed asking the questions on polygamy, and more importantly, on current pregnancy status. In fact some 30 respondents were not asked the pregnancy status questions (out of 1,088). These lessons indicate that the instructions for the LHM should be in a separate booklet for the interviewers (handbook) which they would use only until they became familiar with the system of completing the LHM and the L5Y charts. This would also save paper and weight in the body of the questionnaire.

The layout of the LHM is a large chart 35 cm. across by 25 cm. down (see APPENDIX I).

--The first column down the left side was 'YEAR OF EVENT' and started at the top with the current year 1980 descending in single years to 1945 at the bottom. The first event recorded was first marriage, assuming no premarital births.

--The second column was for order number of each marriage (if more than one) and each pregnancy.

--The third column was for outcome of the pregnancies - whether livebirth; stillbirth; abortion (spontaneous or induced), also any notes about divorce or widowhood or separation.

--The fourth column was SEX of the livebirths.

--The fifth column was BIRTH ORDER NAME of the liveborn children, and as it turned out, most of the stillbirths. This is an unusual feature which is rather specific to Bali where virtually all live- or stillbirths are given a birth order name at the time of delivery. It was intended to utilize this custom to overcome memory lapse by older women in particular, and for stillbirths, and indeed it proved to be very useful in the interview for detecting children who had not been mentioned by the mother. The names were basically the repeating cycle of four referring to first, second, third and fourth born children, as explained in chapter 2.

The sixth column inquired about the current status of the liveborn children, ie., were they currently alive or dead. If alive, their current age was noted in the adjacent column seven; if no longer alive their AGE AT DEATH was noted in column 9, on the same row as their birth. Column 8 was not in fact used. Having completed the pregnancy history for the respondent, the interviewer had then to

complete the family planning history - paying special attention to any long birth intervals (more than three or four years) but covering all the birth intervals. Next to the FP method used (column 10) was a column (11) where the interviewer noted the reason for stopping use of the method if that had occurred, and in the next column (12) the length of time the method had been used, again as a cross-check against the dates.

The first item established is the year of birth of the respondent, and current age, again as a cross-check (4). This date, along with the dates of the pregnancies, was determined by means of a calendar of events which had been compiled before the survey. These events ranged from important political events at both the local and the national level, to other notable events such as volcanic eruptions. After the pretest it was decided that there was no need to include events for the majority of years back to the beginning of the century, in the hope of striking one which coincided with the year of birth of the respondent or her children. Rather it is preferable to have relatively few events but ones of great significance to the local people, and have the interviewers perform the required mental arithmetic to determine year of birth from information on age at the time of one of these significant events. For example a 22 year old Klungkung woman (in 1980) is less likely to know that she was born in the same year that the military took control of the government in Jakarta, than that she was about five years old at the time (1963)

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(4) This was a check against the 'year of birth' and proved useful in indicating any problems the interviewer had with mental arithmetic., and ensuring that they checked both current age (preferably against current year of schooling for children), and year of birth for which there was an Events Calendar available (SEE BELOW).

that the sacred mountain of Gunung Agung erupted during the very important (100 year) ceremony of Eka Dasa Rudra. Or that she had just started school (age 7) at the time the last great king/Raja of Klungkung was cremated in a spectacular ceremony in 1965.

After the Life History Matrix was complete, if there were any children born during the last five years (ie. since mid 1975) the interviewer was required to turn to the 'Last Five Years' chart under the LHM and complete the details for these 'under-fives'. The aim was to utilize the local calendar systems to try to obtain very accurate data (to the day) on the date of birth of these children. This was done by first inquiring the current age of the child in terms of Balinese otons (each of 210 days or six 35-day months) and Balinese months. Next to this 'current age' in column 1, information on the day of birth according to the seven-day week and the five-day week was noted, then the name of the week according to the Wuku calendar of thirty weeks (see Appendix II). It is this system of noting day of birth that is used by the Balinese for determining when the various life ritual ceremonies of the child should take place, and the names are remembered for quite some time after birth as these ceremonies are observed rigorously for the first three otons (roughly two calendar years), and sometimes after that.

The interviewers were supplied with a condensed form of the calendar which enabled them to cross-check the internal consistency of the days of the 7 and 5 day Wuku weeks with the name of the week. The chart also included the most important recurring dates in the 30 week calendar with which virtually all Balinese are familiar. These are the days when offerings must be made to the vast array of spirits and

gods which inhabit, or periodically visit, Bali.

The Last Five Years chart also included a question on age at weaning and some questions relating to those children who have been bottle-fed. In fact there proved to be few such children. Finally, there was a question as to the age of the youngest child when the respondent commenced use of contraception (if she had ever done so).

Having established with the LHM whether or not the respondent had ever used any form of contraception, the interviewer moved on to section 5 which examined the experience of family planning use in more detail.

5) The section began with some questions aimed at elucidating the situation in the past (5), well before the family planning program came into being. It appears though, that the question about ideal family size 'when the respondent was still a little girl' was not always interpreted as intended but rather was answered with a number which equalled the total number of brothers and sisters of the respondent plus the respondent herself.

There was also a question concerning what methods of controlling fertility, either by preventing pregnancy or aborting pregnancies, were known in the times before the family planning program. The results suggest that there was little knowledge of such methods in those times - except for herbs and massage abortion by some women (see chapter 6).

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(5) The question was the result of the suggestion that the naming system reflected a long held belief that three or four children was the ideal.

These questions were followed by a rather detailed battery of questions to respondents who had ever used either the IUD or the pill (or both). This was expected to be about 80 percent of those who had ever used any modern method. These questions inquired as to the reasons why the couple had initially accepted family planning; what role government information/encouragement had played in the decision; what role other people had played - who the important people were, and what they had said to influence the decision.

There were detailed questions concerning the source of the IUD or pill; who had inserted the device; what warning was given of possible side effects; what side effects, if any, were experienced by the woman; how these problems affected her daily life; what did she do about them? - if she stopped using the method what was the reason? If she did not stop using it, did she do anything to alleviate the problem? For the pill there were also questions regarding supply of the monthly cycles.

6) The section on value of children inquired about ideal family size at the time of marriage or before any children were born; and desire for more children - which sex, how many, and why; - if not, why not? There were also questions concerning the costs of rearing children now compared to former times; which items in particular are significant expenses in the rearing of children; what was the expenditure on the most recent first oton ceremony (after 6 Bali Months - or 210 days); is there any selectivity in educating the children; which level of schooling is desired for boy and girl children separately. This was followed by what type of work is hoped for in the future for boys and girls. Then there was a section on the 'benefits' of children,



concentrating on the ways in which boys and girls assist their parents in daily life, as well as what expectations the parents have for the future as to ways in which their children might help them, financially or otherwise. This section, and the questionnaire, was completed with a question probing the hypothetical response of the parents if the child were to refuse to fulfil the parental expectations.

#### 4.3.5 INTERVIEW TIME

After the interviewers had become familiar with the questionnaire, the interview time could be as short as fifteen minutes if the respondent was newly married, did not yet have any children and had never used any contraception. However for one respondent who had given birth to sixteen live born children, had used contraception, and who had little idea of her age, the interview took close to one and a half hours. The normal time was 30-40 minutes.

#### 4.3.6 TRAINING OF INTERVIEWERS

The training of the interviewers was conducted over four days at Udayana University in Denpasar, and consisted of a description of the study and its aims etc.; a description of the area; the number of potential respondents and the work required from each interviewer; plus selection of the three teams by the supervisors. This was followed by familiarization with the questionnaire and interpretation of the questions, plus the additional material in the form of events calendar and birth-date chart.

The important part of the training was when this researcher and the three supervisors took the roles of interviewer and a variety of fictitious respondents whose life histories became increasingly complex in proceeding from Sample Respondent A to F. The intention was that the interviewers should complete blank questionnaires as if they were conducting a genuine interview, these were then checked for errors and misinterpretations. This sequence of sample respondents made it possible to include quite a variety of possible circumstances which the interviewers might meet, such as a list of birth order names which did not include any third born child, or inconsistencies between a child's stated age and its current stage of schooling, or a very long interval between two births where the woman was living with her husband but claimed not to be using any birth control method.

After four such sample respondents it was decided that the interviewers were ready, and the survey got underway a few days later, although checking of the questionnaires was very thorough, particularly in the initial period.

The interviewers went into the field with the events calendar; the birth-date chart; letter of introduction; as well as a map of the banjar in which they were to work, and a list of names of the eligible couples (both husband and wife) linked to the household number on the map. The maps were copies derived from the banjar maps which had contained details as to the current contraceptive or pregnancy status of the eligible couple, but in the copying this information was deleted to avoid giving the interviewer any preconceptions concerning the couple. These maps and the associated names made the locating of couples much easier than it would otherwise

have been. The interviewers were also encouraged to inquire whether there were any other couples living in the compound who might fit the definition of 'eligible' but were not included in the Elco Registers. This in fact proved to be the case with some two hundred couples being detected and interviewed who were not on the BKKBN lists for one reason or another. This will be discussed later in this chapter.

Because of the physical proximity of the households within the banjar , and the system of maps and associated lists of potential respondents, the rate of interviewing was considerably faster than had been anticipated. Rather than the expected average of about 2.5 interviews per day, the rate proved to be about five interviews per day with considerable variation amongst different interviewers. This was despite the fact that many of the interviewers preferred to work in pairs, although this often meant that each visited an adjacent house at the same time, or they interviewed two respondents in the same household at the same time, but travelled together between households, particularly if this involved travel on a motorbike.

#### 4.3.7 PROBLEMS DURING INTERVIEWING

These fell into a number of different categories:

a) Because so many Balinese women work outside the home there were some difficulties in locating respondents, necessitating several return trips before finally meeting with the women. The women also went daily to the river to bathe and wash clothes.

b) As mentioned earlier, in regard to the questions on knowledge of the various contraceptive methods, there were some questions which certain interviewers were reluctant to ask and instead assumed an

answer - usually that the woman would be ignorant of the method (especially if she was uneducated). There was also some evidence from the pattern of answers to certain more abstract questions, such as 'do you recall what reasons the Government gave as to why couples should enter the Family Planning program', that interviewers at times prompted respondents to answer in a certain way - this applied to the more conscientious interviewers as well as to those who did not probe very deeply beyond the superficial answer. There seemed to be a hesitation to write that the respondent did not hold a firm opinion or was indecisive.

c) This brings us to the next point, namely that there were certain conceptual questions which seemed to hold little meaning for the respondents and which, if I had been more familiar with Balinese culture before devising the questionnaire, possibly would not have been included, certainly not in the same form. An example is the question which asks the respondent to think back to the time when she had just married and try to recall the number of children that she hoped to have during the following years (ie., that she considered ideal for herself and her husband without considering the number of children she actually had). This involves both the ability to mentally shift both back and forward in time - something which seems difficult and unusual for Balinese, quite apart from the difficult concept of ideal family size.

d) The next difficulty occurred in the actual interview situation where frequently other members of the respondent's family were present and attempted to answer for the respondent; this was particularly so when a mother-in-law was present. Husbands also spoke for the wives

at times, although this was not such a problem as the husband was usually not at home during the interviewing. Also husbands usually allowed the wife to answer the more personal questions regarding the experience of side effects while using the IUD or the pill. An exception to this was a husband who had been village headman (Perbekel) at the time the family planning program had been initiated in Banjarangkan and who had nothing but praise for the program in the area. He answered most of the questions for his wife and showed some impatience with those inquiring as to possible side effects of the IUD which she had been using for some time. She was given no opportunity to answer for herself and there was no way of knowing what her thoughts were on the matter. She did, however, come into her own when naming her own children as the husband had four other wives and the sixteen (or was it seventeen?) children were something of a problem when it came to names, let alone recalling which mother had produced them!

The data on interval of use of contraceptive methods do not include month in which the respondent began use, only the year. This limits the analysis by excluding precise determination of continuation rates. However such data were considered to be probably unreliable unless reference was made to the BKKBN Elco registers.

#### 4.4 EVALUATION OF THE FAMILY PLANNING DATA

There are two basic sources of data concerning current usage of family planning and new acceptors. The first is the quarterly Laporan Sistem Banjar (Banjar System Reports) published by the BKKBN provincial office in Denpasar, and based on the reports filled out by the fieldworkers from the Elco-Registers kept at the banjar level. The second source is the 'Feed-Back' data, published by BKKBN central office in Jakarta, which is based on logistic information regarding numbers of pill cycles, IUDs, condoms, etc., that have been distributed to supply outlets throughout the province during the period concerned. Certain assumptions are made about continuation rates for the various methods, and reports on current stocks held by the clinics are supposed to be sent regularly to the regency office. The levels of current usage are estimated accordingly. These rates will be seen to vary somewhat from the current usage rates produced by BKKBN, Bali. The data from both sources are published down to the level of the kecamatan.

Initially, the two sources will be compared at various levels from province, kabupaten, down to kecamatan. Then the central office (Jakarta) data will be compared with the prevalence levels obtained by the 1973 F-M survey, and the 1976 World Fertility Survey. Finally, the BKKBN data from the registers for the surveyed villages will be compared with the prevalence levels obtained by the survey.

## 4.4.1 PROVINCE LEVEL DATA

For purposes of comparison the data from Jakarta will be averaged for the months of July, August and September 1980 to make them directly comparable in time with the BKKBN, Bali data.

TABLE 4.10

FAMILY PLANNING PREVALENCE LEVELS FOR ALL BALI, 1980  
FROM BKKBN, BALI AND JAKARTA.

	JULY-SEPTEMBER 1980	
	BKKBN, BALI	BKKBN, JAKARTA
Number of Elcos	301,248	---
Number of MWRAs	---	365,307
Number of Current Users:		
Pill	34,755	14,842
IUD	152,387	154,314
Condom and foam tabs	26,712	6,385
Sterilization	10,742	10,894
Injection	1,252	233
TOTAL	225,848	185,668
PREVALENCE RATE		
(Current Users % of ELCO/MWRA)	74.97 %	50.83 %

(ELCO: Eligible couple aged 15-44)

(MWRA: Married women of reproductive age, 15-44)

Source: BKKBN, Bali-Quarterly Report, Triwulan III, 1980.

BKKBN, Jakarta-Monthly Statistics.

The dramatic difference of 24 percent in prevalence rates between the two BKKBN sources is partly due to substantial differences (40,000) in estimated numbers of pill, condom and foam users, and partly due to a difference of 64,000 in the denominator, the eligible or exposed population.

The reasons for this latter difference in exposed population are unclear. In each case, they supposedly account for all currently married women aged 15 to 44, including those currently pregnant. The figure of 301,248 eligible couples used by BKKBN-Bali is equivalent to 12.9 % of their estimated population of 2,340,187 for that period. This estimate later proved to be about 125,000 short of the actual figure as obtained by the Census in Sept-Oct 1980 (ie., 2,469,724). On the other hand, the figure of 365,307 used by BKKBN-Jakarta, was equivalent to 15.6 % of the estimated 1980 population, or 14.8 % of the actual population. Both of these proportions are considerably lower than the 18 % of the total population that used to be used as a guide to the number of eligible couples in the population (BKKBN,1974:5). The assumed growth rate of the total population of Bali from 1971 was about 1.1 % per annum, a substantial underestimate considering the 1.8 % p.a. growth rate in the 1961-71 period, and the 1.7 % p.a. rate in 1971-80.

It is also worth noting the differences in pill (20,000), and condom and foam users (20,000), which are both very substantial. These differences may in fact be partly explained by the different approaches of the two BKKBN offices in estimating current use rates. In the Bali system a couple is registered as a current user as soon as they receive the first month's pill cycle, or half dozen or so condoms. The central office in Jakarta, however, estimates users on the grounds of 13 pill cycles used per year, or some number of condoms (eg., 72) used per year. This latter approach is retrospective in nature and may understate the true prevalence level a little, though not enough to explain these large differences.



Each month sources of contraceptives such as clinics fill in forms indicating the current levels of stock and how many items have been distributed or inserted during the previous month. BKKBN in Jakarta then convert such data into estimates of current users. The fact that in both sources the numbers of 'once-only' methods, ie., IUDs and sterilizations match up, supports this explanation for why the levels differ so greatly for pills and condoms. It is also probable that pill and condom acceptors are not immediately reclassified as drop-outs if they do not obtain their resupplies at the appropriate time. Partly this is because there are several sources from which they might obtain them, and partly because the effort involved in recruiting new acceptors means that fieldworkers try to remotivate the couples before changing the status of the couple in the register.

## 4.4.2 KABUPATEN LEVEL DATA

The data for Kabupaten Klungkung is for the third quarter (July-Sept.) 1980, from BKKBN Bali, but the data from Jakarta is for the month of July only (Table 4.11).

As above, the difference of 29 percent in prevalence rates is due to different estimates of the population at risk, and in the numbers of current users of those methods which require multiple supplies - condoms and foam tablets (difference of 3,000), and pills to a lesser extent.

TABLE 4.11

FAMILY PLANNING PREVALENCE FOR KABUPATEN KLUNGKUNG, 1980  
FROM BKKBN, BALI AND JAKARTA.

	1980	
	BKKBN, BALI (July-Sept.)	BKKBN, JAKARTA (July)
Number of ELCOs	18,245	---
Number of MWRA	---	23,970
Number of Current Users:		
Pill	797	408
IUD	7,635	8,341
Condom and foam tabs	3,684	610
Sterilization	350	226
Injection	143	0
TOTAL	12,609	9,585
PREVALENCE RATE (Current Users % of ELCO/MWRA)	69.1 %	40.0 %

Source: as for Table 4.10

## 4.4.3 KECAMATAN LEVEL DATA

As above, the data for kecamatan Banjarangkan from BKKBN, Bali, are for July-September 1980, while the data from BKKBN, Jakarta are only for the month of July 1980 (Table 4.12).

TABLE 4.12

FAMILY PLANNING PREVALENCE FOR KECAMATAN BANJARANGKAN, 1980  
FROM BKKBN, BALI AND JAKARTA,

	1980	
	BKKBN, BALI (July-Sept.)	BKKBN, JAKARTA (July)
Number of ELCOs	3,922	---
Number of MWRAs	---	5,333
Number of Current Users:		
Pill	116	32
IUD	2,234	1,984
Condom and foam tabs	349	41
Sterilization	8	10
Injection	0	0
 TOTAL	 2,831	 2,067
 PREVALENCE RATE (Current Users % of ELCO/MWRA)	 72.2 %	 38.7 %

Source: as for Table 4.10

The difference of 33 percent in prevalence rates is again due to the factors described above for the kabupaten and province level figures. The trend for the difference to increase in magnitude on focussing down from province level to kabupaten level to kecamatan level suggests that the survey area should be very suitable for investigating reasons for such discrepancies.

## 4.4.4 OTHER COMPARABLE SOURCES

For purposes of evaluation, we can look at previous surveys and compare the results with the data from BKKBN at the same time.

TABLE 4.13

COMPARISON OF BKKBN AND WORLD FERTILITY SURVEY  
FAMILY PLANNING PREVALENCE DATA FOR BALI, 1976.

	APRIL-MAY 1976 (BKKBN, JAKARTA)	%	WFS 1976
Number of MWRA	347,141		
Number of Current Users:			
Pill	10,922	3.1 %	5.5 %
IUD	91,257	26.3 %	26.1 %
Condom and foam tabs	4,677	1.3 %	4.2 %
Other modern	2,173	0.6 %	1.1 %
TOTAL	109,128		
PREVALENCE RATE		31.4 %	36.9 %

Source: as for Table 4.10

BKKBN's Sistem Banjar took some time to establish in all the banjars of Bali. It was not until the end of 1976 that all banjars were able to report regularly. At the time of the WFS, the second quarter of 1976 (April-June), the number of banjars reporting for the Sistem Banjar to the head office in Denpasar was 2,589 out of the total number of 3,708 at that time (70 %). The prevalence rates from these two sets of figures are very close, particularly in prevalence of IUD use. It is interesting that, in this case, the survey obtains higher rates than BKKBN-Jakarta for the other methods.

Data for 1973 allow comparison with the Fertility-Mortality Survey data, and also indicate the extent of variation that can occur within data from the same source.

TABLE 4.14  
COMPARISON OF BKKBN AND F-M SURVEY FOR BALI, 1973  
FAMILY PLANNING PREVALENCE

	F-M Survey, 1973	BKKBN, Bali	
	MAY	APRIL	MAY
Current Users : (Program methods)			
PILL	2.1 %	2.2 %	3.3 %
IUD	16.8 %	18.6 %	13.8 %
OTHER	1.2 %	0.2 %	0.9 %
TOTAL	20.0 %	21.0 %	18.0 %

Source: 1973 FM Report, Table VI.I, p.50.  
1973, BKKBN, Bali-Astawa et al., 1975:89.

It is not at all clear why the figures for IUD users differ so much as both the April and May figures are from the first two months of the same fiscal year. Because an 'Extra Drive' program to increase numbers of acceptors had been operating since December 1972, the acceptor rates were rather erratic around that time. For the first six months of 1973, the numbers of new acceptors were:

January - 25,078	April - 5,112
February - 31,463	May - 10,081
March - 40,544	June - 14,580

and if current user rates were calculated from the number of new acceptors, as they would have been at that time, these rates would be affected by the dramatic fluctuations in the monthly numbers of new acceptors. Thus it is conceivable that the May prevalence rates would be lower than the April prevalence rate because of the low number of acceptors in April. In broad terms, however, the F-M survey data are close to the BKKBN Bali estimates.

## 4.4.5 PREVALENCE RATES FROM PRESENT SURVEY

As indicated in the section of this chapter on survey area selection, the three villages of Banjarangkan, Tusan and Bakas were selected because together they formed an area which, according to BKKBN-Bali figures, was roughly representative (in terms of contraceptive practice) of the kecamatan of Banjarangkan; the kabupaten of Klungkung; and the island of Bali as a whole.

TABLE 4.15

COMPARISON OF FAMILY PLANNING PREVALENCE  
IN SURVEY AREA WITH PROVINCE, KABUPATEN AND KECAMATAN LEVELS, 1980.

PREVALENCE RATES (Per 100 Eligible Couples) (First quarter, 1980)	
a) Three survey villages	72.6 %
b) <u>Kecamatan</u> Banjarangkan	75.2 %
c) <u>Kabupaten</u> Banjarangkan	75.4 %
d) Province of Bali	75.9 %

Source: BKKBN, Bali-Quarterly Report, Triwulan I, 1980  
-Sistem Banjar Elco Registers.

Viewed separately, the three villages present a range of levels of contraceptive practice which had been considered useful in the selection, however, by the time the survey was conducted in July the figures had been altered somewhat as a result of a survey that BKKBN Bali, had conducted in the month of August to check and update their figures on numbers of eligible couples. Apparently BKKBN was concerned that the National Census to be conducted in the following months (September and October) might show that there were more eligible couples than had been registered by the BKKBN fieldworkers, and possibly some couples listed as current users who had dropped out unnoticed by the fieldworkers. In fact, for these villages the data

from the BKKBN survey proved to be different from that in the Elco-Register for the same year. The new data were incorporated into the registers in terms of updating the numbers of eligible couples but the data from the survey were not analysed for current user data, thus when more eligible couples were found the denominator increased while the numerator remained unchanged.

The fact that the second quarter for the village of Bakas had the revised population figures in it suggests that the fieldworker had not completed his report until after the August survey had been run, when he would have had access to the new figures. On the other hand, the fieldworker for both Banjarangkan and Tusan had probably finished his report for the second quarter before the August survey figures were available.

It is not clear why the total population figures for Banjarangkan dropped by 326 when outmigrants had not been of that order. It may be that the figures were altered as a consequence of the BKKBN survey in August, though the survey figures are slightly different again. The data from the national census in September 1980 showed that the previous figures for total population were more accurate than the BKKBN 'census' of August in Banjarangkan, although in Tusan and Bakas the figures from the survey were quite accurate.

The effect of this survey on the data used in calculating current usage rates can be seen from the changes resulting over the successive quarters of 1980 (Table 4.16).

TABLE 4.16

COMPARISON OF BKKBN FAMILY PLANNING PREVALENCE LEVELS  
FOR STUDY VILLAGES FOR QUARTERS OF 1980.

VILLAGE:	QUARTER OF 1980			BKKBN SURVEY	CENSUS
	FIRST	SECOND	THIRD		
<b>BANJARANGKAN:</b>					
Population	3,415	3,421	3,095	3,105	3,400
Eligible couples	400	400	421	435	
Current users	291	302	300	304	
Prevalence rates*	72.8%	75.5%	71.3%	69.9%	
<b>TUSAN:</b>					
Population	3,090	3,099	2,990	3,002	2,973
Eligible couples	319	319	360	357	
Current users	201	209	208	212	
Prevalence rates*	63.0%	65.5%	57.8%	59.4%	
<b>BAKAS:</b>					
Population	1,498	1,774	1,774	1,736	1,744
Eligible couples	207	200	203	190	
Current users	180	133	146	117	
Prevalence rates*	87.0%	66.5%	71.9%	61.6%	
<b>VILLAGES COMBINED:</b>					
Prevalence rates*	72.6%	70.1%	66.5%	64.5%	

(\*Prevalence rate = Current users as % of Eligible couples)

Source: BKKBN, Bali-Quarterly Reports, 1980.  
-Checking Feedback Survey.  
-1980 Census, village pop.



TABLE 4.17a

BKKBN 'SISTEM BANJAR' DATA, Third Quarter, 1980,  
METHODS USED BY CURRENTLY MARRIED WOMEN AGED 15-44,  
ACCORDING TO VILLAGE.

	VILLAGE			TOTAL
	BANJARANGKAN	TUSAN	BAKAS	
% ELCOs	<u>71.4%</u>	<u>57.7%</u>	<u>71.9%</u>	<u>66.5%</u>
Curr.Using FP				
IUD	67.0	48.6	58.6	
PILL	0.5	0	4.4	
CONDOM	2.4	1.1	5.9	
TUBECTOMY	0.5	7.2	2.5	
OTHER*	1.0	0.8	0.5	
NOT USING	28.6%	42.3%	28.1%	33.5%
No.ELCOs	421	360	203	984
Total Popn.	3,095	2,990	1,774	7,859

(OTHER\*:Vasectomy, foam tablets, injectables)  
Source: BKKBN,Bali-Sistem Banjar Elco Registers.

TABLE 4.17b

SURVEY DATA, July-Sept., 1980.  
METHODS USED BY CURRENTLY MARRIED WOMEN AGED 15-44,  
ACCORDING TO VILLAGE.

	VILLAGE			TOTAL
	BANJARANGKAN	TUSAN	BAKAS	
% ELCOs	<u>56.4%</u>	<u>52.1%</u>	<u>36.5%</u>	<u>50.8%</u>
Curr.Using FP				
IUD	52.7	41.2	33.5	
PILL	1.6	0.6	1.5	
CONDOM	0.2	0.3	0	
TUBECTOMY	1.2	8.5	1.5	
OTHER*	0.6	1.5	0	
NOT USING	43.6%	47.9%	63.5%	49.2%
No. ELCOs	427	328	200	955
Total Popn.	3,400	2,973	1,744	8,117

(Other\*: vasectomy, rhythm, injectable and foam tablets.)  
Source: 1980 survey.

TABLE 4.17c

PERCENTAGE POINT DIFFERENCE BETWEEN PREVALENCE LEVELS  
IN BKKBN REGISTERS AND THE PRESENT SURVEY.

DIFFERENCE	VILLAGE		
	BANJARANGKAN	TUSAN	BAKAS
TOTAL	+15.0%	+5.6%	+35.4%
IUD	+14.3	+7.4	+25.1
PILL	-1.1	-0.6	+2.9
CONDOM	+2.2	+0.8	+5.9
TUBECTOMY	-0.7	-1.3	+1.0
OTHER*	+0.4	-0.7	+0.5

(SOURCES: For this and all Tables up to and including 4.27 are Elco Registers from BKKBN, Bali, and 1980 survey).

As was seen in section 4.4.3 of this chapter, there is a considerable difference between the data from BKKBN Bali, and those from BKKBN Jakarta for the kecamatan of Banjarangkan for the same period. The rates of current usage of family planning are 72.2 % of ELCOs according to BKKBN Bali, versus the Jakarta figure of 38.7 % of MWRA.

The results of the survey conducted as part of this fieldwork give the prevalence rate for the three villages combined as 50.8 % of all the eligible couples surveyed (currently married women aged 15-44, n=955), compared to 66.5 % of the 984 eligible couples on the BKKBN registers (Table 4.17). The difference between the BKKBN register and the survey prevalence levels is greatest in the village of Bakas (35.4 %) followed by Banjarangkan (15.0 %), with Tusan (5.6 %) being in quite close agreement.

The table of differences in the two estimates of prevalence of current use according to method (Table 4.17c) indicates that in Banjarangkan and Tusan virtually all the difference is accounted for

by IUD users. Only condom users in Banjarangkan show a difference greater than 2 %. In Bakas, however, not only the IUD prevalence level was substantially overstated (+25.1%) in the BKKBN Registers, but also condom users (+5.9%) and to a lesser degree pill users (+2.9%). In fact none of the Bakas couples said that they were using condoms. This was of some interest because, according to the registers, the contraceptive prevalence rates in Bakas had risen dramatically in early 1978 entirely because of a sudden increase in condom users. A similar pattern occurred in the other three villages covered by the fieldworker for Bakas. These increases in current use had brought Bakas from near the lowest village in the kecamatan in 1977, to near the highest prevalence level village in late 1979.

As the IUD is the major contributor to the differences, it is important to examine more closely the couples listed in the BKKBN Registers as IUD users to try to establish whether they had, at one time, accepted an IUD but had since stopped without notifying the fieldworker, or whether they had never used an IUD, in which case the registered figures would be quite false. Data in Table 4.18 apply only to those respondents listed in the BKKBN Registers as currently using an IUD at the time of the survey. The data show that 69.6 % of these women said in the survey that they were currently using the IUD, and a further 1.5 % were using some other modern method (Table 4.18). The proportion matching in both survey and registers was highest in the village of Banjarangkan (73.8 %), and lowest in Bakas (60.6 %). Of the remaining 28.9 % who were not currently using any modern method of family planning, about two-fifths (12.0% of 28.9%) said that they had never used any family planning. The rest (three-fifths) had, of course, used family planning at some time but had stopped.

In regard to incorrect recording of women as family planning users when, in fact, they have never used any, the pattern does not clearly implicate one fieldworker as being markedly less reliable than the other, as the proportions of couples listed in the registers as current IUD users, who have never used any family planning, range from 8.1 % (Tusan) to 12.9 % (Banjarangkan) to 16.2 % in the worst case, Bakas.

TABLE 4.18

CURRENT FAMILY PLANNING STATUS (ACCORDING TO SURVEY) OF WOMEN LISTED IN ELCO REGISTERS AS CURRENTLY USING AN IUD (N=484).

CURRENT STATUS (SURVEY)	VILLAGE			
	BANJARANGKAN	TUSAN	BAKAS	COMBINED
A) % Currently Using IUD:	73.8	69.4	60.6	69.6 %
B) % Currently Using Some Modern Method:	75.1	71.2	61.6	71.1 %
C) % Not Currently Using any Family Planning:	24.9	28.8	38.4	28.9 %
D) % Never Used any Family Planning:	12.9	8.1	16.2	12.0 %
E) Ratio of (D)/(C):	0.50	0.28	0.42	0.41
Number:	(225)	(160)	(99)	(484)

To summarize, of the couples registered as current IUD users, about 7 out of 10 were indeed using an IUD, according to the survey; a negligible number were using a different modern method. Of the remaining 3 out of the 10 not currently using any family planning, two had done so in the past but had stopped, and one had never used any family planning. This latter figure (12.0%) does not support any suggestion of substantial inflation of the BKKBN Sistem Banjar current

use data. Rather it seems that many couples accept family planning for one reason or another, then later stop using without notifying the fieldworker. Alternatively, the fieldworker, having been notified of a 'dropout', may delay changing the Register.

The survey data will be examined in greater detail in chapter 6 regarding family planning differentials. In the present chapter the concern is mainly with the published BKKBN figures.

Now the data from the survey and the Elco Registers will be matched. Taking the three villages as a whole, there were 557 eligible couples in the Elco Registers as current users of a modern, program method of family planning (see Table 4.19). When compared to the survey results, two-thirds of these (n=372 or 66.8%) were found to match exactly, that is, they answered in the survey that they were currently using the same method as that recorded in the Elco Register. Also, a further 15 couples were using a modern family planning method, but different to that in the register (total n=387).

The remaining 170 eligible couples were recorded in the twelve banjar registers as current-users but according to the survey were not using any family planning method. Of this 170, 140 were listed as IUD users and thus had either dropped out of the program without notifying the fieldworker, or else they had never been IUD users. On the other hand, there were 65 couples who were in the registers as not being current users of family planning, but in the survey had said that they were using the IUD.

TABLE 4.19

COMPARISON OF CURRENT STATUS OF MATCHED COUPLES,  
ACCORDING TO SURVEY AND BKKBN REGISTERS.

	SURVEY DATA		TOTAL
	CURRENT USER	NON USER	
CURRENT USER	387	170	557
BKKBN REGISTER ELCO			
NON USER	65	239	304
TOTAL	452	409	861

NB: The reason that the total is 861 rather than 1,088 which is the total number of respondents in the survey is that 227 of the survey respondents were not included in the Elco Registers. This will be discussed further later in this chapter.

Now to the question of which methods are most likely to be recorded as being used by current users in the Elco Register when in fact the couple have dropped out, or have never used.

TABLE 4.20

PROPORTIONS OF REGISTERED CURRENT USERS  
WHO WERE NOT USING, BY METHOD.

METHOD	% Registered as using, but not using.	Numbers	Number who had never Used
CONDOM	81 %	26/32	18
PILL	(50 %)	2/4	0
IUD	28 %	140/484	57
VASECTOMY	(20 %)	1/5	1
TUBECTOMY	3 %	1/32	1

The data in Table 4.20 clearly show (although the numbers are small for some methods) that numbers of condom users are the most questionable in that 81 % of those recorded as current users by the family planning program were not in fact users at the time of the survey.

The least likely to be incorrect were the tubectomy users, as might be expected, since the tubectomy acceptors cannot be 'drop-outs', and must usually be referred by the local clinic nurse/midwife to a hospital. For a couple to become a condom acceptor, on the other hand, all that is required is for the fieldworker to deliver a number of condoms to the household, without any guarantee that they will be used. In the calculation of prevalence rates of current usage however, a condom acceptor is 'worth' the same as a tubectomy or vasectomy.

It is useful now to examine the pattern for each of the three villages.

TABLE 4.21

PERCENT OF COUPLES WHO WERE RECORDED AS CURRENTLY USING IN THE REGISTERS, BUT IN THE SURVEY SAID THAT THEY WERE NOT USING ANY METHOD, ACCORDING TO VILLAGE.

METHOD	VILLAGE					
	BANJARANGKAN		TUSAN		BAKAS	
	%	n	%	n	%	n
CONDOM	2 %	(5/8)	75 %	(3/4)	90 %	(18/20)
PILL	0 %	(0/2)	-	(0/0)	100 %	(2/2)
IUD	25 %	(56/225)	29 %	(46/160)	38 %	(38/99)
VASECTOMY	50 %	(1/2)	0 %	(0/3)	-	(0/0)
TUBECTOMY	0 %	(0/3)	4 %	(1/25)	0 %	(0/4)
TOTAL:						
A) ANY METHOD	26 %	(62/240)	26 %	(50/192)	46 %	(58/125)
B) SAME METHOD	29 %		28 %		50 %	

Clearly the village of Bakas has the least reliable registers, with condom user numbers being the worst, as for the other two villages. This is the result that might have been expected from the current user data from the two BKKBN sources, wherein the distribution

figures from Jakarta do not support the claims for high numbers of condom users.

Among the 170 couples who were recorded as current users in the Elco Registers but who in the survey said that they were not currently using any method just over half were former users who had dropped out without the fieldworker being informed. The remainder had never used family planning. Table 4.22 shows that the proportion of couples registered as current users who had never used family planning was greatest (24 percent) in the village of Bakas, owing largely to the number of supposed condom users. As mentioned in section 4.1.3 on selection of study villages, the sudden appearance of a substantial number of condom users in the Bakas Elco Register, resulting in this village jumping from near lowest prevalence rate in the kecamatan to near highest, was one of the reasons for deciding to investigate Bakas. The proportions in Banjarangkan and Tusan who had never used were considerably lower though still significant. These were predominantly couples registered as IUD users.

TABLE 4.22

PERCENT OF THOSE COUPLES REGISTERED AS CURRENT USERS WHO STATED THAT THEY HAD NEVER USED ANY METHOD OF FAMILY PLANNING, BY VILLAGE.

VILLAGE	PERCENT	N
Banjarangkan	13.3 %	(32/240)
Tusan	7.8 %	(15/192)
Bakas	24.0 %	(30/125)
Total	13.8 %	(77/557)



## 4.5 OTHER ASPECTS OF DATA QUALITY IN THE ELCO-REGISTERS.

## 4.5.1 CHILDREN EVER BORN (CEB):

When the data on total children ever born (male and female) are compared for the 861 couples in the registers, only 43 % of the records match exactly (in number of CEB) (Table 4.23).

TABLE 4.23

COMPARISON OF CHILDREN EVER BORN DATA  
FROM SURVEY AND ELCO REGISTERS.

	MEDIAN CEB	MEAN CEB
SOURCE:		
a) SURVEY	3.0	4.0
b) REGISTERS	2.4	3.1

A further 51 % of the couples stated in the survey a CEB total which exceeded that in the registers. Only 6 % of the couples reported a total CEB which was less than the figure given in the registers. This is supported by the difference in the median and mean CEB between the survey data and the Elco Registers. The reason appears to be primarily in the initial recording of couples in the Elco-Registers. The fieldworkers are more concerned with numbers of children still living than with children ever born with the result that the difference between CEB and CSL (see Table 4.24) is very small, as discussed below (section 4.5.2).

## 4.5.2 CHILDREN STILL LIVING (CSL):

It could be argued that the data on CEB are less important than those for children still living (CSL) when analysing parity at acceptance of family planning and to some extent this is correct in that the fieldworker cannot be expected to go to great lengths to enumerate liveborn children who have since died. Indeed, the matching is better for the 'children still living' data. Compared to the 43 % of couples for whom the survey data on CEB matched the Elco Register data, for CSL, 61 % of the records matched exactly, and only 30 % in the survey exceed the figure in the register. The remaining 9 % have the figure in the register exceeding that given in the survey. This also supports the smaller difference between median and mean for the registers and the survey, in the case of CSL (Table 4.24).

TABLE 4.24

COMPARISON OF CHILDREN STILL LIVING DATA  
FROM SURVEY AND ELCO REGISTERS.

	MEDIAN CSL	MEAN CSL
SOURCE:		
a) SURVEY	2.5	3.3
b) REGISTERS	2.3	3.0

The Elco Registers show proportions of children dead as 3 to 4 percent, whereas the survey data show the proportions of children dead as 17 percent, a more realistic figure in a relatively high mortality society. Such a pattern is not surprising where people are generally somewhat reluctant to discuss the dead. This is particularly the case with young children as they have not had a chance to establish themselves securely on this earth, and can easily be drawn back to the world of the gods (see chapter 2).

#### 4.5.3 AGE DATA:

Only 80 of the 857 matched women had the same age recorded in the survey as in the register (9 %), the others differing by as much as 20 years on either side of the correlation line. In general, the older women's ages were underestimated in the registers compared to the survey with none of the women aged 45 to 54 in the survey being recorded as more than 45 years in the registers.

Part of the explanation for the low numbers of ages matching in survey and registers is that there was considerable digital preference in the registers for not only '0's and '5's, but also for '2's and '8's as a result of 0-5 preference three years earlier (1977) when the majority of the couples had been entered in the registers. Each successive year the women's ages are updated by adding one year.

#### 4.5.4 CURRENT PREGNANCY STATUS:

This variable showed the greatest difference between the Elco-Registers and the survey data. The proportion of currently pregnant respondents in the survey (7.9 percent) was about three times the proportion (2.7 percent) recorded in the Elco-Registers (Table 4.25). This survey rate was for couples who could be matched to the registers (n=840), while the pregnancy prevalence rate for the full survey group was 8.4 percent (89 of 1,062) (6). The pattern of proportions currently pregnant by village fits well with the levels of current use of family planning (Table 4.17b) where this prevalence is

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(6) The reason that 28 cases are missing from the data is that the appropriate question was not asked of that number of respondents, because of the question being located amongst the interviewer instructions for the Life History Matrix (see section 4.3.4).

highest in Banjaringan (56.4%), second highest in Tusan (52.1%) and considerably lower in Bakas (36.5%). While all the registers indicate lower prevalence rates of pregnancy than the survey, the difference is most marked in the village of Bakas where the survey level is almost five times that recorded in the register.

TABLE 4.25

CURRENT PREGNANCY STATUS  
(Couples matched in Elco-Registers and Survey)

	SURVEY		SOURCE		TOTAL MATCHED
	%	N	ELCO-REGISTERS %	N	
ALL VILLAGES:	7.9	(66)	2.7	(23)	(840)
BANJARANGKAN:	5.5	(19)	2.9	(10)	(346)
TUSAN:	7.4	(23)	2.6	(8)	(310)
BAKAS:	13.0	(24)	2.7	(5)	(184)

Source: 1980 survey

This pattern is similar to the inconsistencies already seen amongst the other variables examined in the comparison of the registers and the survey data. There are a number of explanations which might fit this situation. The pattern of fieldworkers visiting eligible couples only once in three or four months means that they would be less likely to be aware of all current pregnancies than would be the case with a cross-sectional survey which visits all couples within a short period of time. There may also be a reluctance on the part of couples to admit to the fieldworker or the Kelian Dinas that the woman has become pregnant, particularly if the couple already has a number of children.

#### 4.6 CHARACTERISTICS OF THOSE COUPLES NOT INCLUDED IN THE ELCO-REGISTERS.

There were 227 couples who were eligible according to the survey but who were not in the registers. Enquiries to the various Kelians Dinas indicated that some of these couples might still have been registered in a different village if they had recently moved to the survey area.

##### 4.6.1 AGE:

Those in the registers are compared with those not: as might be expected the couples not in the registers tend to be a little younger, with a median age of 29.7 years compared to a median age for those in the registers of 33.1 years. The difference, however, is not great, and the distribution of ages of those not in the registers is very broad, carrying right through to age 50.

As a percentage of each age group not being noted in the registers, the pattern is close to that expected except for a secondary peak in the 35-39 group. The 15-19 age group has 50 % not in the registers, the 20-24 group has some 36 % not in the registers, down to only 17 % of the 25-29 age group, and 14 % of the 30-34 group missing. The expected pattern is based on the fact that for a couple to become recorded in the register, they must first come to the notice of the fieldworker, who is not always informed of weddings. Thus some time may pass before a new 'eligible couple' comes to his notice, often through the attendance of the wife at the health clinic from which the fieldworker operates.

## 4.6.2 PARITY

If fieldworkers were being selective in the registration of couples, it might be expected that they would avoid those couples who are not eligible to use family planning. These are the couples who have yet to demonstrate their fertility by bearing a child. Such couples have the effect of reducing the contraceptive prevalence rate by increasing the exposed population, but not adding to the number of family planning users.

If such selectivity was present, the proportion of zero parity couples would be greater amongst the couples not included in the registers, compared to those in the registers. The figures in Table 4.26 show just such a pattern. There is a four-fold greater proportion of couples with either zero children ever born or still living, amongst the couples not in the registers.

TABLE 4.26

PROPORTIONS OF COUPLES OF ZERO PARITY IN BKKBN REGISTERS;  
NOT IN REGISTERS AND IN SURVEY.

MEASURE:	COUPLES		
	IN REGISTERS	NOT IN REGISTERS	IN SURVEY
NO CHILDREN EVER BORN (CEB)	3.5 %	16.7 %	5.0 %
NO CHILDREN STILL LIVING (CSL)	4.1 %	16.7 %	5.6 %
MEDIAN CEB	2.4	1.8	2.8
MEAN CEB	3.1	2.7	3.7
Numbers	(861)	(227)	(1,088)

The figures for mean and median children ever born also support the fact that lower parity couples are less represented in the registers than in the population as a whole.

#### 4.6.3 MARRIAGE DURATION:

The pattern of non-registration of eligible couples according to marriage duration is very similar to that for the age pattern with the highest proportion not recorded being in the first group, ie., first married in the five years before the survey (39.8 %) decreasing to 19.6 % in the group married between five and ten years ago, down to 9.3 % in the group married ten to fifteen years ago. Then comes a second peak of 23.0 % not recorded in the group married fifteen to nineteen years ago (1961-65), followed by a trailing off to the older women married prior to 1950. It might be expected that as marriage duration increases the rising incidence of divorce and widowhood would account for some of those not registered in the older age groups, but only 2.7 % of the total population surveyed (30 of 1,088 women) were divorced, separated or widowed.

#### 4.6.4 FAMILY PLANNING PRACTICE:

There appears to be little incentive for fieldworkers to be fully up to date in recording newly married couples in their registers as these couples normally would not yet have any children and therefore, in many areas including Banjaringan kecamatan, they are not eligible to become family planning acceptors, until they prove their fertility. Such a couple would, of course, increase the denominator of eligible couples, but not increase the numerator of eligible couples currently

using a family planning method, hence the current use prevalence rate drops with each new non-contracepting ELCO added to the register. However, if this was the case, one might expect that most of these women not registered would not be using any program family planning. But when the survey data are examined, some 34.3 % of those not registered claim to be currently using some contraceptive method, all but one being a program method (77 of the 78). It is by no means impossible for a woman to attend the health clinic and be fitted with an IUD or be given pills or referred for a tubectomy without the fieldworker being informed, and he may not discover the fact until the next routine visit is made to the person's home, on average once in three months.

#### 4.6.5 FIELDWORKER:

The question arises whether the different fieldworkers vary in their attitudes to finding new eligible couples to be included in their registers. This would be expected to be reflected in the proportions of the total eligible couples not registered varying from fieldworker to fieldworker.

TABLE 4.27

PERCENT OF TOTAL ELCOS NOT REGISTERED, BY VILLAGE.

VILLAGE	PERCENT	N
Banjarangkan	29.3 %	(144/492)
Tusan	12.9 %	(47/365)
Bakas	15.5 %	(36/231)
TOTAL	20.9 %	(227/1088)



Although the average for the villages of Banjarangkan and Tusan is 22 % not registered for fieldworker M.B., this does not necessarily indicate a lax attitude to locating new ELCOs as the level for desa Tusan is only 13 % compared to 29 % for the larger and more diffuse desa of Banjarangkan (Table 4.27). Also, over the few years before the survey, a number of families had moved from the more northerly village of Bakas down into the Banjarangkan area to obtain better farming land.

To summarize this section (4.6), the patterns of characteristics of those couples who were interviewed in the survey but were not included in the BKKBN Elco Registers, were consistent with the expected delay in newly married or newly arrived couples coming to the attention of the fieldworker. The distribution of ages and of marriage durations indicated that these couples are somewhat under represented in the registers. The parity data also indicate the same, although the high proportion of zero parity women outside the registers suggests that there might be an element of intention in the delay in registration of such couples, in order to maintain the contraceptive prevalence levels. There did not appear to be any unexpected pockets of 'resistant' couples where non registration was particularly marked.

To recapitulate this evaluation of the BKKBN data, the province, kabupaten, and kecamatan level data show substantially higher rates of use of oral pills and condoms from the Jakarta source than from the Bali source. The rates for IUDs and sterilizations, both once only methods, match well for each source. This survey indicates marked

overestimation of IUD use rates which account for most of the difference (88 %) between the actual (survey) and the register rates of use. The survey indicated some inflation of condom rates in Bakas, and some underrecording of tubectomies and pill use in the other two villages.

The question of whether the Elco-registers can be used as a reliable source for prevalence rates of current family planning use must be in some doubt as the rates for Bali as a whole are shown to be so much higher in the Sistem Banjar reports than from both the present survey and the monthly reports from central BKKBN office in Jakarta, although the latter may be a little low.

Of those 557 couples included in the Elco-registers as current users, three-tenths (n=170) said they were not currently using any method and of these, just under half (n=77), or one-sixth of the total, said they had never used family planning.

With the possible exception of Bakas, there was relatively little recording of couples as current users if they had never used family planning. This means that the differences between the Elco-registers and reality arise when women who have accepted family planning, in particular the IUD, have it removed for whatever reason but fail to notify the fieldworker or the Kelian Dinas. Considering that the survey banjars no longer conduct the monthly check of each member couple's family planning status at council meetings, and considering that there may be pressure placed on drop-out eligible couples to re-accept, it should not be surprising that couples who have, for example, experienced unpleasant side effects while using family planning may choose not to notify those concerned.

As prevalence levels rise and targets remain high and women continue to experience side effects, this situation of unrecorded drop outs will persist. The most desirable approach to this problem is a sympathetic response to the experience of side effects, with greater flexibility in method selection and switching (see chapter 6). It is also probable that the fieldworkers could detect more of the couples who drop-out of the program by regularly checking with the clinic nurses responsible for IUD insertions and removals. To anticipate the findings of chapter 6, the vast majority of IUD users who have their IUD removed do so at their local clinic, thus the nurses will usually be aware of the situation. It is conceivable, however, that the nurses feel a conflict of interests when they are required to inform the family planning program if one of their clients experiences side effects and consequently decides to stop using a contraceptive method.

While the Elco-register data on prevalence rates may be of doubtful reliability the data on women's ages are certainly usable, though tending to underestimate ages of older women. Also reasonably reliable are the data on children still living, but the children ever born data appear to miss too many dead children to be useful. BKKBN do not currently use children ever born data, but define parity as children still living for purposes of analysis.

Regarding improvement of the Elco-register data, the age data may improve as Bali fieldworkers become familiar with the use of events calendars in their work on the current IFRP study of mortality to women of reproductive age (RAMOS). On the other hand, improving the reliability of the prevalence data might usefully be approached through calculation of drop-out rates at regular intervals. While

these rates would be expected to vary with differences in the skills of those who insert the IUDs, this would probably not be as great as differences due to unrecorded drop-outs. As described above, BKKBN-Bali conducted a checking survey in August, 1980 to correct the register figures, but the problem is not completely overcome by such surveys as they are, for logistical reasons, conducted by the fieldworkers in their own territories. Thus any major differences in prevalence rates brought to light in such a check would reflect directly upon the fieldworker himself, such a system of self-evaluation by fieldworkers is not conducive to maximum reliability of data.

## CHAPTER 5

### FERTILITY IN THE STUDY AREA

In the first chapter we saw that many of the reports concerning the apparent remarkable fertility decline in Bali implicated the National Family Planning Program as being of key importance in precipitating this decline.

This chapter is concerned with the pattern, timing and magnitude of the fertility decline (1), although these results cannot, of course, be extrapolated to all Bali as the study area could not be said to be typical of the whole island (see area characteristics in Chapter 4) (2). The role of the family planning program in this apparent fertility decline will be examined in the following chapter.

This investigation of changes in the pattern and level of fertility will be performed by examining a variety of conventional measures such as annual births; age specific marital fertility rates; age specific fertility rates; total fertility rates; children ever born; parity and birth order distributions, and parity progression ratios. Various subgroups (educational, occupational, socio-economic, etc.) of the study population will also be compared in terms of their fertility.

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(1) As described in chapter 4, it was known that by the mid seventies fertility was quite low in Banjarangkan kecamatan, and there was no reason to believe that it had not been higher in earlier times.

(2) It could be argued that very few areas would be typical of all Bali, only an island-wide sample could be claimed to be representative.

Before commencing the fertility analysis it is useful to introduce a framework which includes those variables through which any change in fertility must operate . In this case the framework is that devised in the fifties by Davis and Blake where eleven 'intermediate variables' were grouped into (a) factors affecting exposure to intercourse ('intercourse variables'), (b) factors affecting exposure to conception ('conception variables'), and (c) factors affecting gestation and successful parturition ('gestation variables') (Davis,K.and Blake,Judith, 1956,211-35). Unfortunately it is not possible to examine all eleven intermediate variables as data for some, such as coital frequency and involuntary infecundity, were not collected in the survey.

However the first three of the intercourse variables are those governing the formation and dissolution of unions in the reproductive period and will be examined here in terms of what proportion, if any, of the fertility decline could be accounted for by changes in marriage patterns.

A further reason for examining patterns of marriage is to enable the selection of the most appropriate pattern of proportions married for conversion of age specific marital fertility rates to age specific fertility rates and subsequently to total fertility rates. This is necessary as the respondents in the Banjaringan survey (1980) were only ever-married women, and data were thus not collected on proportions of women never married. An alternative source does, however, exist for the area, that being the data collected in the mid 1970s (mid-'74 to mid-'77) by the Sample Vital Registration Project conducted by the Central Bureau of Statistics (see Chapter 4,

pp.154-7, for more detail). The selection of an appropriate pattern of proportions currently married will be discussed later in the next section.

### 5.1 MARRIAGE PATTERNS

To return to the question of change in marriage patterns during the period of operation of the family planning program, the best available sources are the 1971 National Census and, more recently, the 1976 Intercensal Survey (known hereafter as SUPAS, and briefly described in Chapter 1). The Fertility-Mortality (FM) survey conducted in 1973 also collected marriage data but it is less recent than SUPAS though the sample size at 4,300 is larger than for SUPAS (n=3,600). Data from the 1980 National Census on proportions married by five year age group is not yet available.

Comparison of the data on proportions ever married (Table 5.1) suggests some degree of delay of marriage amongst younger women. The data from SUPAS I suggest a greater delay than do those from SUPAS II, although in neither case is the change substantial. On the other hand the 1973 FM survey data suggest a quite substantial delay in age at first marriage, more than could be reasonably expected in the two years following the 1971 Census, suggesting that the FM survey may not be representative of all Bali in terms of marriage. The data on proportions currently married from the 1971 Census and 1976 SUPAS I and II (Table 5.2) also indicate very little change since the sixties in either age at marriage or rates of marital breakdown - divorce, separation and widowhood, the first three intermediate (intercourse)

variables (3) from the Davis and Blake framework.

TABLE 5.1

## PROPORTIONS WOMEN EVER MARRIED, BALI.

AGE	1971 CENSUS	1973 FMS	1976 SUPAS I	1976 SUPAS II
15-19	19.5	12.0	17.7	19.4
20-24	72.6	59.6	65.0	67.6
25-29	89.9	85.4	87.2	87.6
30-34	92.4	90.7	92.9	90.2
35-39	94.5	94.7	95.1	94.8
40-44	95.4	92.8	95.1	91.5
45-49	96.3	95.1	95.8	94.3

Sources: 1971 Census, BPS, Series E, Table 7.  
1973 FMS Report, Table II.13, p.23.  
1976 SUPAS I and II, Unpublished tabulations.

TABLE 5.2

## PROPORTIONS WOMEN CURRENTLY MARRIED

AGE	1971 CENSUS	1973 FMS	1976 SUPAS I	1976 SUPAS II	SVRP
15-19	18.2	11.6	16.8	18.2	19.6
20-24	68.9	59.0	62.4	65.4	51.5
25-29	84.1	82.7	82.9	83.8	75.0
30-34	85.0	87.9	85.5	84.5	80.8
35-39	85.5	86.9	85.4	85.0	81.0
40-44	80.5	83.8	78.3	78.2	77.8
45-49	76.0	85.8	76.2	76.6	77.3

Sources: as for Table 5.1.  
SVRP from Gardiner (1980) Table 4.14, p.201.

When the measures median and mean age at first marriage are examined there is a suggestion of a possible decline in age at first marriage. Referring to the SUPAS II data on median age at marriage

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(3) These variables are: (a) Age of entry into sexual unions; (b) Permanent celibacy : proportion of women never entering sexual unions; and (c) Amount of reproductive period spent after or between unions.



(Table 5.3), Cho et al. comment that '...in the case of Bali, the median age at marriage has been high for a long time and may even have decreased slightly in recent years' (1979:15). It should be noted, however, that such a pattern of decreasing mean age at first marriage can result from the truncation effect upon the younger age groups. By definition the 20-24 age group will not contain any woman who married after reaching age 25, whereas the 25-29 age group may include women marrying up to age 30, and so on for the older age groups. This truncation effect can be overcome by comparing the median (or mean) age at first marriage of the 20-24 age group with all those in the 25-29 age group excluding those women married in the last five years, and those in the 30-34 age group excluding any married in the last ten years.

The results of this recalculation can be clearly seen in both Table 5.3 (median) and Table 5.4 (mean). The unadjusted data from the 1980 Banjarangkan survey suggest a decline in mean and median age at first marriage, whereas the recalculated figures show much less of a decline between age groups 25-29 and 20-24, and a very slight increase between groups 30-34 and 20-24.

The first conclusion to be drawn from this exercise is that the pattern in the SUPAS II data commented upon by Cho et al. may well be misleading because of the truncation effect on the younger age groups. In fact in their analysis of the 1971 Census data published in 1980, Cho et al. stated that 'age at marriage is probably rising throughout Java and Bali' (1980:71).

The second conclusion is that the data for the survey area suggest a very slight delay in marriage as median age at first marriage has increased from 18.9 for the group 20-24 in 1970 (i.e., 30-34 in 1980, Table 5.3) to 19.1 for the group aged 20-24 in 1980. Over the same ten year period the mean age has increased from 18.4 to 18.5 for the age group 20-24 (Table 5.4).

TABLE 5.3

## MEDIAN AGE AT FIRST MARRIAGE, WOMEN, BALI.

AGE	1973 FMS	1976 SUPAS II	1980 SURVEY	1980* SURVEY
20-24	---	20.3	19.1	19.1
25-29	19.5	20.4	20.1	19.6
30-34	19.8	(20.7)	20.1	18.9
35-39	19.0		20.4	
40-44	19.9		20.7	

SUPAS II data are for ages 30-49, not 30-34.

1980\* SURVEY data are calculated by excluding all women married in the last five years from the 25-29 age group median and mean, and all women married in the last ten years from the 30-34 age group.

Sources: 1973 FMS Report, Table II.14, p.25

1976 SUPAS II, Unpublished tabulations

1980 Survey is that upon which this study is based.

TABLE 5.4

## MEAN AGE AT FIRST MARRIAGE, WOMEN, BALI.

AGE	1976 WFS	1980 SURVEY	1980* SURVEY
20-24	17.3	18.5	18.5
25-29	18.5	20.4	18.7
30-34	18.4	20.5	18.4
35-39	19.3	21.0	
40-44	20.2	21.7	

1980\* SURVEY data derived as above (Table 5.3).

Sources: as for Table 5.3

These changes are quite insignificant and could not be said to have any measurable impact on fertility levels. A similar pattern is mentioned in the preliminary report of the 1973 FM survey on Bali: 'The median age at first marriage has been in the range of 19-20 years for a long time and only very recently appears to have risen slightly.' (FM Report, Bali, 1974:24)

We will now return to the selection of an appropriate pattern of proportions currently married for conversion of the age specific marital fertility rates from the Banjarangkan survey data to age specific fertility rates and total fertility rates.

Although the 1976 SUPAS data for all Bali suggest a possible slight delay in age at marriage for younger women, the data from the Sample Vital Registration Project (SVRP) (in Table 5.2) for the district of Banjarangkan from roughly the mid 1970s show a pattern of proportions currently married which is consistently lower than all the other sources for the age range 20 to 40 (4). This suggests that in Banjarangkan district age at first marriage may be later than for Bali as a whole, although there is no obvious explanation for this.

If Banjarangkan district varies from all Bali in regard to patterns of marriage then the pattern of proportions married from the SVRP study would seem to be the most appropriate for converting the age specific marital fertility rates from this survey to overall fertility rates; particularly when it is remembered that the SVRP data are based on a population of 27,662 (in 1976), many more than any

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(4) This is supported by the somewhat limited data on proportions ever married for the village of Banjarangkan (Pop. 3,400), obtained from the 1980 Census.

survey, and that considerable care was taken to ensure reliability of age data.

## 5.2 FERTILITY

As mentioned earlier in this chapter, data from the SVRP study indicated that fertility in Banjaringan in the mid 1970s was quite low. Assuming that the level of fertility had been higher in the earlier times, the pattern, timing and magnitude of the decline in fertility will now be examined.

### 5.2.1 ANNUAL BIRTHS

The most basic indicator of the level of fertility is the number of births occurring annually to the women in the survey, those being all ever married women aged 15 to 54 at the time of the survey. These birth data, from the 1980 Banjaringan survey pregnancy history, are presented in Table 5.5a for the period 1961 to 1980. Although the level fluctuates from year to year (Figure 5-A), the trend is for a rise from around 100 births in 1961 to 233 in 1971, thereafter the level drops sharply for a couple of years before stabilizing around 200 per year. It must be remembered however, that these data were obtained retrospectively from a cross-section of ever-married women aged 15 to 54 in 1980, and as we go back in time the number of these women who were married, thus 'exposed to risk' of giving birth, declines (see Table 5.6). Therefore even if age specific fertility levels had remained constant over the period 1961-80 the number of annual births would be expected to increase steadily, although not

necessarily at a constant rate, up to 1980 (5).

TABLE 5.5a

## ANNUAL LIVE BIRTHS, 1961-80, FOR STUDY VILLAGES.

CALENDAR			
YEAR	ANNUAL LIVEBIRTHS	YEAR	ANNUAL LIVEBIRTHS
1980	(106)173*	1970	216
1979	176	1969	220
1978	195	1968	191
1977	213	1967	207
1976	199	1966	163
1975	189	1965	191
1974	200	1964	136
1973	176	1963	150
1972	201	1962	127
1971	233	1961	99

\*: Expected number of live births based on the actual number occurring in the first 0.614 of the year (assuming no seasonal variation).  
Source: 1980 survey.

TABLE 5.5b

## LIVE BIRTHS IN THE FIVE YEARS PRIOR TO THE SURVEY.

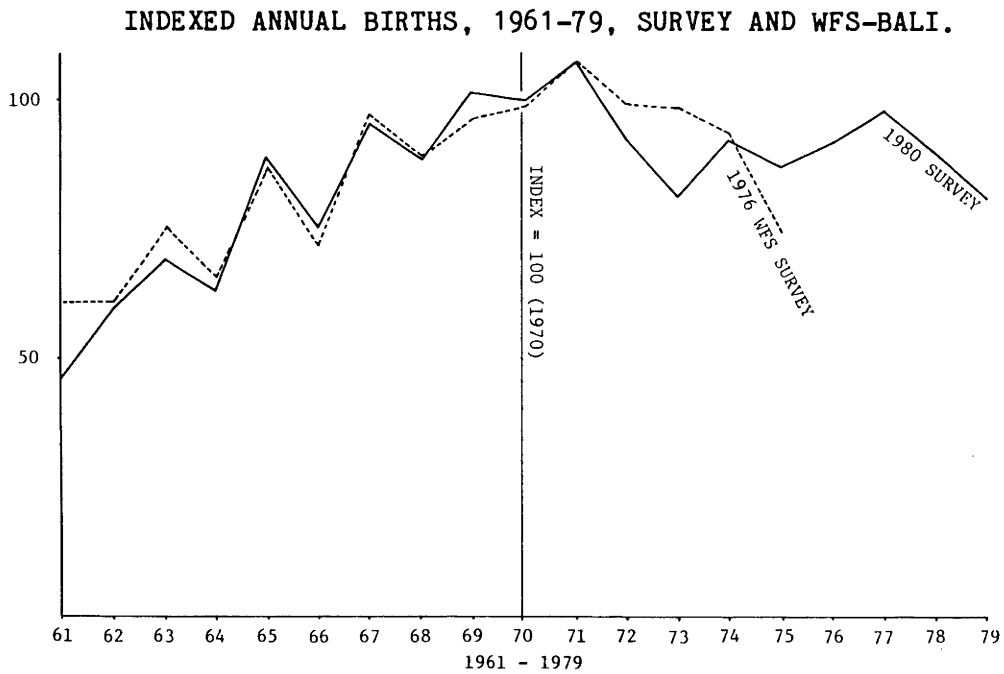
FIRST YEAR	172
SECOND YEAR	168
THIRD YEAR	202
FOURTH YEAR	205
FIFTH YEAR	186
TOTAL	933

Source: 1980 survey.

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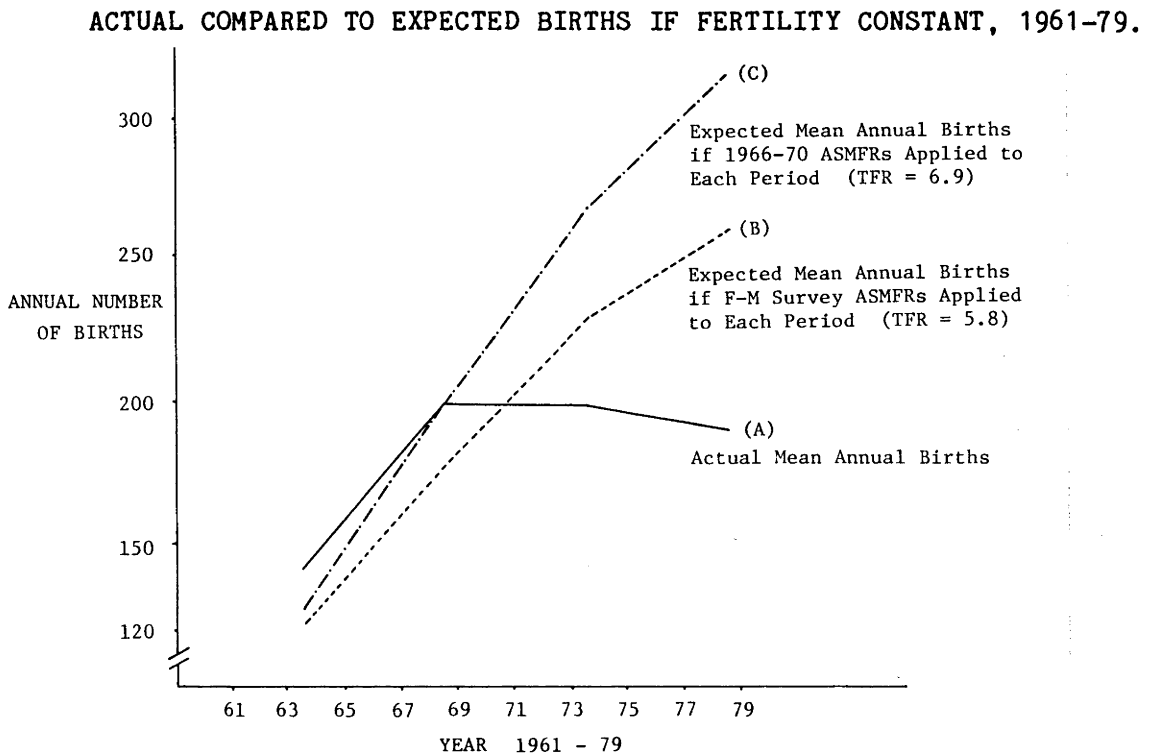
(5) Figure 5-B illustrates the slight decrease in slope of expected births, assuming a constant fertility schedule, (b) or (c), upon reaching the early 1970s, owing to the increasing proportions of the surveyed women shifting up into the older, less fertile age groups (see Table 5.7).

FIGURE 5-A



Sources: 1980 Survey and WFS, Vol.II, Table 3.3.4. (B),pp.165.

FIGURE 5-B



Source: 1980 Survey.

Two examples of this trend are illustrated in Figure 5-B where different sets of age specific marital fertility rates were used to estimate mean expected births per five year period, if fertility had remained constant at those levels during the period 1961 to 1980. Comparison of these examples (broken lines (b) and (c)) with the mean number of births per five year period which actually occurred (unbroken line (a)) shows quite clearly that the upward trend in births was arrested around the early 1970s, and, for the late seventies, fell substantially below either estimate based on constant 1960s levels of fertility.

TABLE 5.6

AVERAGE NUMBER OF MARRIED WOMEN, BIRTHS, AND  
BIRTHS PER WOMAN, FIVE-YEAR PERIODS.

PERIOD	AVERAGE WOMEN	AVERAGE BIRTHS	AVERAGE BIRTHS PER WOMAN/5 YEARS.
1976-80	943	191	1.015
1971-75	738	200	1.355
1966-70	513	199	1.940
1961-65	325	141	2.170

Source: 1980 survey.

TABLE 5.7

DISTRIBUTION OF MARRIED WOMEN BY AGE, FOUR PERIODS.

PERIOD	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1976-80	4.9	19.5	22.3	19.2	16.6	12.1	5.2
1971-75	8.3	23.2	23.8	21.1	15.7	6.8	0
1966-70	10.9	27.1	29.4	21.7	9.7	1.7	0
1961-65	13.6	35.6	33.0	15.3	2.6	0	0

Source: 1980 survey.

To return to the annual births data (Table 5.5a) and questions of accuracy of reporting of year of birth: the saw-tooth pattern of births before 1970 (Figure 5-A), peaking as it does on odd years, is not readily explainable, although an almost identical pattern was obtained by the 1976 World Fertility Survey in Bali (6). It is possible that the children's recorded years-of-birth have tended to cluster around the significant events on the Events Calendar, such as 1963, the year of the major eruption of the holy volcano Gunung Agung, and 1965, the year of the attempted coup and Communist uprising with subsequent widespread violence and killings. The pattern of total fertility rates from the 1973 Fertility-Mortality survey also shows a saw tooth pattern in Bali, but with peaks in years 1960, 1962, 1964 and 1970. In this case the peaking occurs on even numbered years while the survey was conducted in an odd numbered year, the reverse of the situation with the WFS survey and the Banjarangkan survey. Thus it throws no light on the reason for the erratic pattern of reported (and possibly actual) births.

However a feature which the Banjarangkan survey has in common with the 1976 WFS, 1973 FM survey and the 1971 Census, is a decline in the number of births in the two years immediately before the survey (census). The 1973 FM survey was not able to detect any fertility decline in Bali for the years 1969 and 1970 which had been apparent in the 1971 Census data. This suggested possible underenumeration of children aged 0 and 1 in the Census.

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(6) The 1980 Banjarangkan survey data and the 1976 WFS annual data are here expressed in comparable form by taking the 1970 level as an index equal to 100, and expressing other years as a proportion of that index.



The FM survey report stated:

The measured fertility decline in 1971-72 remains somewhat of a mystery. The explanation would appear to be a compound of age misstatement, underregistration of births of young children and, in the case of Bali...some actual decline in fertility.

And concerning this last point '...it would seem that at most only half of the measured decline in fertility in Bali could have been real.' (McDonald et al., 1976:23).

This pattern also occurs in the 1980 Banjarangkan survey: the number of live births drops somewhat in the two years before the survey (1978 and 1979) (7). The proportion of live births occurring in the two years before the survey (Table 5.5b) is 36.4 % of the total live births in the five years before the survey. It seems unlikely however, that this situation could be accounted for by enumerators miscalculating the child's age, as apparently occurred with the 1971 Census (8), since the Balinese calendar system was used in establishing ages of children under five years (see Chapter 4), and in consequence, errors in age reporting should not have been particularly great, and might be expected to form a different pattern from errors observed when using the Western calendar system. Certainly there was little digital preference, for either Western or Balinese calendar ages until five years of age. Also underenumeration should not have been great as the birth-order naming system was used to detect children who might often be missed; for example, children dying soon after birth (see chapter 4).

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 (7) These figures differ from live births in calendar years as the survey was held around mid to late 1980.

(8) In the 1971 Census apparently some enumerators allocated age one to some infants under one year of age (McDonald et al., 1976:16).

### 5.2.2 AGE SPECIFIC MARITAL FERTILITY RATES

The data in Table 5.8a show a marked decline in the ASMFR's in the age groups 25-29, 30-34, and 35-39 from the early 1960s through to the late seventies, with the most important decline being between the periods 1966-70 and 1971-75 where the relative declines were 30% to 50% between 25 and 39 years of age (Table 5.8b and Figure 5-C).

This raises the question of the reliability of the rates calculated for the earlier periods, especially as the pattern of marital fertility is somewhat different from that usually seen in Bali (for the whole province). For the 1966-70 period, for example, the rate for 15-19 is lower than that for 20-24, whereas both the 1973 FM survey (for 1965-70) and the 1971 Census (for 1967-70) show the rate for the 15-19 age group being higher than any other group. In fact this latter pattern might well be the expected one where marriage is late and apparently many marriages are preceded by, and precipitated by, conception. On the other hand the ASMFR's by single years from SUPAS II show a pattern similar to the present survey (Cho et al., unpublished data). The next important aspect of the pattern of period marital fertility for 1966-70 is the very high levels in the 30-34 (387 per 1,000) and 35-39 (356 per 1,000) age groups, much higher than the values seen in the data from the 1973 FM survey (267 and 197 per 1,000 respectively, for 1964-68) and the 1971 Census (for 1967-70) for those age groups. However, it will be seen later in this chapter (section 5.2.6) that the present survey obtained considerably higher values for mean numbers of children ever born for women 30 years and over in 1970 (see Table 5.14a) than did the Census in 1971 (see Table 5.13). As CEB is a cumulative measure of fertility, the period

measures (ASMFR's) for the age groups 30-34 and older, appear to have been underestimated in the 1971 Census data for Bali.

TABLE 5.8a

AGE SPECIFIC MARITAL FERTILITY RATES (PER 1,000 MARRIED WOMEN)							
AGE OF WOMAN DURING REF.PERIOD							
PERIOD	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1976-80 (n)	339 (46.5)	376 (183.5)	260 (210.0)	157 (181.0)	100 (158.0)	57 (114.5)	20 (49.5)
1971-75 (n)	341 (61.5)	370 (171.0)	290 (176.0)	239 (155.5)	171 (115.5)	140 (50.0)	71 (8.5)
1966-70 (n)	321 (56.0)	399 (139.0)	416 (151.0)	387 (111.5)	356 (50.0)	141 (8.5)	n.a. n.a.
1961-65 (n)	291 (44.0)	471 (115.5)	471 (107.0)	400 (49.5)	282 (8.5)	n.a. n.a.	n.a. n.a.

(These data are based on women currently married in the reference period, regardless of whether or not they were married at the time of the 1980 survey.)

The 'n' values are the average values for given period.)

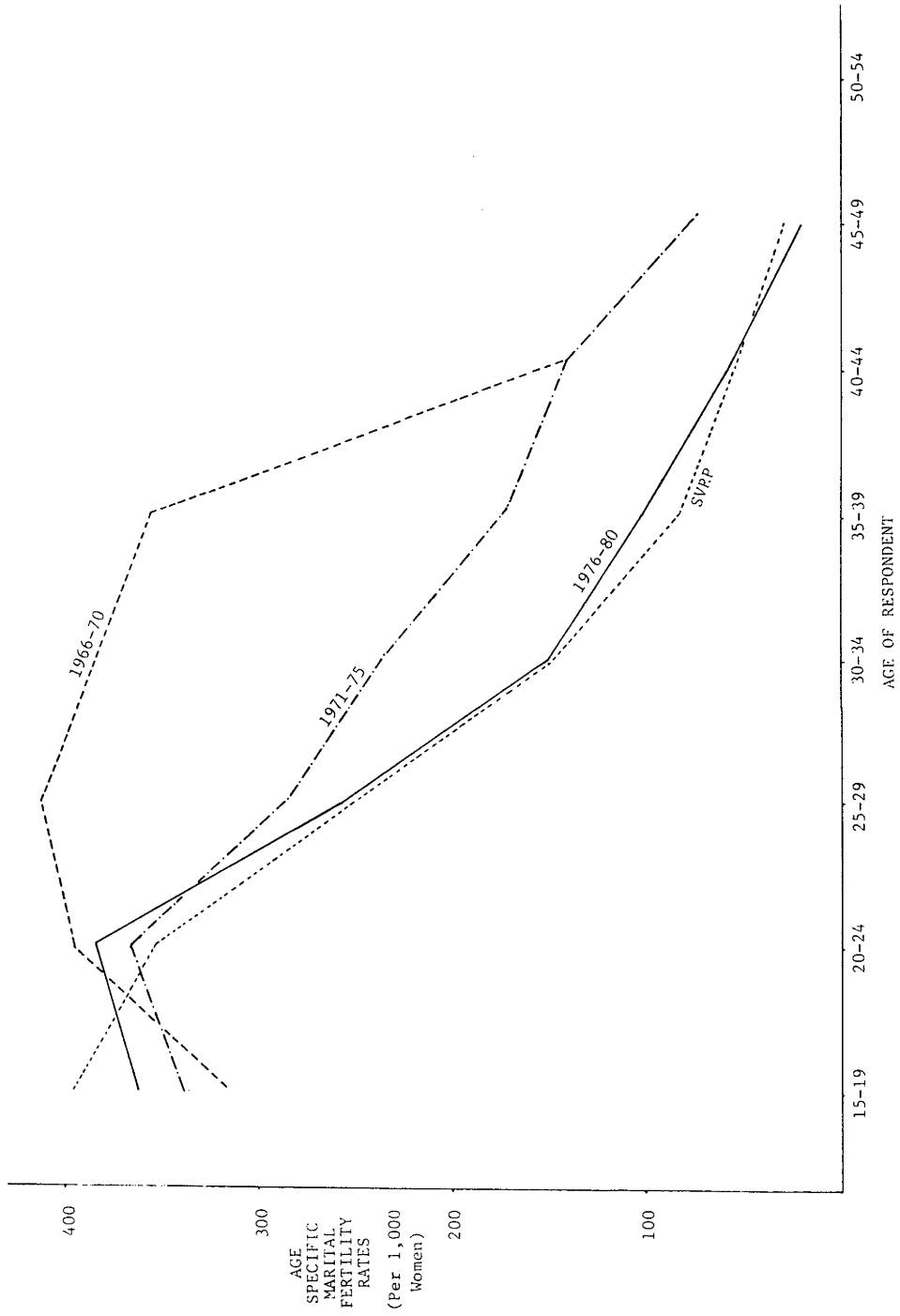
(SOURCE: For Tables 5.8 a and b is 1980 survey).

TABLE 5.8b

PERCENTAGE CHANGE IN ASMFR's BETWEEN PERIODS							
PERIOD	15-19	20-24	25-29	30-34	35-39	40-44	45-49
(1966-70) TO (1971-75)	+6.2	-7.3	-30.3	-38.2	-52.0	-0.7	n.a.
(1971-75) TO (1976-80)	-0.6	+1.6	-10.3	-34.3	-41.5	-59.3	-71.8
(1966-70) TO (1976-80)	+5.6	-5.8	-37.5	-59.4	-71.9	-59.6	n.a.

FIGURE 5-C

AGE SPECIFIC MARITAL FERTILITY RATES, 1966-70 TO 76-80.



Source: 1980 survey.

Another factor involved here could be data accuracy as the numbers of respondents are relatively small for the older age groups in the earlier periods. This may explain the differences in ASMFR's for these age groups between the periods 1961-65 and 1966-70 (see Table 5.8). Finally fertility at the older ages may, in the past, simply have been higher in Banjarmasin than for Bali as a whole.

That marital fertility in the older age groups appears to have been quite high in the past is illustrated in Figure 5-F where the pattern of age specific marital fertility rates for the period 1966-70, when indexed against the value for the age group 20-24, rises above Henry's pattern of natural fertility up to age 40. For the more recent periods however (since 1970), the pattern falls below that of Henry's natural fertility (Henry, 1961:81-92).

The initial reaction to the apparent dramatic decline in marital fertility between the periods 1966-70 and 1971-75 is to question whether erroneous dating of births in the past by respondents in this survey may be resulting in some exaggeration of births occurring in the period 1966-70. This could result from the bringing forward of births which in reality occurred in the early sixties, or it could result from pushing back births which occurred in the early seventies.

In regard to the first possibility, the fact that the 'ever-married total fertility rate' for women aged 15-39, the maximum age range that can be compared, is slightly higher for the period 1961-65 at 9.6 than for the period 1966-70 which is 9.4, does not support the view that such a forward shift of children's dates of birth did take place. Also the pattern of annual births through the 1960s followed very closely that of the WFS conducted four years

earlier than the present survey. On the other hand, while the levels of fertility in the period 1971-75 are considerably lower than those for the preceding five year period, the actual level expressed as a total fertility rate (4.9 for women 15-49) is not inconsistent with the estimates for the same period obtained from the 1976 SUPAS survey, considering the later age at marriage in Banjarmasin than in Bali as a whole (9). Also such a pattern of overestimation of age, mothers reporting their 5-9 year olds as 10-14 year olds, would be the reverse of the usual pattern of age misstatement for children over five (U.N.,1967:21).

Another worrying feature of the pattern is the 35-44 age range for the period 1966-70. The ASMFR for ages 35-39 (356 per 1,000) is very nearly as high as that for the age group 30-34 (387 per 1,000), while the value for the 40-44 age group (141 per 1,000) is quite low. It seems unlikely that between the periods 1966-70 and 1971-75, marital fertility rates would have fallen 52% for the 35-39 group, but only 0.7% for the 40-44 age group (Table 5.8a), particularly when fertility for the latter age group fell by some 59% between the periods 1971-75 and 1976-80. This suggests that the ASMFR (40-44) may have been higher in 1966-70. It seems more probable that for the earlier period (1966-70) the 35-39 age group ASMFR is an overestimate and that for the 40-44 age group is an underestimate. This may be a consequence of relatively small numbers in these groups, as well as possible age misstatement errors of mothers and children. That the ASMFR for the age group 35-39 is too high at 356 per 1,000 is also

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(9) The TFR's for the period 1971-75 were, from SUPAS I, 5.1, and from SUPAS II, 5.3, and 4.9 for 1975 using Last Birth method by Hull, T.H., (Cho et al., 1979:14).

supported by the lower figure of 282 per 1,000 for the same age group for the period 1961-65 when overall fertility was at least as high as in 1966-70.

Finally, the problem of small numbers of respondents may well account for the fact that the ASMFR for ages 15-19 is lower than that for age group 20-24 in each of the four 5 year periods shown in Table 5.8a . Such a pattern of marital fertility is rather unusual and is particularly surprising when it is believed that a sizable proportion of Balinese females marrying in the 15-19 age range, are pregnant at the time of marriage. This situation may, however, differ somewhat in the study area owing to the high proportion of high caste families (about 27% compared to normal 5-10%). Because of the very serious problems associated with a high caste girl becoming pregnant to a boy from a lower caste, it may be that high caste parents are rather more protective of their daughters, with the result that fewer of them become pregnant before marriage. This may reduce the ASMFR for the youngest age group compared to other areas of Bali. If this is the case, we might have expected a similar pattern from the SVRP study in the Banjaringan district, however the 15-19 ASMFR (399 per 1,000) is greater than the ASMFR for the 20-24 age group (355 per 1,000) (Gardiner,1981:Table 4.15,p.203), although it may well be that the proportion of high caste couples is not as high over the eleven SVRP study villages as it is in the three villages of this study (27.2 % of total). It is worth noting that Cho's calculations of ASMFR's for single years for Bali from the SUPAS II data using the Own Children method, also showed a consistent pattern of a lower ASMFR for the 15-19 age group compared to the 20-24 age group (Cho, unpublished data). Finally, as the proportions married in age group 15-19 are so

low the differences in ASMFR's are small.

In an attempt to circumvent the effect of these fluctuations in five year age-group levels, an aggregate measure of marital fertility will be calculated, namely Coale's index 'I<sub>g</sub>'. By applying a standard set of age specific marital fertility rates to the numbers of women in each five year age group for each five year period under study, an expected number of births can be estimated and compared to the actual number of births to those women. The resulting ratio of actual to expected births is the 'I<sub>g</sub>' value.

TABLE 5.8c

COALE'S INDEX OF MARITAL FERTILITY, I<sub>g</sub>, FOR FIVE YEAR PERIODS

AGE GROUP	STANDARD FERTILITY	NUMBER OF CURRENTLY MARRIED WOMEN			
		1976-80	1971-75	1966-70	1961-65
15-19	0.300	46.5	61.5	56.0	44.0
20-24	0.550	183.5	171.0	139.0	115.5
25-29	0.502	210.0	176.0	151.0	107.0
30-34	0.447	181.0	155.5	111.5	49.5
35-39	0.406	158.0	115.5	50.0	8.5
40-44	0.222	114.5	50.0	8.5	---
45-49	0.061	49.5	8.5	---	---
EXPECTED BIRTHS		393.8	328.9	241.1	156.0
ACTUAL BIRTHS		191	200	199	141
'I <sub>g</sub> ' (ACT/EXP)		0.49	0.61	0.83	0.90

Source:1980 survey

The I<sub>g</sub> values in Table 5.8c indicate a considerable decline in marital fertility during the 1970s, from a high value of 0.83 in the late 1960s to 0.49 in the period 1976-80, a decrease of 41%. The figures of 0.90 and 0.83 for the first and second halves of the 1960s are very high, indicating near natural fertility, but owing to the



small (or zero) numbers of women in the older age groups for the earlier periods, where fertility might be expected to have fallen further below natural levels than for the younger women, these values might be slight overestimates.

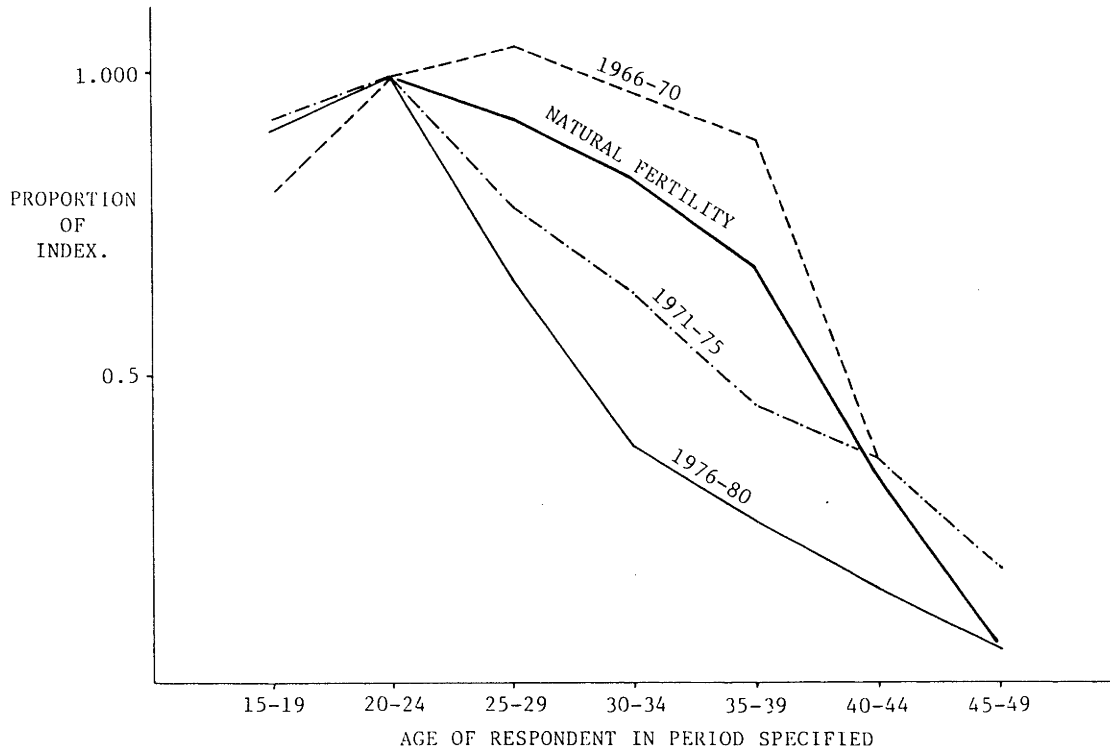
The question of the pattern of this decline in fertility, and its timing in relation to the activities of the family planning program, will be discussed further in the following chapter.

### 5.2.3 AGE SPECIFIC FERTILITY RATES

As the same pattern of proportions currently married, taken from the SVRP study, was used to convert age specific marital fertility rates, for each of the five year periods, to age specific fertility rates (see Table 5.9 and Figure 5-E), the trend in fertility over time is very similar to that seen with the ASMFR's (Table 5.8 and Figure 5-C). However because proportions married rise rapidly at the younger ages the patterns of the age specific fertility rates are somewhat different from those of marital fertility rates. For the period 1966-70 overall age specific fertility rates peak in the age groups 25-29 and 30-34 (both 312 per 1,000). As fertility has fallen the peak has shifted to the younger ages, to the 25-29 age group (218 per 1,000) for the period 1971-75 and to the 20-24 age group (183 per 1,000) for the most recent period. There has been virtually no change over time in the fertility of the youngest age groups, 15-19 and 20-24 years. Nevertheless, the decline in marital fertility amongst women over 25 years has been very substantial as reflected in the dramatic fall in Coale's Index of marital fertility, 'Ig' (Table 5.8c). From a level of 0.8-0.9 in the 1960s, 'Ig' fell to 0.6 in the first half of

FIGURE 5-D

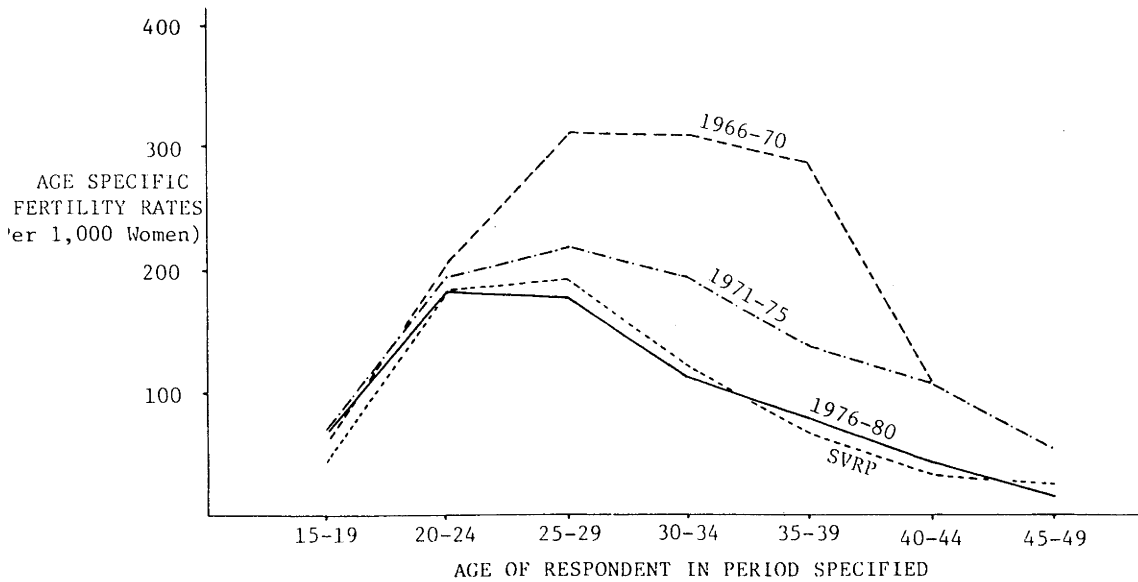
PATTERNS OF AGE SPECIFIC MARITAL FERTILITY RATES EXPRESSED AS PROPORTION OF INDEX LEVEL - ASMFR FOR AGE GROUP 20-24.



Sources: 1980 survey and Henry, 1961 (see Table 1.6, p.51)

FIGURE 5-E

AGE SPECIFIC FERTILITY RATES, 1966-70 TO 76-80.



Source: 1980 survey.

the 1970s, then to 0.49 in the second half. The level for the twelve months before the survey was 0.42, though single year data may be unreliable.

TABLE 5.9

PERIOD	AGE SPECIFIC FERTILITY RATES (PER 1,000 WOMEN)						
	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1976-80	66.4	193.6	195.0	126.9	81.0	44.3	15.5
1971-75	66.8	190.6	217.5	193.1	138.5	108.9	54.9
1966-70	62.9	205.5	312.0	312.7	288.4	114.2	n.a.
1961-65	57.0	242.6	353.6	323.2	228.4	n.a.	n.a.
% CURRENTLY MARRIED (SVRP STUDY)	19.6%	51.5%	75.0%	80.8%	81.0%	77.8%	77.3%

Source: ASMFR's from Table 5.8a  
SVRP % married from Table 5.2

TABLE 5.10

PERIOD	CRUDE BIRTH RATES (Derived from ASFRs in Table 5.9)
	CRUDE BIRTH RATES per 1,000 Population
1976-80	21.7
1971-75	29.7
1966-70	40.5

(These rates are calculated assuming proportions currently married from the SVRP, Banjarangkan study, constant for each period, and using the age structure from 1980 Banjarangkan survey).

It is an interesting exercise at this stage to use these ASFR's to calculate Crude Birth Rates for the various five year periods under study. When this is done for the period 1976-80 (see Table 5.10), the resultant CBR for the three study villages is 21.7 births per 1,000

population. This figure is reasonable when compared to the CBR of 23.6 per 1,000 obtained by the SVRP study for the Banjaringan area for the year 1976-77 (Gardiner,1981:196). A further comparison can be performed by averaging the recorded births between 1976 and 1980 (Table 5.5a) and dividing by the mean 1976-80 population figure (10). This procedure results in an estimated CBR of 24.1 births per 1,000 for 1976-80, slightly higher than that estimated using the ASFR's. This difference might be explained by the proportions currently married used to convert ASMFR's to ASFR's (those from SVRP) being slightly too low, and thus resulting in ASFR's which underestimate expected births.

#### 5.2.4 TOTAL FERTILITY RATES

The age specific fertility rates examined in the previous section indicated that a substantial fertility decline had taken place in the study area during the 1970s. As a summary measure of age specific rates, the total fertility rate (TFR) provides a convenient indicator of the overall magnitude of this decline, although not of the age pattern. Table 5.11 shows that, for women aged 15-44, overall fertility fell by just under half (45.4%) between the periods 1966-70 and 1976-80. The decline was a little greater earlier on, falling 29.3% between 1966-70 and 1971-75, than more recently, falling 22.7% between 1971-75 and 1976-80.

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(10) This assumes that virtually all births that took place in the villages during this five year period occurred to the survey respondents and thus have been recorded by the survey. This may not be too unreasonable an assumption as the age range in 1980 was 15 to 54, and there has been very little in- or out-migration.

TABLE 5.11a

TOTAL FERTILITY RATES, DIFFERENT AGE RANGES.  
FOUR PERIODS.

PERIOD	15-49	15-44	15-39
1976-80	3.61	3.54	3.31
1971-75	4.85	4.58	4.03
1966-70	n.a.	6.48	5.91
1961-65	n.a.	n.a.	6.02

TABLE 5.11b

## PERCENTAGE CHANGE IN TFR's

PERIOD	15-49	15-44	15-39
(1961-65)			
TO	n.a.	n.a.	-1.8
(1966-70)			
(1966-70)			
TO	n.a.	-29.3	-31.8
(1971-75)			
(1971-75)			
TO	-25.6	-22.7	-17.9
(1976-80)			
(1966-70)			
TO	n.a.	-45.4	-44.0
(1976-80)			

Source: 1980 survey.

To examine whether or not fertility had been changing during the sixties it is necessary to examine the TFRs for women aged between 15 and maximum 39 years (11). The level of fertility of women in this

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(11) The oldest age group in 1980 (50-54) were only 35-39 in the period 1961-65. Hence there are no data for women aged 40+ in that period.

range fell only 1.8% in the five years between periods 1961-65 (TFR=6.02) and 1966-70 (TFR=5.91) (12), compared to a decline of 31.8% between periods 1966-70 and 1971-75, and a subsequent decline of 17.9% between periods 1971-75 and 1976-80.

For the complete reproductive age range, 15-49 years, the total fertility rate in the most recent period (1976-80) was 3.61, somewhat higher than the figure of 3.31 from the SVRP study for the period mid-1974 to mid-1977 (Gardiner,1981:147) (13). The figure of 3.61 for 1976-80 represents a decline of 24.7% in TFR over the figure of 4.85 for the period 1971-75. As already mentioned this latter figure seems not unreasonable when compared to other sources such as SUPAS I (TFR=5.1) and SUPAS II (TFR=5.3) for the same period (Cho et al.,1979:14). It should not be forgotten that the SUPAS data represent all Bali, whereas we have seen that proportions currently married in the study area appear to be somewhat lower than for Bali as a whole (see Table 5.2), thus overall fertility might be expected also to be a little lower. In support of this view, the 'last birth' method, when applied by T.H.Hull to SUPAS II data, resulted in a TFR of 4.9 for all Bali in 1975 (Cho et al., 1979:14), almost half a child greater than the figure of 4.5 for the same year obtained by linear interpolation of the data in Table 5.11 .

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(12) The 1971 Census data provided TFR's for Bali (Rural) for the 1960s of 5.74 (1961-63), 5.84 (1964-66), and 5.95 (1967-70), (BPS,1976:6).

(13) If the sets of proportions currently married from SUPAS I or II were used to determine ASFR's from ASMFR's, the resulting TFR's for women aged 15-49 would have been 3.66 and 3.74 respectively.

As we saw at the beginning of this chapter there had apparently been very little change in the pattern of marriage over the last ten to fifteen years in the study area, and thus it is appropriate to apply a single set of proportions currently married to ASFRs for each of the five year periods under study in order to obtain ASFRs and TFRs. These data clearly indicate that very little fertility change appears to have taken place in the study area during the 1960s, whereas in the ten year period from the late 1960s to the late 1970s fertility fell dramatically.

#### 5.2.5 CURRENT PREGNANCY STATUS

As discussed in Chapter 1, Jeanne Siquefield from the Lembaga Demografi at University of Indonesia used the current pregnancy status method on 1976 WFS data to estimate fertility at the time of that survey (Siquefield,1978:25-39). She suggested, quite correctly, that there are definite advantages in having a measure of current fertility, or future fertility in the case of this method, especially when fertility is changing rapidly. The TFR estimated by this method for Bali in 1976 was 3.8 (Siquefield and Sungkono,1979:45) and was the basis for a number of the claims of a dramatic fertility decline in the early 1970s that were reviewed in Chapter 1 (14).

In a recent paper examining the current pregnancy status method, Goldman and Westoff state that the Siquefield results for Indonesia 'yielded fairly accurate estimates of recent fertility' (1980:535);

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(14) These claims were basically that in Bali the TFR had fallen by over one third from 5.8 in the late 1960s to 3.8 in 1976.

although based on applying the technique to WFS data from 15 countries, their conclusion was that 'neither the age pattern of fertility nor the level of the total fertility rates were reliably accurate across countries,' (1980:547). The reason for the fact that, in virtually all the countries, the total fertility rate based on births was higher than that based on the current pregnancy formula was that 'even when relying on the 5 - 7 month formula, there is simply too much underreporting of pregnancies' (1980:547).

TABLE 5.12

TOTAL FERTILITY RATE,  
CALCULATED USING CURRENT PREGNANCY STATUS.

AGE	NUMBER PREG.	NUMBER C.M.WOMEN	%C.M.WOMEN PREG.	% ALL WOMEN PREG.	ADJUSTED ASFRs
15-19	6	26	23.1	4.5	79.3
20-24	29	169	17.2	8.9	155.1
25-29	24	223	10.8	8.1	141.8
30-34	17	194	8.8	7.1	124.4
35-39	9	166	5.4	4.4	76.5
40-44	4	152	2.6	2.0	35.4
45-49	0	86	0	0	0
TOTAL	89	1016	8.8		TFR = 3.1

Source: 1980 survey.

However, in spite of the shortcomings of the method (15), it has been applied to the data from this survey using Sinquefield's adjustment factor directly (16), and using the proportions currently married from the SVRP study as selected in the earlier section of this chapter.

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(15) It is relevant that the TFR estimated for Indonesia by Goldman and Westoff was 2% higher using the current pregnancy status method (4.3) than that derived from births in the last year (4.2) (1980:546).



The resulting total fertility rate of 3.1 for 1980 (Table 5.12) appears to be rather low when compared to the figure of 3.61 for the period 1976-80 (mid-point being 1978.5), although annual births did decrease in the two years before the survey (Table 5.5a). Thus it seems likely that the current pregnancy status method has, in this case, produced an estimate of current fertility (1980) that is low by only a quarter of a child, or less.

#### 5.2.6 CHILDREN EVER BORN

The pattern of mean children ever born by age of ever-married woman (Table 5.13) in the Banjarangkan survey differs somewhat from those patterns for all Bali from the main earlier sources (1971 Census; 1973 FM survey; 1976 WFS).

TABLE 5.13

#### MEAN CHILDREN EVER BORN TO EVER MARRIED WOMEN, BALI

AGE	1971 CENSUS	1973 FMS	1976 WFS	1980 SURVEY
15-19	0.7	0.5	0.6	0.7
20-24	1.7	1.5	1.7	1.5
25-29	3.0	2.9	2.8	2.5
30-34	4.1	4.2	4.1	3.5
35-39	4.8	4.9	4.8	4.4
40-44	5.0	5.9	5.3	5.5
45-49	4.9	6.0	5.2	7.2
50-54	---	---	---	8.2

Sources: 1971 Census, BPS, Series E, Table 26  
 1973 FMS, McDonald, P.F. *et al.*, 1976:6.  
 1976 WFS, Vol. II, Table 3.1.6b, p.131.  
 1980 survey (N's as in Table 5.14a).

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(16) Without a small follow-up survey some months after the main survey it is not possible to calculate a new adjustment factor.

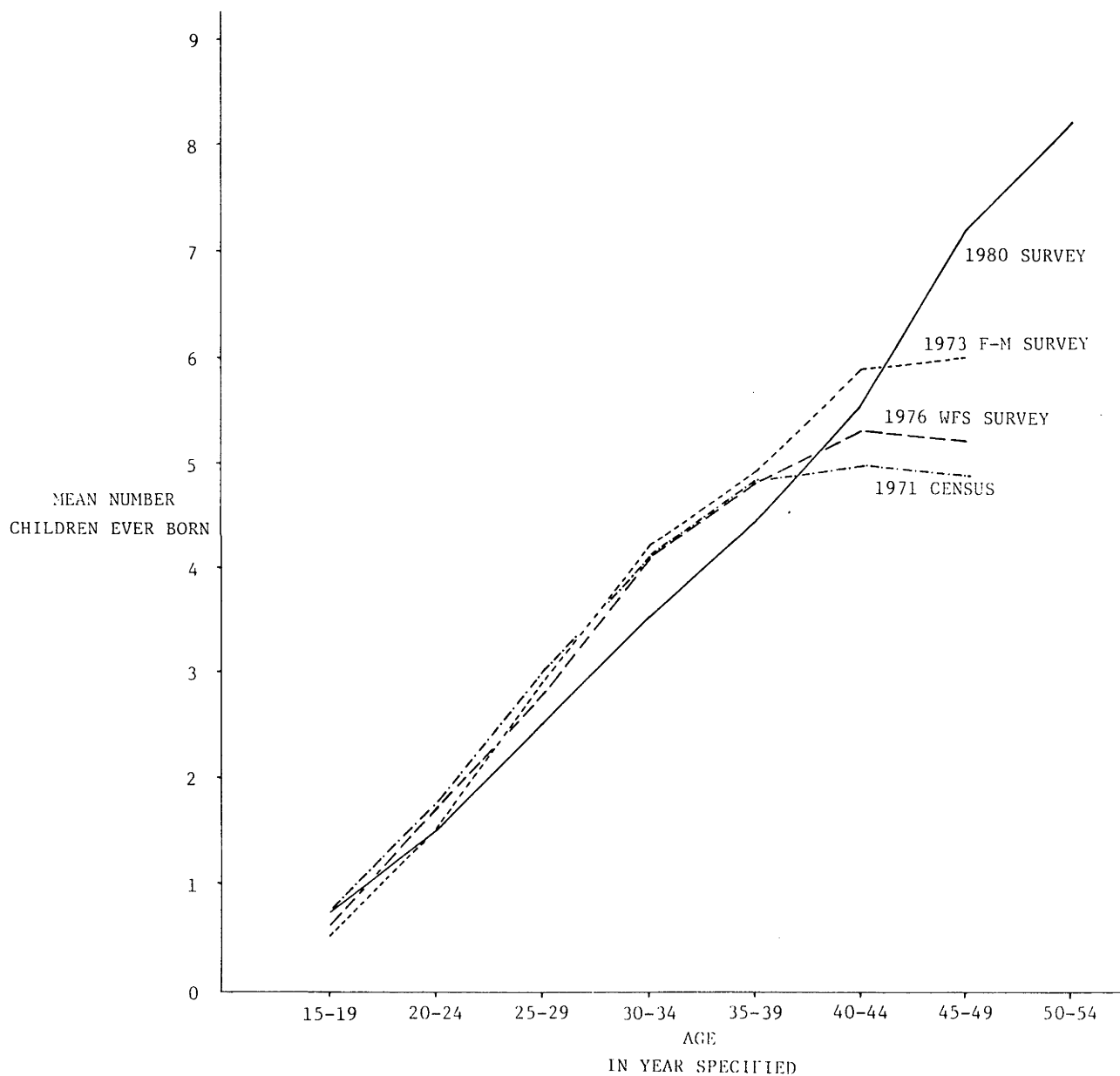
In Figure 5-F it can be seen that the levels for the younger age groups (under 25 years) are quite similar, but between ages 25 and 40, the levels from this survey fall below those from other sources. From age forty upwards, the mean CEB rises rapidly with age to levels considerably greater than for the other sources. The dip in the age range 25 to 40 for the 1980 survey is a reflection of the fertility decline that had been taking place during the 1970s.

The high levels at the older ages (45-54 years) in Banjaringan have been shown in Chapter 4 to reflect more complete data collection for CEB in the current survey than in the previous surveys and census. The difference of one child between the age groups 45-49 and 50-54 does not, of course, reflect additional childbearing after age 50, but rather that the fertility decline of the 1970s has resulted in lower cumulative fertility in each age group over 25 years (see Table 5.14a and Figure 5-G (17)). For example, in 1975, mean CEB for women aged 45-49 was 8.11, but by 1980 this figure had decreased by almost one child to 7.21 for women of the same age. It is for this reason that the pattern of CEB for 1980 continues to increase after age 50.

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(17) These data were obtained by looking back five, ten, and fifteen years in the women's pregnancy histories and estimating how many children they had given birth to up to that time. At those times the women were, of course, one, two, or three five year age groups younger than in 1980. This procedure also permits cohorts to be followed through a maximum of four consecutive five year age groups (see Figure 5-H).

FIGURE 5-F

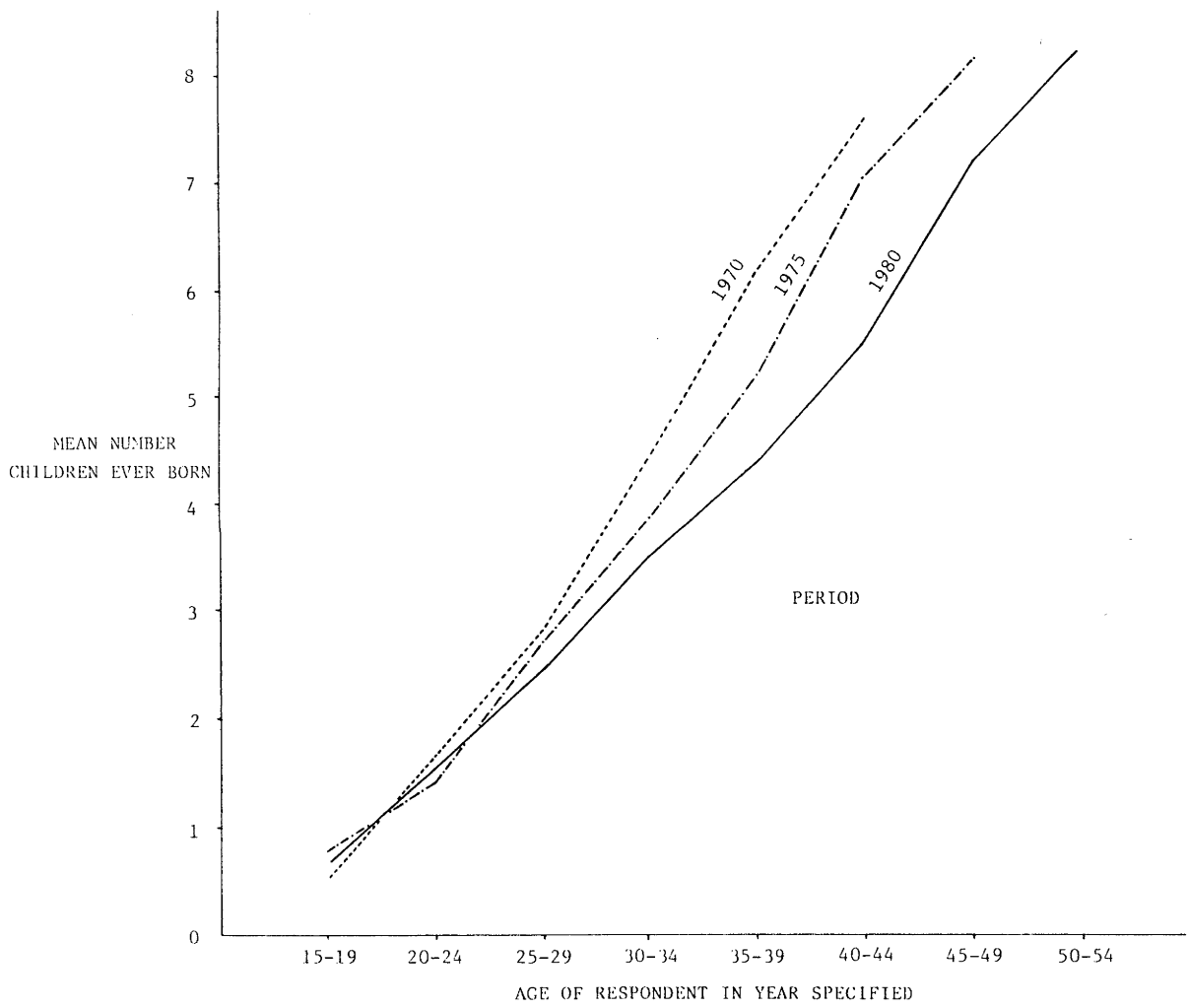
MEAN CHILDREN EVER BORN BY AGE, SURVEY COMPARED TO OTHER SOURCES.



Sources: as for Table 5.13, p.253.

FIGURE 5-G

MEAN CHILDREN EVER BORN BY AGE FOR 1970, 1975 AND 1980



Source: 1980 survey.

That the 1980 pattern of CEB is the consequence of reductions in fertility at earlier ages is more clearly illustrated in Figure 5-H (also derived from data in Table 5.14a) where four cohorts of women can be followed. These cohorts are those women whose ages at the time of the survey were (a)35-39 years; (b)40-44 years; (c)45-49 years; and (d)50-54 years.

When these cohorts are compared at any particular age group between 20 and 40 it is evident that there was negligible fertility change between 1960,1965 and 1970. However for each age group in which years 1970 and 1975, or 1975 and 1980 can be compared (from 30 up to 54 years of age) there is an obvious and substantial decline in the increments to cumulative fertility (Table 5.14c) throughout the seventies.

In the period 1965-70 the increments to total CEB averaged around 1.5 children over five years for ever-married women 20-44. Ten years later, the average increment was about half of that value over a five year period.

The patterns in Figure 5-H illustrate dramatically the change that can be made to completed fertility by a decrease in marital fertility in each age group from 25 upwards. For women aged 40-44, mean CEB was 5.5 children in 1980 (cohort b) compared to 7.5 children ten years earlier (cohort d). The fact that since 1970 the five yearly increment has been lower at all ages for each cohort compared to the previous cohort supports the implications of the data on changes in total fertility rates (Table 5.11). These implications are that if current age specific fertility rates persist mean completed family size will fall to a level between 3 and 4 children.

TABLE 5.14a

PERIOD	MEAN CEB TO EVER MARRIED WOMEN, BY AGE IN REFERENCE YEAR.							
	AGE OF WOMEN IN REFERENCE YEAR							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
1965	0.56	1.41	2.80	4.61	6.11	---	---	---
(n)	(57)	(132)	(154)	(87)	(18)	-	-	-
1970	0.54	1.63	2.79	4.42	6.16	7.56	---	---
(n)	(56)	(156)	(173)	(160)	(89)	(18)	-	-
1975	0.75	1.40	2.71	3.87	5.22	7.04	8.11	---
(n)	(68)	(194)	(199)	(176)	(162)	(89)	(18)	-
1980	0.69	1.54	2.47	3.51	4.41	5.52	7.21	8.22
(n)	(26)	(177)	(236)	(206)	(176)	(162)	(89)	(18)

Source: 1980 survey.

TABLE 5.14b

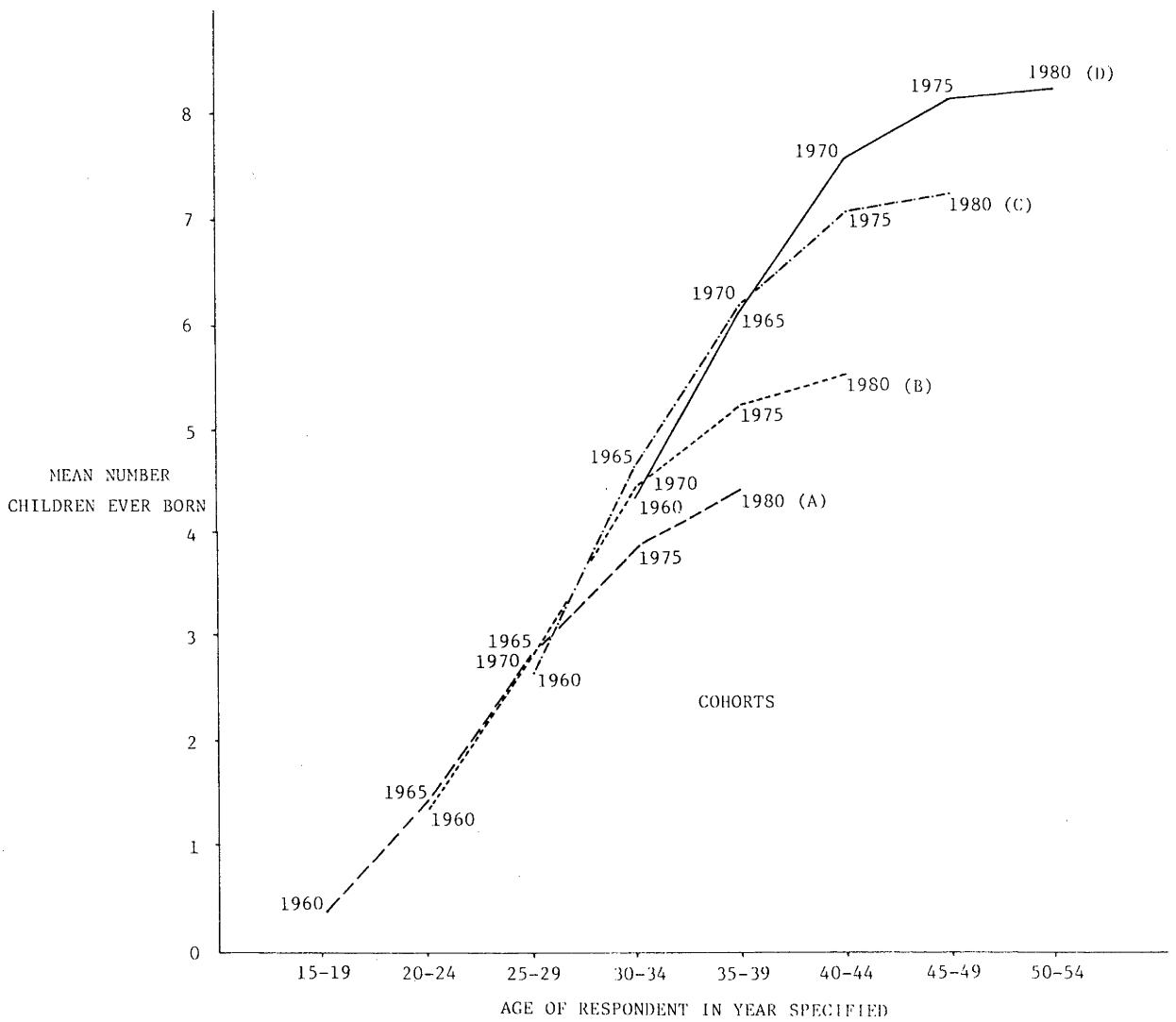
YEARS	PERCENTAGE CHANGE IN CEB VALUES FOR EACH AGE GROUP, BETWEEN DIFFERENT YEARS.							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
1970-75	+38.9	-14.1	-2.8	-12.4	-15.3	-6.9		
1975-80	-8.0	+10.0	-8.9	-9.3	-15.5	-21.6	-11.1	
1970-80	+27.8	-5.5	-11.5	-20.6	-28.6	-27.0		

TABLE 5.14c

PERIOD	MEAN INCREMENTS IN CEB FOR INCREASES OF FIVE YEARS IN AGE						
	15-19 TO 20-24	20-24 TO 25-29	25-29 TO 30-34	30-34 TO 35-39	35-39 TO 40-44	40-44 TO 45-49	45-49 TO 50-54
1965-70	1.07	1.38	1.62	1.55	1.45	---	---
1970-75	0.86	1.08	1.08	0.80	0.88	0.55	---
1975-80	0.79	1.07	0.80	0.54	0.30	0.17	0.11

FIGURE 5-H

MEAN CHILDREN EVER BORN BY AGE, FOR FOUR COHORTS OF WOMEN  
 AGED 35-39 IN 1965, 1970, 1975 AND 1980.



Source: 1980 survey.

It is of interest to note the difference in magnitude of fertility decline when expressed as cohort (cumulative) fertility (Table 5.14a) rather than cross-sectional rates, as in Table 5.11a. For example, in the ten years between periods 1966-70 and 1976-80, the total fertility rate (Table 5.11b) for women 15-44 has fallen 45%, from 6.48 to 3.65, while the cumulative CEB up to age 44 has fallen only 27%, from 7.56 in 1970 to 5.52 in 1980 (Table 5.14b).

#### 5.2.7 CHILD SURVIVAL

The dip in the pattern of children ever born by age (Figure 5-J) below age 45 has been shown to be partly a function of relatively complete reporting of CEB by the older women (see Chapter 4), and partly due to the recent fertility decline (see previous section). There is however, no such dip apparent in the pattern of children still living (CSL) by age of woman (Figure 5-J). This pattern rises steadily to age 50 before flattening slightly. The explanation of the constant slope of the CSL pattern (rather than dipping as does the CEB pattern) appears to lie in the effect of the fertility decline being counteracted by a substantial decline in infant, and probably child, mortality amongst the same age groups wherein fertility has declined.

On examining proportions of children dead by age of woman (Table 5.15), the values increase, slightly erratically, to 0.18 for age group 40-44; there follows a jump to 0.27 for age group 45-49. This indicates that mortality of infants and children was almost certainly higher when women currently 45-54 were bearing their children than for the children of women currently under 45 years.



TABLE 5.15

## MEAN CHILDREN EVER BORN AND CHILDREN STILL LIVING

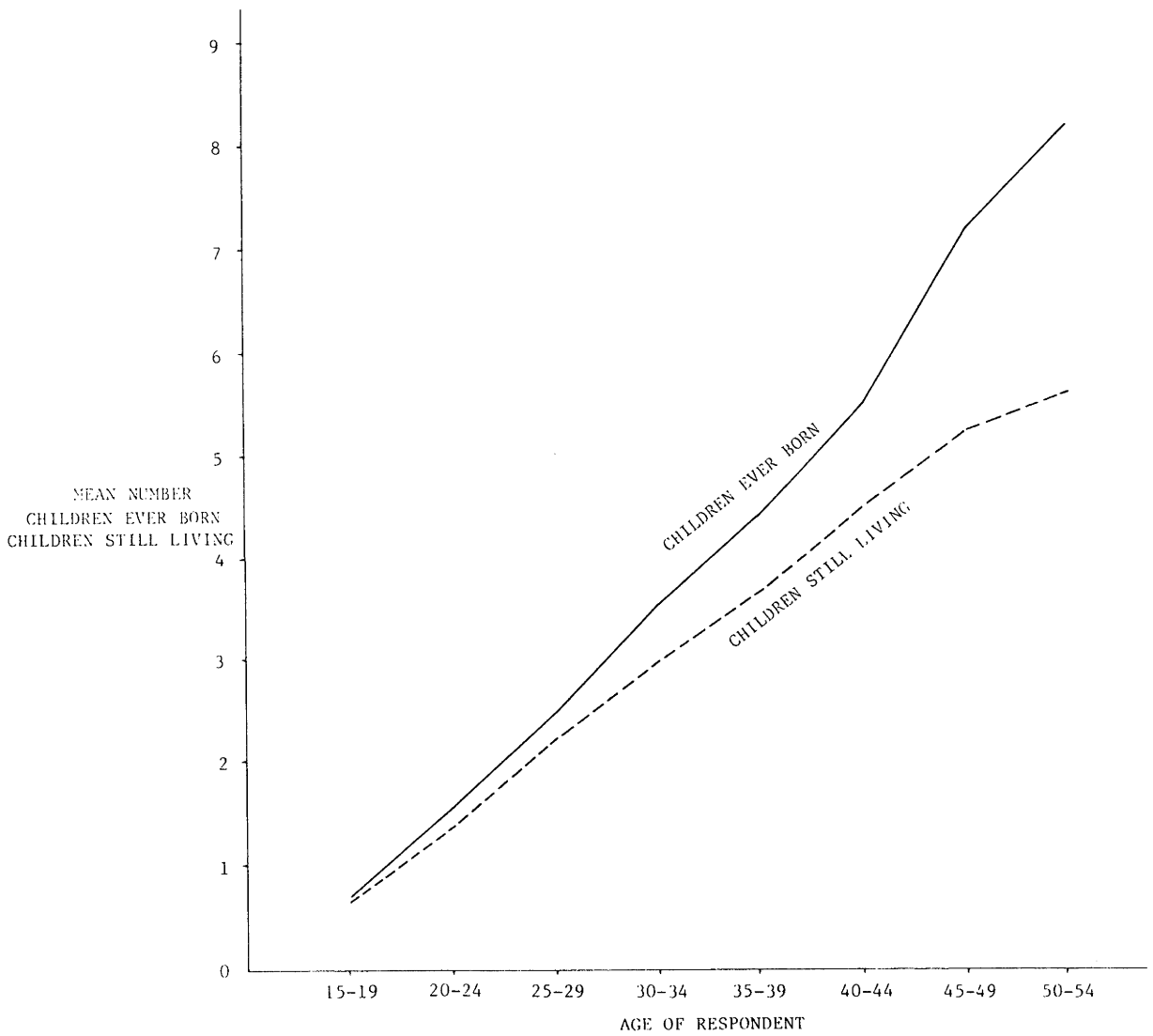
AGE WOMAN	MEAN CEB	MEAN CSL	PROPORTIONS DEAD(CEB-CSL/CEB)
15-19	0.69	0.65	0.06
20-24	1.54	1.40	0.10
25-29	2.47	2.24	0.10
30-34	3.52	3.01	0.15
35-39	4.43	3.72	0.16
40-44	5.53	4.53	0.18
45-49	7.21	5.29	0.27
50-54	8.22	5.67	0.31

Source:1980 survey.

That the level of infant mortality has undergone a substantial decline in recent years is demonstrated by data in Table 5.16a obtained using the Feeney method (Feeney,1976:12) and the Brass method (Brass,1975:50). The application of these methods to proportions of children dead (Table 5.15) indicates a drop in IMR of between 40 % (Brass method) and 47 % (Feeney method) over the fifteen years between the early sixties and the late seventies. The figures for age group 25-29 (both methods) are probably spuriously low (see Feeney,1976:13), otherwise the levels are similar, with the Brass method figures being higher throughout. Data extracted directly from the pregnancy histories (Table 5.16b) also support the apparent decline in infant mortality during that period, although the magnitude of decline is greater with the pregnancy history data, from IMR of 160 per 1,000 in 1961-65, to 54 per 1,000 in 1976-78, a decline of 66 %.

FIGURE 5-J

MEAN CHILDREN EVER BORN AND CHILDREN STILL LIVING.



Source: 1980 survey.

TABLE 5.16a

ESTIMATES OF INFANT MORTALITY AT DIFFERENT TIMES  
(Feeney and Brass Methods)

AGE OF WOMAN	(FEENEY METHOD)			(BRASS METHOD)
	IMR	YEARS PRIOR TO SURVEY		USING WEST MODEL TABLES
20-24	66.6	3.6	(1976.4)	74.6
25-29	60.2	5.8	(1974.2)	72.6
30-34	87.2	8.2	(1971.8)	96.6
35-39	90.9	10.9	(1969.0)	97.0
40-44	92.4	14.2	(1965.8)	123.8
45-49	124.8	17.6	(1962.4)	144.0

The mean age at childbearing used for the Feeney method was 25.3 years, calculated as described by Feeney (1976:13).  
(SOURCE: 1980 survey for Table 5.16a,b and c.)

TABLE 5.16b

ESTIMATES OF INFANT MORTALITY RATES  
FROM PREGNANCY HISTORIES

PERIOD	IMR (Per 1,000 Livebirths)	N (Livebirths)
1961-65	160	704
1965-70	104	1,005
1971-75	104	958
1976-78	54	607

TABLE 5.16c

RATES OF PREGNANCY LOSS Per 1,000 PREGNANCIES

PERIOD	STILLBIRTHS	SPONTANEOUS ABORTIONS	INDUCED ABORTIONS	TOTAL
1970-80	24.2 (46.4%)	24.7 (47.3%)	3.3 (6.4%)	52.2 (100%) (n=2218 pregs.)
Pre-1970	28.7 (59.6%)	19.0 (39.4%)	0.5 (1.1%)	48.2 (100%) (n=2043 pregs.)

The data used in the three estimates of infant mortality are not controlled for age of woman and thus the absolute values for the earlier periods may be distorted somewhat. However the expected effect would be to understate mortality in the earlier periods. The births occurring at those times would have been, on average, of lower birth order, and the mothers would have been younger, than was the case in the more recent periods. Generally, mortality of infants and children tends to be lower for lower birth order children and younger mothers, down to age twenty or so (Puffer and Serrano,1973:123). The value of IMR of 160 per 1,000 for the period 1961-65 is rather higher than those obtained by the other methods, but as the Feeney method estimates were arrived at assuming constant mean age at childbearing (18), based on that for women currently aged 15-34, the values for older women, and hence an earlier time, may be underestimates. This is supported by data from the 1971 Census which give an IMR of 132 per 1,000 for the period 1960-70 (Cho et al.,1980:20).

The three estimates of infant mortality rates for the late 1970s (54-75 per 1,000 livebirths) are consistent with West Model Life Table 17 or 18 mortality (Coale and Demeny,1966:19). This seems too low a level of mortality, considering other estimates, for example the SVRP study estimate for Banjarangkan of 90 per 1,000 livebirths (Gardiner,1981:Table 4.2,p.152). Also the estimates from this survey of q(5) levels suggest a higher mortality level equivalent to around

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(18) Before 1970, mean age at childbearing in Bali was almost certainly higher than in 1980, as indicated by the patterns of age specific fertility rates (Table 5.9). If higher mean ages at childbearing were employed in the calculations for earlier times, the Feeney method would give higher rates of infant mortality due to the positive sign of the coefficient of M in the regression equation.

West MLT 16, which would imply an infant mortality rate of 90 per 10,000 livebirths (19).

Nevertheless a decline in mortality has undoubtedly occurred since 1960, and data from the 1973 FM survey suggest that child mortality had been declining since the late 1940s (McDonald, et al., 1976:69). The decline in IMR between the early seventies and the late seventies may be also partly a consequence of the fertility decline whereby the proportion of higher order births has decreased considerably (see next section).

#### 5.2.8 RATES OF PREGNANCY LOSS

The data on pregnancy losses were collected in the survey primarily to achieve more complete reporting of livebirths. It was not expected that the reporting of pregnancy losses would be complete, particularly in respect of spontaneous or induced abortions, the latter being illegal.

The rate of pregnancy losses was relatively low at 52 per 1,000 livebirths for the period 1970-80, although slightly higher than the rate of 48 per 1,000 reported pre 1970 (Table 5.16c). Comparable data from the 1973 FM survey are 66 per 1,000 livebirths for 1964-70, and 69 per 1,000 for 1971-73, although that survey cautioned that the reporting was probably incomplete (McDonald et al., 1976:70). The FM survey report quoted sources which suggested that in careful retrospective studies rates of pregnancy loss may reach 100 to 120 per

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(19) The Brass procedure gives a  $q(5)$  of 0.139; the Trussell Simplified Regression Equation procedure gives 0.145; and the Sullivan multiplying factors give 0.134.

thousand pregnancies (from Coombs et al.,1969:247), and that the real incidence of pregnancy loss has generally been thought to be more like 200 to 300 per thousand pregnancies (from Abramson,1973:235). Many of these losses could never be counted because they occur in the first month of gestation and thus go undetected by the woman herself.

The distribution of types of pregnancy loss differs in this survey from that in the FM survey with 46.4 % being stillbirths compared to 11.8 % in the FM survey for Bali. Conversely there is a lower incidence of reported spontaneous abortions, 47.3 %, compared to 82.0 % in the FM survey. This may be a consequence of different definitions of stillbirth, which in the present survey was defined as any pregnancy loss occurring at six or more Bali months (seven or more Western months).

The proportion of pregnancies lost as induced abortions, 6.2 % in the 1970s, was the same as for the FM survey for 1969-72, and about 70 % of the absolute level, as a rate per thousand livebirths, of that in the FM survey. It seems unlikely that the incidence of induced abortions has declined since the 1960s as there are a number of doctors performing them, usually by vacuum aspiration, both privately and in certain hospitals (see Astawa,1980:63). As this procedure is commonly termed 'menstrual regulation' a number of women are almost certainly unaware that they are undergoing an induced abortion but rather believe that a late period is being induced. Overall there is no indication that any substantial changes have occurred during the 1970s in the two 'gestation variables' of Davis and Blake: foetal mortality due to (a) involuntary causes (spontaneous abortion or stillbirth), or (b) voluntary causes (induced abortion).

## 5.2.9 PARITY DISTRIBUTION

The report of the 1973 FM survey points out that while mean parity levels are a useful summary measure, they conceal the frequency distribution upon which they are based, as the same mean value can derive from different frequency distributions (McDonald et al., 1976:7).

TABLE 5.17a

PERCENT DISTRIBUTION OF EVER MARRIED WOMEN BY PARITY						
WOMEN 35-39	0	1-3	4-6	7-9	10+	MEAN
1980 SURVEY	2.8	23.9	60.8	11.4	1.1	4.4
1973 FM SURVEY	5.2	25.1	40.8	25.8	3.1	4.9
1971 CENSUS	11.7	24.1	32.8	25.8	5.7	4.8
WOMEN 40-44						
1980 SURVEY	1.2	14.2	54.3	29.0	1.2	5.5
1973 FM SURVEY	4.8	17.2	33.8	31.8	12.4	5.9
1971 CENSUS	12.8	25.1	26.2	25.7	10.1	5.0

Source: as for Table 5.13

TABLE 5.17b

BIRTH RATES BY PARITY GROUP, FOR WOMEN AGED 30-39 IN REFERENCE PERIOD, (Per 1,000 Women 30-39).				
PERIOD	1 - 3	4 - 5	6+	ALL PARITIES
1976-80	39.3	33.8	23.1	96.2
1971-75	44.8	64.7	57.6	167.1
1966-70	65.9	103.8	131.2	301.0

Source: 1980 survey.

Table 5.17a shows a comparison of the parity distributions at different times using the 1971 Census, the 1973 FM survey, and the 1980 Banjarangkan (BTB) survey. In the 1980 survey the distribution of parities is narrower than for other sources for both age groups 35-39 and age group 40-44, that is, the majority of women are in the parity group 4 to 6 in 1980 with relatively few women in the extreme parity groups of 0 and 10+. The means however, do not vary greatly from one source to another (20).

The exceedingly low proportions in parity zero in the 1980 survey are considerably lower than expected from knowledge of proportions of couples suffering primary sterility in most populations. According to the FM survey, in other countries of the region for which data are available, the proportion childless is generally between 6 and 9 per cent, but is considerably higher in some other parts of the world, particularly areas of Central Africa. Thus the expected values would fall somewhere between those of the 1971 Census and the 1973 FM survey. The FM survey may have underestimated zero parity women because in some areas it was thought that many women in their second or subsequent marriage might have been missed by the interviewers. In Bali however, this would not be expected to account for a large proportion of the women, as second marriages are relatively uncommon in Bali: only 2.4% of the respondents in the 1980 survey had more than one marriage. On the other hand, the Census data have been shown to be possibly too high in certain areas of Java and Bali when compared to data from other surveys such as those in Yogyakarta by

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(20) The mean of 5.0 for women 40-44 in the Census is probably too low for reasons of underreporting discussed in Chapter 4.



Singarimbun and Manning (1974:54) which showed 6% nulliparous women 45 years and over, and that of Valerie Hull which showed 8.8% nulliparous among women for the same age range, (Hull, 1975:287). The 1973 FM survey generally obtained lower values for proportions of nulliparous women than did the Census (McDonald et al., 1976:10).

If the FM survey figures for parity zero are not too low in Bali, it might be expected that around 5% of women in these age groups would be parity zero. There are however, several reasons which might account for relatively low proportions of zero parity women in Bali. Firstly such importance is attached to becoming a parent (21) (see Chapters 2 and 7) that many couples do not marry officially until they are certain that they can produce a child, '...often the (marriage) ceremony is not celebrated until the girl has shown by her pregnancy that she is not barren but fully able to bear children.' (Belo, J., 1970:5). Thus by implication, a number of sterile females will never marry, resulting in a reduced proportion of ever-married women being sterile (zero parity). The second possibility is that married women are not at risk of becoming pregnant only by their husbands. There is only anecdotal evidence gathered during fieldwork to support the view that if a couple is having difficulty conceiving occasionally another male of proven fertility may be called upon to try to help solve the problem. Assuming that primary sterility afflicts both males and females in roughly equal proportions, such an

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(21) 'Women who have no children are believed to go to hell, and lurid paintings and drawings abound which depict the barren women in hell with enormous hairy caterpillars sucking at their dry breasts' (Belo, J., 1970:5)

'assistance scheme' might be expected to reduce the proportion of zero parity couples substantially.

These hypotheses do not, however, explain the variation in proportions of parity zero women among sources within Bali. There is some reason to believe that very careful questioning of respondents may reveal that a woman who initially claims never to have given birth may have, at some time, had a child which has since died (22). A conscientious interviewer would find this relatively easy in Bali, as the respondent's name, and that of her husband, would normally have changed when she first became a parent, and it would not have reverted even if the single child subsequently died (23). Of the 125 women of parity one, only 5 had no surviving child: even if all five of these women reported that they had never given birth to a child that would only increase the proportion of parity zero women from 5.0 % (n=54) to 5.4 % of total women. We cannot know how many of the 54 women stating their parity as zero have, in fact, had a child in the past. The interviewers were also careful to ensure that the women included only children to whom they had given birth, not adopted children. This concept of biological motherhood is quite familiar to the Balinese who describe an adopted child as anak ngidih (asked-for-person).

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(22) Data from Yogyakarta indicate that mortality rates for single children are unreasonably low, suggesting that deaths to single children often go unreported (McDonald and Sontosudarmo, 1976:29)

(23) See Chapter 2 for details of naming system and life cycle stages.

A final possibility is that over time the proportions of women childless may genuinely have been decreasing. With the construction of readily accessible health clinics and the increasingly widespread use of powerful antibiotics it might be expected that sterility due, for example, to chronic bacterial infection of the Fallopian tubes, may have declined since 1971.

To return to the higher parity groups, it is apparent that the fertility decline taking place during the seventies has resulted from the avoidance of the very high birth order births (7+) which were not uncommon in the 1960s, producing a concentration of women in the parity group 4 - 6. There is no indication that women are limiting their families to 1,2 or 3 children (proportions in parity 0 -3 have fallen between 1971 and 1980) (Table 5.17a), although as parity is a measure of cumulative fertility some time will be expected to elapse before behavioural changes are reflected in parity distributions.

On the other hand, parity specific birth rates immediately reflect fertility changes. These data are presented in Table 5.17b for women aged 30-39 (24). The birth rates for women aged 30-39 were estimated for the last three 5-year periods, then these rates were broken down to component rates for the parity groups 1-3,4-5, and 6+, and the trends examined.

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(24) As discussed earlier, in the section on annual births, there is a shift in the proportions of women in each age group as we go back in time. This would result in an apparent shift upwards in the distribution of births according to birth order over time even if the pattern and level of age specific fertility remained constant. Thus it is necessary to choose a limited age range which acts to reduce this effect, but is large enough to be reliable for the earlier time periods. The range 30-39 years was chosen as it fulfils these criteria, and is the key age range in which fertility has changed.

From Table 5.17b we can see that over the ten years from 1966-70 to 1976-80, the overall birth rate for women 30-39 has fallen some 68%, from 301 per 1,000 to 96.2 per 1,000. However this decline has been greatest in the parity 6+ births (down 82.4%) while parity 1-3 births have fallen 40.4%. For the most recent period the majority of births were of parity 1-3 (39.3% of total births). Five years previously the majority of births were of parity 4-5, and ten years previously (1966-70) the majority were 6+ parity.

#### 5.2.10 PARITY PROGRESSION RATIOS

The data in Table 5.18 indicate a substantial decline in movement on to the next parity level, in the 1970s as compared to the previous decade. This is particularly noticeable amongst the livebirth orders of four or more, as might be expected from the changes in parity specific birth rates described in the previous section, where between the late 1960s and the late 1970s the birth rate for parity 6+ women fell by 82.4 %, for parities 4-5 women by 67.4 %, and for parities 1-3 women by only 40.4 % . Between the sixties and the seventies the proportion of parity one women moving on to parity two in three years or less decreased relatively by only 3.0 percent, from 82.1% to 79.6%, whereas there was a 35%+ decline in the proportions moving from parity four or higher, up to the next parity level (25). Overall, the proportion of women moving on to the next higher parity dropped from 72.2 % in the 1960s to 60.9 % in the 1970s. This change has occurred not through substantial lengthening of closed livebirth intervals, but

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 (25) The period examined in the 1970s is only to 1977 as it cannot be determined whether or not a woman having a livebirth in, say 1979, would go on to have another child in less than three years.

rather through many of the women ceasing childbearing at a lower average parity level than was the norm during the sixties before the family planning program.

TABLE 5.18

PARITY PROGRESSION RATIOS, 1960-69, 1970-77.  
WOMEN MOVING FROM ONE LIVEBIRTH ON TO ANOTHER LIVEBIRTH  
IN THREE YEARS OR LESS, BY LIVEBIRTH ORDER.

PERIOD	LIVEBIRTH ORDER	PERCENT PROGRESSING	RELATIVE CHANGE	N
A)1960-69	1 - 2	82.1 %		507
	2 - 3	80.1 %		414
	3 - 4	76.8 %		312
	4 - 5	75.3 %		229
	5 - 6	71.6 %		160
	6+ - 7+	69.1 %		257
	TOTAL	72.2 %		1,879
B)1970-77	1 - 2	79.6 %	-3.0 %	387
	2 - 3	68.9 %	-14.0 %	309
	3 - 4	59.0 %	-23.2 %	222
	4 - 5	48.4 %	-35.7 %	190
	5 - 6	44.6 %	-37.7 %	130
	6+ - 7+	43.1 %	-37.6 %	262
	TOTAL	60.7 %	-15.9 %	1,500

Source: 1980 survey.

The closed livebirth intervals changed little between the 1960s (mean length of 28.3 months) and the 1970s (mean length of 29.6 months), and of course it is not possible to know from a cross-sectional survey in 1980 how the open livebirth interval has changed since the 1960s to the mean 1980 value of 46.6 months. In the following chapter, both open and closed livebirth intervals will be compared for users and non-users of family planning through the 1970s. The pattern of decline among the parity groups between the sixties and the seventies

follows rather closely the pattern of prevalence of contraceptive practice among the different parity groups, as will be seen in the following chapter.

### 5.3 FERTILITY DIFFERENTIALS

The first part of this chapter has been concerned with using a variety of measures to examine the overall pattern of fertility change in the study villages. It is now clear that a very substantial decline in fertility has taken place since the late sixties and that this decline has occurred largely through decreased marital fertility, especially at the older reproductive ages.

This part of the chapter is concerned with examining various subgroups of the village populations in the hope that the presence or absence of differentials in the fertility of these different educational, occupational, and socio-economic subgroups may throw further light on the process of fertility decline.

Also fertility trends in some variables, such as woman's education, will be examined where the data permit estimation of past levels. This is important because comparisons based only on cumulative measures of fertility (e.g., children ever born) may not be satisfactory when one is trying to relate changes in fertility to cross-sectional events such as socio-economic change or the family planning program. As mentioned in section 5.2.6, while the total fertility rate fell 45 % between the periods 1966-70 and 1976-80, the cumulative mean CEB fell only 27 %, reflecting the delay in fertility change being registered by the cumulative measure.

### 5.3.1 RESPONDENT'S EDUCATION

This variable is now seen as being of key importance in determining the timing of a couple's decision to limit their family size '...there now appears to be increasing recognition of the possibility that education itself may be of fundamental significance (in fertility transition).' (Caldwell, J.C., 1980:227). This naturally holds implications for the propensity of women to accept family planning. The general pattern is that the higher the level of education of the woman the more likely she is to practise family planning, and the lower will be her fertility.

Before examining the data on fertility according to respondent's education (Table 5.19) it is necessary to point out the bias resulting from education having become more widespread in recent times. It tends largely to be the younger women who have had access to modern education, while the majority of the older women fall into the 'no school' category (26). This age difference in the educational categories accounts for some of the fertility differential and its effect must therefore be negated by standardizing for age. Also because the numbers of women in the higher educational categories are small, these will be combined to form a new category 'completed primary and above', comprising 15% of the total.

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(26) While 46% of the women who have completed primary school are 30 or over, some 70% of the 'no school' group were 30 years or over.

TABLE 5.19a

MEAN NUMBER OF CHILDREN EVER BORN  
BY EDUCATION OF RESPONDENT  
(Standardized by Age of Respondent)

EDUCATION	15-19	20-24	25-29	30-34	35-39	40-44	45-49	MEAN CEB
NO SCHOOL	0.78 (9)	1.74 (74)	2.69 (110)	3.56 (120)	4.36 (115)	5.61 (131)	7.26 (66)	=3.82 (625)
SOME PRIM	0.44 (9)	1.52 (69)	2.49 (78)	3.85 (48)	4.52 (31)	5.50 (16)	7.40 (20)	=3.81 (271)
COMPLETE PRIM+ABOVE	0.88 (8)	1.15 (34)	1.96 (48)	2.85 (38)	4.05 (30)	4.93 (15)	5.00 (3)	=3.02 (166)
ALL LEVELS	0.69	1.54	2.47	3.52	4.43	5.53	7.21	
1973 FMS	0.51	1.49	2.87	4.17	4.94	5.94	6.00	
CENSUS 1971	0.74	1.74	2.97	4.15	4.77	4.99	4.89	

\*:Completed Primary, n=91; Junior Secondary, n=39;  
Senior Secondary, n=30; University/Academy, n=6.

TABLE 5.19b

MEAN NUMBER OF CHILDREN EVER BORN  
BY EDUCATION OF RESPONDENT  
(FOR WOMEN CONTINUOUSLY IN THE MARRIED STATE)  
(Standardized by Duration of Marriage)

EDUCATION	0-4	5-9	10-14	15-19	20-24	25-29	30+	MEAN CEB
NO SCHOOL	1.14 (68)	2.50 (118)	3.47 (132)	4.63 (141)	6.10 (104)	7.48 (58)	8.20 (21)	=3.78 (642)
SOME PRIM	1.10 (68)	2.39 (84)	3.98 (44)	4.68 (43)	5.41 (17)	8.73 (13)	9.00 (3)	=3.81 (272)
COMPLETED PRIM+ABOVE	1.00 (46)	2.10 (49)	3.04 (27)	4.19 (21)	5.06 (18)	4.80 (5)	---- --	=3.12 (166)
ALL LEVELS	1.08	2.38	3.48	4.54	5.83	7.50	8.62	

Source: 1980 survey.



After standardization for age or marriage duration (Table 5.19), there is virtually no difference in the fertility of the lower educational groups, whereas the highest educational category (comprising one sixth of all the women) averages 0.7-0.8 children ever born fewer than the other groups, when standardized by either age of woman (Table 5.19a) or duration of marriage (Table 5.19b). The fact that there is no difference in the mean CEB for the educational categories of 'no schooling' and 'some primary', including 85% of the respondents, is somewhat unexpected considering the view that 'In countries in the early stages of fertility transition...the most marked fertility differentials appear to be educational ones' (Caldwell, 1980:227)(27).

As will be seen though, the modest difference (0.7-0.8 CEB) between the 'completed primary and above' group and the others proved to be the widest differential within any of the variables examined, except for a couple of small occupational groups. These data suggest that among the majority of the women in the study area female education has not been of great importance in affecting fertility behaviour, particularly as some 59% of the women had no schooling in 1980, although high school education appears to have been of considerable importance in causing women to limit their childbearing.

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(27) It could be argued that Bali in 1980 was no longer in 'the early stages of fertility transition', but with a TFR of over 6 some twelve or so years earlier, it could not yet be classed as a 'late transition' region.

TABLE 5.19c

ACTUAL and EXPECTED BIRTHS AND INDEX  
BY RESPONDENT'S EDUCATION, FOR DIFFERENT PERIODS.

	RESPONDENT'S EDUCATION		
	1)NO SCHOOL	2)SOME PRIMARY	3)COMPLETED PRIMARY and ABOVE
	ACTUAL BIRTHS		
1966-70	762	187	97
1971-75	644	235	117
1976-80	478	270	134
	EXPECTED BIRTHS		
1966-70	553	152	81
1971-75	636	231	133
1976-80	665	333	200
	INDEX (ACTUAL/EXPECTED)		
A)1966-70	1.38	1.23	1.20
B)1971-75	1.01	1.02	0.88
C)1976-80	0.72	0.81	0.67
%CHANGE A)-C)	-47.8 %	-34.1 %	-44.1 %

Source: 1980 survey.

A factor which urges caution in the interpretation of these differentials is that they are based on cumulated fertility from previous years, rather than on current fertility. Thus trends within subgroups may be dampened by long-term fertility levels. An alternative approach is to examine cross-sectional fertility amongst the educational subgroups for certain periods of time. This could take the form of age-specific marital fertility rates for five year periods, however in this case the numbers of women in the earlier periods (e.g. 1966-70) would be too small to provide reliable

ASMFR's. Instead a method of indirect standardization is preferable. A standard schedule of ASMFR's (in this case 1971-75 for the whole study population, see Table 5.8a) can be applied to the women in each five year age group and educational subgroup for the particular period, to produce an expected number of births. An index can then be made of actual over expected births. For the various education levels of the respondents, the indices are presented in Table 5.19c, indicating that in the period 1966-70, cross-sectional fertility of the 'No school' subgroup was somewhat higher at 1.38 than that of the groups with 'Some Primary' education (1.23), or 'Completed Primary and above' (1.20). This is not as wide a differential as suggested by the cumulative fertility levels in the 1973 FM survey where after standardization for age the 'No School' category had a mean CEB of 4.4, compared to 3.8 for the 'Some Primary' group and 3.0 for the 'Completed Primary and above' group (McDonald, P.F., et al., 1976:5). However between 1966-70 and 1976-80 the indices (for the 'No School' group) fell some 48 % for the 'No School' subgroup, 44 % for the 'Completed Primary and above' subgroup, but only 34 % for the 'Some Primary' subgroup. So, while fertility has fallen within each educational subgroup between the late 1960s and late 1970s, the levels of the subgroups relative to each other have remained much the same. Thus it appears that the educational differentials were of similar magnitude before the fertility decline, as at present.

### 5.3.2 RESPONDENT'S HUSBAND'S EDUCATION

The bias due to age differences in regard to availability of education which required age standardization of fertility levels of women also affects levels of fertility according to the respondent's

husband's level of education.

TABLE 5.20

CHILDREN EVER BORN BY HUSBAND'S EDUCATION  
STANDARDIZED BY (a)AGE OF WOMAN, AND (b)DURATION OF MARRIAGE

TABLE 5.20a

EDUCATION	AGE OF WOMAN							MEAN CEB
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
NO SCHOOL	0.75 (4)	1.43 (23)	2.27 (37)	3.29 (41)	4.38 (29)	5.73 (55)	7.68 (40)	=3.67 (229)
SOME PRIM	0.50 (8)	1.62 (58)	2.53 (73)	3.56 (66)	4.24 (62)	5.66 (58)	7.39 (31)	=3.78 (356)
COMPLETED PRIM+ABOVE	0.78 (14)	1.52 (96)	2.50 (126)	3.59 (99)	4.37 (85)	5.15 (49)	5.89 (18)	=3.35 (485)
ALL LEVELS	0.69	1.54	2.47	3.52	4.43	5.53	7.21	

TABLE 5.20b

EDUCATION	DURATION OF MARRIAGE							MEAN CEB
	0 - 4	5 - 9	10-14	15-19	20-24	25-29	30+	
NO SCHOOL	0.92 (26)	2.42 (45)	3.42 (36)	4.41 (46)	6.20 (45)	8.06 (32)	9.27 (11)	=3.77 (241)
SOME PRIM	0.98 (48)	2.34 (87)	3.28 (65)	4.62 (76)	5.89 (47)	7.41 (27)	8.50 (10)	=3.67 (360)
COMPLETED PRIM+ABOVE	1.17 (108)	2.39 (118)	3.59 (103)	4.41 (82)	5.38 (48)	6.59 (17)	6.67 (3)	=3.57 (479)
ALL LEVELS	1.08	2.38	3.48	4.54	5.83	7.50	8.62	

Source: 1980 survey.

However in the 1980 Banjaringan survey data on husband's age were not collected on the grounds that husbands were usually not present at the interview. However assuming a certain degree of correlation between

husband's age and wife's age the data on fertility by education of husband have been standardized by wife's age, as well as duration of marriage which would normally be the same for both husband and wife (in 95% of cases women were currently married to their first husband).

The result (in Table 5.20a and b) is a virtually negligible differential according to husband's educational level. As might be expected, the distribution of husbands in educational categories differs from that of wives in that only 22.3% have no schooling, compared to 59.4% of wives. But the range of mean CEB, when standardized by age of wife, is from 3.7 for those husbands with no schooling to 3.8 for those with some primary, to 3.4 for those who have completed primary and above, even those with tertiary education have a mean CEB of 3.1, (Table 5.20b).

The pattern when standardization is for duration of marriage is very similar (Table 5.20b) ranging from 3.8 for those husbands with no schooling, down to 3.6 for those who have completed primary and above. Thus there cannot be said to be any significant difference in fertility according to educational level of respondent's husband.

### 5.3.3 ECONOMIC SCORE

The decision to measure economic status by the possession of certain items in the household rather than by estimating income was discussed in chapter 4 (p.181) (28).

It should be noted that the concept of ownership of household items differs in Bali from that in some other places. The Balinese

tend to live in a houseyard or compound comprising many buildings occupied by several families related patrilineally and sharing many of the facilities and goods in the compound (see Geertz and Geertz, 1975:49). However there does exist the notion of personal ownership in that an individual may own and sell certain items such as chickens or pigs, whereas other 'household items', such as lamps or buckets may be considered communal property and thus be less reliable guides to economic status.

After standardization by age (29), the fertility differentials are reduced to one third of a child among the different groups (Table 5.21a) (30), and after standardization by duration of marriage (Table 5.21b), the differential covers a range of half a child. The pattern bears little resemblance to the positive relationship between economic status and fertility as observed in Java by Hull and Hull (1976). Although overall the higher economic score groups combined tend to have fractionally higher mean CEB than the lower two economic groups, there could not be said to be any real fertility differential by economic score.

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(28) The number of items possessed was multiplied by the weighting given each in direct proportion to its price. One unit of price was roughly equivalent to the price of the cheapest item on the list (a kerosene lamp at Rupiah 500 or A\$0.70) at the time of the survey.

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(29) Table 5.21c shows that, generally speaking, economic score increases with age as individuals accumulate more wealth, or take on responsibility for those items present within the compound.

(30) Prior to standardization the range was from 3.2 CEB (poor group, Rs. 10,000-99,999) to 4.4 (wealthy group, Rs.150,000-449,999).

TABLE 5.21

CHILDREN EVER BORN BY ECONOMIC SCORE  
STANDARDIZED BY (a)AGE, AND (b)DURATION OF MARRIAGE.

TABLE 5.21a

ECONOMIC SCORE	AGE OF RESPONDENT							MEAN CEB
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
0 - 19	1.00 (5)	1.81 (52)	2.46 (70)	3.31 (45)	3.83 (35)	5.51 (41)	7.45 (20)	=3.66 (268)
20 -199	0.42 (12)	1.37 (62)	2.45 (71)	3.36 (67)	4.42 (36)	5.15 (33)	6.67 (21)	=3.59 (302)
200-299	1.00 (4)	1.56 (36)	2.75 (61)	3.98 (54)	4.69 (64)	5.43 (54)	7.07 (27)	=3.87 (300)
300-899	0.75 (4)	1.47 (17)	1.83 (12)	4.53 (15)	5.12 (17)	6.18 (22)	7.38 (13)	=3.86 (100)
900 +	1.00 (1)	1.30 (10)	2.18 (22)	2.61 (23)	4.17 (24)	5.83 (12)	8.25 (8)	=3.54 (100)
ALL LEVELS	0.69	1.54	2.47	3.52	4.43	5.53	7.21	

TABLE 5.21b

ECONOMIC SCORE	DURATION OF MARRIAGE							MEAN CEB
	0 - 4	5 - 9	10-14	15-19	20-24	25-29	30+	
0 - 19	1.30 (47)	2.53 (80)	3.19 (50)	4.64 (45)	6.23 (30)	8.21 (15)	8.60 (10)	=3.69 (277)
20 - 199	0.93 (68)	2.21 (76)	3.79 (58)	4.46 (48)	5.42 (31)	6.14 (17)	7.60 (7)	=3.49 (305)
200-299	1.24 (34)	2.54 (57)	3.63 (63)	4.81 (77)	5.77 (49)	7.48 (22)	7.50 (2)	=3.79 (304)
300-899	1.00 (18)	2.38 (17)	4.20 (16)	5.20 (16)	6.15 (21)	8.00 (10)	10.50 (2)	=4.03 (100)
900 +	1.00 (15)	2.24 (21)	2.67 (18)	3.81 (22)	6.73 (11)	7.40 (12)	7.00 (3)	=3.41 (102)

Source: 1980 survey.

TABLE 5.21c

## MEAN ECONOMIC SCORE BY RESPONDENT'S AGE

AGE	MEAN ECONOMIC SCORE	N
20 - 24	206	(177)
25 - 29	224	(236)
30 - 34	261	(206)
35 - 39	310	(176)
40 - 44	256	(162)
45 - 49	282	(89)

TABLE 5.21d

ACTUAL and EXPECTED BIRTHS, and INDEX  
BY ECONOMIC SCORE, FOR DIFFERENT PERIODS.

	ECONOMIC SCORE		
	1)0-199	2)200-299	3)300+
ACTUAL BIRTHS			
1966-70	433	342	221
1971-75	504	320	177
1976-80	521	243	127
EXPECTED BIRTHS (Using 1971-75 ASMFRs)			
1966-70	360.5	264.9	162.1
1971-75	510.4	304.0	186.6
1976-80	661.7	325.0	208.3
INDEX (ACTUAL/EXPECTED)			
	1)0-199	2)200-299	3)300+
A)1966-70	1.20	1.29	1.36
B)1971-75	0.99	1.05	0.95
C)1976-80	0.79	0.75	0.61
% CHANGE A)-C)	-34.5 %	-42.1 %	-55.2 %

Source: 1980 survey



As explained earlier (section 5.3.1), differentials expressed in terms of cumulative fertility (CEB) may not reflect recent changes. When the indices of 'actual over expected' births are examined for the economic score subgroups (Table 5.21d) there is in 1966-70 a positive relationship between wealth and current fertility level, although this has been reversed by the late 1970s as fertility has declined faster within the wealthiest subgroup (down 55.2 % for the 300+ group), than within the poorest subgroup (down 34.5 % for the 0-199 group). This example illustrates clearly how the absence of differentials in cumulative fertility may conceal real differences in cross-sectional fertility (in different periods), which have cancelled each other out.

#### 5.3.4 LAND OWNERSHIP

Here we are concerned only with land ownership (wet riceland or sawah) by couples where the husband's primary occupation is farmer. A number (129) of non-farming couples also own sawah but in their case it is largely a means of investment or inheritance and it is unlikely that these couples will have aspirations for their children to work on the land (see chapter 7 for parents' aspirations for work for their children)(31).

Of the farming couples about half own some sawah themselves (Table 5.22), the remainder work land belonging to another, in some cases the land of the husband's father. It might be expected that for a farming couple, ownership of sawah would be of considerable

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(31) Of the 129 non-farming couples, 46 (35%) are Pegawai Negeri (Civil Servants); and 45 are labourers generally owning too little land to support a family by farming alone.

significance in determining aspirations for childbearing and that this would be reflected in the level of fertility. However there proved to be no difference in mean CEB between those farmers who own sawah (mean CEB=4.3) and those who do not (mean CEB=4.3), although both groups have somewhat higher fertility levels than the overall average of 3.7 CEB.

TABLE 5.22

## MEAN CEB BY LAND OWNERSHIP AND AGE OF FARMERS' WIVES.

OWNERSHIP	15-19	20-24	25-29	30-34	35-39	40-44	45-49	MEAN CEB
NO SAWAH (n)	0 (5)	1.5 (32)	2.6 (41)	3.5 (48)	4.5 (36)	5.9 (36)	7.4 (27)	=4.3 (225)
SOME SAWAH (n)	0.7 (3)	1.5 (21)	2.8 (41)	3.6 (32)	4.7 (51)	5.8 (50)	6.8 (29)	=4.3 (227)

Source: 1980 survey.

Part of the explanation for the absence of any substantial fertility differential according to land ownership may be related to the fact that even those farmers who do own land tend to own relatively little. Of the 227 farmers owning some sawah, about two-thirds (64.5%) own less than 30 Ares (0.3 hectares), generally considered to be the minimum area necessary to support a family with three or four children (32).

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(32) For land-owning farmers, the mean area owned is 29.1 Ares whereas for land-owning Pegawai Negeri the mean area owned is 42.6 Ares, reflecting the fact that many of the large plots of sawah are owned by people other than farmers.

### 5.3.5 RESPONDENT'S OCCUPATION

The respondents were asked if they did any work for which they received an income, in cash or in kind (e.g., a share of rice harvested). About two-thirds (n=679) of the women said that they did do some such work, and of these 367 (53%) said it was regular work, while 312 (47%) said the work was irregular (for less than half the weeks of the year) (Table 5.23a).

The working women (n=679) had a mean CEB of 3.7, virtually the same as those who did not do work (mean CEB=3.8) which brought them an income.

After standardization for either age or duration of marriage there remain some substantial differences among occupational categories. Both civil servants and workers in cottage industries (making cloth, coconut oil, shirts, etc.) have a low mean CEB of 2.8-3.1, while the labourers, farmers and street sellers (for example, women who carry water from the spring or river to sell in the town) have mean CEB of 3.6-3.9. Initially this may not appear to be a very substantial difference but in the context of almost negligible fertility differentials, a difference in mean CEB of 0.8-1.1 is worth noting, although the numbers in some occupational groups are very small, and may be atypical. It should not be surprising that the lowest fertility group, the civil servants, also have the highest educational levels, and were seen earlier in this chapter to be younger and of lower than average fertility (33). Except for street

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(33) This group will be seen in the next chapter to also have the highest level of family planning use.

sellers, it tends to be the occupational groups with the higher proportions in regular work (civil servants, cottage industry, and shop sellers) who have the lower levels of fertility.

TABLE 5.23a

MEAN CEB BY RESPONDENT'S OCCUPATION STANDARDIZED BY (a)AGE, AND (b)DURATION OF MARRIAGE				
OCCUPATION	AGE STDZD MEAN CEB	DURATION STDZD MEAN CEB	NUMBER	PROPORTION REGULAR WORK
FARMER	3.9	3.6	67	60.0%
SHOP SELLER	3.4	3.2	19	100.0%
MARKET SELLER	3.6	3.6	196	72.0%
LABOURER	3.7	3.8	345	34.2%
CIVIL SERVANT	2.8	3.0	25	96.0%
COTTAGE INDUSTRY	3.1	3.1	21	81.0%
STREET SELLER	3.9	3.6	18	77.8%
TOTAL WORKING	3.6	3.6	691	54.1 %
NOT WORKING	3.8	3.8	392	

TABLE 5.23b

CHILDREN EVER BORN BY AGE OF WOMAN FOR LABOURERS WHO WORK (a)REGULARLY, (b)IRREGULARLY								
AGE OF WOMAN								
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	MEAN CEB
REGULAR (n)	0.00 (2)	1.27 (15)	1.63 (24)	3.34 (32)	3.63 (19)	5.18 (17)	7.60 (5)	=3.5 (114)
IRREGULAR (n)	0.40 (5)	1.64 (33)	2.56 (43)	3.80 (45)	4.86 (36)	5.23 (30)	7.70 (23)	=4.0 (223)

Source: 1980 survey.

It is not difficult to imagine the circumstances for these women whereby their jobs may be jeopardized by repeated pregnancies, thus it is in their interests to limit childbearing. It may also be that it is only those women with fewer children who are in a position to take

these jobs. This concern is less likely to apply to women working in farming, often on their own family land, or labouring, which is somewhat more flexible in terms of attendance than, say, teaching.

The effect of performing regular work, as opposed to irregular work, can also be seen in Table 5.23b where labourers in both these categories have been compared (the only occupational group large enough to do this), and there can be seen a difference in mean CEB of about half of one child between the regular labourers (3.5) and the irregular labourers (4.0), (34). This pattern can be followed through all the age groups up to age 40 (although there is little difference among the few older women), suggesting that possibly if a young woman has a regular job, whether skilled or unskilled, she may be more inclined to restrict her childbearing than if she has only occasional work. It may also be that women with more children can take only irregular employment. It will be seen in the next chapter that the female labourers who work regularly also have a higher prevalence rate of use of family planning than those who work irregularly.

The data suggest that, overall, there are differences in fertility, though not very large ones, between the different occupational groups, and that regularity of work seems to play a role in encouraging working women to restrict their childbearing. This effect is not simply restricted to those occupations, such as civil servant, where the women tend to have higher educational levels, which has also been associated with lower fertility.

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(34) The mean CEB for all woman working regularly is 3.5 (age standardized), compared to a mean CEB of 3.8 for women working only irregularly.

## 5.3.6 CASTE

It is generally held that between five and ten percent of the population of Bali belong to the 'gentry', those persons whom the Balinese refer to as triwangsa, the 'three (upper) castes' (Geertz and Geertz, 1975:6), comprising all those of Brahmana, Satria, and Wesia status, as opposed to the Sudra or commoners, who make up the rest of the Balinese population. However in the three survey villages the overall proportion of high caste people was 27.2% (see chapter 4 for village characteristics), the proportion varying between 5% in Bakas and 60 % in Tusan, (35).

In the past, circumstances for many high caste people in Bali were such that their fertility behaviour may be expected to have been different from that of the commoners. The major land-owning families were primarily from the Satria caste who, because of their historical connections, had not only political power but also control of much of the island's wealth. They certainly had the economic capacity to support large families although there are no data to enable the examination of this situation in the past. A factor which would have tended to reduce average fertility per high caste woman was the prevalence of polygyny amongst the caste groups, in particular the Satria or princely group. In general, average overall fertility per wife would be expected to be lower in a polygamous marriage than for a monogamous couple.

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(35) Such a clustering pattern is not uncommon with members of the same caste apparently preferring to live together, possibly because this facilitates such interactions as marriage which is generally within caste boundaries, also for reasons of ceremonial and language convenience.

Times, however, have changed. With the arrival of the Dutch the Royal families lost a great deal of their traditional political power (36). With the Land Reform Act of the early 1960s the princes lost much of their economic assets, although possibly not as much as those drafting the Act had envisaged (37). Also polygyny now appears to be rather less common than a generation ago (38). One respondent's husband, a prince, bemoaned the fact that times were harder now as he could afford to support only five wives, whereas his father had seventeen wives, and his grandfather had two hundred wives.

Although many present Government administrative positions, in the Klungkung regency, are held by members of the caste groups, these account for only a small proportion of the total caste people in the study villages. Many of the Satria caste inhabitants of the village of Tusan, for example, appear to benefit only in terms of status from belonging to one of the caste groups. It may be for this reason that fertility amongst the castes proved to be virtually identical to that of the commoners (Table 5.24).

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(36) As Geertz states in 'Peddlers and Princes': 'When the Dutch came they struck at the heart of this system: they suppressed the personal service tie between lord and subject and replaced it with a territorial bureaucratic relationship. With this kingpin removed, the traditional state was demolished at a single blow, and the position of the aristocracy could never be quite...the same again.' (1968:24-25).

(37) This Act limited ownership of wet riceland to 7.5 hectares, and dry land to 9 hectares, by any individual. It is not difficult to think of ways in which these ownership restrictions could be circumvented, and indeed were.

(38) 119 of the respondents' husbands had more than one wife at the time of the survey; 94 had one other, 16 had two others, 4 had three others, and five had four other wives.

TABLE 5.24

## MEAN CEB BY CASTE/TITLE GROUP

CASTE	MEAN CEB	n	MEAN CEB Standardized by age
SUDRA	3.7	789	3.8
a) BRAHMANA	4.1	51	
b) SATRIA	3.7	234	
c) WESIA	4.6	10	
GROUPED(a,b,c)	3.8		3.7

Source: 1980 survey.

Although standardizing for age reversed the values of mean CEB, the difference remained insignificant at mean 3.8 for commoners and 3.7 for grouped caste members. It can be seen that there is some variation amongst the caste groups in mean CEB, although numbers are quite small for Brahmana (mean CEB=4.1, n=51) and particularly for the Wesia group (mean CEB=4.6, n=10).

## 5.3.7 VILLAGE

In chapter 4 it was explained that the three villages selected were intended to provide a range of levels of family planning practice to permit comparisons on an areal basis. As it turned out (see chapter 4) the village of Bakas which had the highest rate of current family planning use according to the program statistics had the lowest rate (37.0 %) according to the survey (39). It is of interest, then, to examine the fertility differentials amongst the three villages considering their many differences (see chapter 4.2.1).

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(39) Compared to 53.2 % for Banjaringan and 50.7 % for Tusan.



TABLE 5.25

CHILDREN EVER BORN BY VILLAGE  
STANDARDIZED BY (a)AGE, and (b)DURATION OF MARRIAGE.

TABLE 5.25a

VILLAGE	(a)AGE OF RESPONDENT							MEAN CEB
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
BANJAR- ANGKAN	0.73 (15)	1.41 (97)	2.42 (105)	3.07 (71)	4.02 (84)	5.30 (71)	7.10 (39)	=3.49 (482)
TUSAN	0.67 (6)	1.65 (55)	2.48 (79)	3.70 (83)	5.06 (62)	6.14 (50)	7.85 (26)	=4.03 (361)
BAKAS	0.60 (5)	1.80 (25)	2.58 (52)	3.84 (50)	4.13 (30)	5.17 (41)	6.71 (24)	=3.69 (227)

TABLE 5.25b

VILLAGE	(b)DURATION OF MARRIAGE						MEAN CEB
	0 - 4	5 - 9	10-14	15-19	20-24	25+	
BANJAR- ANGKAN	1.09 (100)	2.32 (119)	3.16 (69)	4.29 (91)	5.58 (61)	7.38 (52)	=3.49 (492)
TUSAN	1.00 (49)	2.51 (86)	3.71 (81)	4.89 (74)	6.47 (49)	8.14 (26)	=3.92 (365)
BAKAS	1.22 (33)	2.39 (46)	3.71 (55)	4.76 (43)	5.79 (32)	7.33 (22)	=3.74 (231)

Source: 1980 survey.

TABLE 5.25c

## ACTUAL and EXPECTED BIRTHS and INDEX for VILLAGE.

VILLAGE	ACTUAL BIRTHS		
	BANJARANGKAN	TUSAN	BAKAS
PERIOD:			
1966-70	403	379	214
1971-75	367	387	251
1976-80	409*	334*	214*

\*:Births for entire year of 1980 (extrapolated).

PERIOD:	EXPECTED BIRTHS		
	1966-70	333.8	285.7
1971-75	428.3	363.1	213.6
1976-80	551.2	412.1	251.9

INDEX  
(Actual/Expected Births)

VILLAGE	BANJARANGKAN	TUSAN	BAKAS
PERIOD:			
A)1966-70	1.21	1.33	1.18
B)1971-75	0.86	1.07	1.18
C)1976-80	0.74	0.81	0.85
% CHANGE A)-C)	-38.5 %	-39.0 %	-28.0 %

Source: 1980 survey.

In Table 5.25a, the mean CEB standardized by respondent's age show a pattern, up to age 35, higher for Bakas than the other two villages, thereafter Tusan has the highest levels. The data when standardized for duration of marriage are slightly different with Tusan having the highest levels from 5 years duration upwards (Table 5.25b), although the differences are not great for the lower durations. These data seem a little paradoxical considering the higher levels of current contraceptive use in Tusan compared to Bakas, however the use of indirect standardization to obtain indices of

'actual over expected' births (Table 5.25c) shows that in the past (1966-70) the levels of cross-sectional fertility in Tusan and Banjarangkan were originally higher than in Bakas but have declined further to be currently lower. The decline between the late 1960s and the late 1970s was 38.5 % for Banjarangkan, 39.0 % for Tusan, compared to only 28.0 % for Bakas.

#### CONCLUSION

There can be no doubt that during the 1970s a substantial fall in fertility took place in the study villages. During the ten year period from the late sixties to the late seventies, the total fertility rate fell from about 6.5 to 3.6 children ever born, whereas during the 1960s fertility had remained almost unchanged. The timing of this fertility decline coincided quite closely with the introduction of the family planning program in Bali.

Although the data on marriage patterns are not conclusive it appears that virtually all the fertility decline has occurred due to decreased fertility within marriage. This decline has been particularly marked amongst the older women between 30 and 49, while amongst women 15 to 24 fertility has changed very little. This pattern is consistent with the expected effects of a family planning program which emphasizes birth limitation rather than birth spacing. The magnitude of the fertility decline between the late sixties and the early seventies (some 30% decrease in TFR) is remarkable considering the short period that the family planning program had been in operation. This point will be examined more closely in the following chapter.

In terms of the Davis and Blake framework introduced at the beginning of this chapter, the changes in fertility during the 1970s do not appear to have resulted from changes in the three intermediate ('intercourse') variables 'governing the formation and dissolution of unions in the reproductive period', nor from changes in the 'conception variables', 'fecundity or infecundity as affected by involuntary causes'. And although the data are not highly reliable, apparently not from changes in the 'gestation variables', 'foetal mortality from involuntary or voluntary causes'. The remaining five intermediate variables (use or non-use of contraception, etc.,) will be examined in the following chapter.

It is of some interest that for the variables examined: education of both husband and wife; occupation; economic status; land ownership; caste; and village, very few substantial fertility differentials emerged.

Although the data on fertility in the past suggest that while the differentials for variable subgroups may have changed relative to each other, being reversed in some cases, the magnitude of the differences was not very much greater then than at present. This suggests that whatever forces were at work to reduce fertility operated across all sections of the community simultaneously, and to a similar extent.

## CHAPTER 6

### FAMILY PLANNING IN THE STUDY AREA AND ITS EFFECT ON FERTILITY

This chapter is concerned with family planning practice in the three villages of the study area. The questions to be answered are: how many couples are using family planning? what methods are being used? who is using them (i.e., which subgroups)? what are the reasons for accepting family planning? For those users of family planning, what are their experiences with the methods? what is the effect on their fertility? where do they obtain the contraceptive services? For those who have stopped using family planning, what are the reasons?(1).

#### 6.1 PATTERNS OF USE OF CONTRACEPTION

##### 6.1.1 VILLAGE

The patterns of current use (2) of family planning varied somewhat among the three villages, and more widely among the banjars within the villages. However, overall just under half (48.9%) of the

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(1) As described in chapter 4, the survey covered women aged 15 to 54, but as women over 49 years would not normally be considered as 'exposed to risk' they will be excluded from much of the analysis, although seven of the eighteen said that they were using family planning at the time of the survey (six IUD's and one tubectomy).

(2) Regarding the definition of Current Use of family planning some surveys ask 'Have you used family planning in the last week, or in the last month' and take a positive answer as indicating current use, even if the respondent is not actually using anything at the time of interview. This survey asked only about status at the time of the interview, although recent practice could be determined from the family planning history.

ever married women aged 15 to 49 said that they were currently using family planning at the time of the survey (Table 6.1).

TABLE 6.1

	PROPORTIONS CURRENTLY USING FAMILY PLANNING		
	AGE OF WOMAN		
	15 - 44	15 - 49	15 - 54
ALL EVER-MARRIED	49.6 %	48.9 %	48.7 %
ALL CURRENTLY- MARRIED	50.8 %	50.1 %	----
ALL NON-PREG, CURRENT-MARRIED	56.5 %	55.1 %	----

Source: 1980 survey

TABLE 6.2a

METHOD	CURRENT FAMILY PLANNING USE ALL EVER MARRIED WOMEN 15-49 BY METHOD AND VILLAGE.				TOTAL USERS ONLY
	BANJARANGKAN	TUSAN	BAKAS	TOTAL	
IUD	49.9	40.4	34.4	43.4	(88.7)
TUBECTOMY	1.0	8.0	1.3	3.5	(7.1)
PILL	1.5	0.6	1.3	1.1	(2.3)
VASECTOMY	0.2	0.8	0	0.4	(0.8)
CONDOM	0.2	0.3	0	0.2	(0.4)
RHYTHM	0.2	0.3	0	0.2	(0.4)
VAG. TABLET	0	0.3	0	0.1	(0.2)
INJECTABLE	0.2	0	0	0.1	(0.2)
TOTAL % USING	53.2%	50.7%	37.0%	48.9%	(100 %)
TOTAL % NOT USING	46.8%	49.3%	63.0%	51.1%	
n	(481)	(361)	(227)	1,069	(530)

Source: 1980 survey.

When all women thought to be not exposed to risk were excluded the prevalence rate for non-pregnant, currently married women aged 15 to 44 was 56.5% for the three villages combined (see Table 6.1). The data presented in this chapter will normally not be restricted in this way but will cover all ever-married women aged 15 to 49.

The villages of Banjarangkan and Tusan had prevalence rates of family planning use of around 50% (Table 6.2a), while the smallest village, Bakas, had a prevalence rate of only 37.0% (3). Amongst the three villages there was some use of each of the eight modern methods available, although in no village were all eight methods being used simultaneously, and generally the vast majority of users had an IUD. The lower prevalence rate in Bakas compared to the other two villages, is interesting because it is not only lower for the IUD (34.4 % of eligible women) but because there is no use of the five 'less popular' methods. Bakas differs from the other two villages in being relatively isolated although it is only about 3.5 Kms. north of Tusan. It is also poorer, it has no school, and there are few jobs outside farming. The population density is also lower, at 7.3 per sq.km., than for the villages of Tusan (11.2 per sq.km.) and Banjarangkan (12.8 per sq.km.). The 'satellite' health clinic is small and rather dilapidated compared to the clinics in Banjarangkan and Tusan. It does not have a resident nurse, although it is visited each week by a nurse from one of the neighbouring villages, and indeed all the current IUD users in Bakas (n=79) said that they had obtained their IUD at the Bakas clinic. Nevertheless, there is some suggestion

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 (3) This can be compared to the BKKBN Sistem Banjar data for the same villages at the same time, Banjarangkan = 71.4%, Tusan = 57.8%, and Bakas = 71.9% (See chapter 4 for more detail).

that availability of clinic services may explain some of the difference in contraceptive use rates between Bakas and the other two villages. The importance of available services in explaining differential family planning practice is suggested by Freedman et al., (1981:14) in their analysis of the situation in Java-Bali. Another possibility which cannot be discounted is that when a family planning fieldworker reports high current rates of use (see Table 6.2c), in spite of low actual rates, and thereby avoids feedback from above with a high target number of acceptors to be obtained, there may be less than normal pressure on couples to accept family planning.

As can be seen in Table 6.2a, the IUD is the method used by almost all current users (88.7%), and together with tubectomy (7.1%), leaves less than 5% for the remaining six modern methods.

The only significant variations among the three villages were the greater use of tubectomy in Tusan, although this was not a function of different age structures (tubectomy acceptors normally being older than other acceptors on average); and the considerably lower prevalence of contraceptive use in the village of Bakas. This may be partly explained by the different fieldworker (M.P.) responsible for Bakas, being less 'successful' than the fieldworker (M.B.) who covers both Banjarmasin and Tusan, or it may also be due to differences in the circumstances of the inhabitants of Bakas which makes them less inclined to accept family planning.



TABLE 6.2b

EVER USE OF FAMILY PLANNING, WOMEN 15-49,  
BY METHOD AND VILLAGE.

METHOD	BANJARANGKAN	TUSAN	BAKAS	TOTAL
IUD	64.3	62.0	55.1	61.6 %
TUBECTOMY	1.0	8.0	1.3	3.5 %
PILL	6.0	3.0	5.7	5.0 %
VASECTOMY	0.2	1.1	0	0.5 %
CONDOM	2.1	1.7	1.8	1.9 %
RHYTHM	1.0	1.4	0	0.9 %
VAG.TABLET	1.2	0.6	0.4	0.8 %
INJECTABLE	0.4	0	0	0.2 %
TOTAL % EVER USED	66.4%	66.8%	59.0%	65.0 %
TOTAL % CURRENT USERS	53.2%	50.7%	37.0%	51.1 %
DIFFERENCE	13.2%	16.1%	22.0%	13.9 %
N	(481)	(361)	(227)	(1069)

Source: 1980 survey.

If we concentrate here on the IUD as the primary method of family planning, the argument that availability of services is a major distinguishing factor among couples in the three villages loses some of its explanatory power. The data in Table 6.2b show that while there are substantial differences between current use of the IUD in Bakas as opposed to the other two villages, the differences in ever use are not nearly so great. This implies that the lower Bakas prevalence rates are as much a result of a greater proportion of IUD users dropping out of the program, as they are of lower acceptance rates.

TABLE 6.2c

PERCENT CURRENTLY USING FAMILY PLANNING  
CURRENTLY MARRIED WOMEN 15-49, BY BANJAR,  
SURVEY AND BKKBN Elco-Registers

VILLAGE	BANJAR	N	1980 SURVEY	ELCO REGISTERS	DIFFERENCE
BANJARANGKAN	SELAT	(201)	60.7	77.3	16.6
	NESA	(97)	59.3	67.6	8.3
	PAGUTAN	(48)	42.6	45.6	3.0
	KORIPAN TENGAH	(81)	44.9	70.5	20.6
	KORIPAN KANGIN	(54)	52.8	50.0	-2.8
TUSAN	KAWAN	(97)	57.9	72.6	14.7
	KANGIN	(120)	43.6	56.4	12.8
	KALER	(58)	45.6	54.5	8.9
	SEMA AGUNG	(86)	58.2	62.9	4.7
BAKAS	KAWAN	(71)	30.4	61.8	31.4
	PEKEN	(66)	43.1	59.6	16.5
	KANGIN	(90)	39.3	74.1	34.8
TOTAL			50.1 %	66.2 %	16.1 %

Source: 1980 Survey and BKKBN Elco-Registers for banjars.

The pattern of current use prevalence rates according to banjar also throws some doubt on the importance of access to clinic or other facilities. The data in Table 6.2c indicate a considerable range of current use prevalence rates among the banjars within one village. In Banjarangkan village, for example, the prevalence rates range from 43 percent in banjar Pagutan to 61 percent in the central banjar, Selat. The village family planning clinic is in banjar Selat, and banjar Pagutan is some 0.5 Km. to the east, while banjar Koripan Kangin, which had a higher prevalence rate of 53 percent, was 1.5 Km. to the east of Selat and its clinic. Likewise, in village Tusan, the banjar with the highest prevalence rate was Sema Agung, which was by far the most remote banjar. These figures, and the fact that the prevalence rate for the 'best' Bakas banjar is the same (43 percent) as the 'worst' Banjarangkan banjar, point to other factors, such as banjar leadership, as being of importance in the degree of acceptance of family planning.

## 6.1.2 AGE OF RESPONDENT

The pattern of family planning use indicates a rapid rise in prevalence of current contraceptive use from the 15-19 year age group (15.4 %) up to the late twenties (49.6 %), then the level rises to a peak of around 60 % of women in the late thirties (Table 6.3 and Figure 6-A). This is followed by a decline to a level of about 40 % for women 45-49; and one-third of the 18 women aged 50-54.

The levelling off in the late twenties and early thirties is matched by an increase in the difference between proportions ever using and proportions currently using, this difference reflecting proportions dropping out (see Table 6.3). This is indicative of the pattern that women initially accept family planning after their first, or more commonly, their second child, then after a period of spacing they stop using that method (drop-out) in order to have another child (see next section, 6.1.3, on parity).

With the low levels of fertility current at the time of the survey, many of the women would have completed their childbearing by their late thirties or early forties, hence it is in these ages that the rate of contraceptive use was highest. Following the first period with a high drop-out rate (parity two), the second period was, as might be expected, the late forties when many women considered themselves too old to produce more children, and indeed many would have been post-menopausal (4).

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(4) A striking feature of the pregnancy histories of a number of older women was that many of proven fertility had stopped childbearing in their thirties while still cohabiting with their husband, but were practising no family planning, and apparently were not becoming pregnant. This pattern of early secondary sterility was said to be not uncommon by several doctors with whom it was discussed.

TABLE 6.3

RATES OF CURRENT USE AND EVER USE  
OF FAMILY PLANNING, BY AGE OF WOMAN.

AGE	% CURRENT USERS	% EVER USERS	ABSOLUTE DIFFERENCE
15-19	15.4	26.9	11.5
20-24	36.7	45.2	8.5
25-29	49.6	67.4	17.8
30-34	52.9	71.6	18.7
35-39	59.7	73.9	14.2
40-44	54.3	71.0	16.7
45-49	41.6	65.2	23.6
50-54	33.3	55.6	22.3
TOTAL	48.7%	64.8%	16.1%
n	(530)	(705)	(1,088)

Source: 1980 survey.

TABLE 6.4

CURRENT FAMILY PLANNING USE  
BY METHOD AND AGE OF WOMAN

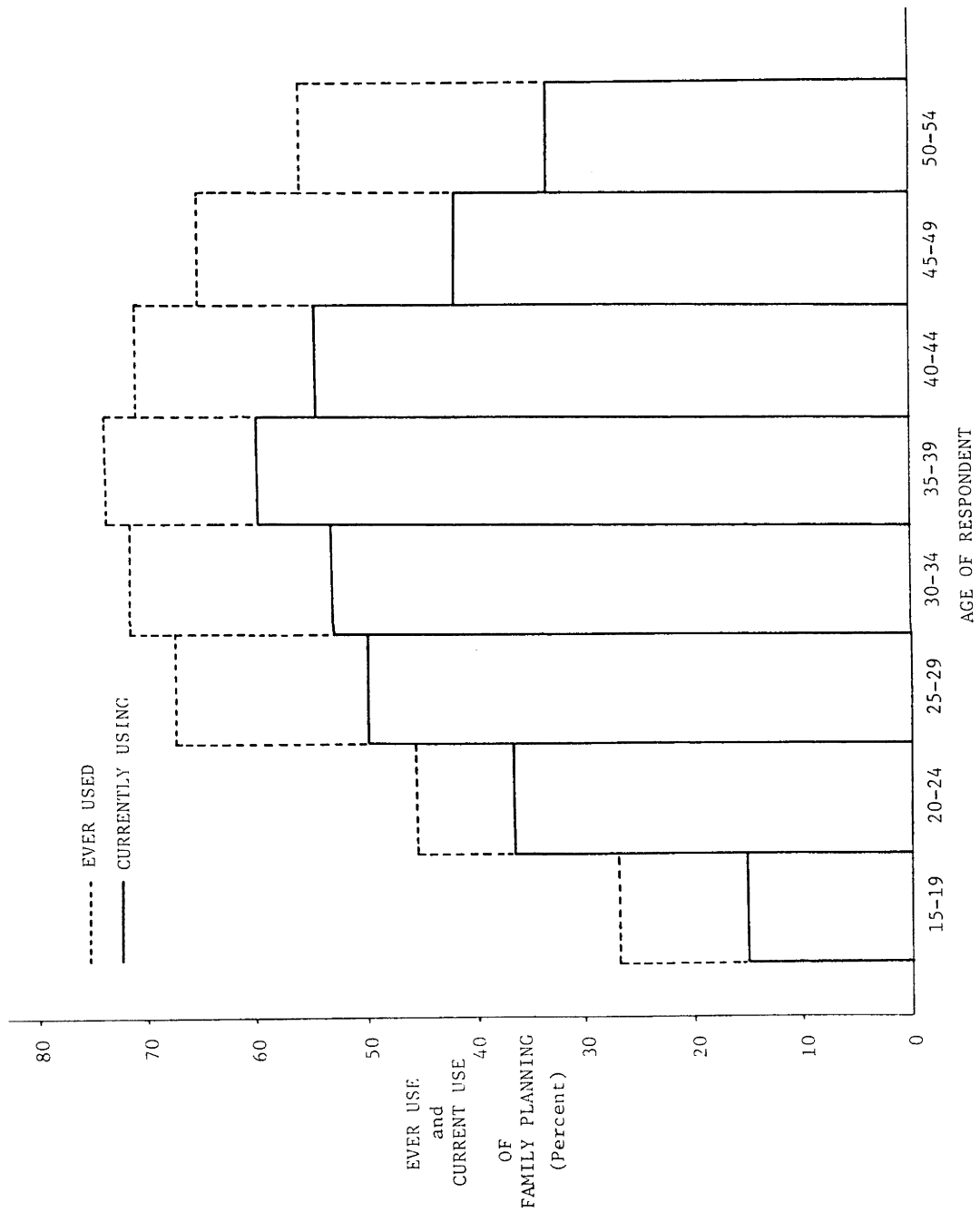
METHOD	AGE OF WOMAN							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
IUD	100.0	92.4	93.2	78.8	84.8	93.2	97.2	83.5
PILL	0	6.3	2.6	1.9	1.0	2.2	0	0
CONDOM	0	0	0.8	0	1.0	0	0	0
VAG. TAB	0	0	0	0	1.0	0	0	0
TUBECTOMY	0	0	3.4	14.0	12.2	4.6	2.8	16.5
VASECTOMY	0	0	0	3.8	0	0	0	0
RHYTHM	0	1.6	0	0.8	0	0	0	0
INJECTION	0	0	0	0.8	0	0	0	0
CURRENT USERS %	15.4	36.7	49.6	52.9	59.7	54.3	41.6	33.3
N	(26)	(177)	(236)	(206)	(176)	(162)	(89)	(18)

Source: 1980 survey.

When the pattern of type of method used by age is examined it reveals that in the age groups where family planning started to be used in any numbers, i.e., from about 25 years, there was a limited variety of methods being tried, with 93.2 % of 25-29s using the IUD.

FIGURE 6-A

PROPORTIONS EVER USED AND CURRENTLY USING  
FAMILY PLANNING, BY AGE OF WOMAN.



Source: 1980 survey.

By age 30-34, this proportion decreases to 78.8 % with a concurrent rise in other methods including pill, condom, vaginal tablets, rhythm, and injectables. This suggests that by age thirty a number of women, first accepting the IUD, have changed over to try a different method. However by age 40 there was virtually no use of the methods considered to be of lower theoretical use-effectiveness, the high effectiveness methods, IUD and tubectomy, being the only ones in use amongst older women (Table 6.4). This suggests that while the methods such as condom, vaginal tablets, rhythm and injectables may be tried briefly they are not being used as satisfactory long-term alternatives to the IUD.

#### 6.1.3 PARITY OF RESPONDENT

The pattern of acceptance of family planning suggested by the age related prevalence is indeed supported by the proportions of women, by parity, currently using family planning (see Table 6.5 and Figure 6-B). The prevalence rate rises rapidly to 56.6 % for parity 2 women then drops to 48.9 % for parity three women, rising again thereafter to levels above 60 % for parities 4,5 and 6 before dropping back to below half of the parity 7+ women (13.1 % of total women).

This suggests a tendency for women to accept family planning after their second child (5), then having delayed the third pregnancy to stop using contraception until after their third and possibly fourth pregnancies. However the data from Table 6.19 (lengths of

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(5) Women in the Banjarangkan area are not eligible to receive family planning until they have proved their fertility with a child.

closed birth intervals) do not support the expected difference between lengths of the second and third intervals.

TABLE 6.5

CURRENT USE AND EVER USE OF FAMILY PLANNING, BY PARITY			
PARITY	% CURRENTLY USING F.P.	% EVER USING F.P.	n
0	0	1.9	54
1	20.8	32.8	125
2	56.6	68.8	221
3	48.9	71.1	190
4	62.1	80.0	145
5	60.0	73.2	112
6	66.3	82.6	92
7+	46.3	68.5	149
TOTAL	48.7%	64.8%	1,088

Source: 1980 survey.

TABLE 6.6

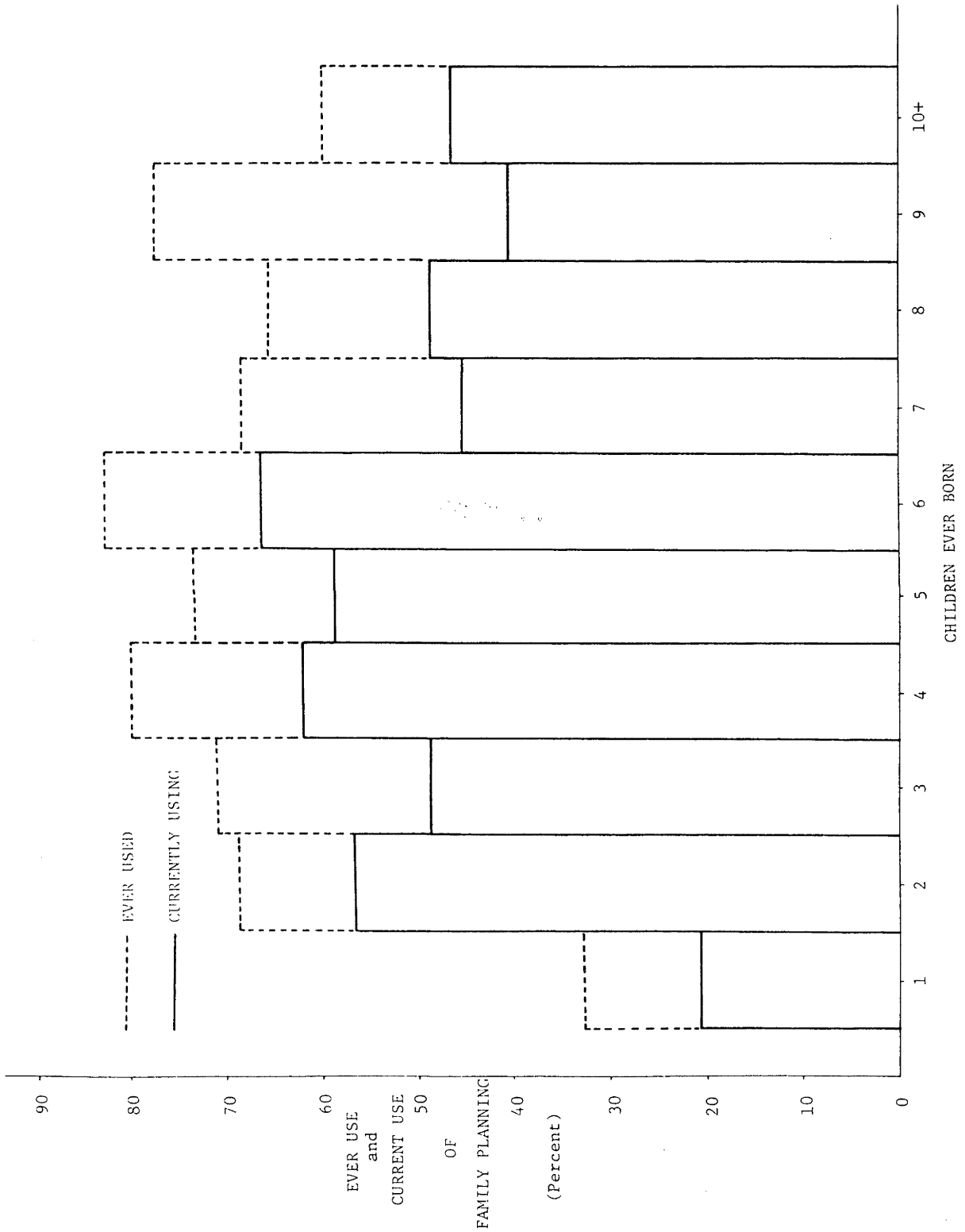
METHOD	CURRENT USE OF FAMILY PLANNING BY METHOD AND PARITY						
	PARITY						
	1	2	3	4	5	6	7+
IUD	88.5	97.6	89.2	84.4	83.3	83.6	87.0
PILL	7.7	1.6	3.2	1.1	1.5	4.9	0
TUBECTOMY	0	0	5.4	11.1	15.2	8.2	11.6
VASECTOMY	0	0	0	3.3	0	1.6	0
OTHER *	3.8	0.8	2.0	0	0	1.6	1.4
TOTAL %	100	100	100	100	100	100	100 %
n	26	125	93	90	66	61	69 = 530

OTHER \*: includes condom, vag. tablets, rhythm and injectables.

Source: 1980 survey.

FIGURE 6-B

PROPORTIONS EVER USED AND CURRENTLY USING  
 FAMILY PLANNING, BY CHILDREN EVER BORN.



Source: 1980 survey.



The very heavy emphasis by the National Family Planning Program on use of the IUD as THE method of first choice in Bali is illustrated in Table 6.6 where data for the proportions using different methods by parity are presented. Considering that only 21 % of parity one women are using any contraceptive method, that group is not very significant. However, of the parity two group (the largest parity group at 20.3 % of total women) 97.6 % of the couples using any modern method are using the IUD. This situation is not entirely due to lack of awareness of alternatives to the IUD, as some 70 % of the women said that they had heard of the pill (compared to 96 % who had heard of the IUD), while the next most commonly heard of modern method, tubectomy (at 35 %) would not be expected to be chosen by many parity two women, as most would want another child.

It is not until the higher parities that the women begin to accept methods other than the IUD, and then it is really only tubectomy which accounts for any substantial amount of the usage (reaching 15 % of the parity five users).

This pattern of acceptance is very much a consequence of the emphasis by the program on starting women off with the IUD because of its high theoretical use-effectiveness, high continuation rate, low cost, and the fact that only one visit to the clinic is required (Astawa et al., 1975:95). The women will normally only be given the choice of an alternative method if the IUD proves to be too troublesome for them.

TABLE 6.7

CURRENT USE OF FAMILY PLANNING METHODS  
BY NUMBER OF PERIODS OF F.P. USE

METHOD	NUMBER OF PERIODS		
	1	2	3+
IUD	95.6	71.1	47.1
PILL	1.6	4.3	5.9
TUBECTOMY	2.5	17.8	41.2
VASECTOMY	0.3	1.7	5.9
OTHER *	0	5.4	0
TOTAL	100 %	100 %	100 %
n	393(74.4%)	118(22.3%)	17(3.2%) (100%=528)

OTHER \*: includes Condom, Vag. tablets, rhythm and injectable.  
Source: 1980 survey.

Consistent with starting acceptors with the IUD but permitting a change of method if problems arise, is the pattern of method currently used according to total number of periods of ever use of any family planning methods (see Table 6.7). This pattern shows a halving of the proportions using the IUD as acceptors move from first period of use to third or more period of use. As proportions using the IUD decline, users change primarily to tubectomy, vasectomy and the pill. Amongst those users in their third or greater period of use (n=17 only), approximately equal proportions are using the IUD and sterilization.

## 6.1.4 CHILDREN STILL LIVING

The pattern of proportions currently using family planning by the number of children still living (CSL) is very similar to that for children ever born but with fewer fluctuations (see Table 6.8).

None of the women with no surviving children were using family planning, and of those with one surviving child, less than one quarter were using any family planning. But for those women with two or more living children between 55 and 60 per cent were currently using family planning, the proportions being the same for couples with only 2 or 3 children as for those with 7+ children still living.

TABLE 6.8

CURRENT USE OF FAMILY PLANNING BY NUMBER OF CHILDREN STILL LIVING		
CHILDREN STILL LIVING	% CURRENT USERS	N
0	0 %	61
1	23.3 %	150
2	54.9 %	257
3	54.9 %	233
4	60.0 %	140
5	60.0 %	120
6	55.7 %	79
7+	54.2 %	48
		(1,088)

Source: 1980 survey.

The fact that for any value of CSL, some 40 % or more of couples were currently not using any family planning may prove to be the result of a variety of factors operating differently on the lower parity women than on the higher parity women. For example, a number of the lower parity women will almost certainly want more children,

and a number of the higher parity women will consider themselves incapable of becoming pregnant, because they are either post menopausal or widowed or divorced. This will be examined in more detail in the section on non-users of family planning, (chapter 6.6).

#### 6.1.5 ANNUAL PREVALENCE RATES OF FAMILY PLANNING USE

The annual prevalence rates were calculated from the pregnancy and family planning histories for women who were currently married during the reference year. Before the beginning of the national family planning program in 1969-70, fewer than 5 % of married women were using family planning (see Table 6.9); however the prevalence rate increased dramatically during the early 1970s to a level of 38.6 % by 1975 in the study villages. After 1975 the level of current users continued to rise steadily but less steeply, to the level for currently married women aged 15-49 in 1980 of 50.1 % (see Figure 6-C).

The high levels of current use in the early 1970s are consistent with the substantial decline in fertility observed in the study villages (see chapter 5.2). The estimated crude birth rate for the period 1971-75 was 29.7 per 1,000 (Table 5.10), a level which was roughly consistent with a mean prevalence rate of current contraceptive practice of 31.0 % of married women. This agrees with the so-called '30-30' rule (Berelson, 1974:34). The levels of current use were also somewhat higher than the reported levels for all Bali for the same years. Data from Astawa *et al.* (1975:91) for the years 1972, 1973 and 1974 indicate prevalence levels 11.0, 9.0, and 3.5 % respectively, below the levels indicated in the study villages.

TABLE 6.9

ANNUAL PREVALENCE RATES OF FAMILY PLANNING USE  
FOR CURRENTLY MARRIED WOMEN (15-49).

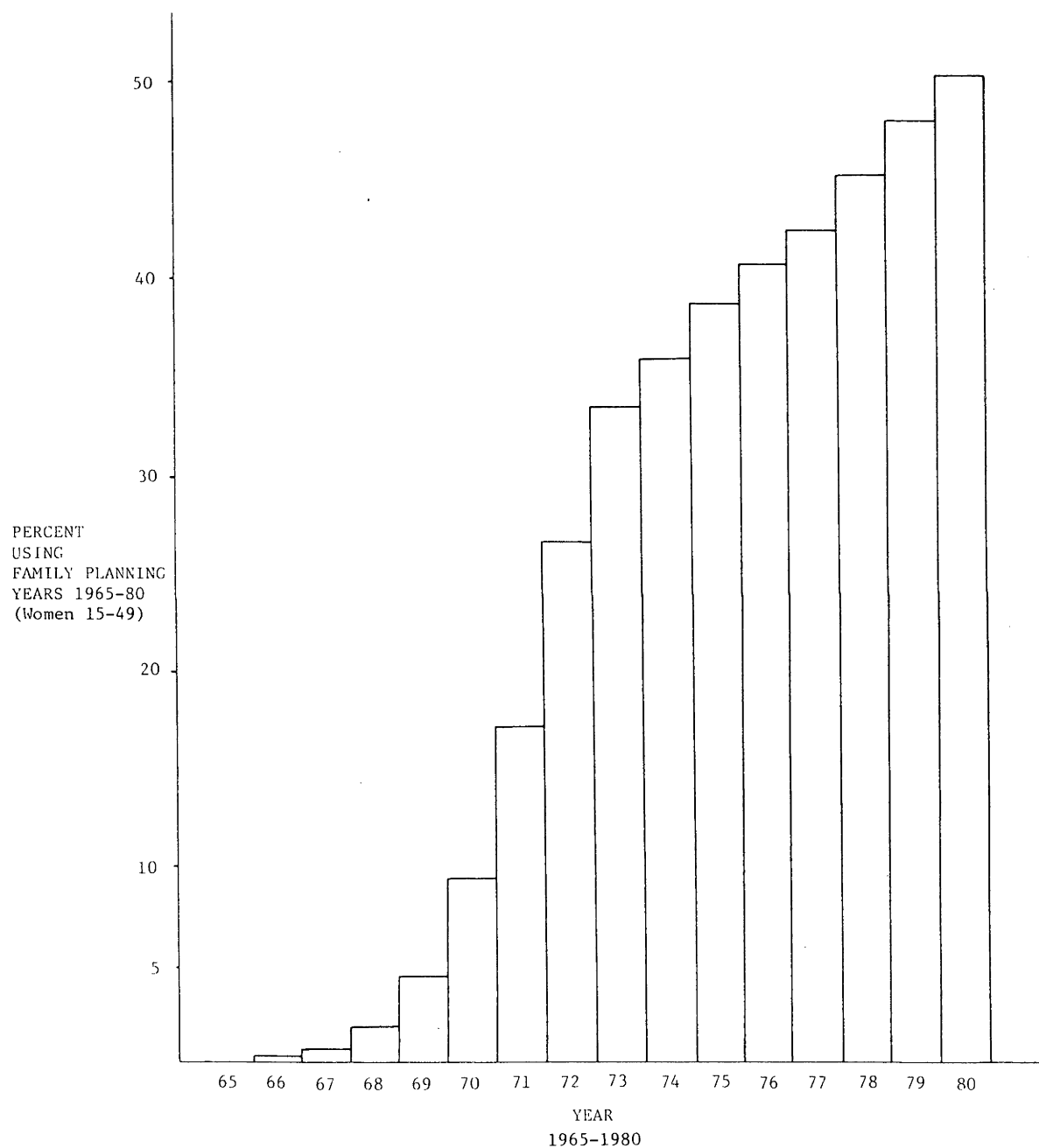
YEAR	% CURRENTLY USING F.P.	Mean N
1965	0.1 %	413.0
1966	0.3 %	451.6
1967	0.7 %	490.2
1968	1.9 %	528.8
1969	4.4 %	567.4
1970	9.4 %	606.0
1971	17.0 %	655.6
1972	26.7 %	705.2
1973	33.4 %	754.8
1974	35.9 %	804.4
1975	38.6 %	854.0
1976	40.7 %	889.8
1977	42.3 %	925.6
1978	45.2 %	961.4
1979	47.9 %	997.2
1980	50.1 %	1,033.0
1966-70	3.7 %	
1971-75	31.0 %	
1976-80	48.1 %	

Source: 1980 survey.

The data quoted by Astawa are for program acceptors only, thus a slight difference might have been expected. Also the prevalence levels from the survey data are obtained retrospectively so the age distribution is distorted somewhat, although the proportion in the high family planning use age range of 25-44 was similar in 1971-75 (67.4 %) to that in 1976-80 (70.2 %). For the period 1976-80 the mean level of current use was 48.1 % of married women, a little lower than might be expected considering that the crude birth rate for that period was estimated at 21.7 per 1,000 (Table 5.10).

FIGURE 6-C

PROPORTIONS OF WOMEN 15-49 CURRENTLY USING  
FAMILY PLANNING DURING YEARS 1965-80.



Source: 1980 survey.

#### 6.1.6 RESPONDENT'S OCCUPATION

The data in Table 6.10 show considerable variation in proportions of women using family planning among several occupational categories, although the variant categories tend to be quite small in terms of numbers of women. For example amongst those women who work as saleswomen in a shop of some kind (other than a market or roadside stall) only 36.8 % were currently using family planning at the time of the survey, while of those working in a skilled job as a civil servant, some 68.0 % were currently using family planning.

This difference in levels of usage is not just a function of different age distributions as the mean age of the shopseller group is 35.1 years compared to 34.3 years for all working women. On the other hand the mean age for the civil servant group is only 31.9 years, as might be expected from the previous chapter where it was seen that this occupational group (including teachers and nurses) had higher than average education which had only become generally available relatively recently, thus only for younger women. This group also had the lowest fertility even after standardization for age or duration of marriage. Apart from the obvious difficulties that would arise from repeated pregnancies for women in the civil service, it will be seen in chapter 7 that this group of civil servants have high educational aspirations for their children, many with the hope that these children will later also enter the civil service. Civil servants are also encouraged by the government to accept family planning, not only through means such as a rice allowance for the first three children only, but in some cases, obtaining a civil service position has been conditional on acceptance of family planning.

TABLE 6.10

CURRENT USE OF FAMILY PLANNING METHODS  
BY RESPONDENT'S OCCUPATION

	RESPONDENT'S OCCUPATION						
	FARMER	SHOP- SELLER	MARKET SELLER	LABOUR -ER	CIVIL SERVT	COTTAGE INDUST.	STREET SELLER
IUD	47.8	21.1	46.4	43.5	48.0	57.1	44.4
PILL	0	5.3	0.5	0.9	4.0	0	0
CONDOM	0	0	0	0	4.0	0	0
VAG.TABS	0	0	0	0.3	0	0	0
TUBECTOMY	7.5	10.5	3.6	3.2	8.0	0	11.1
VASECTOMY	0	0	0	0.9	0	0	0
RHYTHM	0	0	0	0	4.0	0	0
INJECTABLE	0	0	0.5	0	0	0	0
TOTAL % USING FP	55.2%	36.8%	51.0%	48.7%	68.0%	57.1%	55.6%
n	67	19	196	345	25	21	18 (691)

Source: 1980 survey.

In regard to the group of shopsellers (n=19), apart from the problem of small numbers, it is not clear why so few were currently practising family planning (36.8 %), although there does tend to be more capacity to absorb the labour of one's children when self-employed in a shop than in many other occupations. The shops in which these women work are generally rather small although crammed with an extraordinary array of goods (6), and if they sell prepared food, as many do, it is common to see the shopkeeper's children helping out. Data on ideal family size (presented in chapter 7) support the view that women working in shops believe they can benefit from larger families in that the mean ideal family size for these women, at the time of marriage, was given as 4.2 compared to only 3.4 for the total survey population.

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(6) A typical small shop might sell school supplies, stationery, children's clothes, shoes, soap, toothpaste, fruit, biscuits, tea, batteries, and precooked foods, cigarettes and incense for offerings, among other things.



Apart from these two occupational categories, accounting for only 6.3 % of all working women between them, the proportions currently using family planning range from 48.7 % for labourers to 57.1 % for women working in cottage industry. The average for all working women is 50.8 %, compared to 45.1 % of non-working women. The lower prevalence rate for non-working women may be partly a consequence of their being younger (mean age = 31.6 years) than working women (mean age = 34.3 years), also they are more likely to be currently pregnant (11.7 % of non-working women compared to only 6.5 % of working women).

#### 6.1.7 RESPONDENT'S HUSBAND'S OCCUPATION

The pattern of family planning use for the different occupational groups of respondents' husbands is similar to that for occupational groups of working respondents themselves, with over two-thirds of those working as Government employees (civil servants) currently using family planning while only a little more than a quarter of 'own-account' workers or employees in private industry or business were using family planning, (Table 6.11). It should be noted that 13 of the 22 private employees (Pegawai Swasta) category had 2 or fewer children (they had the lowest mean CEB at 2.6), and thus they may not be as unusual a group as at first appears; that is, they may accept family planning after the third child as do many others.

What is striking is that the small unemployed group (n=13) has the highest prevalence rate of family planning use at 69.2 %. although their average achieved fertility is typical at 3.7 CEB. Although they are few in number, this suggests an awareness of the problems arising from the arrival of extra children if the head of the

household is not working. The only characteristic that really separates this group of unemployed husbands from the employed, is that 75 % of them are high caste, either Brahmana (33.3 %) or Satria (41.7 %) compared to the 26 % which these two groups make up in the study population as a whole.

TABLE 6.11

CURRENT USE OF FAMILY PLANNING METHODS  
BY OCCUPATION OF RESPONDENT'S HUSBAND

METHOD	OCCUPATION OF R's HUSBAND							
	FARM -ER	CIVL SRVT	PRIV EMPL OYEE	ENTR PREN EUR	STRT SELR	LABR -ER	OTHR	NOT- WORK
IUD	40.8	57.6	27.3	35.7	42.1	42.4	42.2	53.8
PILL	0.9	3.0	0	0	0	0.6	1.1	7.7
CONDOM	0	0.8	0	7.1	0	0	0	0
VAG.TABS	0	0	0	0	0	0.3	0	0
TUBECTOMY	4.6	4.5	0	14.3	5.3	1.9	1.1	7.7
VASECTOMY	0	0	0	0	0	1.2	0	0
RHYTHM	0	1.5	0	0	0	0	0	0
INJECTION	0	0.8	0	0	0	0	0	0
TOTAL % USING FP	46.2	68.2	27.3	57.1	47.4	46.4	44.1	69.2
n	461	132	22	14	19	321	102	13 (=1,084)

Source: 1980 survey.

As will be seen in section 6.1.12 on family planning use by caste, the proportion of Satria (princely) caste currently using family planning is higher than for the other caste groups or the Sudra group. It might be expected that this caste group provides leadership within the community as in the past they held the political power. Indeed they still frequently hold positions of administrative power. Apart from this the unemployed group are not atypical, having roughly the same economic score as the working group, being of about the same mean age (wife's mean age is 34.0 years compared to 33.3 years for the

workers), and having about the same proportion of their wives working. More important in terms of numbers is the category of civil servants (n=132) of whom 68.2 % were currently using family planning consistent with higher levels of education, and with the pattern observed amongst female civil servants. While there is no reason per se that male civil servants would jeopardize their jobs by their wives having many children, it turns out that the wives of 50 % of these civil servants have regular jobs, compared to an overall average of 33.8 % of wives in regular employment. Thus it is their wife's job which would be jeopardized by frequent pregnancies (7).

#### 6.1.8 RESPONDENT'S EDUCATION

The level of education achieved by the woman appears to have very little effect on the likelihood that she will be using family planning.

TABLE 6.12

PERCENT CURRENTLY USING FAMILY PLANNING  
BY RESPONDENT'S EDUCATION  
(Standardized for Respondent's Age).

EDUCATION	% CURRENTLY USING	n
NO SCHOOL	48.2 %	642
SOME PRIMARY	50.5 %	272
COMPLETED PRIM+ABOVE	52.4 %	166
		(1,080)

Source: 1980 survey.

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(7) Eighteen of the 24 female civil servants in regular employment are married to male civil servants.

When the women are grouped into those with no formal schooling, those with some primary schooling, and those who have completed primary or above, the prevalence rates of family planning use range from 48.2 % for those with no schooling to only 52.4 % for the highest educational group (see Table 6.12). This is a surprisingly small range considering the differences in mean CEB for the different educational categories seen in the previous chapter (Table 5.19) where the two lower educational groups had mean CEBs of 3.8 while the highest educational group had a mean CEB of only 3.0-3.1, after standardization for age.

#### 6.1.9 RESPONDENT'S HUSBAND'S EDUCATION

This variable shows greater variation in proportions currently using family planning (see Table 6.13) as only 39.7 % of the couples where husband is in the No Schooling category were currently using family planning, compared to around 50 % of those couples where the husband had some schooling.

TABLE 6.13

PERCENT CURRENTLY USING FAMILY PLANNING  
BY EDUCATION OF RESPONDENT'S HUSBAND  
(Standardized for Respondent's Age)

EDUCATION	% CURRENTLY USING	n
NO SCHOOL	39.7 %	242
SOME PRIMARY	48.5 %	360
COMPLETED PRIM+ABOVE	53.2 %	479
		(1,081)

Source: 1980 survey.

There is very little variation within the individual higher educational groups except for the small University/Academy group where two-thirds of the 21 were using family planning. This pattern suggests that husband's education may be more important than many other factors, including wife's education where, although there is a larger proportion of women with no schooling (59.4 %) than of men (22.4 %), the difference in proportions using family planning is striking considering the normally small differentials observed. It is not surprising that over 90 % of the No School category (for husbands) are either farmers or labourers, both groups having slightly lower than average prevalence rates of contraceptive practice (see Table 6.11).

#### 6.1.10 ECONOMIC STATUS (Household Possessions)

As with husband's education there is a direct relationship between prevalence of contraceptive practice and economic status as indicated by the household possessions score (see Table 6.14).

TABLE 6.14

#### PERCENT CURRENTLY USING FAMILY PLANNING BY ECONOMIC SCORE

ECONOMIC SCORE	% CURRENTLY USING	n
0 - 19	39.7 %	277
20-199	47.5 %	305
200-299	49.3 %	304
300-899	63.0 %	100
900+	60.8 %	102
		(1,088)

Source: 1980 survey.

Just under 40 % of the very poorest group, comprising one quarter of the population and having a score of less than 20, were currently practising family planning compared to about half of the middle group (scores 20-199, and 200-299), while 61.9 % of the wealthiest groups (scores 300-899, and 900+) were using family planning. It should not be surprising to find that civil servants are strongly represented among the wealthier economic groups. Where the husband is a civil servant, 51.5 % of the couples fall into the 300+ economic score category, while if the wife is a civil servant 68.0 % of the couples fall into this category, compared to 18.5 % of total couples falling into the 300+ category. Of course, as we saw in Tables 6.10 and 6.11 a very high proportion of civil servants were currently using family planning. Conversely, farmers and labourers are somewhat overrepresented in the poorest categories (score: 0-19) of which they make up 83.3 % compared to 72.1 % of the total population. These two occupational categories have lower than average rates of family planning use at 46.2 % and 46.4 %, respectively (Table 6.11).

#### 6.1.11 DESIRE FOR MORE CHILDREN

The emphasis at the beginning of the family planning program in the early 1970s was mainly on preventing unwanted extra pregnancies (see Chapter 3), but as prevalence rates have increased there has been greater emphasis on encouraging women to space births, as will be seen in section 6.3 on patterns of first acceptance.

Thus at the time of this survey in 1980, 32.5 % of those 351 women wanting to have more children were currently using family planning (8) compared to 56.4 % of the 737 women who did not want more

children, or were uncertain (see Table 6.15).

TABLE 6.15

PERCENT CURRENTLY USING FAMILY PLANNING  
BY EXTRA CHILDREN DESIRED

EXTRA NUMBER DESIRED	% CURRENTLY USING	n
0	58.9 %	621
Uncertain	53.8 %	116
1	42.6 %	169
2	26.4 %	125
3	19.0 %	42
4+	6.7 %	15
(1+)	(32.5 %)	(1,088)

Source: 1980 survey.

As might be expected when family planning is being used for spacing births, the fewer extra births desired by the couple, the more likely they were to be using family planning. In fact, for those wanting only one extra child the proportion using family planning (42.6 %) was not greatly less than the proportion (58.9 %) of those not wanting more children.

#### 6.1.12 CASTE

The pattern of current use of family planning according to caste is of some interest as the second largest group (n=234) in the study villages, the Satrias, have a prevalence rate of 58.1 % compared to 47.3 % for the Sudra or commoner group (n=793). This group also shows

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(8) Of the women wanting more children and using family planning, 93.9 % were using the IUD, 2.6 % the pill, and the remaining 3.5 % were using condom, rhythm and even tubectomy.

the widest range of methods in use, having at least some users of all eight modern methods whereas the other groups tend to use only two or three methods, primarily IUD and tubectomy (Table 6.16).

TABLE 6.16

PERCENT CURRENTLY USING FAMILY PLANNING METHODS,  
ACCORDING TO CASTE.

CASTE:	BRAHMANA	SATRIA	WESIA	SUDRA	TOTAL
TOTAL USING:	39.2%	58.1%	10.0%	47.3%	48.9%
IUD-	33.3	46.6	10.0	43.5	43.3
PILL-	0	1.3	0	1.1	1.1
CONDOM-	0	0.9	0	0	0.2
VAG.TABLET-	0	0.4	0	0	0.1
TUBECTOMY-	5.9	6.8	0	2.4	3.5
VASECTOMY-	0	1.3	0	0.1	0.4
RHYTHM-	0	0.4	0	0.1	0.2
INJECTABLE-	0	0.4	0	0	0.1
NOT USING :	60.8%	41.9%	90.0%	52.7%	51.1%
(N)	(51)	(234)	(10)	(789)	(1,084)

Source: 1980 survey.

The Satria caste group is that which in the past held virtually all the overt political power over the village inhabitants. With the loss of this power, first to the Dutch, then to the Indonesian state through changes such as the Land Reform Act of 1960 which was intended to redistribute much of the landholdings of the Royal families to the peasants, the Satrias might have been expected to relinquish much of their hold over the populace. However this appears not to have been the case probably because the source of their authority derived from their claim that they have descended directly from the gods. That is, the source of their power lies not simply in wealth or landownership, but religious purity and consequent status. Also, as mentioned earlier, the majority of administrative positions are held by members of the high caste groups, in particular, the Satrias.



This puts them in a position where they can lead by example as they did in the past, but also where government pressures will be placed upon them to conform to government program aims and demands.

## 6.2 FAMILY PLANNING AND FERTILITY

### 6.2.1 CHILDREN EVER BORN

At first sight it seems paradoxical that the level of achieved fertility of couples currently using family planning (mean CEB=4.1) is higher than the level for couples who are not using family planning (mean CEB=3.4) (Table 6.17). This pattern persists when controlled for age (see Table 6.18a and Figure 6-D), and even when parity zero women, who are not eligible for family planning, are excluded from the analysis. The explanation of this paradoxical situation is that family planning acceptors are not typical of the population. As Brass points out:

For example, women aged, say, 35 years enter a programme with, in general, a higher parity, greater fertility in the past five years and shorter interval to the last birth than the average for married women of the same age in the population. Part of the difference is due to sterility, part to risk exposure and fecundity and part to chance. (Brass,1978:167)

The consequence for these 'high fertility' couples then, is that their achieved fertility is reduced below the level of their potential fertility by using family planning, while remaining higher than the level of achieved fertility of the 'low fertility' couples who do not use family planning. Consequently, fertility at say, community level, can decline while this fertility differential persists.

TABLE 6.17

MEAN and MEDIAN CHILDREN EVER BORN  
BY CURRENT FAMILY PLANNING STATUS.

CURRENT STATUS	MEAN CEB	MEDIAN CEB	n
USING F.P.	4.1	3.2	530
NOT USING F.P.	3.4	2.3	558

TABLE 6.18a

MEAN CHILDREN EVER BORN BY AGE OF RESPONDENT  
BY CURRENT FAMILY PLANNING STATUS

CURRENT STATUS	AGE OF RESPONDENT							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
USING FP (N=530)	1.25 (4)	1.94 (65)	2.75 (117)	3.69 (108)	4.68 (105)	5.81 (88)	7.38 (37)	8.83 (6)
NOT USING (n=558) (All women)	0.59 (22)	1.31 (112)	2.20 (119)	3.31 (96)	4.07 (71)	5.19 (74)	7.10 (52)	7.92 (12)
NOT USING (n=504) (Women with 1+ children)	1.08 (12)	1.69 (87)	2.30 (112)	3.50 (91)	4.38 (66)	5.33 (72)	7.10 (52)	7.92 (12)

Source: 1980 survey.

TABLE 6.18b

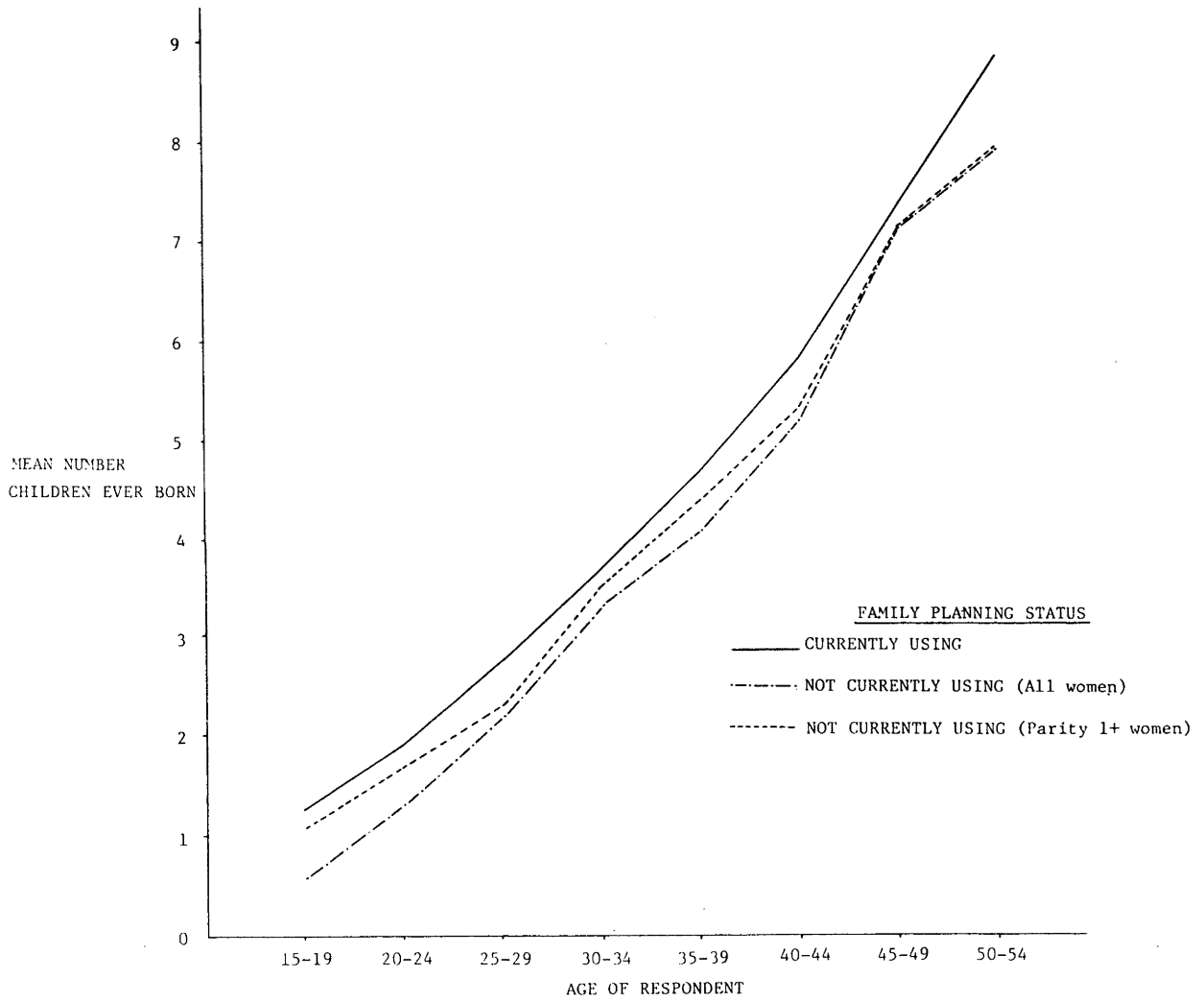
MEAN CHILDREN EVER BORN BY AGE OF RESPONDENT  
BY EVER USE OF FAMILY PLANNING

EVER USE STATUS	AGE OF RESPONDENT							
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54
HAVE USED (n=705)	1.00 (7)	1.96 (80)	2.72 (159)	3.77 (146)	4.60 (130)	5.84 (115)	7.33 (58)	8.30 (10)
NEVER USED (n=383) (All women)	0.58 (19)	1.20 (97)	1.97 (77)	2.88 (58)	3.96 (46)	4.74 (47)	7.00 (31)	8.13 (8)
NEVER USED (n=330) (Women with 1+ children)	1.10 (10)	1.61 (72)	2.17 (70)	3.15 (53)	4.44 (41)	4.96 (45)	7.00 (31)	8.13 (8)

Source: 1980 survey.

FIGURE 6-D

MEAN NUMBER OF CHILDREN EVER BORN, BY AGE OF  
CURRENT USERS AND NON-USERS OF FAMILY PLANNING.



Source: 1980 survey

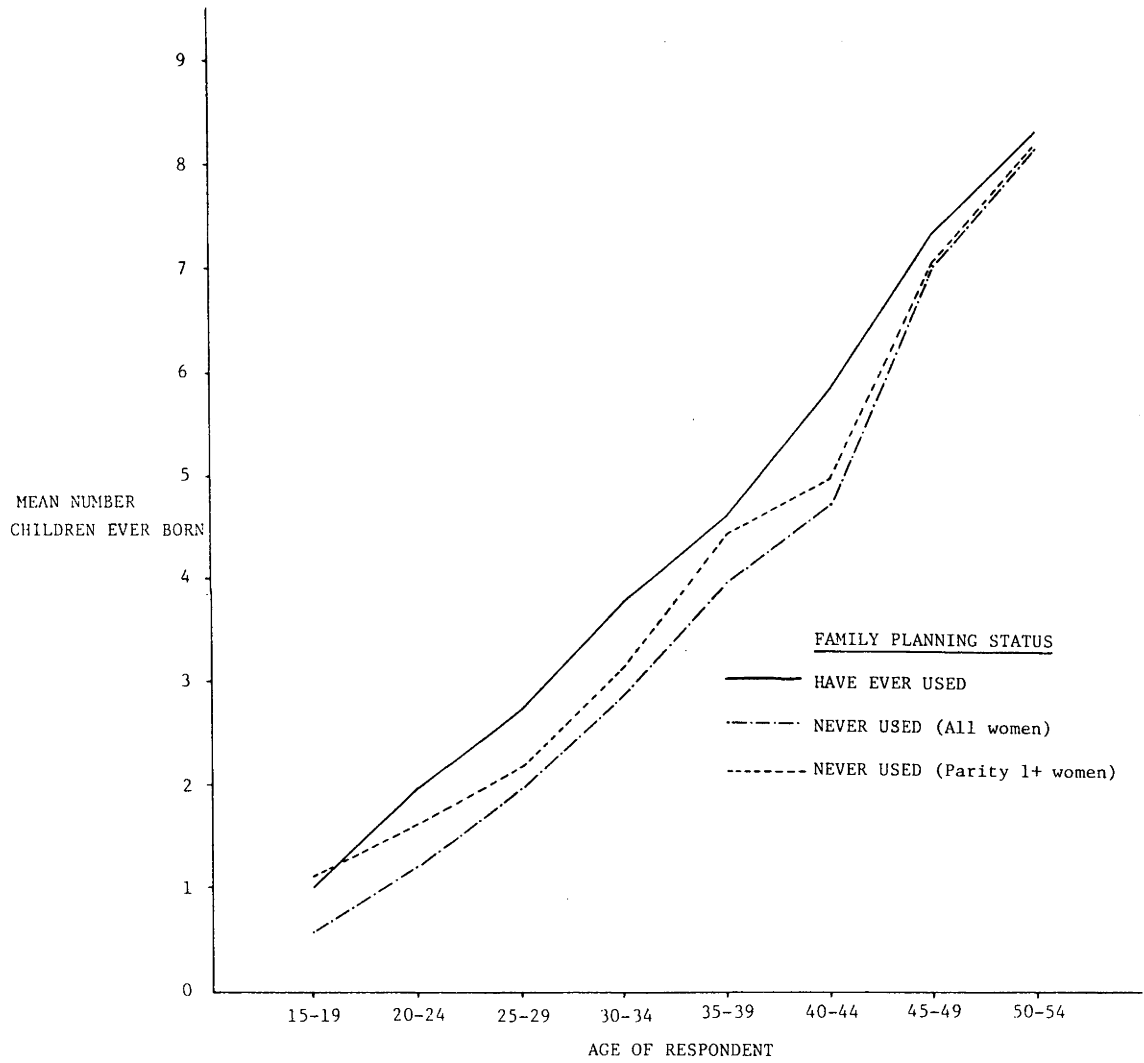
For the same reasons that achieved fertility for current users of family planning is higher than that for non-current users at any particular age, so achieved fertility for ever users of family planning, which of course includes current users, is also higher than achieved fertility for those couples who have never used family planning (see Table 6.18b and Figure 6-E). What is interesting about these graphs is not that the never users consistently have lower fertility than the current or ever users, but that the levels are so similar.

If then, achieved (cumulated) fertility by age is higher for family planning users than for non users, for the reasons just given, how can the practice of family planning be demonstrated to have a reducing effect on fertility?

At the community level (the three villages combined) we have seen in chapter 5 a dramatic decline during the 1970s, from the relatively stable high level of marital fertility (and overall fertility) characteristic of the 1960s without any marked changes in marriage patterns or in age structure of the population in the reproductive years. This fertility decline during the 1970s has certainly coincided with a rapid rise in the prevalence of contraceptive use as a result of the growth of the family planning program. But it still remains, in this analysis, to demonstrate a causal link between the practice of family planning and the decrease in fertility levels.

FIGURE 6-E

MEAN NUMBER OF CHILDREN EVER BORN OF  
EVER USERS AND NEVER USERS OF FAMILY PLANNING.



Source: 1980 survey

In the following section the effect of family planning use on birth intervals (open and closed) and on parity progression ratios will be examined, and numbers of births averted by family planning will be estimated.

#### 6.2.2 CLOSED BIRTH INTERVALS

As only one of the 1,088 respondents stated that she had used any form of family planning in the initial interval between marriage and the first live birth (in her case, the pill), this interval was ignored for purposes of comparing lengths of birth intervals for family planning users with those for non-users.

Also excluded were intervals between pregnancies that did not end in a live birth, but rather in a stillbirth or abortion, spontaneous or induced. Such intervals composed 6.9 % (n=146) of total closed intervals (n=2108). That is, this analysis of closed birth intervals is concerned only with intervals which start and finish with a live birth, and are not interrupted by any other pregnancy, regardless of outcome.

The reasons for selecting livebirth-livebirth intervals is that they, of course, make up the vast majority of all closed intervals, and because intervals following a stillbirth or spontaneous abortion are likely to be shorter than average, if the pregnancy had been desired; consequently the average length of subsequent intervals would have to be weighted by the proportion of initial pregnancies not ending in a livebirth as compared to the number ending in a livebirth. On the other hand, for closed intervals ending in a miscarriage or

abortion, the length of interval would have to be increased by the number of months that the pregnancy had terminated short of the normal nine months for a livebirth.

Regarding the use of family planning, the interval was allocated to the 'family planning user' category if any form of modern contraception was practised for any length of time during the given interval. It was considered unnecessary to devise a system to weight the various possible methods used as in 91 % of the closed livebirth intervals where contraception was used, the method was the IUD, the remainder being taken up by the pill which is of similar use effectiveness over the short term, as is the case for most closed intervals. Naturally sterilization could not be used in a closed interval.

Also for the initial analysis it was not considered necessary to weight the birth intervals in the 'family planning user' category by the length of use of the method or methods in that interval. That was to be attempted in later analysis in the hope of demonstrating that the increment of the family planning user birth intervals over the intervals in which family planning was not used, would be directly related to the length of family planning use.

Finally, time was controlled by limiting the comparison to the period during which contraception has been available, the ten years before the survey during which time the family planning program has been in operation. Also, the data on date of birth are considered to be quite accurate for the last five years, however before that (1975) the accuracy and completeness of birth recording almost certainly declines progressively the further back one goes.

The data in Table 6.19 indicate an extension of the mean closed livebirth interval (26.9 months) by 14.4 months, or 53.6 %, to 41.3 months when some method of family planning was used in the interval. This assumes that the former (26.9 months) would have been the overall mean if family planning had not been available. It cannot be argued validly here that the group not using family planning were a selected lower fecundity (or infecund) group, because these are closed intervals, thus all the women were fecund in the interval.

In terms of overall impact on fertility however, it should be noted that family planning was used in only 18.7 % of all the closed livebirth- livebirth intervals during this period of ten years (for spacing births). The consequence of this is that for all closed livebirth intervals the mean length is 29.6 months, an increase of 10.0 % over the mean length of 26.9 months for closed livebirth intervals where family planning was not used. The effect of spacing has only been to increase mean interval length by ten percent. The prevalence of contraceptive use is considerably higher however, for the open intervals; those between the most recent livebirth and the time of the survey, uninterrupted by any other pregnancy.

### 6.2.3 OPEN BIRTH INTERVALS

The extension of the open livebirth interval when family planning has been used, can be seen from Table 6.20 to be even more dramatic than for the closed intervals. The mean open interval length of 54.4 months when family planning has been used, is some two years longer (an increase of 77.8 %) than the mean length of 30.6 months where family planning has not been used.



TABLE 6.19

MEAN LENGTHS OF CLOSED LIVEBIRTH-LIVEBIRTH INTERVALS (Months)  
BY FAMILY PLANNING STATUS IN THE INTERVAL, 1970-1980.

LIVEBIRTH ORDER	F.P. NOT USED	n	F.P. USED	n
1 - 2	25.4	(307)	38.9	(61)
2 - 3	27.3	(200)	42.6	(51)
3 - 4	28.5	(132)	42.3	(40)
4 - 5	27.7	(92)	46.3	(27)
5 - 6	28.4	(62)	39.1	(17)
6 - 7	26.4	(45)	40.0	(5)
7 - 8	27.5	(32)	50.5	(4)
8 - 9	29.4	(21)	35.3	(3)
9 -10	22.8	(13)	37.5	(2)
10+-11+	24.0	(12)	76.0	(1)
MEAN LENGTH (months)				
ALL CLOSED INTERVALS	26.8	(916)	41.8	(211)
MEAN LENGTHS (months)				
STANDARDIZED	26.9		41.3	
FOR LIVE BIRTH ORDER				

Source: 1980 survey.

TABLE 6.20

MEAN LENGTHS OF OPEN LIVEBIRTH INTERVALS (Months)  
BY FAMILY PLANNING STATUS DURING THE INTERVAL, 1970-1980.

LIVEBIRTH ORDER	F.P. NOT USED	n	F.P. USED	n
1 -	25.6	(57)	25.9	(35)
2 -	18.5	(52)	37.9	(121)
3 -	21.0	(61)	48.8	(85)
4 -	27.0	(38)	65.3	(79)
5 -	41.5	(30)	68.1	(68)
6 -	49.7	(18)	65.8	(58)
7 -	39.0	(18)	79.6	(31)
8 -	61.1	(12)	81.8	(17)
9 -	43.4	(8)	74.3	(15)
10+ -	56.4	(12)	68.7	(20)
MEAN LENGTHS (months)				
ALL OPEN INTERVALS	30.5	(306)	55.9	(529)
MEAN LENGTHS (months)				
STANDARDIZED	30.6		54.4	
FOR LIVEBIRTH ORDER				

Source: 1980 survey.

This is a very significant increase, not only because of the magnitude of the extension of the mean open interval length, but because the open intervals in which family planning has been used account for nearly two-thirds (63.4 %) of all the open intervals, in comparison to only 18.7 % for the closed intervals. The effect of this is that the mean length of all open livebirth intervals is 52.8 % greater (at 46.6 months) than the mean open interval for non-users of family planning (30.6 months). This is clearly an effect of much greater magnitude than that which occurred within the closed livebirth intervals.

#### 6.2.4 PARITY PROGRESSION RATIOS

This ratio is a measure of the proportion of women who move from a particular parity level on to the next higher parity level within a given period of time after the occurrence of the earlier birth. It can be used to compare the tempo of fertility for the same population over different times, or different populations at the same time, or, as in this case, different subgroups of the same (study) population over the same time period.

For this particular analysis, the time period is limited to the ten years prior to the survey, as was the birth interval analysis. It takes as a useful cutoff point for the time frame three years, which is greater than the mean lengths of both open and closed birth intervals for the group not using family planning, but is less than the mean lengths of both open and closed intervals for the group which did use family planning following the initial birth.

To conduct this analysis the same data will be used as were used for the analysis of open and closed birth intervals in the previous section, with the exception of women who have had their last (most recent) birth within the last three years. It is not possible to know whether or not a woman with an open birth interval of, say, one year, will go on to have another livebirth within the two years following the survey.

TABLE 6.21

PROPORTIONS OF WOMEN MOVING FROM PARITY 'X' TO PARITY 'X+1'  
WITHIN THREE YEARS, BY FAMILY PLANNING STATUS IN INTERVAL, 1970-77.

PARITY From To	F.P. USED	n	F.P. NOT USED	n
1 - 2	50.0 %	(68)	85.9 %	(319)
2 - 3	34.6 %	(104)	86.3 %	(205)
3 - 4	21.3 %	(89)	78.3 %	(143)
4 - 5	12.5 %	(88)	79.4 %	(102)
5 - 6	8.6 %	(56)	71.6 %	(74)
6+ - 7+	4.8 %	(109)	70.6 %	(153)
TOTAL PARITIES 'X' TO 'X+1':	21.4 %	(514)	80.9 %	(996)

Source: 1980 survey.

The data in Table 6.21 demonstrate very clearly the effect on the tempo of childbearing, of the use of family planning, with the consequent lowering of parity progression ratios. The implication of the very low percentages moving on to higher parities within three years, for the group using family planning, is that many of these women will never have another child, but that they are, in fact, using family planning to limit their childbearing.

The difficulty with investigating this aspect of family planning practice (parity progression) using these survey data where the family planning program has been operating for only some ten years before the survey, is limited numbers. If, for example, the cutoff point for moving on to a higher parity is extended to five years, which would give a better idea than three years as to how many women will never go on to have a further birth, this would leave only the first five years of the program to be analysed, with fairly small numbers in the 'family planning user' category.

The view that many of the 'family planning user' category will probably never go on to a further birth is supported by the rapid decline in proportions moving on to higher parity as one looks at the values for the higher birth orders in that (the F.P. user) group (Table 6.21). These proportions decline much faster than might be expected simply from the slight lengthening of mean birth interval length (mainly for open intervals) that occurs as birth order increases (see Tables 6.20 and 6.21), and clearly these proportions decline much faster than do those for the 'non-user of family planning' group. It should not be forgotten that the two groups, users and non-users of family planning, refer only to the particular interval indicated and not to any permanent category of women. Thus a woman may appear in both categories, though not, of course, for the same parity. Unfortunately there are no data sources for Bali outside this survey to which these data can be compared; thus the possibility that the parity progression ratios would show a decline over time (compared to the 1960s, for example) cannot be tested, and only analysis of the two categories mentioned can be performed here.

### 6.2.5 BIRTHS AVERTED

We saw in chapter 5 that a substantial decline in fertility had taken place during the 1970s in the study villages. In the previous section of the present chapter, the data on lengths of open and closed birth intervals, according to whether or not family planning had been practised, indicated that the practice of family planning certainly contributed to the fertility decline. However it is not intuitively obvious what proportion of the decline can be accounted for by use of family planning compared to other factors. It is for this reason that the numbers of births averted by family planning use will be estimated, for the periods 1971-75 and 1976-80.

Many of the existing techniques for evaluating the impact of family planning use on fertility are designed for use with program statistics, comprising mainly numbers of acceptors according to method used and a number of acceptor characteristics such as age and parity. Sets of theoretical method-continuation rates, either standard schedules or from surveys of the acceptors, are then applied to the numbers of acceptors to estimate prevalence of contraceptive use at particular points in time, allowing for method failure, users dropping out, etc.

The data gathered in the pregnancy and family planning history in the present survey are of a somewhat different nature. For each pregnancy interval (open or closed), data on family planning practice were recorded, including date of starting use, date of stopping use (if applicable) and reason for stopping, as well as method(s) used in the interval.

The significance of this is that it negates the need to use method-continuation rates borrowed from another source which may not be appropriate for the study population. Also, as method failure is one of the reasons for stopping use, any segment of family planning use can legitimately be considered totally effective in terms of protection against pregnancy. All methods used can therefore be considered as equally effective (i.e.,100%) while they are being used (9), thus there is no need to separate methods for analysis. In this analysis all segments of family planning use, whether an initial segment or otherwise, are treated together; 63.3 % of current use segments were of initial use.

Finally, this survey covered all ever-married women 15-54 years in the study villages and hence is not limited only to users of Program contraception. Thus one of the shortcomings of births averted analysis based on program acceptor statistics is avoided and in this case the estimates of births averted will cover users of contraception from all sources, although there appeared to very little resort to private sources by women in these villages.

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(9) Effectiveness is indeed high as 95 % of segments of ever-use were either IUD, tubectomy or vasectomy.

## METHODOLOGY

The method selected for this analysis is the Component Projection Approach derived from the methodology originally proposed by Lee and Isbister (1966:737-758). In this case, the version used is the 'model for desk calculators' described in chapter 4 of U.N. Manual IX (U.N.,1979:63-75). As the authors state:

Most applications of the component projection approach assess the potential effect of a family planning programme on fertility (and thus estimate future changes in fertility). But the discussion that follows deals with the impact of a programme from the past to the present rather than from the present to the future. (U.N.,1979:63).

This is precisely what is required in this case. The method is designed to estimate the births averted in a given calendar year through the use of birth regulation methods provided by a family planning programme (in this case, all sources). The logic is that:

..if  $t$  is the year for which births averted are estimated and since there is an interval of about nine months between conception and birth, it follows that births prevented in year  $t$  result from the practice of family planning that took place approximately between 1 April of the year  $t-1$  and 1 April of year  $t$ . The number of births averted of couples or women in age group  $i$  is thus obtained as the product:

$$Q_{i,t} \cdot g_i$$

where  $Q_{i,t}$  = number of women in the  $i$ th age group in year  $t$  who were practising totally effective contraception during the period from 1 April of year  $t-1$  to 1 April of year  $t$ ;

$g_i$  = potential fertility estimate of the number of women  $Q_{i,t}$  in age group  $i$ ;

$i$  = successive age groups of women of reproductive ages 15-19,20-24,25-29,etc. (U.N.,1979:63).

There are therefore two major steps, the estimation of  $Q_{i,t}$  and  $g_i$ .

The computation of  $Q_{i,t}$  involves the following assumptions:

(a) Acceptance occurs at a constant rate throughout each year of the programme, so that acceptors who do not discontinue use will be in the programme for an average of six months during the year of acceptance (the survey data did not include exact month of accepting or stopping use);

(b) the number of users as of 1 October of year  $t-1$ , mid-point between 1 April of year  $t-1$  and 1 April of year  $t$ , is assumed to represent the average number of users of that period.

Thus the number of users was estimated as of 1 July of year  $t-1$  and 1 July of year  $t$ , then linear interpolation was used to obtain the estimated number of users as of 1 October of year  $t-1$ , this being the value of ' $Q_{i,t}$ ' to be used in estimating births averted in year  $t$ .

Computation of ' $g_i$ '.

The selection of appropriate potential age-specific fertility rates raises a number of problems. There has been a variety of options used in the past, from the age-specific marital fertility rates of the population as a whole, to the acceptors' own fertility during the period prior to entering the programme, to the approach of Lee and Isbister (1966:737-758) who used the marital fertility of the general population increased by 20 per cent to account for the acceptors' higher fecundity. The assumption in the past has been that acceptors are more likely to have a higher potential fertility than do married women in general, since the chances are that the latter include some sterile women and some subfecund women, and women whose husbands are temporarily absent etc. Indeed, data generally show just



such a pattern where for any age group cumulative fertility is higher for current or ever-users than for non- or never-users (see chapter 6.2.1). On the other hand, it has been argued that this finding results from biases due to the fact that acceptance of a method frequently occurs shortly after a birth, or among other things, to the chance factors affecting the occurrence of contraception rather than to higher fecundibility (U.N. Manual IX:64). It has also been contended that the higher fertility of acceptors might not have remained so had they not started using family planning. That is, many acceptors may have entered a period of relatively low fertility, without family planning use, following the initial period of above average fertility, a phenomenon described as 'regression to the mean' by Brass (personal communication).

When these factors are taken into consideration, it does not seem reasonable to elevate the ASMFRs by 20 percent. Instead the fertility schedules that will be used are those for the general population but for fecund women only (10), for the period 1966-70, before the family planning program commenced operations. This assumption, that acceptors are all fecund, has been made by Nortman in her more sophisticated version of the Component Projection Method suitable for computer analysis, CONVERSE (U.N. Manual IX:57), and seems reasonable in this case as couples are not eligible to become acceptors until they have demonstrated their fertility with at least one child. Thus this analysis includes only parous women, although such women may of course, experience secondary sterility after bearing a child.

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(10) These schedules result in marital TFRs of 9.9 for 1971-75, and 9.0 for 1976-80, compared to 10.7 for 1966-70.

For the period 1966-70 the age-specific marital fertility rates (see Table 5.8a) have been adjusted upwards by the inverse of the proportions fecund (one minus the proportion sterile), from Nortman's article (cited in U.N. Manual IX:53 from Henry:1961:81-92) and are presented in Table 6.22a.

The 1966-70 schedule of fecund marital fertility was then applied to the mean number of users of family planning by five year age groups on 1 October 1970, 1971, 1972, 1973 and 1974 to produce estimated numbers of births averted in years 1971 to 1975. The reasoning is that conceptions resulting in livebirths between January 1 and December 31 of year 't', occur between April 1 of year 't-1', and March 31 of year 't'. Thus protection due to family planning use can be taken as the average number of family planning users between April 1 of year 't-1', and April 1 of year 't', the mid-point being October 1 of year 't-1'. It is also necessary to eliminate the segment of ineffective contraceptive protection at the beginning of use caused by overlap with post-partum amenorrhoea. As mean length of breastfeeding was 20 months, usually with supplementation starting early, the mean length of post-partum amenorrhoea might be expected to be about 9 months. No data were collected on post-partum amenorrhoea in this survey. The mean time at which family planning was accepted after the most recent birth was 3.6 months, so it was concluded that a period of 6 months overlap of contraceptive use with post-partum amenorrhoea would be a reasonable estimate. Thus the first 6 months of contraceptive use was eliminated from each interval of use in these calculations. The total of 340 births averted represents 34.0 % of the 999 births which actually did occur in that five year period, 1971-75 (see Table 6.22b).

TABLE 6.22

## ANNUAL BIRTHS AVERTED DUE TO FAMILY PLANNING USE

(a) AGE-SPECIFIC MARITAL FERTILITY RATES  
FOR FECUND WOMEN, 1966-70.

AGE GROUP	1966-70
15 - 19	0.328
20 - 24	0.418
25 - 29	0.452
30 - 34	0.445
35 - 39	0.392
40 - 44	0.367
45 - 49	0.067

## (b) BIRTHS AVERTED FOR PERIODS 1971-75 AND 1976-80\*.

PERIOD	BIRTHS AV.	PERIOD	BIRTHS AV.
1971-75	340.4	1976-80	715.5

(Six months was subtracted from each woman's period of contraceptive use for the overlap of post-partum amenorrhoea and contraceptive use.)

(1980\*:ESTIMATED FOR FULL YEAR 1980)

(c) TOTAL FERTILITY RATES, WOMEN 15-49.  
(i)ACTUAL, (ii)IF BIRTHS NOT AVERTED

PERIOD	(i)ACTUAL	(ii)IF BIRTHS NOT AV.
1966-70	(6.8)	
1971-75	4.85	6.8
1976-80*	3.61	6.9

(1980\*:ESTIMATED FOR FULL YEAR 1980)

(1966-70 TFR IS ESTIMATED FOR WOMEN AGED 15-49 USING ASFR(45-49) FROM 1971-75, AS NO ASFR AVAILABLE FOR WOMEN 45-49 IN 1966-70.)

(d) TOTAL FERTILITY RATES, WOMEN 15-44.  
(i)ACTUAL, (ii)IF BIRTHS NOT AVERTED

PERIOD	(i)ACTUAL	(ii)IF BIRTHS NOT AVERTED
1966-70	6.48	
1971-75	4.58	6.5
1976-80*	3.56	6.8

(1980\*:ESTIMATED FOR FULL YEAR)

When the 1966-70 schedule of fecund marital fertility was applied to the numbers of users on 1 October 1975 to 1979, the total number of births averted was estimated at 715.5 for the period 1976-80. This represents 74.8 % of the 956 births which actually occurred (assuming a full year of births in 1980) in the period 1976-80.

It must be noted that simply adding births averted per calendar year to actual births per calendar year does not necessarily give an accurate indication of the number of births that would have occurred had there been no family planning (program or otherwise) available. Other factors may well have come into operation.

However, to put the magnitude of the effect of the births averted into perspective, these births have been added to the actual births and hypothetical total fertility rates for the periods 1971-75 and 1976-80 have been derived. For women aged 15-44 (Table 6.22d), the hypothetical TFR, had no births been averted by family planning, would have been 6.5 in 1971-75, some 42 % higher than the actual TFR of 4.58 (Table 6.22c). For the period 1976-80, the hypothetical TFR would have been 6.8, higher by 90 % than the actual TFR of 3.61 (see Table 5.11a). The pattern and magnitude of changes is similar for women aged 15 to 49 (Table 6.22c). These calculations cannot, of course, account for changes that may have occurred in fertility due to factors other than family planning, although the question of changes in patterns of marriage was examined early in chapter 5 and found to be virtually negligible. Thus it appears that the use of family planning has resulted in very substantial numbers of births being averted during the period of operation of the national program in the study area.

Another approach in evaluating the effect of family planning on fertility is to examine changes in the pattern of marital fertility over time. This method, developed by Coale and Trussel (1974:40), allows quantification of the effect of fertility control (from family planning and abortion) by comparing the shape of the actual marital fertility schedule with the pattern of natural fertility. In this model, 'm' is an index of departure of fertility from natural fertility, it is independent of the level of fertility and depends solely on the age structure of fertility. The greater the value of 'm', the greater the deviation of the schedule from the natural fertility schedule, and hence the greater degree of fertility control implied. A value of  $m = 1.0$  indicates that the schedule deviates from natural fertility by an amount that is the average deviation of 43 reasonably reliable marital fertility schedules in the early 1960s, representing a range of differences in the extent of fertility control.

TABLE 6.22e

COALE-TRUSSELL INDEX OF FERTILITY CONTROL, 'm',  
FOR DIFFERENT PERIODS, 1961 TO 1980, WOMEN 25-44.

PERIOD	'm'
1961-70	-0.09
1971-75	+0.36
1976-80	+0.93

(Source of n(a) values (schedule of natural fertility) Knodel, 1977:223 following Coale and Trussell (1974:188) based on the arithmetic average of ten of the schedules designated by Henry (1961)).

Source: 1980 survey.

Data from the present survey for women aged 25-44 give values of 'm' increasing from -0.09 in the 1960s, to +0.36 in 1971-75, to +0.93 in 1976-80 (Table 6.22e). The negative small value for the 1960s indicates that at that time the fertility schedule closely followed a standard natural fertility schedule, although fertility declined even more slowly with age than in the standard schedule. The value of +0.93 for the late 1970s indicates a considerable degree of fertility control being introduced during the 1970s. It is not, however, possible to directly equate changes in 'm' with family planning prevalence, nor is the magnitude of 'm', or changes in 'm', directly comparable among different societies. Bali, for example, had a TFR of 3.6 in the late 1970s when 'm' equalled 0.93, whereas in Taiwan the TFR was about 4.8 at the time (Chang et al., 1981:225).

### 6.3 PATTERNS OF FIRST ACCEPTANCE OF FAMILY PLANNING

As mentioned in the first section of this chapter, there have been changes in the characteristics of couples accepting family planning for the first time, over the ten years or so since the family planning program began in Bali. The reasons for these changes are not entirely straightforward but depend somewhat on the types of methods made available: for example, tubectomy is used more by older women who have completed childbearing, whereas pills are often used for spacing early births. The changes also depend on the pattern of fertility over that time; for example, if average completed fertility falls from six to four children, then the mean parity of 'limiters' such as tubectomy clients will also fall by about two children, and presumably mean age at acceptance would also fall.

A further difficulty arises from the fact that this survey was cross-sectional, so as we try to examine trends in the past from the pregnancy and family planning histories, it must be remembered that the age distribution of the survey population was different in the past, that is, the group aged 50-54 in the survey was aged 45-49 in 1975, and 40-44 in 1970, thus we have no access to data on women aged 45+ in 1970. This truncation effect modifies mean ages and parities considerably, however the effect is to underestimate the changes that will be shown here in Table 6.23a and b, (11).

The data in Table 6.23a show a decline of about five years in the apparent mean age at first acceptance between 1970 and 1980, from a value of close to the mean age of the study population (29.5 years) in 1970, to a figure some eight years less than the mean age of the study population (33.3 years) in 1980. This indicates very clearly a move for younger women to accept family planning, although some caution should be used as the numbers of 'first-time' acceptors for single years are relatively small, and the means fluctuate somewhat.

Just as mean age at first acceptance has fallen substantially, so has mean parity (see Table 6.23b), from a value of around 4.5 children in 1970 to 2.5-3.0 at the end of the seventies.

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(11) If there had been no actual change in the mean age at first acceptance between 1970 and 1980, analysis based on these family planning histories would have shown an increase in apparent mean age at first acceptance as the mean age of the study population increased by about four years, from 1970, to 33.3 years in 1980.

TABLE 6.23a

MEAN AGE OF WOMEN AT FIRST ACCEPTANCE OF FAMILY PLANNING		
YEAR	MEAN AGE (Years)	NUMBER OF WOMEN ACCEPTING
1969	30.5	25
1970	29.8	60
1971	30.9	72
1972	30.3	97
1973	27.1	61
1974	29.9	61
1975	27.3	54
1976	27.5	57
1977	26.0	57
1978	26.7	64
1979	27.9	51
1980	24.5	33

1980 was not a full year (=0.614).

TABLE 6.23b

MEAN PARITY OF WOMEN AT FIRST ACCEPTANCE OF FAMILY PLANNING		
YEAR	MEAN PARITY	NUMBER OF WOMEN ACCEPTING
1969	4.5	25
1970	4.4	58
1971	4.6	71
1972	4.5	94
1973	3.4	61
1974	4.4	58
1975	3.6	53
1976	3.3	57
1977	2.7	57
1978	2.9	63
1979	2.9	51
1980	2.4	31

Source: 1980 survey.

Of the 530 current users of family planning at the time of the survey, only 114 (21.5 %) said that they wanted more children later, that is, they were using contraception for spacing their births. This is



relatively few women, even considering the current low level of fertility, and is partly a consequence of the limited variety of family planning methods available to acceptors. Although the clinic nurses tell some of the women that the IUD can be removed later if they want another child (see section 6.5.2) many of the acceptors still view the IUD as a method to permanently limit childbearing.

#### 6.4 DECISION TO ACCEPT FAMILY PLANNING

A series of questions were asked of the 705 women who had ever used family planning to elucidate their reasons for initial acceptance, and to examine the role of social pressure at the local (village or banjar) level in the decision-making process.

In response to the question (Q.507): 'Can you recall any reasons or information given by the Government as to why people should accept family planning?' the 680 responses were grouped as follows (see Table 6.24). Of the 70 % who could recall any Government information, the answers tended to be strongly on personal aspects, e.g., 'limit or space your children for the future prosperity of your family', but only rarely 'limit your children to ensure that Indonesia's population does not grow too large'. In fact the 21 responses related to population pressure or problems were all obtained by one particular interviewer who, in informal discussion, showed great interest in the population situation of his country, which suggests prompting of respondents.

Also the responses to 'Limit' or 'Space' children do not really answer the question and probably conceal other motivations, although it will be argued later (chapter 8) that a sizeable number of couples would not have made a purely personal decision to accept family planning, but would have followed the guidance of village (or banjar) authorities on the grounds that such behaviour was considered beneficial to the community.

TABLE 6.24

REASONS GIVEN BY GOVERNMENT FOR  
ACCEPTANCE OF FAMILY PLANNING.  
(As recalled by respondents)

NUMBER	%	REASON
174	25.6	LIMIT CHILDBEARING
146	21.5	SPACING CHILDREN
88	12.9	PROSPERITY OF CHILDREN/FAMILY
21	3.1	POPULATION PRESSURE/DENSITY
18	2.6	HEALTH OF FAMILY/MOTHER/MOTHER+CHILDREN
16	2.4	HEALTH OF CHILDREN ONLY
11	1.6	FOLLOW GOVT. PROGRAM
8	1.2	FORCED/MUST FOLLOW F.P. PROGRAM
3	0.4	ADVISED CAN CHANGE/STOP LATER
2	0.3	MOTHER FREER TO WORK
2	0.3	ENSURE CHILDREN'S EDUCATION
191	28.1	FORGOTTEN/NEVER HEARD ANY INFORMATION
680	100 %	

Source: 1980 survey.

What is striking about the data in Table 6.24 is how few replies there were which mentioned health of children (n=16) or of mother and child (n=18), although this may have been the reason implicit in a number of the 'limiting' or 'spacing' responses, had the interviewers probed more deeply.

It is also the case that much of the propaganda, in the form of posters to be seen in village clinics and banjar halls, emphasizes that spacing or limiting childbearing can make life easier for women, but there is also some emphasis on the economic benefits of small families. However only two respondents replied that they recalled information suggesting that acceptance of family planning would leave the mother freer to work, although economic reasons were of much greater importance in the personal reasons of the couples for accepting family planning (see Table 6.25), comprising 20.8 % of the replies.

TABLE 6.25

PERSONAL REASONS GIVEN BY RESPONDENTS FOR  
FIRST CHOOSING TO ACCEPT FAMILY PLANNING.

NUMBER	%	REASON
302	43.0 %	LIMITING BIRTHS
171	24.3 %	SPACING BIRTHS
146	20.8 %	ECONOMIC REASONS
52	7.4 %	GOVERNMENT PRESSURE
4	0.6 %	FOLLOWING OTHERS/AS EXAMPLE
13	1.8 %	FORGET/DON'T KNOW
688	100 %	

Source: 1980 survey.

In reply to the question (Q.508) on reasons why the respondent and her husband first decided to accept family planning, two-thirds were related to limiting and spacing births (n=473). A further 20.8 % were for economic reasons, and 7.4 % (n=52) were said to be primarily due to government pressure (at the local level). The economic reasons ranged from their current situation being too poor to support more children to concern that their future economic wellbeing would be threatened by too many children.

The government pressure replies ranged from simply wishing to follow the government program or contribute to its success, to being forced (Dipaksa) by local officials (including the Family Planning Program fieldworker, the kelian dinas, or the village policeman) sometimes with threats of a fine and, in one case, with the threat of expulsion from the village. These incidents of blatant pressure were, however, few in number. This is not to say that there was very little external pressure put on couples to accept family planning, but rather that if there was it was not seen as coming directly from the Government. This will be followed up in a later chapter.

#### 6.4.1 DECISION-MAKING PROCESS

We have seen some of the reasons that respondents gave for their initial acceptance of family planning, and this section will examine more closely the decision making process: who was involved in the decision, and what external pressures, if any, were brought to bear on the respondent. The possibilities are that before the introduction of the national family planning program, Balinese couples wanted fewer children than they were having but either found existing methods of birth control to be unsatisfactory or not readily available. Alternatively, these couples may previously have wanted large families but since the 1960s circumstances changed such that high fertility in the 1970s had become less desirable. Finally, the rapid and widespread acceptance of family planning during the 1970s may have been motivated largely by an awareness of Indonesia's population problems and the desire to participate in the government's program to alleviate the situation.

TABLE 6.26

OTHER PEOPLE INVOLVED IN DECISION  
TO ACCEPT FAMILY PLANNING.

PERCENT	PERSON
68.8 %	HUSBAND
8.3 %	F.P.FIELDWORKER
7.4 %	RESPONDENT ALONE
3.9 %	KELIAN DINAS
3.4 %	NURSE/DOCTOR/HEALTHWORKER
2.9 %	VILLAGE POLICEMAN
2.1 %	NEIGHBOURS/FRIENDS
1.7 %	FAMILY (NOT HUSBAND)
1.1 %	PERBEKEL (VILLAGE HEAD)
0.3 %	BALIAN (TRAD.HEALER)

100 % (N=712)

Source: 1980 survey.

When women who had at some time accepted use of family planning were asked who else had been involved in the decision the vast majority indicated that only the husband had been involved (68.8 %) (see Table 6.26). The other main individuals involved were the family planning fieldworkers (8.3 %), kelian dinas (3.9 %), nurse/doctor/healthworker (3.4 %). There were several other categories all smaller than 3 %, with friends, neighbours or other members of the family (other than the husband) being virtually negligible, surprisingly. The very high proportion of respondents indicating that only the husband had been involved in the decision must be viewed with caution as it does not necessarily mean that no external forces were operating on the couple via the husband. Unfortunately the respondent's husband was generally not present at the interview for further enquiries to be made. In the final chapter a case will be made that there were very powerful influences bearing on the husbands to encourage them and their wives to accept family planning and limit their childbearing.

The question of the extent of social pressure being applied by other women (neighbours, family, etc.,) is also of interest considering the widespread interest in the family planning status of members of the community which was apparent, particularly during the early days of the program. It was quite striking how ready Balinese women were to discuss their reproductive behaviour and/or problems. This made the interviewers' job much easier than it might otherwise have been, considering that privacy was impossible in many of the interviews as groups of small boys and girls accompanied the interviewers into each household and listened attentively to the details of the respondent's reproductive history.

It is important, however, to distinguish between interest in the behaviour of others, and attempting to influence their behaviour. One of the difficulties for some Western researchers in Bali is coming to terms with the different concept of privacy. The Balinese do not readily doubt the right of another to ask personal questions, but they are adept at avoiding direct answers to such questions if they don't wish to reply. On the other hand, a characteristic of immanent cultures such as that found in Bali, is a reluctance to try to alter the behaviour of others, or to express direct criticism, provided that such behaviour is not infringing social custom. This attitude is reflected in the responses to a question where respondents were asked for their opinion of a hypothetical couple in the same banjar, who already had 5 or 6 children but decided not to use family planning (Table 6.27).

TABLE 6.27

RESPONSES TO HYPOTHETICAL COUPLE  
REFUSING FAMILY PLANNING

PERCENT	RESPONSE
64.2 %	WOULD NOT DO OR SAY ANYTHING/DOESN'T MATTER
11.1 %	SUGGEST THEY USE F.P.
9.1 %	BAD/BETTER IF THEY USE F.P.
7.4 %	IF THEY CAN MANAGE, DOESN'T MATTER
4.3 %	IF POOR, MUST USE F.P.
3.9 %	'POOR THEM'/WOULD WORRY FOR THEM

100 % (N=584)

Source: 1980 survey.

Of the 584 replies, only 11 % said that they would DO anything, usually to suggest that the couple should use family planning. The remainder varied from expressing disapproval, e.g., that such a situation was not good (9.1 %), to pity for the mother or children (3.9 %), to the majority stating that they would simply keep silent, that it is not their business (64.2 %). The overall feeling expressed by the women was that if the couple could care for the children in a satisfactory manner then the situation was no cause for concern. Had the hypothetical couple been given 8 or 9 children the replies might have been different.

It appears then that in the majority of cases, the decision to accept family planning was made by the couple themselves, without significant influence from informal sources such as neighbours, other family members, etc. This does not, however, exclude influences from more formal sources within the community, such as the banjar council. Indeed, it will later be argued that this institution has been of great importance in encouraging community members to accept family planning.

## 6.5 EXPERIENCES OF CONTRACEPTIVE PRACTICE

As described earlier in this chapter while 705 women (or couples) had ever used some form of modern contraception only 530 were currently using contraception at the time of the survey. However because some women have used family planning several times, the total number of periods of use of contraception is 878, comprising the 530 continuing periods of use by current users ('open') and a further 348 periods of past use which have stopped for one reason or another ('closed') (Table 6.28).

TABLE 6.28

NUMBER OF SEGMENTS OF FAMILY PLANNING USE,  
ALL EVER-USERS.

NUMBER OF SEGMENTS	CURRENT USERS	NON-CURRENT EVER-USERS	ALL EVER-USERS	%
1	395	161	556	78.9 %
2	118	14	132	18.7 %
3	13	0	13	1.8 %
4	2	0	2	0.3 %
5	1	0	1	0.1 %
6	1	0	1	0.1 %
TOTAL	530	175	705	100 %

Source: 1980 survey.

Naturally the more that contraception is used for spacing births, the greater will be the proportion of periods of family planning use which have been terminated. However the following table (6.29) indicates that only in one third of cases where family planning use was terminated was the reason that the couple wanted another child. The remaining two-thirds stopped because of side-effects (41.8 %); involuntary expulsion of an IUD (16.2 %); method failure (6.4 %); while 'having no further need' accounted for only 1.5 % .



TABLE 6.29

## REASONS FOR STOPPING FAMILY PLANNING USE (ALL METHODS)

PERCENT	N	REASON
41.8 %	137	SIDE EFFECTS EXPERIENCED*
33.8 %	111	WANTED ANOTHER CHILD
16.2	53	IUD FELL OUT/EXPELLED
6.4 %	21	METHOD FAILED/PREGNANT
1.5 %	5	NO FURTHER NEED (WIDOW;MENOPAUSE)
0.3 %	1	FORCED TO ACCEPT INITIALLY
100 %	328	

\*SIDE EFFECTS INCLUDE: Unspecified pain (26.5 %); Loss of body weight (3.0 %); Stomach pain (2.7 %); Breakthrough bleeding (2.7 %); Dizziness (1.5 %); Poor vision (0.9 %); Nausea (0.9 %); Heavier menstruation (0.6 %); Chest problems (0.6 %); Tiredness (0.6 %); Vomiting (0.6 %); Hepatitis (0.3 %); Dissatisfied (0.3 %); Fear that IUD would enter insides (0.3 %).

Source: 1980 survey.

Within the major category, side-effects, the actual problem was described only as unspecified pain in many cases, although considering the distribution of methods used this would very often be the IUD, and consequently the pain would probably be stomach pain or cramps even though this was only specified by nine women. A more detailed examination of side-effects of use of both the IUD and the oral pill will come later in this chapter.

There also appear in the list of side-effects, several, such as dizziness, poor vision, chest problems, hepatitis, for which there is no immediately obvious connection to contraceptive practice. It is possible that anaemia resulting from heavier menstrual periods may account for dizziness, but it is also possible that certain other conditions, either pre-existing, or developing during the period of contraceptive use, may be viewed by the woman as a direct consequence of contraceptive practice when in fact the condition occurred independently.

In regard to how few women have stopped using family planning because they no longer need contraceptive protection, due to widowhood or old age, it may be that the effect of underestimation of ages of the older women which was seen in chapter 4 results in women remaining in the Registers as current users although they no longer need such protection. Of the 18 women aged 50-54 in the survey, seven were still using family planning (one being a tubectomy), although all of them were listed in the register as being 45 years or younger.

#### 6.5.1 EXPERIENCE OF SIDE-EFFECTS OF IUD USE

Of the 705 couples who had ever used any modern family planning method, some 95 % (n=669) had used the IUD, and of those 470 were currently using an IUD. A sub-section of the survey questionnaire was aimed specifically at these women, regardless of whether or not they were continuing to use an IUD.

In answer to the question : 'Some women who use the Loop/IUD experience some problems. Have you ever experienced any problems while using the IUD?', some 360 (53.8 %) of the women answered that they had experienced some problems. These women were then asked whether they had ever experienced any of the specific problems listed, and also about any other problems not listed. The women mentioned, on average, three problems of varying degrees of severity and importance.

TABLE 6.30

## EXPERIENCE OF SIDE EFFECTS OF IUD USE

QUESTION: 'What were these problems that you experienced (felt), and did it/they occur regularly each month, or just occasionally?'

PROBLEM	REGULARLY	IRREGULARLY	TOTAL	(% REG)
MENSTRUATION LONGER	99	83	182	(50.6%)
MENSTRUATION HEAVIER	159	63	222	(61.7%)
BREAKTHROUGH BLEEDING	55	31	86	(23.9%)
STOMACH PAIN/CRAMPS	104	55	159	(44.2%)
INCREASED TIREDNESS	107	52	159	(44.2%)
BODY WEIGHT DECREASED	178 (49.4%)			
BODY WEIGHT INCREASED	36 (10.0%)			
OTHER PROBLEMS:				
WHITE VAGINAL DISCHARGE		21 (5.8%)		
DIZZY OR ASTHMA		13 (5.8%)		
SICK		13 (3.6%)		
VISION DISTURBED		13 (3.6%)		
HEART RATE INCREASED		4 (1.1%)		
ITCHINESS/ODOUR		2 (0.6%)		
FEVER		1 (0.3%)		
BLOOD PRESSURE DROPPED		1 (0.3%)		

Source: 1980 survey.

Table 6.30 lists the problems experienced by those 360 women. One half experienced longer menstrual periods while using the IUD, and over 60 percent experienced heavier menstrual bleeding. Stomach pain and increased tiredness were each felt by 44 % of the women, and about half (49.4 %) experienced loss of body weight.

The consequences of the high incidence of heavier and longer menstrual periods, and the occurrence of breakthrough bleeding for some of the women are of both spiritual and corporeal nature. Entry to all temples is forbidden to menstruating women, nor can they be involved in the making of offerings, an almost daily duty in Bali, particularly in rural areas. Indeed in the past, women were obliged to wear a black sarong during menstruation to ensure that no mistakes would be made in regard to temple attendance. Although it is less common these days, in traditional households a husband would sleep in a separate room, sometimes a separate house, from his menstruating wife. During this time however, a Balinese woman may normally still prepare and cook food, unlike a Moslem woman.

Regarding physical consequences, extra blood loss during menstruation can have a serious effect on a woman's capacity to perform physical work, as many Balinese women do. Nearly two-thirds (n=691) of the women surveyed performed some kind of work which brought them income, and around 60 % of those were doing what would be classed as physically demanding work, as a labourer on a farm, in a quarry, repairing roads, construction, or as 'dagang' (hawker). It is quite possible that the women would feel more tired than usual as a direct consequence of anaemia due to increased blood loss during menstruation.

When questioned about the loss of body weight, the nurse at the clinic where most of the IUDs had been inserted said that she had seen women lose about three to five kilograms (12), and she believed that the women who experienced such weight losses were those who had been pressured, by either the village head, Banjar head, mobile medical

teams which travel the rural areas, or someone else, into accepting the IUD against their wishes. She believed that this view (of a psychosomatic element) was supported by the example of a woman who came to the clinic asking to have the loop removed because she was losing weight, whereupon the nurse pretended to remove it and the woman's weight proceeded to increase! Also mentioned in 36 cases was weight gain although this does not tend to be viewed so much as a problem in moderate cases, as the 'ideal' body morphology tends to be slightly heavier than average.

#### 6.5.2 RESPONSE TO SIDE EFFECTS

This raises the question of how the women responded to the experiencing of side-effects of IUD use. Over half of the women stopped (n=264) using the IUD, but of those who did not stop, nearly half (48.1 %) did nothing, just putting up with the problems, while 42 % went back to the clinic (doctor or nurse) where often they were given an injection (13). Only 7 women said that they used traditional medicine to treat the problem, while 12 used one of the locally available analgesics (e.g., Bodrex).

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(12) In the survey some women claimed weight losses of 10 Kg with one of 18 Kg, many of these could state their exact weights before and after receiving the IUD.

(13) If the problem was loss of weight, the injection was usually Vitamin-B Complex, repeated weekly, to encourage the woman to eat more. If the problem was heavier menstrual periods, the injection was a single dose of Ergometrine with Vitamin K. And if the problem was white vaginal discharge with itch, she received a penicillin injection.

The other response to the problems associated with IUD use was to stop using it. Of the 264 women who stopped, about half (46.6 %) stopped because of side effects such as excessive menstrual bleeding; nausea; stomach and chest pain; dizziness and affected vision. One quarter (25.0 %) stopped to have another child, for one fifth the loop fell out, 14 became pregnant accidentally and 7 no longer needed protection, because of either menopause, widowhood, divorce or husband vasectomized.

On the part of some women experiencing side effects there was clearly a reluctance to complain to the nurse or doctor who had inserted the loop. For this reason it might have been expected that some women would have attempted to remove the cause of the problem, thereby avoiding the pressure to try a different method or have another IUD inserted or simply to be given an injection and told to wait and see if the situation improved. This course might also be considered by a woman who had been pressured into accepting the IUD initially. However when those who said that they had stopped using the loop were asked who had removed it, only 3 of the 250 women said that they had done so themselves. Of the remainder, 191 (76.4 %) said that the doctor or nurse had removed it; 53 (21.2 %) said it had spontaneously been expelled, many noting that this had occurred while they were washing or bathing in the river - coincidence or cold water?; one had the IUD removed by a Dukun (traditional healer), and two were uncertain whether it had in fact fallen out.

In determining the role of side-effects on the decision to stop using the IUD it is not surprising to find that the more different side-effects were experienced, the more likely a woman was to stop

using. Of those women experiencing only one or two side-effects, 41.2 % stopped, while of those with three side-effects 51.0 % (n=51) stopped, and of those with four or more side-effects 68.6 % (n=137) stopped (Table 6.31).

TABLE 6.31

PROPORTIONS OF IUD USERS WHO STOP USE  
ACCORDING TO EXPERIENCE OF SIDE EFFECTS (SEs).

NUMBER OF SEs EXPERIENCED	NUMBER STOPPING	NUMBER NOT STOPPING	% STOPPING	N
1	37	50	42.5 %	87
2	35	52	40.2 %	87
3	26	25	51.0 %	51
4	47	18	72.3 %	65
5+	47	25	65.3 %	72
TOTAL	192	170	53.0 %	362

Source: 1980 survey.

A number of questions are raised by these responses to side-effects. For example, of the women who experienced side-effects but continued to use the loop, why is it that more do nothing (48.1 %) than return to the clinic (42.0 %)? Access to facilities is unlikely to account for this as the vast majority went to the clinic in their own village to have their IUD inserted : 93.8 % of the IUD ever-users had them inserted in either Banjarangkan (55.7 %), Tusan (21.6 %), or Bakas (16.5 %) clinics.

The women were also asked whether they had received any information at the time the IUD was inserted, and about one quarter indicated that they had (185 of 668, or 27.2 %). The types of information given are presented in Table 6.32. About 70 % of the 185 women were told basically that they should return to the clinic if they had any problems.

TABLE 6.32

## INFORMATION RECEIVED WHEN OBTAINED IUD

Only 27.7 % (n=185 of 668) received any information.

PERCENT (N=185)	INFORMATION
36.9 %	IF ANY PROBLEMS, COME BACK. AFTER TWO YEARS, HAVE LOOP REMOVED. RETURN REGULARLY (2 WEEKLY) FOR CHECKUP.
24.4 %	MAYBE LOOP UNSUITABLE. IF UNSUITABLE, CAN REMOVE OR CHANGE.
18.7 %	POSSIBLY STOMACH PAIN/NAUSEA/SICK.
7.4 %	DON'T WORRY, DOESN'T MATTER. TAKE AN EXPLANATORY BOOKLET. NO INTERCOURSE FOR 3 WEEKS. OTHER.
5.7 %	POSSIBLY MENSTRUATION WILL INCREASE/DECREASE.
5.7 %	POSSIBLY FEEL UNWELL/TIRED/CHANGED. POSSIBLY LOSE WEIGHT.
3.4 %	MAY FEEL DIZZY. POSSIBLY VAGINAL DISCHARGE.
100 % (N=185)	

Source: 1980 survey.

About one-third (59/185) were warned that they might experience a range of specific symptoms including stomach pain, changes in menstrual periods, or body weight, or dizziness, increased tiredness, etc., and 14 were told not to worry about any symptoms they might experience. There is some anecdotal evidence from fieldwork to suggest that Balinese women are capable of regarding physical discomfort as 'mind over matter' and thereby ignoring the problem.



Also Jane Belo states that:

..there is an undercurrent of superstition in the Balinese mind that to 'give up' will cause weakness and increased vulnerability to the dangers of illness. For illness is conceived as imposed from the outside by malevolent forces, which lurk everywhere, ready to rush into the body of anyone whose strength and purity (both physical and spiritual) are for the time below the normal, outbalanced by the share of weakness and impurity which form a part of every human being. (Belo,J.,1970:89)

This is not to say that Balinese women regard side-effects of IUD use in the same way as an illness, but it throws some light on their response to discomfort or pain.

When the nurse responsible for inserting IUDs at one of the village clinics was asked about the usual practice regarding the informing of clients about possible side-effects of IUD use, she replied that if the women were forewarned of all the possible side-effects they would be too afraid to have an IUD inserted! So her policy was only to advise the women to return if they had any problems, although as indicated only about 15 % recalled having received even this information. The nurse's concern is supported by the data on proportions of women experiencing side-effects of IUD use according to whether or not they had been given any forewarning of possible problems. Of those ever-users who had been given some prior information (n=175), 61.7 % later claimed to have experienced some side-effects, compared to 49.3 % of those women who had not been given any such information (n=469). This raises such questions as 'are women who are given information such as this more or less likely to return to the clinic?'. In fact of those who experience some side-effects, the women are slightly less likely to return to the clinic (17.3 %) if they have received some advice than if they have

not (19.4 %). They are also slightly less likely to stop using the IUD if they have received some advice (51.5 %) than if they have not (56.3 %).

There may, of course, be more important factors related to 'social distance'. It is common throughout Bali for those people filling positions which require at least high school education, such as nurses, and certainly doctors (unless they are Javanese recent graduates), to belong to one of the higher castes, particularly the princely Satrias. This is certainly the case in the three survey villages, where the nurses are of the Satria caste and there is almost inevitably a certain degree of social distance between these people and the clients or patients of the numerically predominating Sudra or commoner group. This however, proves not to be a barrier to women experiencing side-effects returning to the clinic. Of the Sudra women experiencing problems, 18.6 % returned to the clinic, compared to 18.8 % of high caste women. This may be a consequence of the fact that certain high caste families have always played an important advisory role in the community, and people will visit the homes of these leaders/rulers to seek guidance in spite of the caste formalities which must be observed. Apart from caste barriers, there are also educational and economic distinctions between Government employees and the poor, often illiterate villagers who attend the health clinics. This is illustrated by a higher proportion of women with completed primary school education or above (27.5 %) returning to the clinic if they experience problems, than of women with no schooling (17.4 %), or some primary schooling (16.7 %).

When considering the question of what could be done to reduce the incidence of side-effects, and increase continuation rates, it is necessary to consider the nature of the IUDs themselves, the insertion process, and their suitability for Balinese women.

The IUDs used by the Family Planning Program in Bali have generally been the well-known Lippes Loop available in the study villages in sizes B,C, and D (the smallest, A, is unavailable), although there have been trials of the copper clad Multi-Load 250 device which is much more expensive. The selection of the appropriate size IUD is purely on the parity of the woman; nulliparous women are ineligible. Size B is for parity one women, size C for parities 2 or 3, and size D for parities 4 or more. Apparently a woman complaining of stomach pains or excessive bleeding would not normally have her IUD replaced with a smaller or more flexible one, even though it is conceivable that this would reduce the problem (14). Considering that more than half of the women who had ever used an IUD had experienced problems, the vast majority of which were related to menstrual bleeding, stomach pain, etc., it seems that there may be alternative strategies which could be tested to try to reduce the incidence of side-effects.

This raises the point of the process of IUD insertion. In the clinics in the study villages (and probably elsewhere), the Lippes Loops are kept (nonsterile) in bulk in large bottles according to size (15). When required, the plastic inserter and the IUD are placed for

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(14) The Lange Handbook of Obstetrics and Gynecology advises that: 'if the IUD is removed because of pain or bleeding, one should substitute the next smaller size or another design.' (1974:669)

about five minutes in a sterilizing solution of dilute iodine in water, while the metal sound and other instruments are boiled in Lysol and water. At first sight this appeared to be possibly inadequate sterilization for the loop and the inserter, but the low incidence of vaginal discharge ('keputihan'), characteristic of bacterial infection (only 21 or 3.0 % of the 691 ever-users of a loop), suggests that infection may not be an important problem, particularly when compared to the incidence of other side-effects.

#### 6.5.3 EXPERIENCE OF SIDE-EFFECTS OF PILL USE

This section is of rather less significance than the IUD section for the Bali program, because relatively few women use the oral pill. In the survey population only 52 women have ever used the pill (compared to 691 ever-users of the IUD), and of those only 12 were current users.

The pattern of use of the pill has been somewhat different to that of the IUD. As was seen in Table 6.7, as the total number of periods of use of some contraceptive increases from 1 to 3+, we see that the proportion of couples currently using the loop decreases, and the proportion using the pill and sterilization increases. This follows the expected pattern as acceptors usually start with the loop and only if this method proves unsatisfactory are they offered the pill as an alternative (or possibly tubectomy if they don't want more children).

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(15) In late 1979 the cost of bulk-packaged (without inserter, unsterilized) Lippes Loops was US\$0.08-0.16 each, compared to US\$5.00 for individually prepackaged sterile units with inserter (Population Council, 1979).

So it is important if many of the women trying the pill find it unsatisfactory, as many of these women have already tried the loop and found that also to be unsatisfactory. This suggests that there may be a particular group of women who are more likely to experience problems with contraception, regardless of the method.

Of the 52 ever-users of the pill, 36 (69.2 %) said that they had experienced some problems while taking them, compared to 53.4 % of the IUD ever-users. These problems were predominantly nausea, headache and weight loss (Table 6.33).

TABLE 6.33

## EXPERIENCES OF SIDE EFFECTS OF PILL USE

PROBLEMS	REGULAR	IRREGULAR	TOTAL
NAUSEA	22	5	27
HEADACHE	18	9	27
BODY WEIGHT INCREASED	4		
BODY WEIGHT DECREASED	16		
CHANGES IN BREASTMILK	0		
MENSTRUATION HEAVIER	2		
MENSTRUATION LIGHTER	1		
MENSTRUATION MORE REGULAR	2		
INCREASED TIREDNESS	1		
DIZZINESS/VERTIGO	2		
DEAFNESS	2		
DROWSY	1		
RINGING IN THE EARS	1		
ASTHMA	1		

Source: 1980 survey.

When asked how these problems affected their daily lives, the women replied that they were 'very tired' (n=7), 'dizzy or faint' (n=7), 'vomiting constantly' (n=3), or simply 'can't work' (n=2).

Some of the side-effects of pill use may well have resulted from the women taking an incorrect dosage of the pill. Virtually all brands available were 28 pill cycles, mainly Pil Keluarga Berencana (Schering's Neogynon ED) packaged especially for the program, but also Norinyl, Noriday, and Ovostat 28, only Lyndiol being a 21 day cycle. However, during interviewing it was noticed that a number of the women believed that they should take two pills each day; one woman was taking three each day under the instruction of the kelian dinas who acted as 'Village Contraceptive Distribution Centre'!. There was a question intended to elucidate the pattern of pill taking but the replies (Table 6.34) were rather too ambiguous to be really helpful; for example, 'After menstruation' does not indicate the number of pills being taken daily.

TABLE 6.34

## PATTERNS OF PILL TAKING

NUMBER	RESPONSE
26	One pill each day
21	After menstruation
2	Two pills each day
1	Three pills each day
1	At time of menstruation

Source: 1980 survey.

The magnitude of the problem of incorrect instruction on dosage should not, however, be overestimated, as most of the ever users of the pill usually obtained their supplies at the clinic rather than from the kelian dinas (VCDC) (see Table 6.35), the reason probably being that most of the kelians whom I questioned did not have any supplies of the pill (or anything else).

TABLE 6.35

USUAL SOURCE OF PILL SUPPLIES		
NUMBER	PERCENT	SOURCE
36	69.2%	CLINIC/HOSPITAL
6	11.5%	NURSE
1	1.9%	DOCTOR
4	7.7%	KELIAN DINAS
4	7.7%	F.P. FIELDWORKER
1	1.9%	BALIAN (Trad.Healer)
52	100 %	

Source: 1980 survey.

As mentioned, of the 52 women ever using the pill, less than one quarter were still using it at the time of the survey. The reasons for the other 40 ever-users having stopped use were primarily illness (n=27) (Table 6.36). There were also some failures (n=5), and some wanted another child (n=4).

TABLE 6.36

REASONS FOR STOPPING PILL USE	
NUMBER	REASON
27	SICK*
5	PREGNANT/FAILED
4	WANTED ANOTHER CHILD
1	LOSS OF BODY WEIGHT
1	PILL SUPPLY RAN OUT
1	NO FURTHER NEED
39	

SICK\*: includes nausea;deaf;tiredness;feeling unwell;weak;unsuitable.  
Source: 1980 survey.

## 6.6 CHARACTERISTICS OF NON-USERS OF FAMILY PLANNING

Very little in the way of marked differentials has emerged from the analysis of patterns of contraceptive use in this chapter, except possibly level of husband's education, and occupations of husband and wife (if she is working). What is striking is the fact that for almost any variable, and subgroup of a variable, around half of the group was using family planning at the time of the survey.

If the prevalence of family planning practice is to rise in the future it necessarily involves recruitment of acceptors from that half of the population which is currently not using some form of contraception. Obviously a number of women in the group of non-users would not be eligible to become acceptors as they, for example, were not currently married, or were too old, or had not yet produced any children, or they were currently pregnant.

The aim of this section, then, is to exclude all those women from the non-user group who were ineligible, and estimate roughly how many 'potential acceptors' remained.

As stated earlier, 558 of the total 1,088 respondents were not currently using any family planning at the time of the survey. From that group of non-users can be removed all those ineligible to use family planning, for the present anyway, through being widowed, divorced, separated, over 50 years of age, currently pregnant, or having never had a child; this leaves 381 women. From those can be removed the couples who want another child, or are uncertain. This leaves 208 women who are currently married, still in the fertile years, not currently pregnant, who don't want any more children, but



are not using any form of family planning. This raises the question of how these couples differ from the family planning users?

Closer examination of this group of 208 apparently eligible couples who are not using family planning reveals no distinguishing characteristics except for previous experience of side-effects of either IUD or pill use sufficiently severe to result in the user stopping use of the method.

Awareness of family planning is not a limiting factor as only 11 (5 percent) said that they had never heard of it. In addition to these 11 respondents, another 120 have never used family planning. Of the remaining 77 respondents who have ever used family planning, 73 have used the IUD but have had to stop using because of side-effects. A further 2 respondents have had to stop using the pill also because of experiencing severe side-effects.

The fact that a substantial number of respondents have tried one or two methods and found them unsuitable but have not then changed to another method, at least up till the time of this survey, implies that knowledge of a range of family planning methods may be limited. The data in Table 6.37 support this. In regard to knowledge of modern methods, available through the family planning program, only the IUD (96 percent) and the pill (70 percent) have been widely heard of, the remaining methods have been heard of by only one quarter or fewer of the respondents. It is interesting that relatively few respondents claim to have heard of traditional methods of contraception, although over one third have heard of massage (abortion).

TABLE 6.37

PROPORTION OF RESPONDENTS HAVING HEARD  
OF SPECIFIC FAMILY PLANNING METHODS

METHOD	% EVER HEARD	% EVER USED
A)Modern-		
IUD	96.1 %	61.5 %
PILL	70.4 %	4.9 %
TUBECTOMY	35.4 %	3.6 %
VASECTOMY	30.8 %	0.5 %
CONDOM	25.4 %	1.8 %
INJECTABLE	18.0 %	0.2 %
FOAM VAGINAL TABLETS	6.9 %	0.8 %
B)Traditional-		
MASSAGE ABORTION	37.1 %	0.5 %
HERBS	17.6 %	0.1 %
RHYTHM	9.1 %	0.9 %
ABSTINENCE	8.5 %	1.6 %
RETROFLEXION OF UTERUS	6.7 %	0.1 %
COITUS INTERRUPTUS	5.1 %	0.8 %
(N = 1,088)		

Source: 1980 survey

As would be expected, the range of methods ever used is even more limited than the knowledge of a variety of methods. The only method used by more than 5 percent of the respondents is the IUD, ever used by over 60 percent.

Such patterns of contraceptive knowledge and use are consistent with the approach of the family planning program in Bali where there is heavy promotion of a single method, the IUD (Astawa, et al., 1975:95). This approach has many positive aspects in a program such as that in Indonesia. The method is cheap, requires one visit only to the clinic, is independent of intercourse, is reversible, etc., but if users of the primary method experience serious problems it is essential that they have information about alternative methods, and are also given the opportunity to change to such methods.

## CONCLUSION

The data in this chapter have shown a remarkable consistency in the levels of current family planning use among all population groups. This is the same pattern as seen for the analysis of Java-Bali, 1976, by Freedman et al.(1981:4), although the levels in the present survey are somewhat higher than in 1976.

There are few substantial family planning use differentials, apart from economic score and husband's education; also some occupational categories are analytically interesting, but not important in terms of overall impact on fertility. Finally, there is a marked geographic differential whereby the isolated village of Bakas has a considerably lower prevalence rate than the other two villages, as well as being poorer and lacking in facilities such as a school and good health clinic.

While some observers have suggested that several forces may be operating separately on different sections of the population in Indonesia:

..the increases in contraceptive use among the (highest standard of living) group are attributable to modernization, while sheer Malthusian pressures coupled with access to new influences - including the information and services of the family planning program - may have worked together to increase contraceptive use among the poor.  
(Freedman,R. et al.,1981:4)

the patterns of use, and the limited range of methods used, suggest that family planning acceptance is being heavily influenced by social forces outside the individual couples concerned. This will be followed up in chapter 8.

The influence of family planning use on fertility has been demonstrated as operating primarily through limiting of births, as indicated by the extension of the open livebirth intervals, and the consequent decrease in high order parity progression ratios. Also the births averted analysis supports the view that the use of family planning has been responsible for most of the substantial fertility decline in the study villages. The question of why family planning has received such widespread acceptance still remains, and will be examined in the remaining chapters.

## CHAPTER 7

### VALUE OF, AND ASPIRATIONS FOR CHILDREN

We have seen in the preceding chapters that fertility in the study area has recently declined dramatically (chapter 5), and that the use of modern, program contraception has become widespread (chapter 6), and yet there have been few changes in the social and economic sphere (chapters 1 and 2) which can throw light on this remarkably rapid uptake of modern contraception. Can it be that in a predominantly rural, agricultural society, children have long been of relatively low value in terms of the assistance that they provide their parents, or of such a cost to their parents that many parents have chosen to limit their childbearing as soon as acceptable contraceptive methods became readily available: that there was a latent demand for contraception before 1970? Or has Balinese society undergone recent changes which have altered the value of, and costs of children?

In chapter 1, a variety of micro-level theories of fertility were reviewed, in particular the 'demand', or 'new household economics' theories. The basis of such theories was that children could provide certain benefits or utilities to their parents, as consumer goods, as productive agents, and as sources of old-age security. The review went on to describe the criticisms of these economic theories both from sociologists (e.g.: Blake, 1968; Leibenstein, 1974, 1975) who considered that sociological concepts such as tastes must be accounted for, and also from economists who cautioned that these theories were too heavily influenced by a Western (rather American) view of economic

behaviour and thus were inappropriate in poor Third World societies (Jones,1977:18).

In recent years the study of how parents make their childbearing decisions has broadened to include applications of social-psychological theories (1). One such model was that of Hoffman (1972), and Hoffman and Hoffman (1973), which has been used as a framework in the cross-cultural study of value of children sponsored by the East-West Population Institute and described by Fawcett (1974) and Arnold (1975).

One of the features which a model such as this shares with the micro-economic models is the emphasis on the micro-unit of decision making. According to both these approaches, the fertility decisions of parents are made by their weighing up the benefits or values deriving from having children against the costs incurred in rearing those children. The 'value of children' studies such as that conducted by the East-West Population Institute tended to gather mainly attitudinal and descriptive information, but there have also been a number of studies which have concentrated on trying to obtain precise estimates of type and duration of work performed by children (see White,1976; Hull,1975; Cain,1977).

While the present study was not in this mould in terms of collecting precise data on hours spent by children on different tasks, nevertheless it is hoped that by utilizing the information that was collected, combined with knowledge of tasks which Balinese children

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(1) Fawcett (1977) discussed the convergence between micro-economic and social-psychological theories on the subject.

perform, it will be possible to draw some conclusions on the value of children in Bali.

Before examining the data from the present survey it is useful to note the conclusions of two studies of children's work activities in Java. These studies address themselves to the question of how the number of children that a couple or household has affects that couple. The emphasis is on the household as the unit of production, and Hull (1975) and White (1976) examine the economic values and costs of children to parents in that light.

In the past, some researchers have taken for granted that a large number of children is advantageous in peasant societies, for example Kasarda states:

One of the most potent structural factors affecting desired family size is the type of economy within which the population functions. If the economy is of the household unit type where the family itself is the exclusive unit of production, the compulsion to have a large number of children is strong.... Large numbers of children are desired not only because they may satisfy some inherent psychological need of the parent or 'normative pressures' of the society, but also because they are economic necessities (Kasarda, 1971:307-308).

But simply listing a series of tasks that children perform does not necessarily mean that they are 'economic necessities' nor does it adequately confront the issue of how the work of children varies when there are different numbers of children. For example if one child spends one hour per day cutting fodder for the family buffalo, then two children would spend not one hour each but half an hour each. In other words, a proper study of such work should take into account the availability of work to be performed, and also the consumption of the children in relation to their production.

White attempted this in a detailed study of residents of Kali Loro, 35 Km northwest of Yogyakarta, Java. He selected a sample of 92 households and visited them every six days for one year, asking for detailed information on the previous day's activities for each member of the household. As the analysis was to be done by hand, only data from a sub-sample of 20 households was actually used. While there must be doubts about the accuracy of the time allocated by respondents to the various tasks, and also doubts deriving from the small sample size, nevertheless the results appear to confirm Kasarda's statement that at least some children are an economic necessity for the household.

The children carry out a wide variety of tasks which White categorised into two groups: household maintenance and directly productive work. The first group includes child care, household food preparation, firewood collection, and other maintenance work. The second group includes animal care, wage labour (agricultural and non agricultural), handicrafts, reciprocal labour exchange, irrigated rice culture, garden cultivation, trading, preparation of food for sale, and other tasks. The reason for detailing these tasks here is that the work activities of Balinese children will be examined in terms of whether they also perform these tasks. As young children, girls in particular are mainly involved in 'adult-freeing' tasks of household maintenance and animal care. It is only really as young adults that they contribute substantially to productive work. The children also provide a longer term service in that they offer security in old age to the parents who prefer to reside with their children than with siblings or others. In Kali Loro about 80 percent of the elderly lived with their children or grand-children (White, 1976:311-327).



Despite the possible shortcomings, White feels that his data, as well as being more accurate, contradict the conclusions of the widely quoted work of Mueller which stated that 'work-input by children under 15 in peasant agriculture is quite limited' and that 'children have negative economic value in peasant agriculture' (Mueller,1975:34,70). White's conclusion that Javanese children 'most probably have a net positive economic value to their parents in these villages' was supported by the data from an almost identical study in Nepal by Peet (Nag,Peet and White,1977:138). The conclusion is also similar to that of Cain who found in Bangladesh that 'male children appear to become net producers at least by age 12, compensate for their cumulative consumption by age 15, and compensate for their own and one sister's consumption by age 22.' (Cain,1977:224).

On the output side, White found that far the greatest proportion of the costs of rearing children were food costs. As these costs did not vary greatly with age, and children did not begin directly productive work until age 10 or so, the child did not start being a net asset until about this age. Nevertheless, of the 20 households studied in detail, all but 3 showed a positive balance of income over food expenditure for the total household.

A similar 'community study' approach to White's was used in Java by T.H.Hull (1975). Ten kilometres east of Yogyakarta is the village of Marguwoharjo where Hull conducted his intensive study for one year from March 1973. This village was known to have variation in occupation and fertility, reliable village records and access to a model family planning clinic since 1969 (Hull,1975:100). However where White focused his analysis on the value of children throughout

the life cycle of the household, Hull examined differences among socio-economic classes.

Hull obtained similar findings to White regarding the material benefits of children, both in their contribution to the household economy, and in parental support in old age. In addition to the fact that both boys and girls start contributing their labour at an early age but do different tasks, Hull also observed differences between the children of poorer parents and better off parents. Poorer children were less likely to be attending school, more likely to be working, and more likely to be working harder and in a 'productive' activity such as labouring or trading (Hull, T. 1975, Table 7.3, p.246 and 247). Partly because agriculture did not occupy as large a proportion of the inhabitants of the study village as for all Java, the children's participation in agricultural activities was very limited. This was also partly due to the recent changes resulting from the green revolution where many work activities for both women and children have become redundant, not only in Maguwoharjo but also in other parts of Indonesia (Hull, T. 1975:251-260). Nevertheless, children continued to be viewed as a valuable 'investment' both in the returns from their work when young, and as a source of support for the parents in old age.

Having outlined the benefits of childbearing as observed in the main 'value of children' studies in Java (2) we will return now to the present study in Bali and examine the value of children in that

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(2) Meyer has recently completed a study of value of children in Java as part of the cross-cultural study mentioned earlier as supported by East-West Population Institute, Hawaii (Meyer, 1981).

society which is known to differ in certain aspects from that in Java. As well as the roles of, and costs of Balinese children, the parents' aspirations for them in terms of education and occupation will also be examined.

## 7.1 ROLES OF CHILDREN

As described in chapter 5, the capacity to bear children is considered of such importance in Balinese society that a number of marriages are not performed until the girl has become pregnant. The explanation of the importance of parenthood, and therein the first of the 'returns' from childbearing, is involved and complex and requires a temporary diversion at this stage to explain how the individual Balinese passes through many stages in life and in death, some of which are marked by ceremonies, while others such as parenthood and grandparenthood are marked by a change of name.

### 7.1.1 SOCIAL VALUE OF PARENTHOOD

The conjugal couple is usually considered to be an essential unit for most social purposes in Bali as stated by the Geertz: 'membership in any temple congregation, in the hamlet organization, in an irrigation society, all require the joint participation of a man and a woman, preferably a husband and wife' (1975:90). In such hamlets, it seems that a young man can, and indeed must, join the hamlet council at his marriage and remain a member as long as he is capable of carrying out the demands deriving from such membership, or until he is replaced by a married son (3).

However, while marriage and subsequent membership of the banjar council bring an elevation in social standing to a couple, it is the custom of teknonymy, wherein the parents take the name of the first born child, which illustrates the stress placed on fertility in the conferring of social status. As Geertz points out, one of the effects of teknonymy is:

to identify the husband and wife pair, rather as the bride's taking on of her husband's surname does in our society; except that here it is not the act of marriage which brings about the identification but of procreation. Symbolically, the link between husband and wife is expressed in terms of their common relation to their children, grandchildren... (1966:24).

It may seem paradoxical that when the first child is born to a couple it is the new name taken by each parent that is significant rather than the name bestowed on the child. Personal names given at birth or at 105 days after birth are, as Geertz says, 'arbitrarily coined nonsense syllables' (e.g., Digdig, Togog,) devoid of content, not indicating any relationship, serving only to distinguish this child (who will automatically have a birth order name such as Wayan, along with about 30 percent of the other children) from the rest of the children in the banjar. Although the child's personal name (e.g., Togog) will rarely be used in addressing, or indicating the child, it will be incorporated into the parents' new names, whereafter they become known as 'Pan Togog' (father of Togog) and 'Men Togog' (mother of Togog). When the next generation appears, that is, when Wayan

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(3) There are exceptions, as with most things Balinese, where some hamlets base membership eligibility on having fathered a child, and some where a man, even if married with children, may not 'have a voice' at council meetings until his father has stood down, for example when the youngest son marries and replaces the father.

Togog produces a first born child (named for example, Wayan Mergeg), Pan Togog will become Pekak Mergeg (grandfather of Mergeg), and Men Togog will become Dadong Mergeg (grandmother of Mergeg). Likewise for the firstborn greatgrandchild, the kinship term for great-grandparent and for great-grandchild are reciprocal, 'Kumpi'. This is because the first great-grandchild is believed to complete the ideal, four generation cycle of life. A person's great-grandchild is not viewed as being junior to him but rather as being of the same age, the great-grandchild having recently arrived from that diffuse pool of ancestor-gods to which the great-grandfather will return on his death and cremation.

Thus it is the most recent addition to the line of descent which is the focus in Bali. What matters is 'not who one's ancestor is, or was,...but who one's descendent is, whom one is ancestor to' (Geertz,H.and C.,1975:90). Thus the importance of parenthood:

a man who has never had a child remains all his life a child terminologically. When all of his age-mates have become 'father of-' and 'grandfather of-', he retains his childhood name, and the shame of this is often very deeply felt (ibid, p.90)

So it is not the quantitative aspect of reproductive capacity that is considered critical, it is the number of generations which stem from a person that bestows status. Elevation of status occurs in 'quantum leaps' with no gradation between generations. For example, a couple with four children has the same status as a couple with eight children (other things being equal), and both couples are lower in status than a couple with only a single child who in turn has a single child. This situation is unlike so many traditional communities, particularly in Africa where status increases in proportion to the number of

children a man has. In Bali, however, the wellbeing and stability of the community is paramount: 'What counts is reproductive continuity, the preservation of the community's ability to perpetuate itself just as it is (Geertz,1966:25)'. .

#### 7.1.2 ACTIVITIES OF CHILDREN

For some time after birth a Balinese child is viewed as a small god, also often the reincarnation of one or more ancestors, an individual who, while independent in terms of rights, is not responsible for its actions and requires a certain lenient guidance from the parents. However, by the age of two or three years, the children live in a 'children's republic', according to Covarrubias (1937:132), and are permitted considerable freedom to spend time with their agemates, outside the home. One school of thought holds that this independent existence is actively forced on the young children by their mothers who take active, and apparently harsh measures to sever the previously close mother-child bond. The work of Margaret Mead and Gregory Bateson on patterns of childrearing amongst the Balinese (1942) cites numerous examples of this sudden, intentional rejection of the child at an early age. They extrapolate this to the Rangda witch figure present in many Balinese plays, as symbolizing the rejecting mother in the eyes of the Balinese, although not all Bali scholars agree with this interpretation.

A further change which follows the end of the early independent stage is that the child is expected to assist its parents in a number of ways, particularly if a female (see Table 7.1). Young girls can frequently be seen caring for their younger siblings, freeing the

mother to work. The girls also assist by learning at an early age to make the daily offerings to the gods and spirits. This requires the collection of coconut fronds, banana leaves and flowers to be cut and woven into a variety of shapes. On certain days of the Balinese calendar, rice must be moulded into shapes and cooked in small packets, later to be distributed to the appropriate temple or shrine. While it is possible to purchase some of these offerings in street stalls (warungs) usually one or more female members of the household must spend a considerable amount of time in their preparation.

Although the groups of youngsters seen wandering through the villages are composed mainly of boys, giving the distinct impression that they are not required to do any work, in fact, four and five year old boys can be seen performing specific tasks such as washing water buffalo, minding ducks in the field, scaring birds from the ripening rice, etc.

Apart from the latter duty, young children tend not to be included in the variety of tasks associated with rice production, although traditionally they could follow the harvesting teams and gather up and keep any dropped rice heads or grains. When they grow older and stronger, boys are often expected to help with ploughing, and girls with weeding and hulling the gabah (rice), but the most important steps such as planting and harvesting tend to be carried out by teams (seka, see chapter 2) of adults from the same banjar. Rice planting for religious reasons is carried out only by men, unlike in Java, but harvesting can be carried out by women or men. With changes occurring in rice production, some of the traditional jobs for children are being lost. Most of the gabah will be husked in a

cooperative owned/built slip or mill with diesel powered, rubber-rollered hullers. The new high yielding varieties of rice are not attractive to birds, thus 'scarecrows' are required now only in the occasional plots of traditional 'padi Bali'. There is even a limited trend towards roving harvesting teams operating on a cash basis (see chapter 2, Astika,1978:47).

In the study villages Tusan and Bakas, when water was unavailable for wet rice production (alternate years), the land was used to grow corn, cassava, sweet potato and various leafy vegetables, thus there was a frequent demand for children to scour the family plot to gather such produce. Probably the major change in recent times has been the decline in the size of the average farming family's sawah plot to about 0.3 hectare (30 Ares). Even with increased requirements for weeding as a consequence of the use of nitrogenous fertilizers with the high yielding rice varieties, and double-cropping creating more frequent work, there is a limit to how much labour can be absorbed in a sawah plot of 30 Ares (30m X 10m). Although, as Geertz indicates in Agricultural Involution (1963:32), land productivity of sawah can often be increased by greater intensity of labour input, that is, more thorough weeding, more careful control of irrigation water flow, etc., this does not mean that productivity per worker will increase.

With a system of inheritance (Waris) whereby farm land is, in principle, divided equally amongst all the sons and any unmarried daughters, it is not surprising that average sawah plot size has declined dramatically in recent generations and that present day farmers are very concerned about the further fragmentation of their land, as indicated by the desire of the majority of farmers that their



children prepare for non-farming occupations (see chapter 7.2 re aspirations for children's jobs). In practice it seems that when plot size is subdivided to a certain size, it is accepted that the farm would no longer be viable if divided further so one of the sons would take responsibility for the whole farm and arrange to buy out the other brothers over time. Indeed, the children of farmers in the study villages frequently expressed despair that they would ever be able to afford to buy farmland of their own. With monthly salaries, even for civil servants, ranging from Rs.15,000 to 30,000, it would clearly be an onerous task to save sufficient money to purchase the generally accepted minimum of 30 Ares necessary to support a family with three or four children. The cost of this land in desa Banjarangkan would be Rs.3 to 4 million. In the less well irrigated areas where unit cost is lower, e.g., Tusan and Bakas, more land would be required for the same output.

As a consequence of this situation young people in the study villages, if they had limited education, were aiming at finding work as labourers in the roof-tile factories, quarries, farms, on road repair gangs, etc., or if more adventurous, in the tourist industry or business in the capital, Denpasar; and if they have sufficient education many hope to enter the civil service.

Another factor in the roles which children actually play, rather than those which their parents hope they will play, is the effect of some education on raising job expectations. While 59% and 23% of respondents and their husbands, respectively, had never been to school, if parental expectations are fulfilled (see chapter 7.3) only 6 % of daughters, and 1 % of sons will not receive any schooling.

Such a rapid change in education, with its consequent, often unfulfillable, expectations is a common phenomenon (not restricted to developing countries), which results in the comment by a number of mothers, in informal discussions, that their teenage sons will no longer help their parents but prefer just to 'go around' with their friends - a situation most parents seem to feel they cannot do anything about.

An important reason for parents to encourage their children to enter the cash economy is the frequent need for cash, not only for the educational expenses of the younger siblings in the household, but for the ceremonies involved along the path to adulthood. As will be described in the following section (7.2) on costs of childbearing and rearing, each major milestone in a child's life must be commemorated with an appropriate ceremony. The costs of the priest, food for guests, and entertainment, can be very considerable, and 98 % of respondents expected their sons to assist in this when they were earning; 73 % expected daughters to contribute (Table 7.1).

Another major factor, which has contributed to the growing dependence on cash in everyday life, has been the shift from traditional rice varieties to the new high yielding types of rice. The traditional varieties could be stored for years on the stalk (as gabah) in the family rice barn (lumbung), and a portion removed when required, only to be husked to be ready for cooking (Mears, 1981:141). As long as sufficient rice was stored, there was no need to purchase rice in the market. The new varieties, however, do not store well but rather deteriorate markedly within a year of harvesting. Thus the normal practice now is to sell most of one's rice crop in the market

immediately after it is harvested, then later purchase (using cash) different rice in the market. A common pattern is that when the time comes to purchase more rice, the money obtained from the previous harvest has been spent. Thus it is useful, at such times, if the parents can call upon a working son or unmarried daughter for financial assistance.

TABLE 7.1

## EXPECTATIONS OF HELP FROM SONS AND DAUGHTERS

## (i) SONS ONLY

TYPE OF ASSISTANCE:	PERCENTAGE RESPONDING:			N
	YES	NO	DON'T KNOW	
HELP AROUND HOUSE	85.5	13.5	1.0	1048
HELP IN FARMING	82.2	14.5	3.3	1025
CARE FOR SIBLINGS	65.3	28.8	5.9	1030
HELP PARENTS WORK	85.8	8.0	6.2	1045
-When receiving income:				
GIVE MONEY FOR CEREMONIES	97.5	1.2	1.2	1050
REMIT PART INCOME HOME	80.2	12.2	7.6	1050
HELP PARENTS IN OLD AGE	98.0	0.9	1.1	1051

## (ii) DAUGHTERS ONLY

TYPE OF ASSISTANCE:	PERCENTAGE RESPONDING:			N
	YES	NO	DON'T KNOW	
HELP AROUND HOUSE	94.3	4.0	1.6	1040
HELP IN FARMING	47.5	46.9	5.7	1020
CARE FOR SIBLINGS	89.9	4.9	5.2	1017
HELP PARENTS WORK	89.6	3.9	6.6	1037
-When receiving income:				
GIVE MONEY FOR CEREMONIES	73.1	22.8	7.1	1043
REMIT PART INCOME HOME	41.1	42.3	16.4	1043
HELP PARENTS IN OLD AGE	59.3	23.9	17.6	1038

(Source for all Tables in this chapter is 1980 survey)

It is largely for such cash requirements that 80.2% of parents expect their sons to send remittances home once they start paid work. That only 41.0% expect the same of a daughter reflects the different

attitude to daughters who, upon finishing school and starting work, are seen to be preparing to leave their immediate family. On marrying, the daughter will become responsible to, and the responsibility of, her husband's family. In theory a daughter, once married, cuts all ties with her parents, no longer worshipping the ancestors of her parents but rather those of her husband and his family. In practice she will often maintain contact and, as reflected in parental expectations of help in old age, will often contribute to the support of her parents, though she is under no formal obligation to do so. This is particularly the case in endogamous marriages, of course, as the girl's husband's ancestors are basically the same as her own. As Boon states, 'Balinese justify any endogamous union by saying that it keeps daughters paying homage to their own ancestors; outside wives are often lax in these female domestic-ceremonial duties' (1977:129). This statement implies a significant role for daughters in participating in the honouring of the family ancestors. Indeed, Boon cites a statement by Korn (1932) that the not uncommon pre-colonial practice of the husband making a payment to the bride's father was to reimburse the woman's group for its loss of an attendant to the household gods (1977:123). There are also cases where a daughter may pave the way to higher status for her family. If such a girl marries into a higher status group, sometimes accompanied by a land dowry, thereafter the girl's family may begin to claim higher status as a consequence of their new affiliation with the superior ancestor group (Boon,1977:125).

The most obvious and important change has been in the expansion of the range of goods and services competing for financial resources of the family. The influx of consumer goods which are both desirable

and within reach of an average poor household, for example, domestic items like torches, kerosene lamps, radios, cooking utensils, plastic buckets for water or agricultural implements such as sickles, steel plough blades, hoes, etc., is relatively recent. As described in chapter 2, Bali remained isolated from the outside world rather longer than many other areas of Indonesia, partly because the Balinese were not seafarers, and partly because of the unwelcoming nature of the island's coastline.

As everywhere, parents in Bali are concerned that they will be secure and cared for in old age. With the custom of having several households (4) within a family houseyard or compound (see chapter 2), it is most uncommon for a couple to be living alone in old age, or indeed at any time in their lives.

At the time they become grandparents a couple will very often be relieved of many of their community obligations and duties, the father having been replaced on the banjar council by his married son:

It is the middle rank, the 'fathers of', who are the backbone of the hamlet political structure. Those who are called 'grandfather of' tend to take more passive advisory roles which, however, can be quite high in prestige and influence. (Geertz and Geertz, 1975:89)

Likewise, when a man's son becomes a parent, the son may take responsibility for the family agricultural land even though he and his brothers do not inherit it until the father dies. Also the

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(4) A Balinese household is defined as a group of people who all eat food cooked in the same kitchen, usually a married couple and their children. A son will usually set up a separate kitchen upon marrying.

responsibility for the wellbeing of the parents rests with all the sons, even though very often only one married son will remain living in the same houseyard as the father, the others having to move out on marrying.

The last major duty for which children are called upon to assist their parents is the funeral and cremation of the latter. To the Balinese Hindu, the cremation ritual must be carried out to release the spirit from its earthly body, and allow it to join the pool of deified ancestors to which all spirits aspire. The cremation is traditionally an expensive, and often spectacular affair requiring the efforts not only of all family members, but also of the members of the banjar to which the deceased belonged. In past times, the body was normally interred after the funeral, sometimes for many years while the family saved to pay for an appropriate cremation; however, the present government has been trying to encourage cremation as soon as possible after death. For this, and other reasons, the extravagant cremations seen in the past are much less frequent these days; nevertheless, it is still a substantial expense for most families, since, as with most ceremonies in Bali, the cost is not uniform but should be proportional to one's wealth, or more specifically, one's wealth and status.

While the prospect of not being cremated satisfactorily does exist in Bali, it could not be said to have the same motivating force for wanting numerous male offspring, as has been claimed to be the case in India (Miller, B.D., 1981:162), although some writers disagree (Mandelbaum, D.G., 1974:22). The reason is that, if worst comes to worst, and the dead person has no surviving family to organize the

cremation, the banjar of which the deceased was a member would normally take full responsibility. Usually banjar members belong to a club, the Seka Patus Mati, which is specially run to provide material and labour for families faced with burials and cremations. This is to ensure that the hamlet would not be haunted by the dead person's spirit - a state of affairs guaranteed to bring misfortune upon the community.

After cremation there are a number of small ceremonies which should be conducted at certain intervals to complete the departure of the spirit. By and large, the spirit of the dead person is believed to have joined the diffuse, amorphous group of ancestors and will be prayed to, and worshipped, by the population generally. The name of the dead person will not be mentioned, and they will not be remembered or honoured as an individual. Thus the cremation largely concludes the duties of the children to the dead person.

To summarize this section, the roles performed by Balinese children are quite similar to those of Javanese children with the exception of certain practices associated with wet rice production. In Bali certain aspects of rice growing, such as planting, are only performed by men; others, such as harvesting, only by groups of adults. The remaining tasks provide a limited capacity to absorb child labour depending on the size of agricultural plot, and the nature of the crop grown. The increased availability of education, and a growing concern that agriculture will not continue to be a reliable source of work, has resulted in parents turning to other avenues to ensure their children's wellbeing, and in turn, their own. This increasing emphasis on preparing children for occupations which

require a number of years of schooling will be examined further in section 7.2.

## 7.2 COSTS OF CHILDBEARING

There are a number of aspects to the examination of significant costs of childrearing, and the changes over time. These include changes in the actual costs of types of, say, food, which may have always had to be bought rather than grown or made; there are changes in the system of payment where formerly a credit or barter system may have been the practice, now cash is required; and there is an expansion in the variety of goods or services considered desirable, transistor radios being an example of the former, education of the latter.

A generation or more ago, the major costs of childbearing and rearing for the typical Balinese family would have been ceremonies and food. The family would have had a wide network of relatives upon whom they could call in times of need, for example, to assist with labour, goods or money for a major family ceremony; or in normal times by a reciprocal arrangement whereby children could eat, from time to time, in a cousin's or uncle's house. As T.H.Hull says about Bali:

the child's natural parents bear only a portion of the costs - and reap only a portion of the rewards of childbearing, the rest being 'externalized to the other household members, the child himself, and the larger community'. (1978:4).

Recent work on this support network, however, suggests that it is shrinking. The degree of kin distance of a relative to whom one can turn and reasonably expect help, is decreasing. Conversely, one's



former obligations to, say, first and second cousins might now apply only as far as first cousins (Cole, personal communication, 1980). Certain other supports have also weakened in recent times. For example before land reform in the early 1960s, a landless farmer could turn to the local landowning prince and ask to work (sharecrop) a piece of the prince's (often extensive) land. The prince was under a social obligation to fulfil such a request from his subjects. Since land reform, many of the princes no longer have control of large landholdings, and although much of the former royal estates were divided up amongst the tenant farmers, if a farmer owns no land now it is more difficult to obtain access to the land of another on a sharecropping basis. There are no longer the big ceremonies conducted by the royal families in the past, which served to redistribute special foods (e.g., turtle satay) to the general populace. These ceremonies provided a regular, if not frequent source of variety of nutritious foods for the poor who, otherwise, might not have been able to obtain it.

At the same time as the support network is declining in importance, the cost of food is rising. In real terms the cost of rice, though subsidized, has increased about five times since 1972 (5), while wages have not risen nearly as much as that. And now a much greater proportion of rice consumed has to be purchased in the market rather than stored homegrown produce (see section 7.1).

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(5) From around Rs.30-35 / Kg in 1972 to Rs.175 in 1980.

### 7.2.1 LIFE CYCLE CEREMONIES

The cost of ceremonies has also risen markedly in recent years, partly because of increased food prices, but also because of the astronomical increase in gold prices during the 1970s. While in theory silver can be substituted, gold is believed to possess magical protective properties which make it far more desirable for the amulets, bracelets, etc., so vital a part of many of the early life cycle ceremonies (Covarrubias, 1937:129). Because of the nature of the costs of childrearing, there are few 'economies of scale' within a family, the cost being largely for the guests' food, for musicians or wayang kulit ('shadow play'), etc., which cannot be held over for the next child, although certain pieces of jewellery can be handed down.

The only way to economize is for children from several families to have a ceremony together - something which is common for tooth filings but not for otonans which must normally be carried out on the anniversary of the child's date of birth. Also there are occasional multiple marriages, provided the day is appropriate (auspicious) for each couple. To give an indication of the expenditure involved in childhood ceremonies, and the seriousness with which they are taken, data are presented for estimated expenditure by couples on the most recent first oton ceremony. This ceremony is conducted promptly, though on an auspicious day, when the child is 210 days old (6 Bali months). The ceremony is taken most seriously because it is at this point in the child's life, when it has survived the hazardous early months, that it is introduced to its ancestors. It is considered vital that the ancestors be aware of the child's existence as it is they who oversee and protect the child on its journey through life.

In Table 7.2 what is surprising is that the mean expenditures for the very poor (economic score, 0-19), poor and medium groups, constituting over 80 % of the families, are almost identical, being less than the overall mean of Rs.36,000 (A\$50). Also the distributions as reflected in proportions of couples in each group spending Rs.10,000 or less, and spending more than Rs.50,000, indicate a minimum necessary expenditure on bracelets and anklets for the child, and for the entertainment and food which usually includes luxuries which the hosts and the guests would not normally eat, other than at such ceremonies.

TABLE 7.2

## EXPENDITURE ON FIRST OTONAN, ACCORDING TO ECONOMIC SCORE

OTON COST	ECONOMIC SCORE					TOTAL
	0-19	20-199	200-299	300-899	900+	
UP TO 10,000	23.5	22.1	21.1	16.0	10.3	20.5
10,001-15,000	16.3	12.9	11.9	16.0	4.1	13.0
15,001-25,000	23.5	28.4	27.0	24.5	29.9	26.5
25,001-50,000	23.5	27.3	25.9	28.7	32.0	26.5
50,001-100,000	11.7	6.3	11.9	9.6	12.4	10.2
OVER 100,000	1.5	3.0	2.0	5.3	11.3	3.3
	100 %	100 %	100 %	100 %	100 %	100 %
Mean (Rs.)	31,300	33,200	33,900	42,700	63,200	36,600
Numbers	(264)	(271)	(293)	(94)	(97)	(1019)

During an interview in one of the very poorest households comprising a widow, her children, sister and mother, the writer was stunned to hear that the estimated expenditure on a recent first otonan was around Rs.100,000. This is in the context of a usual monthly wage of Rs.6,000-10,000 for a woman working as a full-time labourer. Thus the cost of the ceremony was equivalent to about one year's salary. In order to save this money the mother had taken a job

in the nearby town of Klungkung soon after the child was born, thus the child was left for much of the day in the care of his aunt. The other women in the household also took extra work if available, to try to save a little money for the forthcoming ceremony.

A possible explanation for the apparently extravagant expenditure (i.e., greater than Rs.50,000) by a substantial number (13.3%) of the poorest couples is that these are the people normally with the least degree of control over, and security in their lives, probably the most fatalistic, and the most likely to lose or have lost children. Thus one of the few avenues to try to avoid misfortune befalling their children is to provide them with a satisfactory otonan ceremony, thus ensuring the protection of the ancestors.

As mentioned earlier in this chapter, ceremonies and food were the two most significant expenses in childrearing in the past. To these has been added education (see Table 7.3) which is becoming increasingly widespread.

TABLE 7.3

## MAJOR EXPENSES IN CHILDREARING

	PERCENTAGE
CEREMONIES	35.0
FOOD	28.7
EDUCATION	22.3
DAILY LIVING	4.7
HEALTH	2.1
OTHER	4.7
Not Applicable	2.5
TOTAL	100 % (N=1088)

(N.B.:This is category stated as greatest expense, although about one third of mothers mentioned more than one category.)

The less obvious, but still possibly significant expense, is the lost 'opportunity' cost where, by going to school, the child is not directly assisting the parents or indirectly freeing the mother to work outside the home, or working away from the family and remitting income. This is an undeterminable cost from the data gathered in the present survey, although if such costs were substantial, it might be expected that only certain children would be sent to school (eg., eldest son) while others were kept at home to help out. However the data do not support the possibility that this practice exists on any significant scale (Table 7.4a).

#### 7.2.2 EDUCATIONAL ASPIRATIONS

The data in Table 7.4b show that about 90% of respondents indicated that all their children would get some schooling, only 9.5% saying that they would be selective about which children attended school. Of those respondents who were selective, 7 out of 10 said that it would be only the boys who would receive some education.

While there is relatively little selectivity according to sex or birth order, in terms of which children will obtain some education, the Census data suggest a marked difference in the level attained by boys and girls. While in 1971 the proportions of ages 5-13 attending school was similar for boys (61.4%) and girls (58.0%), in the older ages (14-19), i.e., secondary school, the proportion of boys (60.7%) at school was markedly higher than for girls (39.3%).

TABLE 7.4a

RESPONSES TO QUESTION REGARDING WHICH CHILDREN  
ARE EXPECTED TO RECEIVE SOME SCHOOLING.

RESPONSE	PERCENTAGE
ALL CHILDREN	88.0
SOME CHILDREN ONLY	9.2
Not Applicable	2.9
TOTAL	100.0% (N=1088)

TABLE 7.4b

SELECTION WHERE ONLY SOME CHILDREN  
WILL RECEIVE SCHOOLING

	PERCENTAGE
-BOYS ONLY	71
-1 BOY AND 1 GIRL	5
-YOUNGEST CHILD	5
-WHOEVER WANTS TO	4
-ELDEST CHILD	2
-WHICHEVER IS CLEVER ENOUGH	1
-No Answer	12
TOTAL	100.0 % (N=100)

TABLE 7.5

LEVEL OF EDUCATION WHICH SONS AND DAUGHTERS  
ARE EXPECTED TO ATTAIN, CUMULATIVE PERCENT.

LEVEL	SONS	DAUGHTERS
PRIMARY	93.5	93.8
JUN. SEC.	76.0	69.7
SEN. SEC.	41.8	35.1
UNIV/ACAD.	8.2	7.0
WHAT CAPABLE OF WHATEVER	4.5 1.9	4.4 1.7
TOTAL	100.0% (N=1045)	100.0% (N=979)

Such a sex difference in secondary schooling is not supported by the responses in the present survey when respondents were asked, separately for male and female children, to what level of education they would support their children. The data in Table 7.5 indicate a difference in proportions planning to send their children on beyond primary school: for boys 83.3% for girls 75.9%; however the proportions of boys and girls in each of the educational categories do not differ markedly.

It is possible, of course, that parents' intentions do not match actuality in regard to their children's education. While data were not gathered on achieved or current levels of education of the respondents' children, the data gathered on parents' aspirations for their children's education and subsequent occupation suggest that considerable emphasis is now being placed on education as a path to a secure job which it may be hoped will ultimately benefit the parents.

As might be expected, the pattern of level of educational achievement beyond primary school intended for the children is closely linked to the education of the respondent's husband. The data in Tables 7.6a and 7.6b are presented in a cumulated form as children who attend secondary school have necessarily attended primary school. The proportion of parents who intend to send their children to at least primary school is about 90% for both boys and girls, the remainder falling into several categories of response such as 'whatever they're capable of', and a few 'no school'.

TABLE 7.6a

ASPIRATIONS FOR SON'S EDUCATION (Cumulated %),  
ACCORDING TO EDUCATION OF RESPONDENT'S HUSBAND

SON'S LEVEL:	R's HUSBAND'S EDUCATION						TOTAL
	NO EDUC	SOME PRIM	COMPLETED PRIM	JUN. SEC.	SEN. SEC.	UNIV.	
Primary	96.5	91.7	90.8	90.3	92.9	90.0	92.5
Jun.Sec.	63.5	73.7	79.3	87.7	92.9	90.0	76.0
Sen.Sec.	18.9	31.4	49.0	64.0	85.9	90.0	41.2
Univ/Acad	1.3	3.7	6.5	15.8	33.8	55.0	8.2
No School	0.4	1.1	1.1	1.8	2.8	0	1.1
Capable of	0.9	4.0	7.3	7.0	2.8	10.0	4.5
Whatever	2.1	3.1	0.8	0.9	1.4	0	1.9
TOTAL	100 %	100 %	100 %	100 %	100 %	100 %	100 %
N	(233)	(350)	(261)	(114)	(71)	(20)	(1049)

TABLE 7.6b

ASPIRATIONS FOR DAUGHTER'S EDUCATION (Cumulated %),  
ACCORDING TO EDUCATION OF RESPONDENT'S HUSBAND

DAUGHTER'S LEVEL:	R's HUSBAND'S EDUCATION						TOTAL
	NO EDUC	SOME PRIM	COMPLETED PRIM	JUN. SEC.	SEN. SEC.	UNIV.	
Primary	86.4	86.7	89.6	89.9	92.4	95.0	88.2
Jun.Sec.	48.5	61.6	70.8	82.6	90.9	90.0	65.6
Sen.Sec.	13.7	23.7	37.7	53.2	83.3	90.0	33.2
Univ/Acad	0.9	2.6	5.0	14.7	28.8	50.0	6.7
No School	11.9	6.6	3.1	1.8	3.0	0	6.0
Capable of	0.9	3.7	6.5	7.3	3.0	5.0	4.2
Whatever	0.9	3.1	0.8	0.9	1.5	0	1.6
TOTAL	100 %	100 %	100 %	100 %	100 %	100 %	100 %
N	(227)	(351)	(260)	(109)	(66)	(20)	(1033)

In regard to the effect of parents' education on hopes for children's education, for the higher levels of intended education for sons, eg., secondary school, the proportion rises steadily from 18.9% for fathers with no education, to 49.0% for fathers who have completed primary school, to 85.9% for fathers who have senior secondary education themselves (Table 7.6a).



For daughters' intended education, the pattern is similar, although the levels are a little lower. The proportion of parents intending to send their daughters to senior secondary school rises from 13.7% for fathers with no education, to 37.7% for fathers with completed primary schooling, to 83.3% for fathers with senior secondary (Table 7.6b).

TABLE 7.7a  
ASPIRATIONS FOR SON'S EDUCATION (Cumulated %),  
ACCORDING TO ECONOMIC SCORE.

SONS'S LEVEL:	ECONOMIC SCORE					TOTAL
	0-19	20-199	200-299	300-899	900+	
Primary	94.7	91.9	91.2	91.0	93.9	92.5
Jun.Sec.	64.4	76.6	77.2	84.0	92.9	75.9
Sen.Sec.	25.0	44.4	34.1	54.0	84.8	41.3
Univ/Acad	2.7	6.4	4.7	12.0	34.3	8.1
No School	0.8	1.0	1.7	1.0	1.0	1.1
Capable of	1.5	4.4	5.7	8.0	5.1	4.4
Whatever	3.0	2.7	1.3	0.0	0.0	1.9
TOTAL	100 %	100 %	100 %	100 %	100 %	100 %
N	(264)	(295)	(299)	(100)	(99)	(1057)

TABLE 7.7b  
ASPIRATIONS FOR DAUGHTER'S EDUCATION (Cumulated %),  
ACCORDING TO ECONOMIC SCORE.

DAUGHTER'S LEVEL:	ECONOMIC SCORE					TOTAL
	0-19	20-199	200-299	300-899	900+	
Primary	90.0	87.7	86.6	86.5	91.9	88.3
Jun.Sec.	55.3	66.8	64.7	68.8	88.9	65.6
Sen.Sec.	20.6	33.2	24.6	44.8	78.8	33.0
Univ/Acad	2.7	4.8	2.7	11.5	29.3	6.6
No School	6.5	5.8	6.8	5.2	3.0	6.0
Capable of	1.1	4.1	5.1	8.3	5.1	4.1
Whatever	2.3	2.4	1.4	0.0	0.0	1.6
TOTAL	100 %	100 %	100 %	100 %	100 %	100 %
N	(262)	(292)	(292)	(96)	(99)	(1041)

The pattern of costs of schooling discussed earlier in this section, in which primary school has no tuition fees, junior secondary has moderate fees, and senior secondary has higher fees, is reflected in intended educational levels for children according to the family's economic status (Table 7.7a and b). This is not unexpected following on from the previous table as respondent's husband's education is positively related to occupation and to economic status.

Examining the proportion of parents, according to economic score, who intend their sons (daughters) to go to senior secondary level school, only 25.0% (20.6%) of the poorest group (Score:0-19) intended this, compared to 54.0% (44.8%) of the well-off group (Score:300-899), and 84.8% (78.8%) of the wealthiest group (Score:900+).

As a consequence of this pattern, the parents from the wealthiest group make up 41% of the parents expecting their children to obtain tertiary education (university or academy) while they make up only 9.4% of all respondents. Clearly, then, the wealthier families have higher aspirations for education of their sons and daughters than less well off families, as might be expected. This raises the question of whether this desire for better (or more) education results in the view that it is better to have fewer children and provide them with better support to ensure a better education.

From Table 7.8a and 7.8b it can be seen that ideal family size (IFS) has little relation to the educational level desired for children, although the mean IFS for those hoping that their children will go to university is slightly lower than the means for parents with lower levels of desired education. What is noticeable however, is that the higher the educational level hoped for, the smaller the

percentage of parents who reply 'However many are born', implying that such parents are more likely to have a particular IFS in mind when they get married. It should not be forgotten, however, that those couples with higher educational expectations for their children tend to be couples with higher achievement themselves, and thus are among the younger couples who are more likely to have married recently when the possibility of control over family size has become rather more real.

TABLE 7.8a

	IDEAL FAMILY SIZE AT MARRIAGE BY EDUCATIONAL ASPIRATIONS FOR SONS				TOTAL
	EDUC. LEVEL ASPIRED TO FOR SONS				
	PRIMARY	JUN.SEC.	SEN.SEC.	UNIV/ACAD	
MEAN IFS	3.4	3.5	3.3	3.2	3.4
% Answering 'However many born'	33.7%	24.0%	11.1%	3.5%	18.6%
N	(175)	(366)	(351)	(86)	(990)

TABLE 7.8b

	IDEAL FAMILY SIZE AT MARRIAGE BY EDUCATIONAL ASPIRATIONS FOR DAUGHTERS.				TOTAL
	EDUC. LEVEL ASPIRED TO FOR DAUGHTERS				
	PRIMARY	JUN.SEC.	SEN.SEC.	UNIV/ACAD	
MEAN IFS	3.5	3.5	3.4	3.1	3.4
% Answering 'However many born'	28.4%	18.9%	11.6%	2.9%	18.9%
N	(236)	(339)	(275)	(69)	(1041)

In Table 7.7 it was shown that those couples with high educational aspirations for their children were likely to be the wealthier couples and thus could more easily afford more per child for education without having to limit the number of children obtaining education. It seems, however, that as the educational level aspired to rises, so too education becomes a more significant cost of childrearing. When respondents were asked what are the major costs of rearing children these days, the percentage answering 'Education' as the major cost increased from 17.7% for parents hoping that their children would obtain primary education, to 20.8% for junior secondary school, 24.5% for senior secondary school, and 39.5% for those wanting their children to go to university/academy (overall 22.6%). There is no doubt that entry into university can be very expensive depending on the faculty attended. While high school costs are relatively modest, though too great for many, entry into a desirable university faculty such as medicine or law might cost several million Rupiahs for entry alone, quite apart from tuition expenses during the course.

### 7.2.3 OCCUPATION ASPIRATIONS FOR CHILDREN

As there has proved to be no significant differential in number of children considered ideal, among the groups of parents with different aspirations for their children's education, it might be expected that there would also be little or no difference in IFS among the groups with different aspirations for the future occupation of their children (6). This is in fact the case (see Table 7.9), where the range of IFS according to different occupations ranges between 3.1 and 3.5.

TABLE 7.9

IDEAL FAMILY SIZE AT MARRIAGE  
ACCORDING TO OCCUPATION ASPIRATIONS FOR CHILDREN

	OCCUPATION ASPIRED TO FOR CHILDREN					TOTAL
	FARMER	CIV.SERV.	PROFL.	OTHER	WHATEVER	
MEAN IFS:						
SONS	3.2 (110)	3.3 (551)	3.3 (19)	3.2 (34)	3.4 (95)	3.3 (809)
DAUGHTERS	3.3 (126)	3.3 (442)	3.1 (9)	3.5 (91)	3.5 (95)	3.3 (763)

The aspirations of parents for their children's education leads naturally to the question: what are the parents' aspirations for jobs for their children on completing their education? The data in Tables 7.10a and 7.10b indicate a remarkable concentration of occupational aspirations into the category of civil servant. While only 12.5% of the children's fathers, and 2.3% of mothers, fall into this category themselves virtually two-thirds (65%) hope that their sons will become civil servants, and half (51%) want the same for their daughters.

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(6) The Indonesian word used in the question on aspirations for children's occupation was diharapkan which could be interpreted as either 'expect' or 'hope for' which may imply variable degrees of realism in the replies. The fact that about half the respondents aspire to the civil service for their daughters when only 2.3% of the women are themselves civil servants suggests that either the question was understood to mean 'what job would you most want for your daughter if she had a choice of any job?', or else a great many of the respondents are under the impression that provided the children have sufficient education, then they have a reasonable chance of obtaining employment with the civil service. To refer again to Tables 7.6a and 7.6b, some three quarters of parents expect their sons, and two-thirds expect their daughters to go on to junior secondary school, which is sufficient to satisfy the requirements for a number of occupations within the civil service: for example, fieldworkers with the family planning program need only to have completed this level of schooling.

TABLE 7.10a

PARENTS' ASPIRATIONS FOR OCCUPATION OF SONS,  
ACCORDING TO R'S HUSBAND'S OCCUPATION.

HUSBAND'S OCCUPATION:	JOB ASPIRED TO FOR SONS					TOTAL	N
	FARMER	CIV.SERV.	PROFL.	OTHER	WHATEVER		
Farmer	18.0	65.0	1.2	4.4	11.4	100 %	(428)
Civ.Servant	3.2	71.4	10.3	1.6	13.5	100 %	(126)
Entrepreneur	4.8	85.7	4.8	4.8	0	100 %	(21)
Other	7.7	70.8	3.1	10.8	7.7	100 %	(65)
Labourer	23.5	57.5	0	4.8	14.3	100 %	(294)
Unemployed	23.1	46.2	0	15.4	15.4	100 %	(13)
TOTAL	16.4	64.6	2.1	4.9	12.1	100 %	(1010)

TABLE 7.10b

PARENTS' ASPIRATIONS FOR OCCUPATION OF DAUGHTERS,  
ACCORDING TO R'S HUSBAND'S OCCUPATION.

HUSBAND'S OCCUPATION:	JOB ASPIRED TO FOR DAUGHTERS					TOTAL	N
	FARMER	CIV.SER.	PROFL.	OTHER	WHATEVER		
Farmer	16.7	49.8	0.2	22.3	11.0	100 %	(420)
Civ.Servant	4.8	71.0	5.6	6.4	12.1	100 %	(124)
Entrepreneur	9.1	77.3	0	13.6	0	100 %	(22)
Other	15.0	61.7	1.7	11.7	5.0	100 %	(60)
Labourer	24.0	38.7	0	21.9	15.3	100 %	(300)
Unemployed	16.7	41.7	0	25.0	16.7	100 %	(12)
TOTAL	16.9	51.1	0.9	19.3	11.8	100 %	(999)

TABLE 7.10c

PROPORTION OF FARMER HUSBANDS WHO WANT THEIR SONS TO BECOME  
FARMERS OR CIVIL SERVANTS, AS REPORTED BY RESPONDENTS,  
ACCORDING TO AREA OF FARMLAND OWNED.

SAWAH OWNED(Hectares)	BECOME FARMERS	BECOME CIV.SERVANT	N
NONE	22.8 %	53.4 %	232
0.01-0.19	12.4 %	66.3 %	89
0.20-0.29	10.9 %	67.2 %	64
0.30-0.39	9.1 %	54.5 %	33
0.40-0.89	7.1 %	78.6 %	28
0.9 or more	6.7 %	80.0 %	15
TOTAL	16.7 %	60.3 %	461

This determination is exemplified by the couple, husband working as a civil servant, wife working in a bank, who speak only Bahasa Indonesia to their young daughter on the grounds that schooling is conducted in the national language, as is government business. The fact that the daughter could not communicate with her peers (who speak only Balinese until primary school) was seen as only a temporary disadvantage compared to the advantages of early fluency in the official language.

The father's current occupation had little bearing on this variable except for those who were labourers (or the 13 unemployed) where just under a quarter hoped that their children would become farmers, compared to one sixth overall. It is striking that of the largest category of current occupation, farmers (n=428 or 42%), the occupational aspirations were so markedly toward the civil service for their sons (65%) and daughters (50%).

In fact it is interesting to examine the group of farmers more closely. One might expect that in a predominantly agricultural society those farmers with extensive holdings of sawah (wet rice land), and thus probably most easily able to provide their sons with sufficient farmland for a satisfactory living, would be the most likely to want their sons to become farmers. It must be remembered that this group is farmers, not all owners of farming land which include many non-farmers (see chapter 5). However the pattern is exactly the opposite to that expected. The group of farmers with the greatest proportion wishing their sons to follow in their footsteps (22.8%) are those who own no sawah (Table 7.10c). As size of wet rice land holding increases, the proportion of farmers wanting their sons to also become farmers steadily declines, at the same time the

proportions wanting their sons to become civil servants increases. This suggests the possibility that what a wealthy farmer might envisage as desirable for his son is that he become educated then obtain a suitably prestigious position in the civil service, with the security that that entails, and employ labourers or sharecroppers to work the inherited farmland.

TABLE 7.11a

PARENT'S ASPIRATIONS FOR OCCUPATION OF SONS  
ACCORDING TO RESPONDENT'S HUSBAND'S EDUCATION

HUSBAND'S EDUCATION:	FARMER	JOB ASPIRED TO FOR SONS				TOTAL	N
		CIVIL SERVANT	PROFL	OTHER	WHATEVER		
None	34.2	49.3	0	5.3	11.1	100 %	(225)
Some Primary	15.2	65.0	0.6	4.5	14.3	100 %	(329)
Compl Prim.	12.5	69.4	1.2	5.6	11.3	100 %	(248)
Jun. Sec.	3.6	75.9	2.7	3.6	14.3	100 %	(112)
Sen. Sec.	2.9	73.5	14.7	4.4	4.4	100 %	(68)
University	0	75.0	15.0	0	10.0	100 %	(20)
Total	16.5	64.6	3.9	4.0	12.1	100 %	(1002)

TABLE 7.11b

PARENT'S ASPIRATIONS FOR OCCUPATION OF DAUGHTERS  
ACCORDING TO RESPONDENT'S HUSBAND'S EDUCATION

HUSBAND'S EDUCATION:	FARMER	JOB ASPIRED TO FOR DAUGHTERS				TOTAL	N
		CIVIL SERVANT	PROFL	OTHER	WHATEVER		
None	32.7	29.5	0	27.3	10.5	100 %	(220)
Some Primary	16.1	48.5	0	21.5	13.9	100 %	(330)
Compl Prim.	13.7	58.1	0	16.5	11.7	100 %	(248)
Jun. Sec.	5.6	68.5	0.9	12.0	13.0	100 %	(108)
Sen. Sec.	4.7	73.4	10.9	6.3	4.7	100 %	(64)
University	0	81.0	4.8	4.8	9.5	100 %	(21)
Total	17.0	51.2	0.9	19.2	11.8	100 %	(991)



The pattern of aspirations for occupation of sons and daughters according to characteristics of parents is made most clear in regard to educational level of respondent's husband (Tables 7.11a and b). The higher the educational level of the husband the more likely that the couple's aspirations for their children will be for the civil service or in a profession (doctor, lawyer, etc.), and the less likely they will aspire to farming as an occupation for their children. Even where the husband has had no education, about half the couples want their sons to find work in the civil service, and about one third want the same for their daughters. This proportion rises steadily with education to 85-90 percent of couples where the husband has senior secondary or higher education.

TABLE 7.12a

PARENTS' ASPIRATIONS FOR OCCUPATION OF SONS  
ACCORDING TO ECONOMIC SCORE.

Economic Score:	JOB ASPIRED TO FOR SONS					TOTAL	N
	FARMER	CIVIL SERVANT	PROFL.	OTHER*	WHATEVER		
0 - 19	27.6	52.8	0.8	8.2	10.6	100 %	(254)
20-199	13.0	69.7	2.1	2.9	12.3	100 %	(284)
200-299	16.7	64.1	0.7	5.3	13.2	100 %	(281)
300-899	9.7	76.3	0	3.3	10.8	100 %	(93)
900 +	3.1	70.4	11.2	2.0	13.3	100 %	(98)
Total	16.4	64.6	2.1	6.2	12.1	100 %	(1010)

(Professional: Doctor, engineer, lawyer)

(Other\* : Barber, tailor, roof-tile maker, driver, conductor, hawker, etc.)

TABLE 7.12b  
PARENTS' ASPIRATIONS FOR OCCUPATION OF DAUGHTERS  
ACCORDING TO ECONOMIC SCORE

Economic Score:	JOB ASPIRED TO FOR DAUGHTERS					TOTAL	N
	FARMER	CIVIL SERVANT	PROFL.	OTHER*	WHATEVER		
0 - 19	24.0	39.0	0	25.6	10.6	100 %	(254)
20-199	15.3	54.1	0.7	15.0	12.8	100 %	(281)
200-299	18.6	48.9	0	18.3	12.0	100 %	(274)
300-899	13.2	59.3	0	13.2	11.0	100 %	(91)
900 +	2.0	71.7	7.1	7.0	12.1	100 %	(99)
Total	16.9	51.1	0.9	17.6	11.8	100 %	(999)

(Professional and Other\*: as in Table 7.12a)

The aspirations of parents for their children are not markedly affected by the family's economic status, as shown by Tables 7.12a and 7.12b. Although the proportions of parents aspiring to farming as an occupation for their children is higher amongst the poorer economic groups than the wealthy, for both sons and daughters, the most desired category, civil servant, is aspired to by more than half of the very poorest group (52.8%) for their sons, and by 39.0% for their daughters.

It is interesting that many writers point to the fact that education raises children's aspirations even if there is little possibility of such aspirations ever being realised, e.g.:

It is true that many rural youth who have gone beyond primary school are reluctant to work in agriculture and that many of them leave the villages in search of urban employment. (Sinaga,1978:111 ff).

Such a statement implies that it is the educated youth who aspires to an occupation outside agriculture, possibly to the regret of his farming parents, whereas the data presented above suggest that the parents are very much involved in encouraging such aspirations.

### 7.3 DESIRE FOR ADDITIONAL CHILDREN

There has been considerable disagreement about the real meaning and validity of questions regarding ideal family size in different societies, the argument usually centring around the belief in many societies that the number of children one has is up to god, fate, destiny (Ware,1974). Also the answers of many women are influenced by the number of children that they already have. Data on desires for additional children are more reliable and take into account the present situation of the women. Analysis of data on desire for additional children, while controlling for various demographic characteristics of women, can indicate which women are most likely to try to prevent future births and will therefore be most amenable to family planning (see chapter 6.1.11).

Despite the shortcomings and difficulties noted above, a question inquiring about the respondent's ideal family size at the time of her marriage was asked and 81 % gave a numeric answer (19 % Don't Know). While the responses are discussed below, some caution should be used as many respondents appeared to have difficulty both with the concept of recalling future plans from a point in the past, and with the notion that family size was something determined only by the couple rather than being up to the gods, or 'up to the uterus' as one said. In fact it is surprising that so many respondents gave a definite answer to the ideal family size question as the Balinese believe so strongly that events are determined very much by forces outside the individual. In many ways it is presumptuous and tempting fate to foretell one's behaviour, particularly in a matter as important as childbearing. This suggests that many respondents may have been

regurgitating the family planning program propaganda on family size.

TABLE 7.13

COMPARISON OF IDEAL FAMILY SIZE AT MARRIAGE, AND NUMBER OF CHILDREN STILL LIVING PLUS ADDITIONAL CHILDREN WANTED\*

(A) CSL	(B) ADDTL CHILDREN WANTED(mean)	(A + B) CURRENT IFS	IFS AT MARRIAGE	N
0	2.2	2.2	2.6	61
1	1.6	2.6	2.8	150
2	0.7	2.7	3.1	257
3	0.3	3.3	3.5	233
4	0.14	4.1	3.7	140
5	0.03	(5.0)	3.8	120
6	0.01	(6.0)	4.0	79
7+	0		4.4	48
MEANS				TOTAL
3.1	0.6	3.7	3.4	1,088

(CURRENT IFS: \* If extra children wanted equals zero, it is assumed that R wanted all previous children. No way to determine otherwise.)

The data in Table 7.13 show an implied ideal family size calculated by adding mean number of additional children wanted to the mean number of children still living (CSL). However, unlike the World Fertility Survey, the present survey did not ask whether the last child was wanted, thus this calculation assumes that all the children still living were desired. Thus the implied mean ideal family size of 3.7 (mean CSL of 3.1 plus mean extra children wanted of 0.6) exceeds the mean ideal family size at marriage of 3.4 children. The mean ideal family size obtained by the F-M survey in Bali, 1973 was also 3.7 children (FM Report, 1974:29). Taking the above limitation into account, one could assume that the desired number of children at the time of the survey was around 3.5, although it is notable that some 43 percent claim a desired family size of less than three children (i.e., those with CSL of 0, 1 or 2).

## 7.3.1 AGE, CHILDREN STILL LIVING

## AND DESIRE FOR ADDITIONAL CHILDREN

As might be expected, Table 7.14a shows a decline in desire for additional children with increasing age. Virtually all (95%) of the women aged 40-49 did not want more, while the vast majority (91%) of the young women (15-19) did want more. For a particular number of CSL (1,2,3 or 4), the younger women are more likely to want more children than the older women.

TABLE 7.14a

PROPORTION OF RESPONDENTS WANTING NO ADDITIONAL CHILDREN,  
ACCORDING TO CHILDREN STILL LIVING AND AGE OF RESPONDENT.

CSL	AGE OF RESPONDENT				TOTAL
	15-19	20-29	30-39	40-49	
0	0.0	8.6	0.0	0.0	5.7
1	8.3	9.8	16.7	83.0	13.9
2	(100.0)	36.7	52.5	73.3	43.8
3	---	55.1	72.6	100.0	71.2
4	---	75.0	90.6	89.8	88.5
5+	---	100.0	93.7	100.0	97.9
TOTAL	8.7%	32.6%	72.0%	95.4%	61.9%
N	(26)	(413)	(382)	(251)	(1,070)

This does not necessarily mean that older women have a lower 'ideal family size' but is more probably due to the concern to have no more children once becoming a grandparent. The belief that grandmothers should not become mothers is very much in keeping with the Balinese view that individuals, ideally, are reincarnated through a series of lives on the way to the next, and hopefully last, life on earth. As described in chapter 2, one of the major stages is parenthood which is marked by a change of name for both mother and father. The following major stage is grandparenthood, again marked by acceptance of a

generation-indicating name, likewise great grandparenthood. These stages are part of a one-way progression, and entry into a later stage relieves one of the responsibilities of the preceding stage.

TABLE 7.14b

MEAN NUMBER OF ADDITIONAL CHILDREN DESIRED (ACD), ACCORDING TO AGE OF RESPONDENT AND NUMBER OF LIVING CHILDREN (CSL).

		AGE		
		20 - 29	30 - 39	40 - 49
CHILDREN				
STILL	0-	2.29	2.14	1.00
LIVING:	1-	1.68	1.38	0.17
	2-	0.83	0.60	0.38
	3-	0.47	0.27	0.00
	4-	0.22	0.13	0.12
	5+-	0.00	0.05	0.01
MEAN ACD		1.06	0.36	0.07
MEAN CSL		1.89	3.27	4.20
TOTAL		2.95	3.63	4.27
N		(413)	(382)	(251)

An approximation of desired completed family size may better be gained from Table 7.14b. As mentioned earlier, the assumption has been made that respondents wanted all their current living children, thus the total of mean number of children still living plus mean number of additional children desired (including those not wanting any more) is taken as the desired completed family size at the time of the survey. This figure probably overestimates somewhat the desired completed family size, particularly for older women who had less control over their fertility before the family planning program. The results indicate a desired family size of around three children for the younger women (20-29 years), to around 4.3 children for the older women (40-49 years).

The data in Table 7.14b show that the desire for additional children was negatively related to number of children still living (CSL). While the number of CSL is naturally a function of age, the relation still held when controlled for age. Thus both higher parity and older age were both associated with a higher percentage of women not wanting additional children.

Table 7.15a shows that the desire for additional children was also a function of the gender mix of living children, the most important consideration being the existence of a son, although a balance of sexes is considered desirable. The importance of at least one living son is indicated by the fact that of couples with 3 or more daughters but no living sons, 70% want an additional child, whereas for couples with 3 or more sons but no daughters only 28% want an additional child. On the other hand, the proportions of couples with two sons and a daughter wanting an additional child (18%) is similar to the proportion (27%) of couples with 2 daughters and a son who want an additional child. When the sex of desired additional children according to the sex pattern of living children is examined (Table 7.15b) the desire for a balance of both male and female children becomes obvious, although underlying that is a somewhat more marked desire to restore the balance if it is deficient in males.

For couples with no CSL, virtually all want either or both sons and daughters, only 2% specifying boys only. Where there is an existing imbalance, for example, one son and no daughters, 36% want a daughter specifically, while if they have no son and one daughter, 53% want a son specifically. The specificity is stronger where the couple have two children of the same sex. On the other hand where the

couple's children comprise son and daughter, the percentage not specifying the sex of the additional child desired (i.e., replying 'either') jumps to 69%. Once a couple has two children of the same sex, plus one of the other sex, none of the couples want a third child of the same sex.

TABLE 7.15a

PROPORTION OF COUPLES WANTING ADDITIONAL CHILDREN,  
ACCORDING TO MALE AND FEMALE CHILDREN STILL LIVING

		FEMALE CHILDREN STILL LIVING				TOTAL	N
		0	1	2	3+		
	0	94.3	85.3	76.9	70.0	83.7	(204)
MALE	1	86.8	50.0	26.7	9.3	46.5	(368)
CSL:	2	55.6	17.8	5.6	0	20.8	(281)
	3+	27.5	5.3	3.6	0	7.6	(235)
TOTAL		69.8%	39.2%	24.7%	13.5%	38.1%	(1088)
N		(253)	(393)	(238)	(204)	(1088)	

TABLE 7.15b

SEX BALANCE OF DESIRED ADDITIONAL CHILDREN BY COUPLES WITH  
0 TO 3 LIVING CHILDREN, ACCORDING TO SEX BALANCE OF CSL.

CHILDREN STILL LIVING		SEX BALANCE OF DESIRED ADDITIONAL CHILDREN (%)				TOTAL	N
MALE	FEMALE	MALE	FEMALE	EITHER	BOTH		
0	0	2.0	0	52.0	46.0	100 %	(50)
1	0	4.5	36.4	39.4	19.7	100 %	(66)
0	1	53.4	0	24.1	22.4	100 %	(58)
1	1	19.4	0	69.4	11.3	100 %	(62)
2	0	2.9	80.0	14.2	2.9	100 %	(35)
0	2	86.7	3.3	6.6	3.3	100 %	(30)
2	1	0	62.5	37.5	0	100 %	(16)
1	2	80.0	0	15.0	5.0	100 %	(20)



These results support the data presented above (section 7.1.2) on roles of Balinese children. There it was suggested that becoming parents was of great importance to married couples, but this was not directly proportional to the total number of children produced, only the first child being the source of increased prestige. It was also described how there are a number of activities wherein sons and daughters have sex-specific contributions to make. These are of both a secular kind, as in agriculture and descent for sons, and a religious kind, as in daughters making the frequent household offerings for the gods.

TABLE 7.15c

PROPORTION OF COUPLES WANTING ADDITIONAL CHILDREN,  
ACCORDING TO NUMBER OF LIVING AND DEAD CHILDREN.

CSL:	NUMBER OF DEAD CHILDREN				N
	0	1	2	3+	
0	95.7	(80.0)	(100.0)	---	53
1	89.5	78.3	(80.0)	(33.3)	144
2	60.3	54.8	28.6	(14.3)	226
3	36.2	20.8	9.1	(0)	215
4	13.0	6.2	5.6	25.0	131
5+	3.4	0	5.3	0	235
TOTAL	50.0%	22.9%	15.2%	8.2%	38.1%
N	(626)	(218)	(99)	(61)	(1004)

( % ): less than ten cases.

An unexpected finding arose from the examination of the desire for additional children according to the number of children who had died (Table 7.15c). It might be expected that the greater the

proportion of a couple's children who had died, the greater the number of children the couple would consider it needed to bear to ensure a certain number of survivors, the so-called 'insurance effect'. The pattern, even when controlled for number of living children, was that the greater the number of children who had died, the less likely the couple was to want to have any additional children. For the largest group, that is, those with two living children, 60% of the couples who had not experienced any child deaths wanted additional children, whereas of the couples who had experienced two child deaths, only 29% wanted additional children. This pattern suggests a dampening effect of experience of child mortality upon the couple's desired family size even if their number of living children is quite low. It should be remembered, however, that couples with higher numbers of dead children are more likely to be older couples and therefore may view further childbearing as inappropriate; for example, many may already be grandparents. There is also the likelihood that experience of child deaths is taken as a 'sign' that the couple is not meant to have more children, and as described in chapter 2 there are ways in which a couple can overcome the absence of a living son such as through sentana marriage of their daughter or adoption of a son. The lack of surviving daughters is not viewed as a serious setback though a number of respondents having no daughter said that they wanted one for companionship (and probably to help with the offerings).

### 7.3.2 CHILDREN STILL LIVING, WORK STATUS AND DESIRE FOR ADDITIONAL CHILDREN

The work status of a woman might be expected to affect both her fertility and her desire for children. Table 7.16 examines the proportions of women wanting no additional children according to work status, while controlling for children still living.

Working women were only slightly more likely to not want additional children than non-working women when controlling for the number of living children. The explanation for this similarity probably lies in the fact that Balinese women tend to do kinds of work where responsibility for a young child is not a great drawback. Mothers can take quite young babies to the fields for the day, or often someone in the houseyard (grandmother, older sibling of the baby) will care for the baby until the mother returns.

TABLE 7.16

PROPORTION OF COUPLES WHO WANT NO ADDITIONAL CHILDREN,  
ACCORDING TO RESPONDENT'S WORK STATUS  
AND CHILDREN STILL LIVING.

CHILDREN STILL LIVING	NOT WORKING	WORKING	N
0	0.0	8.6	(61)
1	6.5	20.0	(150)
2	42.7	44.5	(257)
3	66.2	73.9	(233)
4	85.4	90.0	(140)
5+	95.7	95.9	(247)
TOTAL	54.4 % (397)	66.0 % (691)	(1088)

Also, even from a young age children can be seen helping their mothers in their work, particularly in the case of a market seller or shop keeper. In the case of heavier manual work such as quarrying and carrying stone, children often play together beside their mothers,

however this does not occur in the case of Government jobs such as road repair gangs for obvious reasons. This supports Jones' comment (1976:18) on the inappropriateness of emphasizing lost opportunity costs of working mothers in developing countries in economic theories of fertility (chapter 1, p.20). It should not be forgotten though, that of women with three or any more CSL, the majority did not want more children, whether or not they were working. This is consistent with the similar achieved fertility of working women (mean CEB = 3.6) and non-working women (mean CEB = 3.8) shown in Table 5.23a .

#### CONCLUSION

The data presented in this chapter have shown that Balinese society is not 'child-centred' in the sense that has sometimes been implied. While there are tasks that children are expected to perform in assisting parents, those roles of major importance in other agricultural societies , e.g., harvesting, are usually performed in Bali by groups of adults organized specifically for such purposes.

One of the key roles which children play is, by simply being born, to elevate their parents to the level of full adults permitted to participate in hamlet affairs, and to contribute to the continuity of the community. As this elevation of the status of a couple derives from the birth of the first child, and is not affected by the number of subsequent children, the teknonymy system does not inherently encourage high fertility, although the added prestige and the sense of continuity deriving from grandparenthood implies that one must ensure the survival of at least one son to adulthood.

The compulsory religious ceremonies which mark the early stages of a child's life cycle were the most significant major expenses in rearing children, regardless of the wealth of the parents. As there are no real 'economies of scale' for most of these ceremonies, they provide a significant dampener to high fertility, as do the costs of education which many parents, from all occupational groups, appear to view as essential for their children to hope to be able to obtain a satisfactory job.

With regard to desired number of children, the actual mean is around 3.5, though close to three for the younger, lower parity women. This figure of 3.5 children is, of course, the average of a range of desired numbers of children by different couples. What is clear is that very few couples want fewer than 3 children, with a marked preference for at least one male and one female, followed by an additional child of either sex. This pattern apparently results from the fact that, on the one hand, both sons and daughters have sex-specific roles to play, while there are also sex-specific costs such as subdivision of family land amongst all sons, and, commonly, the loss of the daughter from the household at marriage. This situation necessitates a couple having some children of both sexes but, now at least, does not advantage them by having a large number of children.

Owing to the absence of reliable data on ideal family size in the days before the family planning program it has not been possible to investigate the possible existence of a latent demand for the means to limit childbearing. However it can be said that recent changes such as increased availability of education affecting costs of, and

aspirations for children, increasing difficulty in obtaining farm land, declining mortality resulting in improved child survival, and access to the means of controlling fertility, have resulted in a desired family size considerably smaller than average achieved family size before the family planning program. Whether or not mean ideal family size will fall below three children is open to debate, but seems unlikely in the near future.

The data presented in this chapter could not be interpreted as implying that fertility in Bali has fallen from the quite high levels before the family planning program to a relatively low level after some ten years operation of the program, primarily because of a dramatic and substantial decline in the value of children. In recent years, there have certainly been marked changes in the costs of children, in particular with increased desire for education of children, and also the perceived nature of future secure job opportunities has changed from agriculture to public service. However, these changes alone cannot fully account for the very rapid spread of family planning practice and subsequent fertility decline. The role of these changes in the fertility decline, along with other factors, will be discussed in the final chapter.

## CHAPTER 8

### CONCLUSION

#### THE BALI SETTING AND FAMILY PLANNING:

#### 'A CLIMATE UNUSUALLY FAVORABLE FOR A TAKE-OFF'

The survey results presented in the previous chapters confirm that fertility, at least in the study villages, has undergone a rapid and substantial decline during the decade of the 1970s. The Total Fertility Rate of 6.5 in the late 1960s fell to 3.5 by the late 1970s. The data have indicated that this decline was almost entirely due to changes in marital fertility rather than to changes in marriage patterns.

During the period of the fertility decline there was a dramatic rise in the use of family planning, from less than 5 percent of currently married women of reproductive age in the late 1960s to around 50 percent in the late 1970s (Table 6.9). The estimation of births averted by family planning (chapter 6.2.5) indicated that virtually all the decline in marital fertility was the result of use of modern contraception which, in the case of the study villages, had been obtained through the national family planning program.

The key question that still remains to be answered is why was family planning accepted so readily by so many Balinese couples? The purpose of this final chapter is to review the findings of the study in the cultural and historical context in the hope of elucidating the important motivating factors.

The most striking feature of the patterns of fertility and family planning use is the virtual absence of social or economic differentials. While fertility underwent a decline of almost 50 percent in the preceding ten years, the average level in the late 1970s was still high enough (TFR of 3.5) for considerable variation to be possible among different groups within the society. The widest fertility differential was, however, between women with less than completed primary education and those with completed primary or above, and even there the difference in mean number of children ever born was less than one child.

With regard to differentials in family planning use, there are marked differences between women of parities 0,1 and 2 or more, as would be expected where program family planning is not available until a couple has at least one child (see chapter 6). There are also differentials according to the woman's age for the same reason. Among male and female occupation groups, there are few substantial family planning use differentials. The exceptions are the group of civil servants which has a markedly higher prevalence rate (68 % for both sexes) than the average, and small groups of shopsaleswomen (n=19) and male employees in private enterprise (n=22) which have a markedly lower prevalence rate. Nevertheless, even the largest of these outlying groups, the male civil servants, accounts for only one in eight of the study population, the vast majority of whom have rates of current use close to the average.

There is, however, one important differential in prevalence of family planning use which is of considerable importance in the attempt to understand the rapid and widespread acceptance of family planning.



That differential is the banjar of residence. The range of prevalence rates is considerably greater among the twelve banjar (from 30.4 % to 60.7 % currently using family planning) than the range for any other variable subgroup of any size. While there are socio-economic differences which contribute to the differentials, the wide variation in family planning prevalence among different banjar, even within one village, implies that the decision-making bodies, the banjar council and kelian dinas, differ somewhat in their ability or desire to ensure that the members of their banjar practise family planning. This statement must be qualified though, with the caution that the prevalence rates which the Elco-registers showed for each banjar differed, sometimes considerably, from actual (survey) rates. Thus the leaders of Banjar Kawan in village Bakas may have worked harder to motivate their banjar members if they were aware that the true family planning prevalence rate was only 30 percent rather than the 62 percent shown by the Elco-Register.

The overall impression that emerges from the patterns of fertility (chapter 5) and family planning (chapter 6) differentials is that the conventional explanations of the Bali fertility decline, emphasizing the vigorous family planning program in a situation of changing value of children, are somehow incomplete. This implies a need to look beyond those features of the setting which have thus far been examined (chapter 2) for factors that might have played a role in the acceptance of the family planning program but which were not elucidated by the analyses in chapters 5, 6 and 7. These social and historical factors will be discussed next.

The above described pattern of few substantial differentials overall is quite consistent with the frequently noted high degree of conformity amongst Balinese. It is worthwhile examining this characteristic in some detail as it is almost certainly at the root of the rapidity of the increase in family planning use. It is this rapid rate of increase which is the most interesting feature of the Bali family planning story. After all, other regions of Indonesia appear to have now reached similar levels of family planning use (East Java and North Sulawesi for example), but none in as short a time as Bali. In 'The Balinese Temper', Belo states 'I believe that the Balinese exemplify by their behaviour how closely the individual may be required to conform to patterns laid down by the social group' (1970:85). Similarly, in an article entitled 'Nonconformity in the Balinese Family', Swellengrebel states that 'Strictly speaking, there is no place for dissidents in the family group, just as there is no place for non-conformity within the village community' (1969:202). Swellengrebel implies that the reason for this rigid view, both at family and village level, is the role of these social units as religious groupings of vital importance in the continued worship of the ancestors. While various writers have commented on the religious underpinnings of the Balinese community:

the unbroken force of the deeply religious, strongly Hindu-influenced personal and social concepts of the Balinese, which dominate life, permeate and consolidate society, and determine the rites and ceremonies of the individual, the family, the irrigation association, the village, and the country... (Lekkerkerker, 1919).

few writers have proceeded beyond description of the temple system and the various rituals which brought Bali to the attention of the outside world, to attempt to describe how the Balinese view the importance of

conformity of behaviour by all community members. Covarrubias gives an indication of the link between religion and traditional law:

..the religion of Bali is a set of rules of behaviour, a mode of life. The resourceful Balinese fitted their religious system into their social life and made it the law (adat) by which the supernatural forces are brought under control by the harmonious co-operation of everyone in the community to strengthen the magic health of the village. (1937:262).

Thus it is the attempt to preserve the protective life power of the village, which can drain away or be undermined by gradual predominance of evil forces, that motivates the regular performances of music, dance and drama, and the making of offerings which are intended to propitiate the protecting ancestors and entice them to remain when they visit the village during the special holidays or temple anniversaries. This attempt to maintain order also underlies behaviour at the individual level: in matters of social intercourse the rules of vocabulary and courtesy normally accorded to superiors must be observed if the individual is to know his or her place and maintain harmony within the cosmic order. These rules are important because 'only as a result of those principles is the world an ordered whole, a cosmos, instead of a formless, void chaos' (Swellengrebel, 1960:36). Bateson has pointed out that the notion of what behaviour is 'regular' is 'not to be equated with our "etiquette" or "law", since each of these invokes the value judgement of some other person or sociological entity' (1978:91), but rather such correct or regular behaviour is that which is accepted as being consistent with the maintenance of order. Thus if an offence occurs, such as a casteless person addressing a prince in other than refined language, 'the offence is felt to be against the order and natural structure of the universe rather than against the actual person

offended' (1978:92). The offender is considered unfortunate to have made such a mistake. For most such offences the village can impose a fine, usually quite small, but if payment is delayed the amount increases steeply, and if the offender appears to be refusing to pay - 'opposing the village' - the fine is at once raised to an enormous sum and the offender is deprived of membership in the community until he is willing to give up his opposition. Then part of the fine may be excused (Bateson,G.,1978:96). Ostracism from the community places the offender in such spiritual danger that the threat is one of the most severe sanctions applicable. Thus the well being of the individual is seen as being ultimately dependent on the well being of the community, even if that end sometimes requires the subordination of the individual's own goals or wishes. The Geertzes sum up this conformist attitude, 'It is better, the Balinese say, to be wrong with the many than right by yourself' (1975:115).

The point of the preceding argument is that the behaviour of individual Balinese must be in accordance with the traditional scheme which tries to ensure the maintenance of order in the community, Bateson's 'steady state'. When the order is disturbed, as inevitably occurs from time to time, there are procedures to re-establish it. But if any individual does not wish to conform to the accepted pattern there is no room for compromise, he or she must leave the community so as not to bring misfortune upon the other members. This is an important point because, while the Balinese see events as being caused by friendly or unfriendly spirits, constructive or destructive gods, they could not be said to be fatalistic or apathetic. Rather, they go to considerable lengths to discover the appropriate means to try to keep the gods happy and to appease those who are displeased. This

point will be discussed more specifically below. The main point is that there are powerful social mechanisms to ensure conformity. It is this fact which underlies Bateson's observation 'that many Balinese actions are articulately accounted for in sociological terms rather than in terms of individual goals or values' (1978;90).

This is not to say that Balinese society is closed to change. On the contrary, there are numerous examples of their capacity to adopt and adapt new ideas, but in a way which does not disrupt the established pattern. When Hinduism was first brought to Bali, the Balinese selected those aspects which accorded with their existing beliefs, such as the four gods guarding the four primary directions, and incorporated them into those beliefs. When Buddhism came to Bali, Buddha became, to the Balinese, the younger brother of Siva (Covarrubias,1937:263). On the other hand they are selective and do not accept all new ideas, nor change for its own sake. Bateson explains that 'this steady state is maintained by continual non-progressive change', and uses the analogy of a tightrope walker who maintains his balance by rapid adaptation of the position of the balancing pole to changes in the forces acting on him (1978:98).

The key to maintaining the 'steady state' is, according to Bateson, preventing the dominance of any one variable over the others. In the context of the village council, Bateson states that the members 'by hypothesis are interested in maintaining the steady state of the system - that is, in preventing the maximization of any simple variable the excessive increase of which would produce irreversible change' (1978:97). This hypothesis is supported by the existence of two general rules for the organization and operation of the work

groups which carry out social tasks within the community. As the Geertz say, these two rules are 'essentially recipes for the avoidance of group conflict' and they 'reveal some of the most fundamental Balinese social values' (1975:113). The first of these rules implies that the growth of powerful kingroups is seen as the most probable source of factionalism and divisiveness within the hamlet, and this rule 'sets forth a hierarchy of precedence which places the rights of the hamlet first, those of the dadia (1) second, those of the subdadia third, and those of the unaffiliated household fourth' (1975:113). They go on to explain that a kingroup, no matter how powerful, theoretically can never gain precedence over the hamlet of which it is a part: 'When kingroup loyalties conflict with the hamlet ones, kingroup loyalties must give way; on this the Balinese are unanimous' (1975:114). In fact, positive steps are taken to prevent such situations arising. If the hamlet must be subdivided into, say, work groups 'deliberate effort is made to scatter people randomly so that all other allegiances crosscut one another: lines dividing the hamlet into sections are carefully drawn so as to bisect important kin-based residential clusters' (Geertz and Geertz, 1975:115).

The second of the two organizational rules is called, by the Geertz, the 'seka principle', following the general Balinese term for any group organized for a particular purpose. The key point is that 'the seka principle demands that for functional purposes any

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(1) The Geertz describe dadia as a 'peculiar social institution' which none of the established categories of kinship analysis in anthropology seem to translate. It seems to be 'an agnatic, preferentially endogamous, highly corporate group of people who are convinced with whatever reason, that they are all descendants of one common ancestor' (Geertz and Geertz, 1975:5).

group must be viewed as having one and only one basis of organization' (ibid). Thus, when a seka has fulfilled its purpose it is disbanded, and the members may meet again in a different seka, but equally, they may not. This pattern of repeated formation and dissolution of functional groups ensures that power groups, potentially divisive to the hamlet community, have difficulty in becoming consolidated.

In regard to the widespread uptake of family planning, the question that now arises is whether the Balinese accepted it because the government was able to instruct the banjar councils, through the administrative hierarchy, to ensure that as many village inhabitants as possible would participate in the family planning program. Or was it that many communities decided for themselves (within the council) that it was to their benefit that their inhabitants should act to reduce their fertility?

To address the first possibility, the government hierarchy has been described earlier (chapter 2), but the relevant point here is that the village headman (the Perbekel) is a full-time, government paid administrative official who necessarily must pass on instructions from government to the lower level (banjar) officials. The banjar leaders (Kelian Dinas), however, are in a situation of conflict of interests. In receipt of a moderate salary from the government, they are required to pass instructions and information about government programs on to banjar members. On the other hand, they are elected by the banjar council to act as headman and are expected to put the well being of the banjar community above any other consideration. As Hobart states:

The assembly (Banjar) remains, in many senses, an autonomous decision-making council independent of the government, political parties and local factions and these rights are

jealously guarded. (1975:84).

It is also important to keep in mind that the function of the Kelian Dinas is to ensure that council meetings are run in the correct manner and that council decisions are implemented. He is basically an administrator rather than a leader wielding power over the community. So the Kelian Dinas would normally not be in a position to automatically implement government instructions - he must first persuade the banjar council that such action would be to the advantage of the community.

If this interpretation is correct, the implication is that the decision of whether or not to accept family planning is made at the level of the banjar council. Support for this interpretation comes from the wide variation in prevalence rates of current use. For example, within the village of Banjarangkan prevalence rates varied from 60.7 percent in banjar Selat down to 42.6 percent in banjar Pagutan. The difference cannot be explained by differential access to family planning facilities as all the Pagutan houseyards are within ten minutes walk of the village clinic. Also one of the other Banjarangkan banjars, Koripan Kangin, is at least one kilometre further from the clinic than Pagutan, yet the prevalence rate is 10 percentage points higher at 52.8 %. It cannot be claimed that this variation exists because village leaders are unaware of the true prevalence levels, but only the levels in the Elco-Registers, because these show an even greater difference between Selat (77.3 %) and Pagutan (45.6 %). So, while there is no doubt that kelians differ both in their enthusiasm for programs such as the family planning program, and in their persuasive oratorical abilities, it seems likely



that levels of family planning acceptance are a reflection of the relatively independent decisions of the banjar councils. If this interpretation is accepted, the implication is that the high levels of family planning use are primarily the result of independent decisions of banjar councils which presumably had concluded that reduction in fertility rates would be beneficial to their communities. The reasons which might account for such a decision being taken by these councils will now be reviewed briefly, although many have been mentioned in earlier chapters.

In chapter 1, the summary of population data indicated that the 20th century had seen a considerable increase in the population growth rate to 1.7 percent per annum during the 1960s. This increase in rate was largely due to the decline in mortality which had taken place during this century, following implementation of various public health measures such as smallpox vaccination, and the establishment of a system of village health clinics. Quite apart from the population density, which had been high for a long time, the increase in the rate of growth was 'destabilizing'. This should be seen in the context of a society where members' primary affiliation lies with the banjar. Land for houseyards within the banjar is normally strictly defined and limited, that is, agricultural and forest land surrounding the residential land may not be converted to absorb population increases. Thus such increases in overall numbers must be coped with either by building new quarters within existing houseyards, or by movement, say of newly married couples, out of the banjar, which is normally not considered a desirable prospect.

While there has been increasing pressure on available residential land, more importantly, there has also been a serious increase in the demand for agricultural land. In chapter 2 we saw that between 1950 and 1970, when the family planning program was introduced, the area of available sawah (wet rice land) had remained roughly fixed at around 100,000 hectares, while the population had increased by 40 percent. Although increases in productivity were becoming apparent by 1970, through changeover to the high yielding rice varieties and some improvements in irrigation, there was a concern with availability of land. As the average size of a plot of farmland has fallen to around the commonly stated minimum of 30 Ares (0.3 Ha.) to support a family of five or six, the custom of dividing family farmland equally among all sons has become less practicable, with a move toward one son working the whole plot and gradually buying out the other sons, leaving them to find alternative employment. In a rural village there are few alternative opportunities outside agriculture, particularly for women, as mechanization has taken over much of the rice polishing, the sickle has replaced the small ani-ani (finger-knife for harvesting), and threshing now must be done by the harvesting teams in the fields rather than by the women in the houseyard.

While there have been a number of households turning to making artefacts for the tourist trade, these tend to be concentrated in particular villages where 'factories' of apprentices are supervised by a master craftsman or woman. For example, the woodcarving industry is very much centered in the village of Mas, silver and gold working is in Celuk, cloth and sarong weaving in Gianyar, and modern painting in Ubud and neighbouring villages. Naturally these villages form one of the main tourist routes from the southern coastal tourist enclaves,

where there are increasing numbers of 'sweat shops' wherein teams of young girls churn out printed 'Bali' clothes for foreigners, and young boys produce rather mediocre sunset paintings and bone and wood carvings, both modern and 'antique'. Because of lower labour costs, an increasing part of artefact production is being done in Java for sale in Bali. As was shown in chapter 2, there are other small scale industries arising, such as transport, fishing and ice-making, but these are all relatively small scale. The tourist industry has absorbed many workers, directly and indirectly, although prospects may not be as promising as once predicted. The results presented in chapter 7 indicate that parents looked upon the civil service as the most appealing occupation for their children. Naturally the good salaries and other benefits create considerable competition for limited places in government employment, and the educational requirement for entry has undoubtedly contributed to the rising demand for schooling.

So if prospects for alternative employment within the village are not bright, why do the inhabitants not move to the city, or even to another province? Indeed a number do precisely that with the result that many of the older village dwellers bemoan how sepi (quiet, empty) the village is when the younger members are away, and look forward to the village festivals which will see them return briefly, when the village will again be ramai (lively, bustling). But these rural-urban migrants tend often to be the young, single boys, particularly those with some education, and in this study we are primarily interested in those who are already married, with children. It is much less common for such people to move unless they have a job arranged, partly because the support network may not extend to the city, and partly

because the Balinese seem much less to have that entrepreneurial spirit evidenced by so many Javanese who might come alone to Bali, and soon after be found, for example, running a small mobile noodle stall, until they have the opportunity to gain a firmer foothold in the economy (see Peddlers and Princes by Geertz, C., 1968).

Another reason for not wishing to move away from one's place of birth is the importance of the series of bonds linking individuals to their banjar. Lansing discusses in considerable detail how 'the Balinese are "tied" (kaiket) from birth to a bewildering variety of obligations, duties, organizations, temples, places, people and things' (1974:1). It is these links, or rather the groups to which one is linked or tied that provide the reference points for defining oneself. In other words, kaiket emphasizes a sense of the self as a social being. It also emphasizes the place of the self in hierarchies which are not exclusively social but merge into the realms of the divine (Lansing, 1974:27).

Many essays on Bali comment on the importance to a Balinese of knowing where he or she is placed in relation to the key reference point of the island, the holy mountain, Gunung Agung, and the symptoms experienced (described as paling or dizzy) if suddenly disoriented. The point here, however, is that the individual, to feel a sense of identity or self, needs to actually be in his or her place of origin, not just know where he is in relation to it. The examination in chapter 2, of outmigration as a possible response to the land shortage, discussed the reluctance of the Balinese to move away from Bali, largely for the above reasons and because Bali is the home of their ancestors and gods, thus one could no longer expect the

spiritual protection outside the island boundaries.

To this point an attempt has been made to reveal something of the place of order and stability in the Balinese view of the world. There has been discussion of the significance attached to relatively recent changes in land availability which have meant that increasing numbers of young people must move away from their villages in order to search for increasingly scarce employment, often outside the agricultural sector, or else remain in the village dependent on the support of their family until they find work. The Balinese, while not opposed to change, did not view this kind of change as positive or beneficial, but as destabilizing.

It is of interest at this stage to look at a number of events which occurred before the introduction of the family planning program, and which may have created an underlying concern at the gradual loss of order in the Balinese world.

The three decades to 1970 were troubled times in Bali. While there had long been political intrigue and wars among the various kingdoms, such battles were often fought according to certain 'rules of mutual avoidance' where opposing armies would confront each other but the outcome would be decided according to which army had the greater magical power, usually possessed by the weapons carried. Of course there was blood spilt, but the coming of Westerners in large numbers changed the scale of such events. The time before their arrival is described by the Balinese as the 'time when the world was steady' (Bateson, 1978:93). The change was dramatically marked by the extraordinary puputans, in the capital, Denpasar, in 1906, then in Klungkung in 1908, when hundreds of Balinese - princes, priests,

warriors, women and children suicided in spectacular rituals of destruction, or died at the hands of the advancing Dutch soldiers (described in Covarrubias, 1937:33). While these events could have resulted in a complete transfer of power from the Balinese to the Dutch, in fact, the Dutch administration was relatively light-handed, partly in an attempt to preserve the indigenous culture which they found fascinating, and partly out of respect for the courageous nature of the resistance to their invasion.

The year 1942 saw the arrival of the Japanese occupation forces who, at first, were seen as liberators from the Dutch rule. However, this three year period of occupation brought considerable hardship to Bali, largely because of Japanese confiscation of food. The postwar revolution which left Sukarno in power promised an improvement in circumstances of the newly independent nation. Indeed there were changes for the better under his leadership, but many of his personal actions in Bali caused considerable concern. Although his mother was Balinese, Sukarno ignored local prohibitions by building a large palace in Tampaksiring on a hill overlooking Tirta Empul, one of the oldest and most sacred temples in all Bali. To choose a location higher than the temple was considered sacrilegious and spiritually dangerous. Subsequent events, such as the commandeering of young Balinese girls for debauched parties with visiting government ministers and generals, and the shooting of dogs (wherein dwell evil spirits) in the area when strict Moslem visitors were expected, were not conducive to good relations between the local people and the President. More important were the attempts by Sukarno to change age old customs concerning spiritual matters. An example is the banning of the traditional response to the birth of boy-girl twins to a

commoner couple. The response was that such twins had an incestuous relationship, acceptable only for the gods, thus such an event amongst commoners was simulating the behaviour of the gods, a very dangerous and polluting thing to do. For this the couple and their babies were banished to the southern, unclean end of the village for 42 days while the village was purified. During this period they were not permitted to cook, thus there was some danger for the babies. Concern for the health of the babies apparently motivated government interference, but still this was considered provocative and dangerous by many Balinese.

By the early 1960s there were definite signs indicating that all was not well. In 1962 much of the rice crop was consumed by a plague of rats larger and more numerous than had been seen before. And in 1963, an omen of the greatest significance took place. Traditionally, a large scale ceremony (Eka Dasa Rudra) was performed to cleanse the entire island at the end of each one hundred years on the Saka calendar. It was decided that such a ritual should be celebrated at the end of the Saka year 1884 (or March 1963), firstly because it had not been held for much more than one hundred years, and secondly, 'that it was advisable to hold an Eka Dasa Rudra if circumstances were or had been very bad at any time; the ritual would stabilize the situation and allow order, inherently good, to take over again' (Forge, 1979:12). The climax of the ceremony was the cleansing, on March 8, 1963, of the mother temple, Besakih which sits on the side of the mountain Gunung Agung, the home of the gods. In mid February, Gunung Agung, previously believed to be a dead volcano, began to erupt. By the last day of the ceremony the clouds of smoke and hot ash and earth tremors had increased to culminate in an eruption of lava which killed many and destroyed large areas of agricultural land

in the eastern end of the island.

That such an unprecedented eruption of the holiest mountain should take place actually during the ceremony to appease the unhappy gods was not taken as coincidence by many. While one interpretation was that the ceremony had not been conducted totally in the prescribed manner, and indeed some shortcuts were taken, there remained the belief that the world was still not stable, that things were not as they should be.

To return to the political sphere, in 1960 Sukarno's government introduced a Land Reform Act in an attempt to bring about a more equitable distribution of land. As discussed in chapter 2, and as might be expected, not all the peasants were satisfied. It was to this group that the Communists appealed with the promise of genuine land reform. The party built up quite a substantial following, although many apparently were unaware of the broader principles of Communist ideology (Hughes,1968:177).

There are reports that, while promising improved conditions for the peasants, the Communists had wider aims which resulted in their downfall:

They mocked religious observances and festivals. They obstructed the repair and building of shrines and temples. They ridiculed traditional Balinese dance and costume. They tried to smash the tight-knit banjar system,...(ibid.)

In these activities, the Communists were protected by the island's openly pro-Communist Governor, Sutedja. This protection delayed until December 1965 the violent backlash which commenced in Java a couple of months earlier. By this time Sukarno's government had become so



ineffective that in Bali the schools were closed because teachers had not been paid and there were no books. The health clinics were out of medicines, and the few factories were either closed or barely functioning for want of raw materials and spare parts.

The ferocious violence which erupted in late 1965 and continued into early 1966, resulted in the deaths of many thousands (estimates of 40,000-80,000) of confirmed and suspected Communists, as well as many others who died in the settlement of old feuds, and also apparently because of frustrations stemming from the promises of the Land Reform Act of 1960. Hughes quotes a Balinese informant:

In many people's minds, all these troubles (i.e., previous 6 decades) blurred into one sense of discordancy. And by ridding the island of Communists, they believed that all the other problems would somehow be removed, too. It was a kind of purging of the land from evil. (1968:176)

It is significant that many of the corpses resulting from this event were dumped into mass graves and never cremated - a spiritually unclean and dangerous situation for the whole island.

Thus the situation in the late 1960s was of half a century of upheavals of various kinds including numerous omens of spiritual discontent and cosmic instability. In addition, the hopes of the peasants that the 1960 Land Reform Act would bring about a more equitable distribution of available land remained unfulfilled, as did the promises of the Communists, and it seems probable that little faith remained that the land situation would be improved through political action, even if there was optimism for the New Order government of General Suharto.

Clifford Geertz states in the Foreword to Agricultural Involution, that:

There seems to be in the history of each country an 'optimal moment' for launching development, a short period of time when sociological, political, and economic factors coalesce to provide a climate unusually favorable for a take-off into economic growth (1963:ix).

The success of the family planning program in Bali is very much a result of its being introduced at just such an 'optimal moment' in Balinese history. As described above, by the late 1960s, economic, political, spiritual and social factors were such that the climate was 'unusually favorable' for ready acceptance of the concept of fertility limitation as an approach to solving some of the problems besetting the island at that time.

The economic factors were the population pressure on limited resources, particularly land, and few opportunities for alternative employment. The political process had been shown to be unable to satisfactorily solve the problem of land scarcity through legislation of redistribution laws. That the spiritual world at the time was disordered was clear from the numerous recent omens and the sequence of upheavals which had occurred since the beginning of the century. It has been argued above that the violence of the anti-Communist uprising of 1965-66 was a reflection of the feeling that drastic change was necessary to restore and maintain order.

The Balinese social structure was, and is, such that programs of change can be widely implemented in a remarkably short time. This pattern has been seen not only with the family planning program but with the conversion from traditional to high yielding rice varieties

(see chapter 2), with the introduction of health clinics, and with the expansion of educational facilities (2). Inherent in the well developed local level infrastructure is a variability in the commitment, enthusiasm, and goals of key people such as village and banjar headmen. This is reflected in the striking variation sometimes seen among banjars of the same village, not only in levels of family planning use, as seen in this study, but in more visible features such as the condition of roads, footpaths, rainwater ditches, even schools and clinics. There is usually much less variation within parts of the same banjar.

A related aspect of the family planning program that should not be underestimated is the clear commitment to the program made right from the beginning by the New Order government, and the level of social control exercised by the government (3). From the President down, visible government figures repeatedly exhorted the population to participate in the program for the good of the nation. Part of the variability in commitment of community leaders may be explained by differing responses to such government instruction and pressure. A leaders response may well be influenced by his aspirations for a more permanent career in the civil service, or by his attachment to the government. The fact that the village headmen (Perbekels) of Banjarangkan and Tusan were formerly army and police officers respectively, whereas the Perbekel of Bakas, with its low family

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(2) Of the 26 Indonesian provinces in 1971, Bali was ranked 20th in regard to proportions of primary school age children in school. By 1980 Bali had moved up the ranking to equal 7th place, (McDonald, P.F., 1982:15).

(3) The growing influence of 'Dinasization' (bureaucratization) in Bali is discussed in Chapter 2.

planning use rate relative to the other two villages, had never held such a government position, may support this suggestion.

The final piece in the puzzle is, of course, the family planning program itself. While it has been argued that the situation was 'ripe' for a change in fertility behaviour, there is no indication that fertility would have declined to anything like the same extent without access to modern, program contraception. Before 1970, the Balinese had apparently made little or no attempt to modify their fertility through social changes such as substantial delay in age at marriage; changing land inheritance patterns so that not all sons could afford to marry; or practising post-partum abstinence for substantial periods as do their Javanese neighbours. Thus an efficient and sensitive family planning program was superimposed onto a receptive setting. In Bali the program maximized its chances of succeeding in a number of ways: by heavily promoting the IUD with its high continuation rate; by complementing the existing wide clinic coverage with a system of fieldworkers; by involving the local community (banjar) leaders in the motivation and implementation of the program; and by anticipating and forestalling possible religious objections.

While it has been argued that at the time the family planning program was introduced to Bali, the society was still traditional in terms of social arrangements for living, for family relationships, for work and for social control, there is no doubt that changes are taking place. Nowhere is such widespread change more apparent than in education, which not only alters ways of thinking but can also carry a political message, providing an alternative, and possibly more

powerful, medium than the multilayered administrative structure used in the past. The following passage from a Jakarta-issued 4th class school lesson (11 year-olds) on the 'Rights and Responsibilities of Pupils' illustrates the broadening of the ways in which citizens can be influenced to modify their traditional patterns of behaviour:

We live in a family. A family usually consists of father, mother, and children. A good family consists of father, mother and three children. A family like that is called a happy family. As the size of a family increases, the costs of daily living increase.

Whether Balinese society will be drastically altered, and its fascinating culture lost as a consequence of these modernizing influences, is by no means certain. The society has shown in the past that it is flexible and receptive to what it sees as beneficial change; hopefully it can respond adequately to the difficult, and continuing, problem of rapid population growth.

To place the lesson of the family planning program in Bali in a broader context, there are a number of aspects of this case which are sufficiently specific to Bali to mean that it cannot be assumed that any poor rural society would respond equally rapidly to the introduction of a similarly well organized family planning program. On the other hand, there is no doubt that the case of Bali provides an important exception to the demographic transition theories which place great emphasis on the attainment of a 'threshold' of economic development before a major fertility decline can occur.

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## REFERENCES

- Abramson, F.D.  
 1973 'High Foetal Mortality and Birth Intervals,' POPULATION STUDIES, 27(2), pp. 235-242.
- Adelman, I. and C.T. Morris  
 1966 'A quantitative study of social and political determinants of fertility,' ECONOMIC DEVELOPMENT AND CULTURAL CHANGE, 14(2), pp. 129-157.
- Arnold, F., R.A. Bulatao, C. Buripakdi, B.J. Chung, J.T. Fawcett, T. Iritani, S.J. Lee, T-S Wu  
 1975 THE VALUE OF CHILDREN - A CROSS NATIONAL STUDY: VOL. 1 - INTRODUCTION AND COMPARATIVE ANALYSIS, East-West Population Institute, East-West Center, Honolulu.
- Astawa, I.B.  
 1977 Interview in ASIAN POPULATION PROGRAMME NEWS, 6(3), p. 28.
- Astawa, I.B.  
 1979 'Using the local community - Bali, Indonesia', In Potts, M. and p.Bhiwandiwala (Eds.), BIRTH CONTROL - AN INTERNATIONAL ASSESSMENT, MTP Press, pp. 55-70.
- Astawa, I.B., Soegang Waloeyo and J.E. Laing  
 1975 'Family Planning in Bali', STUDIES IN FAMILY PLANNING, 6(4), pp. 86-101.
- Astika, K.S.  
 1978 'Social and Economic Effects of the New Rice Technology: The Case of Abiansemal, Bali,' PRISMA (English Edn.) 10(1), pp. 47-56.
- Bali  
 1978 BALI DALAM ANGKA - 1976 (Bali in Figures), Statistik Tahunan - 4/75, Kantor Sensus dan Statistik, Bali.
- Bateson, G.  
 1978 STEPS TO AN ECOLOGY OF MIND, Paladin/Granada, 2nd Edn.
- Bateson, G. and M. Mead  
 1942 BALINESE CHARACTER: A PHOTOGRAPHIC ANALYSIS, N.Y. Academy of Sciences.
- BKKBN (Badan Koordinasi Keluarga Berencana Nasional), Bali. 'Laporan Triwulan, Sistem Banjar' (Quarterly Reports of the Sistem Banjar Family Planning Program).
- BKKBN (Badan Koordinasi Keluarga Berencana Nasional), Jakarta. Monthly Statistics, Bureau of Reporting and Documentation.
- BKKBN (Badan Koordinasi Keluarga Berencana Nasional), Jakarta. Ulusan Singkat Ciri-Ciri Akseptor.

- BKKBN (Badan Koordinasi Keluarga Berencana Nasional), Jakarta.  
 'Contraceptive use effectiveness in Mojokerto Regency, East Java', Technical Report Series, Monograph No.9, Bureau of Reporting and Documentation.
- Becker, G.  
 1960 'An Economic Analysis of Fertility,' In DEMOGRAPHIC AND ECONOMIC CHANGE IN DEVELOPED COUNTRIES, Universities-National Bureau Conference Series 11, Princeton, N.J., pp. 209-231.
- Becker, G.  
 1965 'A theory of the allocation of time', ECONOMIC JOURNAL, 75(299), PP. 493-517.
- Belo, Jane  
 1970 'A Study of the Customs Pertaining to Twins in Bali' In J.Belo (Ed.) TRADITIONAL BALINESE CULTURE, Columbia University Press, New York, pp. 3-56.
- Belo, Jane  
 1970 'The Balinese Temper' In J.Belo (Ed.) TRADITIONAL BALINESE CULTURE, Columbia University Press, New York, pp. 85-110.
- Bendesa, I.K.G. and I.M. Sukarsa  
 1980 'An Economic Survey of Bali', BULLETIN OF INDONESIAN ECONOMIC STUDIES, 16(2), pp. 31-53.
- Berelson, B.  
 1974 'World Population: Status Report 1974' REPORTS ON POPULATION AND FAMILY PLANNING, Population Council, New York, Number 15.
- Bernet Kempers, A.J.  
 1978 MONUMENTAL BALI: Introduction to Balinese Archeology, Guide to the Monuments, Van Goor Zonen Den Haag.
- Biro Pusat Statistik, Jakarta, Indonesia  
 1971 NATIONAL CENSUS REPORT, BALI, Series E, No.14.
- Biro Pusat Statistik, Jakarta, Indonesia  
 1976 'Perkiraan Angka Kelahiran dan Kematian Di Indonesia Berdasarkan Sensus Penduduk 1971, SP 76-L02.
- Blacker, C.P.  
 1947 'Stages in population growth', EUGENICS REVIEW, 39, pp. 81-101.
- Blake, J.  
 1967 'Income and reproductive motivation', POPULATION STUDIES, 21(3), pp. 185-206.
- Blake, J.  
 1968 'Are babies consumer durables? A critique of the economic theory of reproductive motivation', POPULATION STUDIES, 22(1), pp.5-25.

- Blake, J.  
1974 'Can we believe recent data on birth expectations in the United States', DEMOGRAPHY, 11 (1), pp. 25-44.
- Boon, J.  
1977 THE ANTHROPOLOGICAL ROMANCE OF BALI, 1597-1972, Cambridge University Press, Cambridge.
- Bourgeois-Pichat, J.  
1967 'Social and biological determinants of human fertility in non-industrial societies', PROCEEDINGS OF THE AMERICAN PHILOSOPHICAL SOCIETY, 3(3), pp.160-163.
- Brass, W.  
1975 METHODS FOR ESTIMATING FERTILITY AND MORTALITY FROM LIMITED AND DEFECTIVE DATA, An Occasional Publication of the Laboratories for Population Statistics, University of North Carolina, Chapel Hill, N.C.
- Brass, W.  
1978 'Comments on comparison strategies for the evaluation of family planning impact', In METHODS OF MEASURING THE IMPACT OF FAMILY PLANNING PROGRAMMES ON FERTILITY: PROBLEMS AND ISSUES, United Nations, Department of Economic and Social Affairs, ST/ESA/Ser.A/61.
- Brass, W.  
1979 'A procedure for comparing mortality measures calculated from intercensal survival with the corresponding estimates from registered deaths.' ASIAN AND PACIFIC CENSUS FORUM, 6(2), pp. 5-7.
- Cain, Mead  
1977 'The economic activities of children in a village in Bangladesh', POPULATION AND DEVELOPMENT REVIEW, 3(3), pp.201-277.
- Cain, Melinda L.  
1981 'Java, Indonesia: The introduction of rice processing technology', in R.Dauber and M.L. Cain (Eds.), WOMEN AND TECHNICAL CHANGE IN DEVELOPING COUNTRIES, West View Press, Boulder, pp. 127-138.
- Caldwell, J.C.  
1976 'Toward a restatement of demographic transition theory', POPULATION AND DEVELOPMENT REVIEW, 2(3-4), pp. 321-366.
- Caldwell, J.C.  
1980 'Mass education as a determinant of the timing of fertility decline', POPULATION AND DEVELOPMENT REVIEW, 6(2), pp.225-256.
- Caldwell, J.C.  
1982 THEORY OF FERTILITY DECLINE, Academic Press, London.



- Central Bureau of Statistics and World Fertility Survey  
1978 INDONESIA FERTILITY SURVEY: PRINCIPAL REPORT, 2 Vols., Central Bureau of Statistics, Jakarta.
- Chang, Ming-Cheng, Freedman, R. and Te-Hsiung Sun  
1981 'Trends in fertility, family size preferences, and family planning practice: Taiwan, 1961-80', STUDIES IN FAMILY PLANNING, 12(5), pp.211-228.
- Cho, L.J. et al.  
1979 'Fertility section of the Indonesia Panel Report', Committee on Population and Development, National Academy Press, Washington D.C., forthcoming.
- Cho, L.J., Suharto, S., McNicoll, G. and S.G.Mde Mamas  
1980 POPULATION GROWTH OF INDONESIA: AN ANALYSIS OF FERTILITY AND MORTALITY BASED ON THE 1971 POPULATION CENSUS, Monographs of the Center for Southeast Asian Studies, Kyoto University, English-language Series, Number 15, University of Hawaii Press.
- Cleland, J.G. and S. Singh  
1980 'Islands and the demographic transition', WORLD DEVELOPMENT, 8, pp. 969.
- Coale, A.J.  
1965 'Factors associated with the development of low fertility: an historical summary', United Nations World Population Conference, Vol.2, pp.205-209.
- Coale, A.J.  
1969 'The decline of fertility in Europe from the French Revolution to World War II', in S.J. Behrman et al., (Eds.), FERTILITY AND FAMILY PLANNING: A WORLD VIEW, University of Michigan Press, Ann Arbor.
- Coale, A.J.  
1973 'The demographic transition reconsidered', INTERNATIONAL POPULATION CONFERENCE, LIEGE, 1973, International Union for the Scientific Study of Population, Liege, Vol. 1, pp. 53-71.
- Coale, A.J. and J.Trussell  
1966 REGIONAL MODEL LIFE TABLES AND STABLE POPULATIONS, Princeton University Press, Princeton, N.J.
- Coale A.J. and J.Trussell  
1974 'Model Fertility Schedules: Variations in the Age Structure of Childbearing in Human Populations', POPULATION INDEX, 40, pp.185-201.
- Coombs, L., Freedman, R. and D. Narayanan Namboothiri  
1969 'Inference about abortion from foetal mortality data', POPULATION STUDIES, 23(2), pp. 247.
- Covarrubias, M.  
1974 THE ISLAND OF BALI, Oxford University Press/Indira, Kuala Lumpur, first published by Alfred A.Knopf 1937.

- Crawford, J.  
1856 A DESCRIPTIVE DICTIONARY OF THE INDIAN ISLANDS AND ADJACENT COUNTRIES, Bradbury and Evans, London, p. 197.
- Daroesman, R.  
1973 'An economic survey of Bali', BULLETIN OF INDONESIAN ECONOMIC STUDIES, 9(3), pp.28-61.
- Davis, G.J.  
1974 'Varieties in Adaptation: Balinese Migrants in Central Sulawesi', Unpublished paper presented to the American Anthropological Meeting, November 1974.
- Davis, G.J.  
1976 'Parigi: A social history of the Balinese movement to Central Sulawesi, 1907-1974, unpublished Ph.D. thesis, Stanford University.
- Davis, K.  
1955 'Institutional patterns favouring high fertility in underdeveloped areas', EUGENICS QUARTERLY, 2(1), pp. 33-39.
- Davis, K. and J.Blake  
1956 'Social structure and fertility: an analytical framework', ECONOMIC DEVELOPMENT AND SOCIAL CHANGE, 4(3), pp. 211-235.
- Demeny, P.  
1968 'Early fertility decline in Austria-Hungary: A lesson in demographic transition', DAEDELUS, 97, pp. 502-522.
- Duesenberry, J.S.  
1960 'Comment' in Universities-National Bureau Committee for Economic Research, in Demographic and Economic Change in Developed Countries, Princeton: Princeton University Press, pp. 231-234.
- Easterlin, R.A.  
1969 'Towards a socioeconomic theory of fertility: Survey of recent research on economic factors in American fertility', in FERTILITY AND FAMILY PLANNING: A WORLD VIEW, University of Michigan Press, Ann Arbor, pp. 127-156.
- Easterlin, R.A.  
1975 'An economic framework for fertility analysis', STUDIES IN FAMILY PLANNING, 6(3), pp. 54-63.
- Easterlin, R.A.  
1976 'The conflict between aspirations and resources', POPULATION AND DEVELOPMENT REVIEW, 2(3-4), pp. 417-426.
- Eck, R. van  
1880 'Een en ander over Bali', DE INDISCHE GIDS, II, pp. 544-562.
- Edmondson, J.  
N.D. 'Population adaptation and family planning in a Balinese village', mimeo, pp. 18.

- Eijsinga, van  
N.D. Cited by Hanna, 1971.
- Ekanem, I.I.  
1972 'A further note on the relation between economic development and fertility', DEMOGRAPHY, 9(3), pp. 383-398.
- Emmerson, D.K.  
1976 INDONESIA'S ELITE: POLITICAL CULTURE AND CULTURAL POLITICS, Cornell University Press, Ithaca.
- Fawcett, J.T.  
1977 'The Value and Cost of Children: Converging Theory and Research' in THE ECONOMIC AND SOCIAL SUPPORTS FOR HIGH FERTILITY, edited by Lado T. Ruzicka. Canberra: Australian National University: 91-114.
- Fawcett, J.T. et al.  
1974 'THE VALUE OF CHILDREN IN ASIA AND THE UNITED STATES: COMPARATIVE PERSPECTIVES. Papers of the East-West Population Institute, No. 32.
- Feeney, G.  
1976 'Estimating infant mortality rates from child survivorship data by age of mother', ASIAN AND PACIFIC CENSUS NEWSLETTER, 3(2), pp. 12-16.
- Fertility-Mortality Survey Preliminary Report, Bali  
1974 INDONESIAN FERTILITY-MORTALITY SURVEY, University of Indonesia, Institute of Demography, Economics Faculty, Jakarta.
- Forge, A.  
1979 'Balinese Religion and Indonesian Identity', presented at 'The Indonesia Connection' seminar series, Nov.1979, R.S.S.S., Australian National University, pp. 23.
- Freedman, D.  
1963 'The relation of economic status of fertility', AMERICAN ECONOMIC REVIEW, 53, pp. 414-427.
- Freedman, R.  
1961-62 'The sociology of human fertility: A trend report and bibliography', CURRENT SOCIOLOGY, 10/11 (3).
- Freedman, R.  
1963 'Norms for family size in underdeveloped areas', PROCEEDINGS OF THE ROYAL SOCIETY, B 159, Part 974, pp. 229-245.
- Freedman, R.  
1975 THE SOCIOLOGY OF HUMAN FERTILITY: AN ANNOTATED BIBLIOGRAPHY, Irvington Publishers, New York.
- Freedman, R.  
1979 'Theories of fertility decline: A reappraisal', SOCIAL FORCES, 58(1), p. 1-17.

- Freedman, R. and B. Berelson.  
1976 'The record of family planning programs', STUDIES IN FAMILY PLANNING, 7(1), pp. 1-40.
- Freedman, R., Siew-Ean Khoo and Bondan Supraptilah  
1981 'Use of modern contraceptives in Indonesia: A challenge to the conventional wisdom', INTERNATIONAL FAMILY PLANNING PERSPECTIVES, 7(1), pp. 3-15.
- Gardiner, P.  
1979 'Mortality in Indonesia', Unpublished seminar paper presented to the Indonesia Study Group, Australian National University, June 1979.
- Gardiner, P.  
1981 Vital Registration in Indonesia: A study of the completeness and behavioural determinants of reporting of births and deaths', Unpublished Ph.D. thesis, Demography Department, Australian National University.
- Geertz, C.  
1963 AGRICULTURAL INVOLUTION, The Process of Ecological Change in Indonesia, University of California Press, (2nd. Edn.,1974).
- Geertz, C.  
1966 'Person, Time and Conduct in Bali: An essay in cultural analysis', Southeast Asia Studies, Yale University, New Haven, Connecticut.
- Geertz, C.  
1967 'Tihingan: A Balinese village', IN Koentjaraningrat (Ed.), VILLAGES IN INDONESIA, Cornell University Press, Ithaca, New York, p. 210.
- Geertz, C.  
1968 PEDDLERS AND PRINCES: CHANGE AND ECONOMIC MODERNIZATION IN TWO INDONESIAN TOWNS, University of Chicago Press, 2nd Edition.
- Geertz, C.  
1980 NEGARA: THE THEATRE STATE IN NINETEENTH-CENTURY BALI, Princeton University Press, Princeton.
- Geertz, H.  
1959 'The Balinese Village', In G.W. Skinner (Ed.), LOCAL, NATIONAL AND REGIONAL LOYALTIES IN INDONESIA, New Haven, Connecticut, pp. 24-33.
- Geertz, Hildred and Clifford  
1964 'Teknonomy in Bali: Parenthood, age grading and genealogical amnesia', JOURNAL OF THE ROYAL ANTHROPOLOGICAL INSTITUTE, 94, pp. 94-108.
- Geertz, Hildred and Clifford  
1975 KINSHIP IN BALI, University of Chicago Press, Chicago and London.

- Goldman, N. and C. Westoff  
1980 'Can fertility be estimated from current pregnancy data?', *POPULATION STUDIES*, 34(3), 535-550.
- Goris, R.  
1960 'The religious character of the village community', In J.L. Swellengrebel (Ed.), *BALI: STUDIES IN LIFE, THOUGHT AND RITUAL*, van Hoeve, The Hague and Bandung, pp. 77-100.
- Hamid, M.D.  
1980 'An evaluation of hand-tractor leasing project in Indonesia: a case study in kabupaten Badung, Gianyar, and Tabanan, the province of Bali. Unpublished Master of Agricultural Development Economics, Development Studies Centre, Australian National University.
- Hanna, W.  
1971 'Too many Balinese', *AMERICAN UNIVERSITIES FIELDSTAFF REPORTS, Southeast Asia Series, Indonesia*, 20(1).
- Hanna, W.  
1972 'Population and Rice', *AMERICAN UNIVERSITIES FIELDSTAFF REPORTS, Southeast Asia Series, Indonesia*, 20(4).
- Hanna, W.  
1976 *BALI PROFILE, AMERICAN UNIVERSITIES FIELDSTAFF REPORTS* New York.
- Harrison, P.  
1978 'And in Bali...Banjars show the way', *PEOPLE*, 5(1), pp. 14-17.
- Hawthorn, G.  
1970 *THE SOCIOLOGY OF FERTILITY*, Collier-MacMillan, London.
- Helms, L.V.  
1982 *PIONEERING IN THE FAR EAST*, London, cited by Hanna, 1971.
- Henry, L.  
1961 'Some data on natural fertility', *EUGENICS QUARTERLY*, 8(2), pp. 81-91.
- Hobart, M.  
1975 'Orators and patrons: Two types of political leader in Balinese village society', In M. Bloch (Ed.), *POLITICAL LANGUAGE AND ORATORY IN TRADITIONAL SOCIETY*, Academic Press, London, pp. 65-92.
- Hobart, M.  
1979 'A Balinese Village and its Field of Social Relations', unpublished Ph.D. thesis, S.O.A.S., London University.
- Hoffman, L.W.  
1972 'A Psychological Perspective on the Value of Children to Parents: Concepts and Measures' in *THE SATISFACTIONS AND COSTS OF CHILDREN: THEORIES, CONCEPTS, METHODS*, edited by James T. Fawcett: pp. 27-56.

- Hoffman, L.W. and M.L.Hoffman  
 1973 'The Value of Children to Parents' in PSYCHOLOGICAL PERSPECTIVES ON POPULATION, edited by James T.Fawcett. Basic Books, New York, pp. 19-76.
- Hughes, J.  
 1968 THE END OF SUKARNO, Angus and Robertson, Sydney.
- Hull, T.H.  
 1975 'Each child brings its own fortune: an inquiry into the value of children in a Javanese village. Unpublished Ph.D. thesis, Research School of Social Sciences, Australian National University.
- Hull, T.H.  
 1978 'Where credit is due', Unpublished paper presented at the Population Association of America Meeting, April 1978.
- Hull, T.H. and V.J. Hull  
 1976 'The Relation of Economic Class and Fertility', Report Series No.6, Population Institute, Gadjah Mada University, Yogyakarta, Indonesia.
- Hull, T.H. and V.J. Hull  
 1977 'Indonesia', in THE PERSISTENCE OF HIGH FERTILITY, edited by J.C. Caldwell, Demography Dept., Australian National University, Canberra, pp.827-96.
- Hull, T.H., Hull, V.J. and Masri Singarimbun  
 1977 'Indonesia's family planning story: Success and challenge', POPULATION BULLETIN, 32(6), pp. 1-52.
- Hull, T.H. and M. Singarimbun  
 1982 'The Sociological Determinants of Fertility Decline in Indonesia: 1965-76. (in press).
- Hull, V.J.  
 1975 'Fertility, socio-economic status, and the position of women in a Javanese village', unpublished Ph.D. thesis, Demography Department, Australian National University.
- Hull, V.J.  
 1976 'The positive relation between economic class and family size in Java', Working Paper, Population Institute, Gadjah Mada University, Yogyakarta, Indonesia.
- Indonesia, Biro Pusat Statistik  
 1976 ANALYSIS AND EVALUATION OF THE FIRST YEAR RESULTS OF THE SAMPLE VITAL REGISTRATION PROJECT, Technical Report Series, Monograph No. 2, Jakarta.
- 1979 ANALYSIS AND EVALUATION OF THE THIRD YEAR RESULTS OF THE SAMPLE VITAL REGISTRATION PROJECT, Technical Report Series, Monograph No. 4, Jakarta.
- Jacobs, J.  
 1883 Cited in Ploss et al., 1935:498

- Jones, G.  
1976 'Conceptual Framework.' Proceedings of the Conference on Economic and Social Supports for High Fertility, Canberra 16-18 Nov.1976. pp.3-47.
- Jones, G.  
1977 'Fertility Levels and Trends in Indonesia', POPULATION STUDIES, 31(1), pp. 29-42.
- Kasarda, J.D.  
1971 'Economic structure and fertility: A comparative analysis', DEMOGRAPHY, 8(7), pp. 307-317.
- Katz, June S. and Ronald S. Katz  
1978 'Legislating Social Change in a Developing Country: The New Indonesian Marriage Law Revisited', AMERICAN JOURNAL OF COMPARATIVE LAW, 26(2), pp. 309-320.
- Khoo, Siew-Ean  
1981 'The determinants of modern contraceptive use in Indonesia: Further analyses of individual and aggregate level data', Unpublished paper, East-West Population Institute, Honolulu, Hawaii.
- Kirk, D.  
1971 'A new demographic transition?', In RAPID POPULATION GROWTH: CONSEQUENCES AND POLICY IMPLICATIONS, National Academy of Sciences, Johns Hopkins Press, Baltimore, pp. 123-147.
- Knodel, J.  
1977 'Family limitation and the fertility transition: Evidence from the age patterns of fertility in Europe and Asia', POPULATION STUDIES, 31(2), pp. 219-249.
- Kusuma  
1976 'Berbagai aspek perbedaan pola perkawinan di Indonesia dewasa ini' (Several aspects of differences in marriage patterns in Indonesia today), Published by the Demographic Institute, Economics Faculty, University of Indonesia, Jakarta.
- Landry, A.  
1945 TRAITE DE DEMOGRAPHIE, Payot, Paris, pp. 651.
- Lange  
1974 HANDBOOK OF OBSTETRICS AND GYNECOLOGY, Maruzen Asian Edition, (Benson, R.,Ed.).
- Lansing, J.S.  
1974 'Evil in the morning of the world: Phenomenological approaches to a Balinese community', Ann Arbor Center for Southeast Asian Studies, University of Michigan.
- Lauro, D.  
1979 'Life history matrix analysis: a progress report', In R.J.Pryor (Ed.) RESIDENCE HISTORY ANALYSIS, Studies in Migration and Urbanization No.3, Dept. of Demography, Australian National University, pp. 134-154.

- Leasure, J.W.  
1963 'Factors involved in the decline of fertility in Spain, 1900-1950', POPULATION STUDIES, 16(3), pp. 271-284.
- Lee, B.M. and J. Isbister  
1966 'The impact of birth control programs on fertility', In B. Berelson and others (Eds.), FAMILY PLANNING AND POPULATION PROGRAMS: A REVIEW OF WORLD DEVELOPMENT, University of Chicago Press, Chicago, pp. 737-758.
- Leibenstein, H.  
1974 'An interpretation of the economic theory of fertility: Promising path or blind alley?', JOURNAL OF ECONOMIC LITERATURE, 12(2), pp. 457-479.
- Leibenstein, H.  
1975 'The economic theory of fertility decline', QUARTERLY JOURNAL OF ECONOMICS, 89(1), pp. 1-31.
- Lekkerkerker, C.  
1919 'De geschiedenis der Christelijke zending onder de Baliërs' (The history of Protestant missions among the Balinese), DE INDISCHE GIDS, XLI, pp.835-852.
- Lesthaeghe, R. and E. van de Walle  
1976 'Economic factors and fertility decline in France and Belgium', In A.J.Coale (Ed.), ECONOMIC FACTORS IN POPULATION GROWTH, MacMillan, London.
- Lorimer, F. et al.  
1954 CULTURE AND HUMAN FERTILITY, UNESCO, Paris.
- Mandelbaum, D.G.  
1974 HUMAN FERTILITY IN INDIA: SOCIAL COMPONENTS AND POLICY PERSPECTIVES, University of California Press.
- Mauldin, Parker W. and B. Berelson  
1978 'Conditions of fertility decline in developing countries, 1965-75', STUDIES IN FAMILY PLANNING, 9(5), pp. 89-147.
- McDonald, P.F.  
1979 Mortality section of the Indonesia Panel Report, Forthcoming from Committee on Population and Development, National Academy Press, Washington,D.C.
- McDonald, P.F.  
1982 'Approaches to massive population growth: The case of Indonesia', unpublished paper presented to the Asian Studies Association of Australia, Fourth National Conference, Monash University, May 1982.
- McDonald, P.F. and A. Sontosudarmo  
1976 RESPONSE TO POPULATION PRESSURE: THE CASE OF THE SPECIAL REGION OF YOGYAKARTA, Gadjah Mada University Press, Yogyakarta.



- McDonald, P.F., Yasin, M. and G.W. Jones  
1976 LEVELS AND TRENDS IN FERTILITY AND CHILDHOOD MORTALITY IN INDONESIA, (Indonesia Fertility-Mortality Survey, 1973), Demographic Institute, Economics Faculty, University of Indonesia, Jakarta.
- McKean, P.F.  
1978 'Towards a theoretical analysis of tourism: Economic dualism and cultural involution in Bali', In V.L.Smith (Ed.), HOSTS AND GUESTS - THE ANTHROPOLOGY OF TOURISM, Blackwell, Oxford, pp. 93-107.
- McNicoll, G.  
1980 'Technology and the social regulation of fertility', Working Paper No.46, Center for Population Studies, Population Council.
- Mears, L.  
1981 THE NEW RICE ECONOMY OF INDONESIA, Gadjah Mada University Press, Yogyakarta.
- Meier, G.  
1979 'Family planning in the banjars of Bali', INTERNATIONAL FAMILY PLANNING PERSPECTIVES, 5(2), pp. 63-66.
- Mershon, K.E.  
1937 SEVEN PLUS SEVEN: MYSTERIOUS LIFE RITUALS IN BALI, Vantage Press, New York.
- Meyer, P.  
1981 THE VALUE OF CHILDREN IN THE CONTEXT OF THE FAMILY IN JAVA. Unpublished Ph.D. dissertation, Department of Demography, Australian National University.
- Miller, B.D.  
1981 THE ENDANGERED SEX, Cornell University Press.
- Mincer, J.  
1963 'Labour force participation of married women', In H. Gregg Lewis (Ed.), Aspects of labour economics, Universities-National Bureau Conference series No.14, Princeton University Press, Princeton, N.J.
- Missen, G.  
1972 VIEWPOINTS OF INDONESIA: A GEOGRAPHICAL STUDY, Nelson, Melbourne.
- Moore, J.  
N.D. NOTICES OF THE INDIAN ARCHIPELAGO AND ADJACENT COUNTRIES, cited in Hanna, W., 1971.
- Mueller, E.  
1976 'The economic value of children in peasant agriculture', In R.G.Ridker (Ed.), POPULATION AND DEVELOPMENT, Johns Hopkins Press, Baltimore.

Mustoffa, S.

1981 'Indonesia plans 10 years ahead', POPULI, 8(1), pp. 14-17.

Nag, M.

1962 'Factors affecting human fertility in non-industrial societies: a cross-cultural study', Published by Department of Anthropology, Yale University, New Haven.

Nag, M., B. White and C. Peet

1978 'An anthropological approach to the economic value of children in Java and Nepal', CURRENT ANTHROPOLOGY, 19(2), pp.293-306.

Nitisastro Widjojo

1970 POPULATION TRENDS IN INDONESIA, Cornell University Press, Ithaca, New York.

Notestein, F.W.

1953 'Economic problems of population change', paper presented to the 8th International Conference of Agricultural Economists.

Oka, G.A.

1971 'Agama Hindu Tidak Melarang Keluarga Berencana' (The Hindu religion does not forbid family planning), published by Parisada Hindu Dharma, Bali.

Peet, Nancy and David Peet

1977 'Family Planning and the Banjars of Bali', CYCLE Communications, Ford Foundation.

Perlman, J.E.

1976 THE MYTH OF MARGINALITY, University of California Press, Los Angeles.

Ploss, H.H., Bartels, M. and P. Bartels

1935 WOMAN, William Heineman, London, Vol. II.

Poffenberger, M.

N.D. 'Fertility decline in Bali: Couple, community and religion', unpublished paper, pp. 64.

Poffenberger, M. and M. Zurbuchen

1980 'The economics of village Bali: Three perspectives', ECONOMIC DEVELOPMENT AND CULTURAL CHANGE, 29(1), pp. 91-133.

Population Council

1979 'Five Intrauterine Devices for Public Programs', booklet.

Potter, J.E.

1977 'Problems in using birth-history analysis to estimate trends in fertility', POPULATION STUDIES, 31(2), pp. 335.

Potts, M., Kessel, E. and P. Bhiwandiwala

1977 'Taking Family Planning to the World's Poor', International Fertility Research Program, North Carolina.

Potts, M. and P. Bhiwandiwala

1979 BIRTH CONTROL - AN INTERNATIONAL ASSESSMENT, MTP Press.

- Puffer, R.R. and C.V. Serrano  
1973 PATTERNS OF MORTALITY IN CHILDHOOD, Pan American Health Organization, W.H.O.
- Purbangkoro, M.  
1978 'The special drive in East Java: An evaluation of an Indonesian Family Planning program intensive campaign, mimeo from Jember University, Jember, cited by Freedman et al., 1981.
- Raffles, Sir T.S.  
1830 THE HISTORY OF JAVA, Oxford University Press, Kuala Lumpur, Second edition. First published 1817, London.
- Ravenholt, A.  
1973 'Man-land-productivity microdynamics', In POPULATION: PERSPECTIVE 1973, pp. 216-226. Freedman, Cooper and Co., San Francisco.
- Schultz, T.  
1976 'Determinants of fertility: a micro-economic model of choice', In A.J.Coale (Ed.), ECONOMIC FACTORS IN POPULATION GROWTH, Proceedings of a Conference held by the International Economic Association at Valescure, France. MacMillan Press, London.
- Sinaga, R.  
1978 'Note: Implications of agricultural mechanization for employment and income distribution: a case study from Indramayu, West Java', BULLETIN OF INDONESIAN ECONOMIC STUDIES, 14(2), pp. 102-111.
- Singarimbun, M. and C. Manning  
1974 'Fertility and family planning in Mojolama', Population Institute, Gadjah Mada University, Yogyakarta, Indonesia.
- Sinquefield, J.C.  
1978 'Estimating fertility from data on current pregnancy status of women', MAJALAH DEMOGRAFI INDONESIA, 10, pp. 25-39.
- Sinquefield, J.C. and B. Sungkono  
1979 'Fertility and family planning trends in Java and Bali', INTERNATIONAL FAMILY PLANNING PERSPECTIVES, 5(2), pp. 43-58.
- Soedarmadi and T.H. Reese  
1975 'The Indonesian national family planning program: A cost-effectiveness analysis 1971/72-73/74.', BKKBN Technical Report Series Monograph No.10, BKKBN, Jakarta.
- Soedjatmiko,  
1976 'Feasibility Study Pengembangan Traktor Pertanian di Kabupaten Badung, Gianyar dan Tabanan, Propinsi Bali'. Sub-Direktorat Mekanisasi Pertanian, Direktorat Bina Produksi Tanaman Pangan, Departemen Pertanian.

- Suyono, H., Pandi, S.H., Astawa, I.B., Moeljono and T.H. Reese  
 1976 'Village family planning - The Indonesian model', BKKBN  
 Technical Report Series Monograph No.13, BKKBN, Jakarta.
- Suyono, H.  
 1979 'An interview with Haryono Suyono', INTERNATIONAL FAMILY  
 PLANNING PERSPECTIVES, 5(2), pp. 59-62.
- Swellengrebel, J.  
 1960 'Introduction', BALI: STUDIES IN LIFE, THOUGHT AND RITUAL,  
 Selected Studies on Indonesia by Dutch scholars. Published  
 by W. van Hoeve Ltd., The Hague and Bandung.
- Swellengrebel, J.L.  
 1969 'Non-conformity in the Balinese family', In BALI: FURTHER  
 STUDIES IN LIFE, THOUGHT AND RITUAL, W, pp. 199-212. van  
 Hoeve, The Hague.
- Teachman, J., Bogue, D.J., Londono, J. and D. Hogan  
 1979 THE IMPACT OF FAMILY PLANNING PROGRAMS ON FERTILITY RATES: A  
 CASE STUDY OF FOUR NATIONS, Published by the Community and  
 Family Studies Center, pp. 155.
- Teachman, J.D., Suyono, H., Parsons, J.S. and Rohadi  
 1980 'Continuation of contraception on Java-Bali: Preliminary  
 results from the quarterly acceptor survey', STUDIES IN  
 FAMILY PLANNING, 11(4), pp. 134-144.
- Tjitarsa, I.B., Waloeyo S., Wirawan, D.N., Wiadnyana, G.P. and K.  
 Gunung  
 1975 'Penelitian Kelangsungan Pemakaian Alat-Alat Kontrasepsi  
 Akseptor Extra Drive di Bali' (An investigation of the use of  
 contraception by Extra Drive acceptors in Bali), mimeo,  
 Udayana University, Denpasar, Bali.
- United Nations, Department of Economic and Social Affairs  
 1967 MANUAL IV - METHODS OF ESTIMATING BASIC DEMOGRAPHIC MEASURES  
 FROM INCOMPLETE DATA, No.ST/SOA/Series A/42, New York.
- 1979 MANUAL IX - THE METHODOLOGY OF MEASURING THE IMPACT OF FAMILY  
 PLANNING PROGRAMMES ON FERTILITY, No. ST/ESA/Series A/66,  
 New York.
- USAID  
 1980 'Indonesia - Family Planning Program', U.S. Agency for  
 International Development Office of Population, Jakarta,  
 Indonesia.
- Ware, H.  
 1974 'Ideal Family Size', World Fertility Survey Occasional Paper,  
 No.13.
- White, B.  
 1976 'Production and Reproduction in a Javanese village',  
 unpublished Ph.D. dissertation, Columbia University.
- World Fertility Survey  
 1976 listed under Central Bureau of Statistics.

## GLOSSARY

The Indonesian words and terms frequently used in the text are presented below with their English translation. Most of these are also defined when they are used in the text.

ADAT	customary or traditional law
ANGGOTA	member (eg. of banjar)
AWIG-AWIG	written or oral set of regulations (eg. for subak)
BALE BANJAR	banjar meeting hall
BALIAN	traditional healer
BANJAR	hamlet community of households (see chapter 2.1.1)
BEMO	4-wheel taxi van
BERAS	husked rice, either traditional (Bali) or HYV (Baru)
BIMAS	Govt. program of 'mass guidance' (Bimbingan Masyarakat)
BRAHMANA	highest (princely) caste
BUPATI	administrative head of a kabupaten formerly rency or kingdom (8 in Bali)
CAMAT	administrative head of a kecamatan or subdistrict (51 in Bali)
DADIA	a type of kin group
DESA	village, either administrative (desa dinas) or traditional (desa adat)
GABAH	harvested rice still on stalk (i.e., before threshing)
GENDAK	trial marriage
GENTENG	baked clay roof tiles
IUD	Intrauterine device (also Lippes Loop; spiral)
LONTAR	traditional book with words or drawings scratched on palm-leaf pages
LUMBUNG	traditional household rice barn (less common now)
KAHYANGAN-TIGA	set of three major temples in a village (desa adat)
KELIAN	administrative head of a banjar (kelian dinas) or traditional head of a banjar (kelian banjar) or person responsible for temple care (kelian pura)

MANIK	'gem', or traditional concept of ovum
MAPADIK	arranged marriage, particularly amongst high castes
NGEROROD	marriage by mock capture or elopement
OTON	period of 210 days, equal to six 35 day Bali months or thirty 7 day weeks
PADI	growing rice (i.e., before harvesting)
PEDAGANG	travelling salesperson; hawker
PEDANDA	high priest, always from Brahmana caste
PEKARANGAN	houseyard, usually walled in Bali
PEMANGKU	village priest, may be from any caste
PERBEKEL	administrative head of a village
RAJA	traditional head of a kingdom, now replaced by Bupati as administrative head
Rp.	Rupiah 620 = US\$1
SANGKEP	meeting of banjar council, normally every 35 days
SATRIA	second (princely) caste, from which royal families come
SAWAH	irrigated rice fields
SEBEL	state of being polluted (eg., a person or place)
SEKA	voluntary organization or club
SENTANA	arrangement where son-in-law lives in household of wife's parents, when no natural son exists
SUBAK	irrigation society
SUDRA	term for casteless Balinese (some 90% of popn.)
TRIWANGSA	collective term for Brahmana, Satria and Wesia castes
WARIS	inheritance system
WARUNG	small street stall or shop
WERENG	leaf-hopper beetle, pest of rice crops
WESIA	third caste, formerly warrior and merchant caste
WESTERNIZATION	Broad cultural changes in values, ideas and life style - modernization in the nature of social relations, stratification, and basic economic structure.

APPENDIX I

INDONESIAN  
QUESTIONNAIRE

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 NOMOR ID. 5

1980 PENELITIAN PERILAKU & KEPERAWATAN BENCACAKAN, BANJARANGKAW.

## 1. PENGACAPAN

1. NAMA DESA
2. NAMA BANJIR
3. NOMOR RUMAH TANGGA
4. NAMA RESPONDEN
5. NAMA SUAMI RESPONDEN
6. NOMOR RESPONDEN

## 2. KETERANGAN PENGACAPAN

1. NAMA PENGACAP				
2. NOMOR URUT PENGACAP				
3. KUNJUNGAN	Ke 1	Ke 2	Ke 3	Ke 4
4. TANGGAL WAWANCARA				
5. HASIL KUNJUNGAN				

## Kode Hasil Kunjungan:

- |                            |                           |
|----------------------------|---------------------------|
| 1. Lengkap                 | 5. Ditanggukau            |
| 2. Bagian Lengkap          | 6. Tempat Tinggal Kosong  |
| 3. Responden Tidak Dirumah | 7. Alamat Tidak Ditemukan |
| 4. Responden Penolakan     | 8. Sebab lain.            |

6. NAMA PENYANAS
7. TANGGAL PEMERIKSAAN

	NAMA	TANDA TANGAN	TANGGAL
DIPERIKSA OLEH :			
MENYANDI OLEH :			



-2-

JAM DIMULAINYA: \_\_\_\_\_

SUAMI RESPONDEN HADIR?

YA 1 TIDAK 2 T.T. 9

PERKENALAN:

"Saya ingin mengetahui sesuatu mengenai orang-orang yang sedang mempergunakan Keluarga Berencana, dan juga orang-orang yang tidak mempergunakan K.B. Kami akan mengunjungi rumah dari tiap-tiap pasangan usia subur di desa Banjarangkan, Tusan dan Bakas.

BAGIAN 1. IRINGAN EKONOMI

KONDISI RUMAHNYA. (PENCACAH: LINGKARI JAWABAN YANG BETUL)

101. Siapa punya rumah yang Ibu dan suami Ibu tinggali ini?

IBU 1 ORANG IAIN: \_\_\_\_\_  
(JELASKAN)

102. Apakah bahan bangunan dinding yang terbanyak dari tempat tidur?

BAMBU 1 TEBOK 2 SEMEN 3 IAIN2: \_\_\_\_\_  
(JELASKAN)

103. Apakah bahan bangunan lantai yang terluas dari tempat tidur?

TANAH 1 UJIN/TRASO 3 BAMBU 5  
SEMEN 2 KAYU 4 IAIN2: \_\_\_\_\_  
(JELASKAN)

104. Apakah Ibu dan suami Ibu memiliki sesuatu didalam rumah ini? (Kalau 'YA', berapa?)

LISTRIK — YA 1 — Berapa watt?  
— TIDAK 2 — Apakah bisa LISTRIK? \_\_\_\_\_

BERAPA W P.W

LAMPU STROMKING	2	
LAMPU TEMPIOK	1	
KOMPOR MINYAK	2	
SEPEDA	2	
SEPEDA MOTOR	5	
RADIO	2	
TIP/MESIN TIP	2	
TELEVISI	5	
AYAH/BEBEK	1	
KERBAU/SAPI	4	
**JUMLAH**		

PEKERJAAN DAN TANAH HAK MILIK

SUAMI RESPONDEN:

105. Apakah pekerjaan pokok suami Ibu?

PETANI	01	TUKANG KAYU	07
PEGAWAI NEGERI	02	BURUH	08
PEGAWAI SWASTA	03	LAIN2: _____	
PENGUSAHA	04	(JELASKAN)	
PEDAGANG	05	TIDAK BEKERJA (NGANGGUR)	77
PENGERAJIN	06	TIDAK TAHU	99

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106. Apakah pekerjaan tambahan suami Ibu?

PETANI	01	TUKANG KAYU	07
PEGAWAI NEGERI	02	BURUH	08
PEGAWAI SWASTA	03	LAIN2: _____	
PENGUSAHA	04	(JELASKAN)	
PEDAGANG	05	TIDAK BEKERJA (NGANGGUR)	77
PENGERAJIN	06	TIDAK TAHU	99

26

107. Berapa luas tanah yang suami Ibu miliki?

SAWAH \_\_\_\_\_ Are  
 JADANG \_\_\_\_\_ Are  
 KEBUN \_\_\_\_\_ Are

108. Berapa luas tanah Ibu/suami Ibu kerjakan, tetapi milik orang lain?

SAWAH \_\_\_\_\_ Are  
 JADANG \_\_\_\_\_ Are  
 KEBUN \_\_\_\_\_ Are

RESPONDEN:

109. Apakah Ibu mempunyai pekerjaan lain yang mendatangkan hasil, atau uang atau makanan, dan lain lain?

YA 1 TIDAK 2 → LANGSUNG KE 112.

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110. Macam pekerjaan apa yang Ibu kerjakan?

BERTANI 1 SEBAGAI BURUH 4  
 BERJUALAN TOKO 2 LAIN: \_\_\_\_\_  
 BERJUALAN DI PASAR 3 (JELASKAN)

111. Apakah ini pekerjaan tetap (kebanyakan minggu dari tiap tahun), atau hanya kadang-kadang?

TETAP 1 KADANG-KADANG 2

KONSUMSI

112. Apakah makanan pokok Ibu tiap-tiap hari?

NASI 1 NASI-ORAN 2 LAIN2: \_\_\_\_\_  
 (JELASKAN)

36

113. Tidak termasuk upacara, berapa kali Ibu makan dalam satu minggu?

IKAN AYAM/BESEK \_\_\_\_\_ kali seminggu.  
 IKAN LAUT \_\_\_\_\_ kali seminggu.  
 IKAN LAIN \_\_\_\_\_ kali seminggu.

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**BAGIAN 2. PENDIDIKAN****RESPONDEN:**

201. Apakah Ibu pernah bersekolah (Pemerintah;Kejuruan;A.lama)?

YA 1 TIDAK 2 ----&gt; LANGSUNG KE P.205

202. Pendidikan tertinggi (sekolah) apakah yang pernah Ibu selesaikan?

SEKOLAH DASAR		S.H.P.	S.M.A.	AKADEMI/UNIVERSITAS	
1	4	1	1	1	4
2	5	2	2	2	LAIN:
3	6	3	3	3	(JELASKAN)

TANYAKAN  
P.203

LANGSUNG KE P.205

TANYAKAN HANYA RESPONDEN YANG SELESAIKAN 5 TAHUN PENDIDIKAN  
ATAU KURANG:203. Apakah Ibu dapat membaca, misalnya, surat tunggal,  
atau surat kabar?

YA 1 TIDAK 2

204. Apakah Ibu dapat menulis, misalnya, surat tunggal?

YA 1 TIDAK 2

**SUAMI RESPONDEN:**

205. Apakah suami Ibu pernah bersekolah?

YA 1 TIDAK 2 ----&gt; LANGSUNG KE P.207

206. Pendidikan tertinggi (sekolah) apakah yang pernah suami Ibu selesaikan?

SEKOLAH DASAR		S.H.P.	S.M.A.	AKADEMI/UNIVERSITAS	
1	4	1	1	1	4
2	5	2	2	2	LAIN:
3	6	3	3	3	(JELASKAN)

TANYAKAN  
P.207

LANGSUNG KE BAGIAN 3

TANYAKAN HANYA KALAU SUAMI RESPONDEN YANG SELESAIKAN 6 TAHUN  
PENDIDIKAN ATAU KURANG:207. Apakah suami Ibu dapat membaca, misalnya, surat tunggal,  
atau surat kabar?

YA 1 TIDAK 2

208. Apakah suami Ibu dapat menulis, misalnya, surat tunggal?

YA 1 TIDAK 2

**BAGIAN 3. FERTILITAS**

**PENGETAHUAN DAN PENGGUNAAN ALAT-ALAT KONTRASEPSI**

301. Ada cara-cara yang dapat dipergunakan orang untuk mencegah kehamilan dan menjarangkan kelahiran anak-anaknya. Ini disebut Keluarga Berencana.

Apakah Ibu pernah mendengar tentang Keluarga Berencana?

YA 1    TIDAK 2

302. Apakah Ibu mengetahui atau pernah mendengar tentang cara-cara untuk menunda atau mencegah kehamilan?

YA 1    TIDAK 2    → LANGSUNG KE P. 304.

303. Cara apakah yang Ibu ketahui untuk menunda atau mencegah kehamilan?

(TANYAKAN LAGI: Apakah Ibu mengetahui cara-cara lain?)

304. Untuk meyakinkan, saya akan membaca daftar lengkap di cara K.B. Tolong saya ingin mengetahui apakah Ibu pernah mendengarnya, jika 'YA', apakah Ibu dan suami Ibu pernah menggunakannya.

		PERNAH MENDENGAR	PERNAH MENGGUNAKAN
PIL KB.	Salah satu cara yang dipergunakan wanita untuk menunda atau mencegah kehamilan adalah dengan minum PIL setiap hari.	YA 1 TIDAK 2	YA 1 TIDAK 2
305. SPIRAL (LOOP)	Dokter atau Bidan dapat melatekkan SPIRAL yang terbuat dari plastik atau logam didalam rahim seorang wanita.	YA 1 TIDAK 2	YA 1 TIDAK 2
306. OBAT VAGINAL.	Wanita dapat juga menggunakan cara-cara lain untuk mencegah kehamilan, misalnya, menggunakan foam, atau jelly atau cream sebelum bersanggama.	YA 1 TIDAK 2	YA 1 TIDAK 2
307. KARET KB (KONDOM)	Ada juga beberapa cara yang dipakai laki-laki sehingga istrinya tidak menjadi hamil. Beberapa laki-laki menggunakan kondom (Karet KB) selama sanggama.	YA 1 TIDAK 2	YA 1 TIDAK 2
308. SUNTIK	Beberapa wanita mendapatkan suntikan setiap tiga bulan atau jangka waktu tertentu untuk mencegah kehamilan.	YA 1 TIDAK 2	YA 1 TIDAK 2
309. PANTANGAN BERKALA	Beberapa pasang suami istri menahan diri sanggama pada hari-hari tertentu setiap bulan yaitu pada waktu istrinya sangat mungkin menjadi hamil.	YA 1 TIDAK 2	YA 1 TIDAK 2
		LANGSUNG KE P. 310.	

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		PERNAH MENDENGAR	PERNAH MENGUNAKAN	
310. TIDAK CAMPUR.	Cara lain apakah tidak bersanggama untuk beberapa bulan atau lebih lama lagi untuk mencegah kehamilan.	YA 1 TIDAK 2	YA 1 TIDAK 2	66
311. SANGGAMA TERPUTUS	Beberapa laki-laki melakukan sanggama terputus yaitu dengan menarik alat kelaminnya sebelum mencapai klimax (air mani keluar).	YA 1 TIDAK 2	YA 1 TIDAK 2	68
312. PERANAKAN DIBALIK	Beberapa wanita peranakannya dibalik (diputar) oleh dokter atau orang lain sehingga tidak mungkin terjadi kehamilan.	YA 1 TIDAK 2	YA 1 TIDAK 2	70
313. JAMU	Beberapa wanita minum jamu dengan maksud supaya tidak hamil.	YA 1 TIDAK 2	YA 1 TIDAK 2	72
314. URUT/PIJAT	Beberapa wanita diurut peranakannya supaya tidak mempunyai anak lagi.	YA 1 TIDAK 2	YA 1 TIDAK 2	74
315. PEMANDULAN WANITA	Beberapa perempuan dioperasi yang disebut pemandulan wanita yaitu dengan mengikat saluran fallopien supaya tidak pernah mempunyai anak lagi.	YA 1 TIDAK 2	YA 1 TIDAK 2	76
316. PEMANDULAN LAKI-LAKI	Beberapa laki-laki dioperasi yang disebut pemandulan laki-laki yaitu hingga istrinya tidak pernah dapat mempunyai anak lagi.	YA 1 TIDAK 2	YA 1 TIDAK 2	77
317. LAINNYA	Pernahkah Ibu mendengar cara-cara lain yang digunakan oleh wanita maupun laki-laki untuk mencegah kehamilan? YA 1 TIDAK 2 → LANGSUNG KE BAGIAN 4.			8
318.	Cara lain apa yang pernah Ibu dengar? (CATAT CARA-CARA YANG DISEBUTKAN DAN UNTUK SETIAP CARA, TANYAKAN: Apakah Ibu dan suami Ibu pernah memakai (CARA) sehingga Ibu tidak menjadi hamil?		YA 1 TIDAK 2	10
			YA 1 TIDAK 2	12

BAGIAN 4. Matrik Riwayat Hidup

Riwayat Perkawinan

401. Saya ingin mencoba menafkir tahun kelahiran Ibu, dan umur Ibu sekarang, dengan mempergunakan kalender peristiwa dimana saya telah mengetahui tanggalnya. (PENCACAH: TANYAKAN TEMPAT KELAHIRAN IBU, KEMUDIAN PERGUNAKAN KALENDER PERISTIWA UNTUK MEMPERTIRAKAN 'TAHUN KELAHIRAN', DAN 'UMUR SEKARANG'. ) (TULIS)
402. Tahun berapakah Ibu kawin pertama kali? (PENCACAH: TANYAKAN LEBIH LANJUT-"Jadi, berapakah umur Ibu waktu kawin pertama kali tersebut?") (DISEBELAH 'TAHUN KEJADIAN', TULIS)
403. Apakah Ibu masih kawin sekarang?  
YA 1 TIDAK 2
404. Pernahkah Ibu hidup berpisah dari suami Ibu dalam waktu lama?  
YA 1 TIDAK 2 → LANGSUNG KE 406
405. Apakah sebab Ibu, dan apakah waktu? KAPAN (DISEBELAH 'TAHUN KEJADIAN', TULIS SEBAB dan JARAK, MISALNYA 'CERAI' ATAU 'JANDA')
406. Apakah suami Ibu sekarang mempunyai lebih dari satu istri?  
YA 1 TIDAK 2 → LANGSUNG KE 409
407. Kalau 'YA', berapa yang lain? \_\_\_\_\_
408. Apakah Ibu istri wang pertama?  
YA 1 TIDAK 2

TULIS JAWABAN DI Matrik Riwayat Hidup (YANG HIJAU)

" " " " " "

"TAHUN KELAHIRAN" " " " " " "

"(UMUR SEKARANG) DIBAWAH KOLOM 01-MRH. "KAWIN-1" DI KOLOM 02

" " " " " "

"SEBAB, JARAK" DI KOLOM 02

Riwayat Kehamilan

409. "Sekarang tolong Ibu ceritakan riwayat kehamilan Ibu termasuk semua kelahiran hidup, kelahiran mati, keguguran dan mengugurkan, dari Ibu sendiri, dan bukan dari Ibu yang lain."  
Apakah Ibu pernah hamil?  
YA 1 TIDAK 2 → (PENCACAH: TANYAKAN LEBIH LANJUT-"Walaupun hamil hanya dalam satu atau dua bulan saja?" JIKA MASIH 'TIDAK', TULIS) (LANGSUNG KE 420)
- (PENCACAH: UNTUK PERTANYAAN 410-413, PERGUNAKAN KALENDER PERISTIWA)
410. "Mulai dari kehamilan Ibu yang pertama".  
Tahun berapa kehamilan ini terjadi?  
(PENCACAH: TANYAKAN LEBIH LANJUT-"Berapa lama sudah kawin?/ Berapa jaraknya dengan kelahiran terdahulu?") (DISEBELAH 'TAHUN KEJADIAN', TULIS)

"TIDAK PERNAH HAMIL" DI ATAS "KAWIN - 1" DI KOLOM 02

" " " " " "

"(URUTAN/NOMOR) KEHAMILAN" DI KOLOM 02

411. Apakah bayinya lahir:-

HIDUP (Walaupun kalau bayi tersebut dapat hidup  
atau beberapa jam saja)

(TULIS LANGSUNG KE 414)

"LH"  
DI KOLOM 03

MATI → 412. Berapa bulan (Bulan Bali) Ibu sudah  
hamil, saat itu?

(1, 2, 3, 4, atau 5) (6, 7, atau 8) (TULIS)  
LANGSUNG KE 415

"LM"  
DI KOLOM 03

413. Apakah Ibu, atau orang lainnya,  
berbuat sesuatu sehingga  
'kelahiran' berakhir sebelum  
waktunya?

YA -(Abortus Disengaja, TULIS)  
LANGSUNG KE 419

"AD"  
DI KOLOM 03

TIDAK-(Abortus Spontan, TULIS)  
LANGSUNG KE 419

"AS"  
DI KOLOM 03

(PENCACAH: TANYAKAN P. 414-416 UNTUK 'KELAHIRAN HIDUP' SAJA)

414. Apakah anak Ibu yang (pertama, kedua, dan lain2)  
laki-laki atau perempuan?

(TULIS)

" " "  
(L) atau (P)  
DI KOLOM 04

415. Siapakah nama anak Ibu tersebut?  
(Misalnya, Wayan, Made, ....)

(PENCACAH: COCOKAN SETIAP KELAHIRAN HIDUP) (TULIS)

" " "  
(NAMA)

416. Apakah anak Ibu tersebut masih hidup?

DI KOLOM 05

-YA, MASIH HIDUP

(TULIS)  
TANYAKAN P. 417

"HIDUP"  
DI KOLOM 06

-TIDAK, SUDAH MENINGGAL

(TULIS)  
LANGSUNG KE 418.

"MATI"  
DI KOLOM 06

417. Berapakah umur anak itu sekarang?

(PENCACAH: COCOKAN DENGAN KELAS BERAPA SEKARANG DI  
SEKOLAH KALAU BERSEKOLAH, KEMUDIAN TULIS DIDALAM  
OTON, BULAN BALI ATAU TAHUN KALENDER, DAN BUKAN  
TAHUN BALI.)

(TULIS)  
LANGSUNG KE P. 418.

" " " BULAN BALI"  
" " " OTON"  
" " " TAHUN"  
DI KOLOM 07

418. Berapakah umur anak Ibu sewaktu meninggal?

(PENCACAH: COCOKAN DENGAN KELAS BERAPA SEWAKTU  
MENINGGAL DI SEKOLAH, KALAU BERSEKOLAH, KEMUDIAN  
TULIS "UMUR DIWAKTU MENINGGAL" DIDALAM OTON,  
BULAN BALI ATAU TAHUN KALENDER, DAN BUKAN  
TAHUN BALI.)

(PADA BARIS YANG SAMA, SEAGAI TAHUN KELAHIRAN,  
(TULIS)

" " " BULAN BALI"  
" " " OTON"  
" " " TAHUN"  
DI KOLOM 09

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419. Apakah Ibu kemudian hamil lagi setelah kelahiran anak Ibu tersebut?

YA → (PENCACAH: KEMBALI DAN ULANGI P. 410 SAMPAI 419)

TIDAK → (PENCACAH: TANYAKAN LEBIH LANJUT -"Saya ingin lebih yakin lagi yang saya sudah tanyakan semua kehamilan yang pernah Ibu alami.")

---"Apakah Ibu mempunyai anak dari suami yang lain, di mana tadi Ibu tidak menyebutkannya?"

---"Apakah ada diantara anak Ibu sendiri tinggal diluar rumah ini, yang tadi terlupakan (misalnya, tinggal atau membantu, bekerja di keluarga yang lain)?"

---"Apakah ada anak Ibu yang lahir hidup tetapi kemudian meninggal (walaupun dapat hidup hanya dalam beberapa jam saja)?"

---"Apakah ada kehamilan yang lain yang tidak bisa sampai lahir hidup, misalnya, bayi lahir mati, keguguran atau mengugurkan?"

(PENCACAH: TANYAKAN LEBIH LANJUT TERUTAMA KALAU ADA JARAK ANTARA KELAHIRAN LEBIH DARI 4 TAHUN, MISALNYA, OLEHERANGYA KEGUGURAN)

420. Apakah Ibu hamil sekarang? (PENCACAH: LINGKARI JAWABAN YANG BENAR)

YA 1 TIDAK 2 TIDAK TAHU 9

421. Berapa bulankah (Bulan Bali) umur kehamilan Ibu sekarang? \_\_\_\_\_ Bln. Bali. / ?

#### KELUARGA BERENCANA

"Sekarang saya ingin kembali lagi untuk menanyakan hal-hal yang Ibu lakukan untuk menunda atau mencegah kehamilan, ketika Ibu pertama kali kawin dengan suami Ibu."

422. Antara waktu pertama kali kawin dan pertama kali hamil, apakah Ibu atau suami Ibu melakukan sesuatu untuk menunda atau mencegah kehamilan?

YA → TANYAKAN P. 423.

TIDAK → (PENCACAH: TANYAKAN LEBIH LANJUT DENGAN DAFTAR METODE DIDALAM BAGIAN 3, KALAMATI 5 DAN 6. KALAU MASIH 'TIDAK', DIDALAM TAHUN KEJADIAN, TULIS)

LANGSUNG KE P. 426.

"TIDAK PERNAH"  
DI KOLOM 10



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423. Cara apa yang telah Ibu pakai, dan kapankah Ibu mulai memakainya?

(PENCACAH: DIDALAM TAHUN KETIKA MULAI, TULIS)

" (METODE) "  
DI KOLOM 10

424. Apakah Ibu pernah berhenti memakai cara itu?

YA TIDAK → (PENCACAH: TANYAKAN-"Jadi, kalau begitu, Ibu sekarang sedang memakai cara itu?"

DI BARIS YANG BERTINGGI (1980) TULIS

" (METODE YANG PAKAI SEKARANG) "

425. Kapankah Ibu berhenti memakai cara itu dan kenapa? (Apa alasan Ibu untuk berhenti?)

(PENCACAH: TAHUN KETIKA BERHENTI MEMAKAI, TULIS)

DI KOLOM 10

" (SEBAB) "  
DI KOLOM 11

426. Setelah kehamilan tersebut, apakah Ibu memakai sesuatu untuk mencegah kehamilan berikutnya?

YA → (PENCACAH: KEMBALI KE P.423, DAN ULANGI KE P.425)

TIDAK → (PENCACAH: TANYAKAN LEBIH LANJUT, DENGAN DAFTAR METODE DIDALAM BAGIAN 3, HALAMAN 5 & 6).

(PENCACAH: ULANGI UNTUK SEMUA JARAK KEHAMILAN)

427. Apakah Ibu/suami Ibu sekarang memakai sesuatu untuk menunda kehamilan?

YA TIDAK → (PENCACAH: TANYAKAN LEBIH LANJUT - DENGAN DAFTAR METODE DIDALAM BAGIAN 3, HALAMAN 5 & 6)

428. Kalau memakai, cara apakah yang Ibu/suami Ibu pergunakan?

(PENCACAH: DIDALAM BARIS (1980), TULIS)

" (METODE MEMAKAI SEKARANG) "  
DI KOLOM 10

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BAGIAN 4.LIMA TAHUN TERAKHIRTULIS JAWABAN  
DI TABEL 'LIMA  
TAHUN TERAKHIR'  
(YANG HIJAU)

"Sekarang saya ingin kembali menanyakan kepada Ibu semua kehamilan dan kelahiran dari Ibu sendiri sejak 5 tahun, jadi jelasnya sejak tahun 1975. Tolong ceriterakan kepada saya semua kehamilan yang pernah terjadi sejak tahun tersebut, dan berapa umur anak-anak Ibu tersebut sekarang. Jadi mulai dari anak-anak Ibu yang sekarang berumur kurang dari 9 oton. Alangkah baiknya kalau Ibu bisa mengingat hari, tanggal lahir dari anak-anak tersebut (DINA, dan WUKU, misalnya REDITE-UMANIS/WATUGUNUNG). Kemudian lihat TABEL.

ANAK-ANAK YANG MASIH HIDUP SEKARANG.

(PENCACAH: LIHAT "MATRIX RIWAYAT HIDUP", (YANG HIJAU) KOLON 05 & 06).

"Mulailah dari anak hidup yang terkecil, siapakah nama anak ini?"

429. Berapakah umur anak ini sekarang, dalam OTON dan BULAN BALI?

(PENCACAH: KALAU UMUR ANAK KURANG DARI 9 OTON, TULIS DALAM BARIS YANG SAMA SEBAGAI UMUR SEKARANG, NAMA URUTAN KELAHIRAN ANAK). (TULIS)

"  
(NAMA ANAK)  
DI KOLON 02

430. Apakah Ibu bisa menceritakan kepada saya hari (DINA) dan PANCAWARA (Umanis, Faing, Pon, dll.) kelahiran anak Ibu ini (misalnya: SOMA-WAGL)? ("Tulis catatan pada buku saudara?")

(PENCACAH: PADA BARIS YANG SAMA DENGAN NAMA, TULIS)

"  
(DINA)  
DI KOLON 03 & 04

431. Apakah Ibu bisa menceritakan kepada saya WUKU dari kelahiran anak Ibu ini?

(PENCACAH: PAKAILAH TABEL KALENDAR UNTUK MENYESUAIKAN 'SAPTA-WARA', 'PANCA-WARA' DAN 'WUKU', UNTUK KONSISTENNYA, TULIS)

"  
(NAMA WUKU)  
DI KOLON 05

432. Apakah Ibu/suami Ibu pernah menerima Surat (Kartu) tanda kelahiran dari Pemerintah untuk anak Ibu ini? (Misalnya, dari Perbekel, atau orang lain?)

YA → "Bisakah saya lihat sebentar?"

(PENCACAH: DISEBELAR NAMA PADA L-T-T DALAM TABEL, TULIS)

"  
(TANGGAL LAHIR)  
DI KOLON 02

TIDAK → (PENCACAH: TANYAKAN LEBIH LANJUT- SEGERA SETELAH PERMUGAHAN TAHUN 1974 DAN PERTENGAHAN TAHUN 1977, SEBAGAIAN TERSEBAR ANAK-ANAK YANG LAHIR PADA WAKTU TERSEBUT MENDAPAT SURAT TANDA KELAHIRAN.)

433. Jadi, anak tersebut masih hidup sekarang.  
Betulkah begitu?

YA → (PENCACAH: -----TULIS) → "HIDUP"  
LANGSUNG KE P. 435 DI KOLOM 06

TIDAK → (PENCACAH: PERIKSA KEMBALI DENGAN MATA-MATA  
INI HARUS UNTUK ANAK YANG MASIH HIDUP.  
KALAU ANAK TERSEBUT 'SUDAH MENINGGAL',  
(KEMUDIAN TANYAKAN P. 434.) "MATI"  
DI KOLOM 06

434. Berapa 'OTON' / umur anak Ibu itu waktu dia  
meninggal?

(PENCACAH: TULIS PADA BARIS DISEBELAH "MATI"  
UMUR PADA WAKTU MENINGGAL, TULIS) → " OTON "&  
" BULAN BALI"  
DI KOLOM 07

435. Apakah anak ini dulu Ibu susui sendiri?

YA TIDAK → (PENCACAH: -----TULIS) → "TIDAK"  
DI KOLOM 08

436. Pada umur berapakah anak ini disepih? (TULIS) → " OTON "&  
" BULAN BALI"  
DI KOLOM 08

"Nah, sekarang untuk anak Ibu yang nomor dua dari  
bawah (nomor dua dari yang terakhir).  
Siapakah nama anak Ibu ini?"

(PENCACAH: LIHAT KE 'Matrik Riwayat Hidup',  
(YANG HIJAU), KOLON 05 & 06.)

437. Dapatkah Ibu menceritakan kepada saya umur dari  
anak ini, dalam OTON dan BULAN BALI?

(PENCACAH: KALAU UMUR ANAK INI KURANG DARI 9 OTON,  
TULISLAH PADA BARIS YANG SAMA SEBAGAI 'UMUR ANAK-  
SEKARANG', NAMA URUTAN KELAHIRAN DARI ANAK INI) → " " "  
KEMUDIAN, UNTUK SETIAP ANAK YANG MASIH HIDUP, DI KOLOM 02  
TANYAKAN PERTANYAAN YANG SAMA DENGAN 430-436.

(PENCACAH: KALAU TIDAK ADA LAGI ANAK-ANAK YANG  
BERUMUR KURANG DARI 9 OTON, LANGSUNG KE P. 438.)

ANAK-ANAK YANG TIDAK MASIH HIDUP

438. Apakah Ibu pernah melahirkan anak, kemudian mening-  
gal, tetapi seandainya anak ini masih hidup sekarang  
berumur tidak lebih dari 9 OTON (yaitu yang lahir  
sejak tahun 1975)?

YA → LANGSUNG KE P. 439.

TIDAK → (PENCACAH: TANYAKAN LEBIH LANJUT-"Melaupur  
anak lahir yang hidup hanya beberapa jam  
saja setelah Ibu lahirkan?"  
(LANGSUNG KE P. 442)

439. Kalau seandainya anak ini masih hidup, berapakah  
umurnya sekarang, dalam OTON dan BULAN BALI?

(PENCACAH: TULIS NAMA ANAK DISEBELAH 'UMUR-ANAK-  
SEKARANG' (KALAU MASIH HIDUP)) (TULIS) → " " "  
(NAMA ANAK)

(KEMBALI KE PERTANYAAN 430, DAN ULANGI SAMA 436. DI KOLOM 02  
LENGKAPI KOLOM 03, 04, 05 & 06 ("MATI").

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440. Berapakah umur anak ini, selain OTON dan BULAN BALI, sewaktu dia meninggal? (TULIS)

"OTON"  
"BULAN BALI"  
DI KOLOM 07

441. Apakah Ibu pernah melahirkan anak yang lain, yang belum Ibu sebutkan tadi, yang sekarang sudah meninggal, dan sebagainya masih hidup berusia tidak lebih dari 9 OTOM? (Yaitu, sejak tahun 1975)

YA → (PENCACAH: KEMBALI KE PERTANYAAN 438, DAN ULANGI KE P.441)

TIDAK → (LANGSUNG KE P. 442)

KEHAMILAN LAINNYA

442. "Sampai saat ini saya sudah menanyakan semua kehamilan Ibu sejak pertengahan 1975, yang menghasilkan kelahiran hidup, walaupun setelah beberapa waktu kemudian akhirnya ada diantara anak Ibu tersebut meninggal."

Apakah ada kehamilan-kehamilan Ibu lainnya yang terjadi pada periode waktu yang sama yang tidak menghasilkan kelahiran hidup, yaitu kehamilan yang berakhir sebelum waktunya atau bayinya lahir mati?

YA TIDAK → (PENCACAH: TANTAKAN LEBIH LANJUT-  
"Apakah Ibu pernah disedot, atau mepun, atau pergi ke Balian untuk mengakhiri kehamilan Ibu tersebut/ keterlambatan datang bulan (motor main) tersebut?  
(KALAU HASIL 'TIDAK', LANGSUNG KE P.446)

(PENCACAH: PEKERATAN WAKTU KEJADIAN INI, HASILNYA DENGAN MEMANJARAN LEBIH LANJUT KEPADA RESPONDEH- "Diantara anak yang mana?")

443. Berapa bulankah (Bulan Bali) saat itu sudah hamil?  
(1,2,3,4 atau 5) atau (6,7 atau 8) → (TULIS PADA BARIS YANG SAMA SEBAGAI UMUR YANG DIPERKIRAKAN) → (LANGSUNG KE 446)

"LM"  
DI KOLOM 02

444. Apakah Ibu, atau orang lain, yang melukikan atau membuat sehingga kehamilan Ibu berakhir sebelum waktunya?

YA TIDAK → (PENCACAH: TULIS PADA BARIS YANG SAMA SEBAGAI UMUR YANG DIPERKIRAKAN) → (LANGSUNG KE P. 446)

"A5"  
DI KOLOM 02

445. Apakah dengan disedot atau mepun, atau dengan diusukkan sesuatu oleh 'Balian' ke peranakan Ibu?

(PENCACAH: TULIS "AD-(CARANYA)" PADA BARIS YANG SAMA PADA UMUR YANG DIPERKIRAKAN) (TULIS)

"AD-DISEDOT"  
atau  
"AD-MAPUN"  
DI KOLOM 02

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PENCACAH: KEMBALI KE PERTANYAAN 442, DAN SEMUA SEMUA PERTANYAAN2 TERSEBUT, KE P. 445, SAMPAI TIDAK ADA LAGI KEMAMILAN YANG TERTINGGAL PADA 5 TAHUN TERAKHIR INI.

446. Sekarang saya ingin menanyakan kepada Ibu tentang menetaknya anak Ibu yang terkecil.

(PENCACAH: LIHAT TABEL 'L-T-T', (YANG MERAH), KOLOM 03)

Tadi Ibu mengatakan bahwa Ibu menyusui (meneteki) anak Ibu yang terkecil sampai OTON dan BULAN BALI. Apakah Ibu memberikan susu buatan (susu bubuk) sebelum anak tersebut Ibu sapih?

YA 1 TIDAK 2 → (LANGSUNG KE BAGIAN 5 (P.501))

447. Dapatkah Ibu menceritakan tentang hal-hal dibawah ini?

'Yaitu, -- "Berapakah umur anak itu sewaktu Ibu mulai memberikan susu buatan (bubuk)?"

-- "Berapa kali dalam sehari (misalnya: - Pagi; Siang; Sore; Malam) Ibu menyusui anak tersebut?"

-- "Kenapa Ibu memulai memberikan susu buatan (bubuk) sebelum Ibu menyapihnya?"

-- "Siapa yang memberikan susu buatan (bubuk) itu kalau Ibu pergi meninggalkan anak tersebut?"

PENCACAH: LIHAT TABEL 'M-R-H' (YANG HIJAU), KOLOM 10. TANYAKAN HANYA RESPONDEN YANG MEMAKAI CARA KB SETELAH (SEJAK) KELAHIRAN ANAK YANG TERKECIL.

448. Berapakah umurnya, dalam OTON dan BULAN BALI, anak ini (yang terkecil) pada waktu Ibu/suami Ibu mulai memakai cara KB tersebut? \_\_\_\_\_ OTON, \_\_\_\_\_ BULAN BALI.

\*\*\*\*PENCACAH: TABEL 'MATRIX-RIWAYAT-RIDUP', dan TABEL 'LIMA-TAHUN-TERAKHIR' SUDAH LENGKAP. TOLONG MENULIS JAWABAN2 TENTANG BAGIAN 5 & 6 DI DAFTAR PERTANYAAN.

BAGIAN 5. KELUARGA BERENCANA

(PENCACAH: MEMULIS JAWABAN2 DI DAFTAR PERTANYAAN DAN LINGKARI JAWABAN YANG BETUL.)

"Sekarang kembali kepada hal-hal sewaktu Ibu masih kecil dahulu."

501. Pada waktu itu, berapakah jumlah anak yang dianggap jumlah yang cocok (baik) oleh keluarga-keluarga pada saat itu? (Misalnya oleh orang tua Ibu sendiri.)

JUMLAH ANAK. TIDAK TAHU 9

502. Pada waktu itu, apakah orang-orang tahu cara-cara untuk menunda atau mencegah kelahiran anaknya dari jumlah yang mereka kehendaki?

YA 1 TIDAK 2 TIDAK TAHU 9

503. Bagaimana cara-cara mereka?

504. Dari Ibu yang sama, berapa jumlah saudara laki-laki dan saudara perempuan (termasuk yang sudah meninggal)?

LAKI2: \_\_\_\_\_ PEREMPUAN: \_\_\_\_\_ TIDAK TAHU 9

505. Apakah ayah Ibu pernah mempunyai istri lebih dari satu pada suatu saat yang bersamaan?

YA 1 TIDAK 2 TIDAK TAHU 9

506. Berapakah yang pernah dimiliki dalam saat yang sama? (JUMLAH ISTRI-AYAH IBU)

TANYAKAN HANYA PADA IBU-IBU YANG PERNAH IKUT 'KB'. ATAU MEMAKAI SALAH SATU METODE KONTRASEPSI. LIHAT GAJEL M-R-H (KUNJAU), KOLOM 10.

507. Apakah Ibu masih ingat, alasan-alasan yang diberikan atau diterangkan oleh pemerintah pada waktu itu, bahwa kita harus mengikuti program 'KB'?

508. Apakah Ibu masih ingat alasan-alasannya kenapa Ibu/Suami Ibu pertama kali memakai KB?

509. Apakah ada anggota Banjar Ibu yang mendorong atau menasehati Ibu sehingga Ibu memutuskan untuk memakai KB?

YA 1 TIDAK 2 TIDAK TAHU 9

510. Siapakah yang ikut memegang peranan untuk mengambil keputusan selain Ibu sendiri?

(LANGSUNG KE P.512)

511. Apakah Ibu bisa menceritakan lebih lanjut tentang pengambilan keputusan ini (didalam memulai memakai KB), apakah ada orang2 tertentu, atau sekelompok orang yang ikut berperan, dan apakah yang mereka katakan?

512. Apabila pasangan dalam Banjar Ibu, yang telah mempunyai 5 atau 6 anak, dan telah memutuskan bahwa mereka tidak ingin memakai KB, bagaimana Ibu pikir?

"Walaupun kita sudah bicarakan tentang cara-cara Ibu untuk mencegah atau menunda kehamilan, tetapi saya ingin menanyakan agak lebih terperinci atau lebih mendalam kepada Ibu tentang dua cara yaitu Spiral (Loop/IUD) dan PIL-KB, barangkali Ibu pernah memakai cara ini. Per-tama2 tentang LOOP."

(PENCACAH: LIHAT TABEL M-R-H (HIJAU), KOLOM 10, UNTUK METODE KELUARGA BERENCANA YANG PERNAH DIPAKAI.)

513. Tadi Ibu mengatakan bahwa Ibu pernah memakai:

<u>SPIRAL (LOOP)</u> ←		↓	<u>TIDAK PERNAH PAKAI LOOP</u>	
Apakah ini betul?			Apakah ini betul?	
YA ↓ 1	TIDAK ↓ 2		YA ↓ 1	TIDAK ↓ 2
TERUS KE P. 514	PERIKSA KEMBALI		TERUS KE P. 525	PERIKSA KEMBALI

514. Dimana Ibu memperoleh (memasang) Spiral/Loop itu?

515. Ketika untuk pertama kali Ibu memakai (memasang) Spiral, apakah Ibu diberitahu tentang kemungkinan problema-problema yang mungkin Ibu akan alami?

YA 1                      TIDAK 2  
↓                                      TIDAK TAHU 9 → LANGSUNG KE 517.

516. Apa saja yang diberitahukan?

517. Beberapa Ibu-Ibu yang juga memakai Spiral mengalami beberapa problema. Apakah Ibu pernah mengalami problema juga selama memakai Spiral tersebut?

YA 1                      TIDAK 2  
↓                                      TIDAK TAHU 9 → (PENCACAH: TANYAKAN LEBIH LANJUT DENGAN MEMAKAI DAFTAR PADA P. 518, KALAU MASIH JUGA 'TIDAK', LANGSUNG KE P. 521)

518. Apakah problema-problema yang Ibu rasakan, dan apakah problema ini terjadi setiap bulan secara teratur atau kadang-kadang saja?

(PENCACAH: BISA DITANDAI LEBIH DARI SATU PILIHAN)

	TERATUR (REGULER)	atau	TIDAK TERATUR
a) MASA MENSTRUASI (KOTOR KAIN) MENJADI LEBIH PANJANG.	1		2
b) KOTOR KAINNYA MENJADI LEBIH KERAS.	1		2
c) ADA PERDARAHAN DI-TENGAH2 BULAN.	1		2
d) SAKIT PERUT	1		2
e) TERASA LEBIH CAPEK DARI BIASANYA.	1		2
f) BERAT BADAN BERUBAH: _____			
g) LAIN-LAIN: _____ (JELASKAN)			

519. Apakah problema-problema ini mempengaruhi kerja Ibu sehari-hari?

YA 1 TIDAK 2  
TIDAK TAHU 9 → LANGSUNG KE F.521

520. Karena apa?  
(Dengan jalan bagaimana problema ini mempengaruhi?)

521. Kadang-kadang beberapa Ibu-Ibu harus berhenti memakai Spiral, oleh karena adanya efek sampingan ini yang sangat memberatkan mereka. Apakah Ibu juga melakukan ini? (Yaitu, berhenti memakai Spiral) (PENCACAH: LIHAT TABEL M-R-H, (YANG HIJAU), KOLON 10)

YA 1 TIDAK 2

522. Apakah Ibu berbuat sesuatu untuk mengurangi problema yang disebabkan oleh karena memakai Spiral tersebut?  
(LANGSUNG KE F.525)

523. Dapatkah Ibu menceritakan kepada saya alasan utama kenapa Ibu berhenti memakai Spiral?

524. Siapakah membuka Spiral itu?  
1 DOKTER/BIDAN KE 3 DUKUN  
2 DUKUN TERLATIH 4 SENDIRI  
LAIN-LAIN: \_\_\_\_\_

525. "Sekarang saya ingin tanya beberapa hal tentang PIL-KB". (PENCACAH: LIHAT TABEL M-R-H, (YANG HIJAU) KOLON 10)

Tadi Ibu mengatakan bahwa, Ibu telah memakai:

MEMAKAI PIL-KB

TIDAK PERNAH MEMAKAI PIL-KB

Apakah ini betul?

Apakah ini betul?

YA ① TIDAK 2

YA 1 TIDAK 2

TANYAKAN P.526 PERIKSA KEMBALI

TERUS KE BAGIAN 5 (P.601) PERIKSA KEMBALI

526. Dimanakah biasanya Ibu mendapatkan PIL-KB tersebut?

1 KLINIK KB 4 APOTEK  
② KELIAN 5 DOKTER  
3 PUSKESMAS 6 BIDAN LAIN-LAIN: \_\_\_\_\_

527. Apakah persediaan PIL-KB selalu tersedia ditempat Ibu biasa mengembalnya?

YA 1 TIDAK ②

528. Apakah yang Ibu lakukan kalau PIL-KB ditempat tersebut habis, dan Ibu tidak bisa mendapatkannya disana?

TERUS KE 529



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529. Kapankah biasanya Ibu memulai mengambil PIL-KB tersebut? Apakah di waktu menstruasi (kotor kain), habis kotor kain, atau tiap hari?

530. Pernahkah Ibu lupa meminum PIL tersebut satu kali atau lebih?

YA 1 TIDAK 2 → LANGSUNG KE P. 532

531. Apakah yang Ibu lakukan, ketika Ibu lupa meminumnya?

532. Dapatkah Ibu mengatakan kepada saya, merek (nama) PIL yang Ibu minum?

(PENCACAH: "Bagaimana rupa bungkusnya?")

533. Ketika Ibu pertama kali meminum PIL-KB tersebut, apakah Ibu diberitahu oleh Dokter/Bidan, tentang kemungkinan problema yang bisa Ibu jumpai?

YA 1 TIDAK 2 → LANGSUNG KE P. 535  
TIDAK TAHU 9 →

534. Apakah yang diberitahu?

535. Beberapa Ibu-Ibu yang pernah minum PIL-KB, menemui problema. Pernahkah Ibu menjumpai (mengalami) problema selama minum PIL-KB tersebut?

YA 1 TIDAK 2 → (PENCACAH: LANJUTKAN IDE INI LANJUT DENGAN DAFTAR PADA P. 536)  
TIDAK TAHU 9 →

536. Apakah problema tersebut, apakah terjadi secara teratur (setiap bulan), atau hanya kadang-kadang saja?

	TERATUR (REGULER)	atau	TIDAK TERATUR
a) MUAL-MUAL	1		(2)
b) SAKIT KEPALA	1		(2)
c) BERAT BADAN BERUBAH:			_____
d) PENGELUARAN AIR SUSU BERUBAH:			_____
e) KOTOR KAIN BERUBAH:			_____
f) LAIN-LAIN:			_____

537. Apakah problema ini mempengaruhi kehidupan Ibu se-hari2 atau pekerjaan Ibu se-hari2 ?

YA 1 TIDAK 2 → LANGSUNG KE P. 539  
TIDAK TAHU 9 →

538. Dengan jalan bagaimana?

539. Kadang-kadang beberapa Ibu-Ibu harus berhenti memakai PIL-KB oleh karena adanya efek sampingan yang sangat memberatkannya. Apakah Ibu melakukan ini? (Yaitu, berhenti memakai PIL).

(PENCACAH: LIHAT TABEL M-R-H, (YANG HIJAU), NOMOR 10)

YA 1      TIDAK 2

540. Apakah Ibu berbuat sesuatu untuk mengurangi problem oleh karena minum PIL-KB ini?

(LANGSUNG KE BAGIAN 6 - P.501)

541. Dapatkah Ibu menceriterakan kepada saya alasan utama Ibu berhenti minum PIL-KB tersebut?

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NC

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BAGIAN 6. NILAI ANAK

601. Apakah Ibu atau suami Ibu ingin mempunyai anak lagi, dimasa yang akan datang?

YA 1    TIDAK 2    TIDAK TAHU 9 → LANGSUNG KE P.605

602. Kenapa Ibu tidak ingin anak lagi?

(LANGSUNG KE P.605)

603. Berapakah jumlah anak yang Ibu inginkan lagi?  
 \_\_\_\_\_ (JUMLAH ANAK LAGI) TIDAK TAHU 9

604. Anak yang Ibu inginkan lagi, apakah anak laki-laki atau perempuan, atau tersebut apa saja?

LAKI 1    PEREMPUAN 2    TERSERAH 3

605. Apakah Ibu bisa menceritakan alasan-alasan Ibu/ suami Ibu untuk mempunyai anak?

606. Seandainya Ibu belum mempunyai anak sama sekali, lalu Ibu diberikan memilih jumlah anak yang Ibu kehendaki, berapakah jumlah anak yang baik menurut Ibu?

\_\_\_\_\_ (JUMLAH ANAK) TIDAK TAHU 9

607. Kalau Ibu bandingkan biaya membesarkan dan memelihara anak sekarang, dengan jaman sewaktu Ibu masih kanak-kanak (kecil) apakah biaya yang sekarang:-

1 SAMA DENGAN DULU    3 LEBIH MAHAL SEKARANG  
 2 LEBIH MURAH SEKARANG    9 TIDAK TAHU

608. Hal-hal manakah yang menghabiskan biaya terbanyak didalam membesarkan dan memelihara anak dewasa ini?

609. Dapatkah Ibu menceritakan kepada saya ongkos2 (biaya) yang diperlukan untuk membeayai "Upacara manusia yadnya" dari anak Ibu yang terkecil?

(PENCACAH: KALAU BELUM PUNYA ANAK, MENULIS "N.A.")

UPACARA    PEMANGKU    SAJEN    MAKANAN    GELANG2    JUMLAH  
 1 OTON:-    \_\_\_\_\_ (Rupiah)

610. Berapakah kira-kira anak Ibu yang Ibu bisa sekolahkan?

1 SEMUA ANAK    2 HANYA BEBERAPA ANAK SAJA

611. Anak yang mana khususnya?

612. Kalau disekolahkan, sampai sekolah manakah Ibu akan sekolahkan?

ANAK LAKI: \_\_\_\_\_ ANAK WANITA: \_\_\_\_\_

8  
10  
12  
14  
16  
18  
21

-21-

613. Kalau mereka sudah agak besar, pekerjaan apakah yang Ibu harapkan yang mereka kerjakan?

ANAK LAKI: \_\_\_\_\_ ANAK WANITA: \_\_\_\_\_

"Sekarang (selanjutnya) saya akan mengemukakan hal-hal, dalam hal mana anak-anak Ibu, baik yang laki-laki ataupun yang wanita BISA membantu orang tuanya.

Tolong Ibu sampaikan kepada saya apakah Ibu mengharapkan pekerjaan-pekerjaan dibawah ini bisa dibantu oleh anak-anak Ibu baik yang laki maupun yang wanita."

	ANAK LAKI			ANAK WANITA		
	YA	TIDAK	T.T.	YA	TIDAK	T.T.
614. Membantu sekitar rumah						
615. Membantu disawah/ditegal, atau sewaktu panen, dan lain2.						
616. Membantu menjaga adik-adiknya						
617. Membantu pekerjaan sehari-hari Ibu/suami Ibu.						
<b>SETELAH ANAK-ANAK IBU MULAI BEKERJA:</b>						
618. Menyumbangkan uangnya untuk upacara-upacara adat dan keperluan-keperluan yang mendesak dalam keluarga.						
619. Memberikan sebagian dari penghasilannya secara teratur kepada Ibu/suami Ibu.						
620. Memelihara dan membezai Ibu/suami Ibu kalau sudah menjadi tua.						

621. Apakah ada hal-hal lain yang Ibu harapkan anak-anak Ibu nantinya bisa membantu Ibu?

622. Kalau anak Ibu memutuskan tidak ingin membantu Ibu/suami Ibu, sebagai jalan2 tersebut diatas (P.614-620), apakah yang Ibu/suami Ibu lakukan?

\*\*\*\*\* "Wawancara sudah selesai, terima kasih banyak, Ibu".

JAM DISELESAINYA: \_\_\_\_\_

SUAMI RESPONDEN HADIR?

YA 1 TIDAK 2 T.T. 9

MATRIX RIWAYAT HIDUP							KEMALIHAN ANAK		
RIWAYAT PERKAWINAN & KEHAMILAN									
TAHUN KEJAD- IAN	No. URU- TAN	KAWIN & HASIL HAMIL	J.K. (L) (P)	NAMA. URUTAN ANAK	HIDUP atau MATI	UMUR S. KARANG	No. URU- TAN	UMUR WAKTU MATI.	TAHUN KEJAD- IAN
01	02	03	04	05	06	07	08	09	
1980									
1979									1980
1978									1979
1977									1978
1976									1977
1975									1976
1974									1975
1973									1974
1972									1973
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1948									1949
1947									1948
1946									1947
1945									1946
									1945

TAHUN KELAHIRAN  
(RESPONDER)

UMUR SEKARANG  
(RESPONDER) (TAHUN)

KEMALAIAN  
ANAK

## KELUARGA BERENCANA

No. Urutan	UMUR SEKARANG	No. Urutan	UMUR WAKTU MATI.	TAHUN KEJAD- IAN	KELUARGA BERENCANA		
					CARA -- KB MENGGUNAKAN	KALAU BERHENTI, ALASAN	JARAK TINGGUNAKAN
	07	03	09		10	11	12
				1980			
				1979			
				1978			
				1977			
				1976			
				1975			
				1974			
				1973			
				1972			
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				1951			
				1950			
				1949			
				1948			
				1947			
				1946			
				1945			

ARABIC  
(PART II)



APPENDIX II



MINGGU WUKU	REDITE	SOMA	ANGGARA	BUDDA	WRASPATI	SUKRA	SANISCARA
1. SINTA	Pg	P KAJENG	W ANGGARA	BUDDA KLIWON	U	Pg	P TUMPEK
2. LANDEP	W	KLIWON	UMANIS	Pg	P	W SUKRA	LANDEP
3. UKIR	U	Pg	P KAJENG	W BUDDA	KLIWON	UMANIS	Pg
4. KURANTIL	P	W	*KLIWON*	UMANIS	Pg	P	W
5. TAULU	KLIWON	U	Pg	P	W	KLIWON	U
6. GUMBREG	Pg	P	W ANGGARA	KAJENG KLIWON	U	Pg	P TUMPEK
7. CATUR WARIGA	W	KLIWON	UMANIS	Pg	P KAJENG	W SUKRA	UDUH
8. WARIGADIAN	U	Pg	P ANGGARA	W BUDDA	KLIWON	UMANIS	Pg
9. JULUNGWANGI	P	W	KASEH	UMANIS	Pg	P KAJENG	W
10. SUNGSANG	KLIWON	U	Pg	P	W	KLIWON	U
11. DUNGGULAN	Pg	P	W	<u>GALUNGAN</u>	U	Pg	P
12. KUNINGAN	W	KLIWON	U	Pg	P	W SUKRA	<u>KUNINGAN</u>
13. LANGKIR	U	Pg	P ANGGARA	W BUDDA	KLIWON	UMANIS	Pg
14. MEDANGSIYA	P	W	KASEH	UMANIS	Pg	P	W
15. JULANG PUJUT	KAJENG KLIWON	U	Pg	P	W	KLIWON	U
16. PANCA PAHANG	Pg	P KAJENG	W ANGGARA	KLIWON	U	Pg	P TUMPEK
17. KRULUT	W	KLIWON	UMANIS	Pg	P	W SUKRA	KRULUT
18. MERAKIH	U	Pg	P KAJENG	W BUDDA	KLIWON	UMANIS	Pg
19. TAMBIR MEDANG	P	W	*KLIWON*	UMANIS	Pg	P	W
20. KUNGANG	KLIWON	U	Pg	P	W	KLIWON	U
21. MATAL	Pg	P	W ANGGARA	KAJENG KLIWON	U	Pg	P TUMPEK
22. UYE	W	KLIWON	UMANIS	Pg	P	W SUKRA	ANDANG
23. MENAIL	U	Pg	P ANGGARA	W BUDDA	KLIWON	UMANIS	Pg
24. PERANGBAKAT	P	W	KASEH	UMANIS	Pg	P KAJENG	W
25. SAD BALA	KLIWON	U	Pg	P	W	KLIWON	U
26. UGU	Pg	P	W ANGGARA	KLIWON	U	Pg	P TUMPEK
27. WAYANG	W	KLIWON	UMANIS	Pg	P	W SUKRA	WAYANG
28. TRI KELAWU	U	Pg	P ANGGARA	W BUDDA	KLIWON	UMANIS	Pg
29. DUKUT	P	W	KASEH	UMANIS	Pg	P	W
30. WATU GUNUNG	KAJENG KLIWON	U	Pg	P	W	KLIWON	<u>SARASWATI</u>

\*: ANGGARA-KASEH-KAJENG\*

APPENDIX III

ENGLISH  
QUESTIONNAIRE

INTRODUCTION:

We would like to know something about the people who are using family planning, and also about those who are not using it. We will visit the house of every couple of reproductive age in the villages of Banjarangkan, Tusan and Bakas.

SECTION 1. ECONOMIC BACKGROUND

HOUSING CONDITIONS

101. Who owns the house that you (and your husband) live in?

YOU AND YOUR HUSBAND      OTHER (Specify)

102. What is the main building material of the walls of your sleeping quarters?

BAMBOO      BAKED BRICKS      CEMENT      OTHER

103. What is the floor of the sleeping quarters?

EARTH      TILES      BAMBOO  
CEMENT      WOOD      OTHER

104. Do you and your husband have any of these things in your house?  
If YES, how many?

ELECTRICITY    YES--How many watts?  
                  NO---Is it available here?

PRESSURE LAMP  
KEROSENE LAMP  
KEROSENE STOVE  
BICYCLE  
MOTOR CYCLE  
RADIO  
CASSETTE PLAYER  
TELEVISION SET  
CHICKENS/DUCKS  
BUFFALO/COWS

## OCCUPATION AND LAND OWNERSHIP:

## RESPONDENT'S HUSBAND:

105. What is the main job your husband does?

FARMER	CARPENTER
CIVIL SERVANT	LABOURER
PRIVATE EMPLOYEE	OTHER (Specify)
ENTREPRENEUR	
HAWKER (SELLER)	UNEMPLOYED
CRAFTSMAN	DON'T KNOW

106. Does your husband do any other jobs?

FARMER	CARPENTER
CIVIL SERVANT	LABOURER
PRIVATE EMPLOYEE	OTHER (Specify)
ENTREPRENEUR	
HAWKER (SELLER)	UNEMPLOYED
CRAFTSMAN	DON'T KNOW

107. How much land do you and your husband own?

SAWAH  
 DRY LAND  
 GARDEN

108. How much land do you and your husband rent from, or sharecrop with, someone else (i.e., land that you work but do not own)?

SAWAH  
 DRY LAND  
 GARDEN

## RESPONDENT:

109. Do you do any work which brings an income, either in money or food, etc. (Not just necessary housework)?

YES            NO

110. What kinds of work do you do?

FARMING	LABOURER
SHOPSELLER	OTHER
MARKET SELLER	

111. Is this regular work (i.e., most weeks of the year) or only sometimes?

REGULAR            ONLY SOMETIMES

CONSUMPTION:

112. What is the main food you eat each day?

PURE RICE        RICE+CASSAVA     OTHER

113. Excepting ceremonies, how often do you eat the following each week?

CHICKEN/DUCK  
FISH  
OTHER (Specify)

SECTION 2. EDUCATION

RESPONDENT:

201. Have you ever been to school (Government, private or religious)?

YES        NO

202. What is the highest grade of schooling you have completed?

PRIMARY	JUN.SECONDARY	SEN.SECONDARY	UNIVERSITY/ACADEMY
123456	1 2 3	1 2 3	1 2 3 4 OTHER

ONLY RESPONDENT'S WITH 6 OR LESS YEARS OF EDUCATION

203. Are you able to read, for example, a simple letter, or a newspaper?

YES        NO

204. Are you able to write, for example, a simple letter?

YES        NO

RESPONDENT'S HUSBAND:

205. Has your husband ever been to school?

YES        NO

206. What is the highest grade of schooling he has completed?

PRIMARY	JUN.SECONDARY	SEN.SECONDARY	UNIVERSITY/ACADEMY
123456	1 2 3	1 2 3	1 2 3 4 OTHER

### SECTION 3. FERTILITY

#### CONTRACEPTIVE KNOWLEDGE AND EVER-USE

301. There are methods that people can use to avoid pregnancy and to space their children. This is called family planning. Have you ever heard about family planning?

YES NO

302. Do you know of, or have you heard of, any ways or methods to delay or avoid pregnancy?

YES NO

303. Which methods to delay or avoid pregnancy do you know of? (Specify)\_\_\_\_\_

Just to check, I will now read a complete list of family planning methods. Please tell me whether you have ever heard of them; and if so, whether you and your husband have ever used any of them.

(Each method listed is accompanied by a definition from the World Fertility Survey core questionnaire)

PILL IUD VAGINAL TABLETS CONDOM INJECTABLES  
 RHYTHM WITHDRAWAL ABSTINENCE INVERSION OF UTERUS  
 HERBS MASSAGE FEMALE STERILIZATION MALE STERILIZATION  
 OTHER (Specify)

### SECTION 4. LIFE HISTORY MATRIX

401. I would like to try to estimate your YEAR of BIRTH, and then your AGE NOW, using a calendar of events for which we already know the dates.

402. In what year were you first married?

403. Are you currently married?

404. Have you ever been separated from your husband for any long period?



419. Did you have another pregnancy after this one you have just described?

YES

NO

(if NO)-Did you have any children, by another husband, that you have not mentioned?

-Are there any of your own children living away from home, who have been forgotten, ('borrowed out' by relatives)?

-Any other children who were born alive, but later died (even after only a few hours)?

-Any other pregnancies that did not result in a live born baby, that is, the baby was born dead, or was lost early because of miscarriage or abortion?

420. Are you pregnant now?

YES      NO      DON'T KNOW

421. How many Bali months ('dedinans') since your last menstrual period?

#### FAMILY PLANNING PRACTICE

Now I would like to go back to when you were first married and ask you about anything you and your husband did to delay or avoid pregnancies (i.e., to space or limit them).

422. Between the times you were first married and first became pregnant, did you and your husband do anything to delay or avoid getting pregnant?

YES      NO

423. What method did you use, and when did you start?

424. Did you ever stop using that method?

425. When did you stop using this method, and what was the reason for stopping?

426. After that pregnancy, did you do anything to avoid another pregnancy?



427. Are you and your husband doing anything now to prevent pregnancy?

428. If using something, what method are you using?

SECTION 4. LAST FIVE YEARS

Now I would like to go back over the last five years, i.e., since 1975, to find out the exact age of any children you have given birth to, that is, any children born less than nine otons ago. Also any other pregnancies you have had during that period. It will be very helpful if you can remember the day of birth in the 7-Day and 5-Day week calendars (e.g., Redite-Umanis), and the name of the Wuku week --- (see chart).

Starting with your youngest living child, this child's name is what?

429. Can you tell me this child's age, in OTONS and Bali months (dedinans)?

430. Can you tell me the days of the 7-Day week (Dina) and the 5-Day week (Pancawara-Umanis, Paing, Pon, etc.) calendars on which this child was born? (Did you note in a book?)

431. Can you tell me the name of the WUKU calendar week in which this child was born?

432. Did you and your husband receive an official Birth Certificate from the government for this child's birth? (e.g., from the Perbekel or someone?)

(If YES) May I see it please?

433. So, this child is still alive now. Is that correct?

YES NO

434. (If NO) How many OTONS and DEDINANS was the child at the time he/she died?

435. Did you breastfeed this child?

YES NO

436. How old was this child when you weaned it?

Now to your next youngest living child, this child's name is what?

437. Can you tell me this child's age, in OTONS and DEDINANS?

CHILDREN NOT STILL LIVING:

438. Have you given birth to any children who have died since birth, but if they had not died, would be less than 9 otons old now (i.e., born since 1975)?

439. If this child had not died, what age would he/she be now, in OTONS and DEDINANS?

440. How old was this child, in OTONS and Bali months, when he/she died?

441. Have you given birth to any other children who have died since birth, but if they had not died, would now be less than 9 otons (i.e., born since 1975)?

YES NO

OTHER PREGNANCIES

442. We have now covered your pregnancies, since mid-1975, which resulted in live births, even if the child died later. Were there any other pregnancies during the same five year period, which did not result in a live birth, that is, the pregnancy ended 'early', or the baby was born dead.

YES NO

(If NO) Any menstrual regulations (Mesedot), or massage (Mapun) for late periods?

443. How many dedinans (Bali months) had you been pregnant already?

444. (If 1 to 5 Bali months) Did you, or someone else, do anything to make the baby 'go out' early?

445. Was this by menstrual regulation (Mesedot) or massage (Mapun)?

446. Now I want to ask you about breastfeeding your youngest child. You said that you breastfed this child for ?? months, did you start bottlefeeding this child before weaning him/her from the breast?

447. Can you tell me something about the pattern,

i.e., How old was the child when you started bottlefeeding?

What times of the day did you breastfeed?

Why did you start bottlefeeding before weaning?

Who bottlefed the child if you were away?

448. How old, in months and Bali months, was this youngest child at the time you accepted the family planning method mentioned above?

#### SECTION 5. FAMILY PLANNING

Now returning to when you were a young child,

501. At that time, about how many children was considered a good number to have, by a married couple (such as your parents)?

502. At that time, did people know of any ways to delay or avoid having more children than they wanted?

503. (If YES) What were these ways?

504. From the same mother, how many brothers and sisters do you have (including any who have died)?

BROTHERS        SISTERS

505. Did your father ever have more than two or more wives at the same time?

506. (If YES) How many did he ever have, at the same time?

ASK ONLY OF WOMEN WHO HAVE USED ONE OR MORE METHODS OF FAMILY PLANNING. SEE LIFE HISTORY MATRIX.

507. If you still remember, what reasons were given by the government at that time, that we should follow the Family Planning Program.
508. Can you remember the reasons why you and your husband accepted family planning for the first time?
509. Did any members of your banjar give advice to you that you should decide to use family planning?
510. (If NO) Who was involved in this decision, besides yourself?
511. (If YES) Can you tell me more about this decision (to start using family planning), were there any particular people, or groups of people, involved, and what kinds of things did they say?
512. If a couple from your banjar, who already had 5 or 6 children, decided that they did not want to use family planning, what would you think about that?

Although we have already discussed your family planning practice, I would like to ask some detailed questions about two methods, the Spiral (IUD), and the PILL, if you have ever used either of them. First the Spiral.

513. You have already said that you have:

Used the Spiral	Never used the Spiral
-----------------	-----------------------

Is that correct?	Is that correct?
YES NO	YES NO

514. Where did you obtain the Spiral?
515. At the time the Spiral was inserted, were you told anything about possible problems that you might experience?
516. (If YES) What were you told?
517. Some women who have used the Spiral experience problems. Have you ever experienced any problems while using the spiral?

518. (If YES) What were these problems, and did they occur regularly (every month), or only irregularly?

	REGULAR	IRREGULAR
MENSTRUAL PERIODS LONGER		
MENSTRUAL PERIODS HEAVIER		
BLEEDING BETWEEN PERIODS		
STOMACH PAIN		
FEEL MORE TIRED THAN USUAL		
OTHER		

519. Did these problems affect your daily work?

520. (If YES) In what ways?

521. Sometimes women have to stop using the spiral because of side effects (problems) that are giving them too much trouble. Did you do this (stop using the spiral)?

522. (If NO) Did you do anything to reduce any problems resulting from using the spiral?

523. Can you tell me the main reasons why you stopped using the spiral?

524. Who removed the spiral?

DOCTOR/F.P. NURSE	TRADITIONAL HEALER
TRAINED HEALER	SELF OTHER

525. Now I would like to ask you about the PILL.

You have already said that you have:

USED THE PILL	NEVER USED THE PILL
Is that correct?	Is that correct?
YES NO	YES NO

526. Where do/did you normally obtain your pill supplies?

F.P. CLINIC	CHEMIST
KELIAN DINAS	DOCTOR
HEALTH CLINIC	NURSE OTHER

527. Are/were supplies always available at the supply place when you needed them?

YES NO

528. (If NO) What did you do if you ran out of pills and could not get them at the usual place?
529. When, in your monthly cycle, do you normally take the pills? During menstruation, after menstruation or each day?
530. Have you ever forgotten to take the pill on one or more days?
531. What did you, when you missed taking them?
532. Can you tell me what brand of pill you use?  
(What does the packet look like?)
533. When you first obtained the pill, did the Doctor/nurse tell you anything about possible problems you might experience?
534. (If YES) What did they say?
535. Some women who have taken the pill experience problems. Have you ever experienced any problems while taking the pill?
536. What were these problems, and did they occur regularly (every month), or only irregularly?
- |                           | REGULAR   | IRREGULAR |
|---------------------------|-----------|-----------|
| NAUSEA                    |           |           |
| HEADACHE                  |           |           |
| BODY WEIGHT CHANGED       | INCREASED | DECREASED |
| BREASTMILK SUPPLY         | INCREASED | DECREASED |
| MENSTRUAL PERIODS CHANGED |           |           |
| OTHER                     |           |           |
537. Did these problems affect your daily life and work?
538. (If YES) In what ways?
539. Sometimes women have to stop using the pill because the side effects are giving them too much trouble. Did you do this (stop taking the pill)?
540. (If NO) Did you do anything to reduce any problems resulting from using the pill?

541. (If YES) Can you tell me the main reasons why you stopped taking the pills?

SECTION 6. VALUE OF CHILDREN

601. Do you and your husband want to have more children, sometime in the future?

602. (If NO) Why don't you want any more children?

603. (If YES) How many more do you want?

604. (If YES) Would you prefer a boy or a girl or don't you mind?

605. (If YES) Can you tell me why you and your husband want more children?

606. Thinking back to the time before you had any children, if you could choose exactly the number of children to have in your whole life, how many children do you think that would be?

607. Comparing the costs involved in bringing up children now, to when you were a child, do you think that now the costs are:

SAME AS THEN  
CHEAPER NOW

MORE EXPENSIVE NOW  
DON'T KNOW

608. What are the greatest expenses involved in bringing up children these days?

609. Can you tell me about the costs needed for the first otonan (210 days old) ceremony for your youngest child?  
(Ceremony+Priest+Offerings+Food+Jewellery=Total)

610. How many of your children do you think will go to school?

ALL CHILDREN

SOME CHILDREN

611. (If SOME) Which children in particular?

612. (If ALL) To what level will you send (a) sons, (b) daughters?

613. When they grow up, what kind of work do you expect (hope) they will do?

SONS \_\_\_\_\_ DAUGHTERS \_\_\_\_\_

Now I will list a number of ways in which sons and daughters might help their parents. Can you tell me whether or not you expect these kinds of help from your own sons and daughters?

	SONS	DAUGHTERS
	Y N DK	YES NO DK

- 614. HELP AROUND THE HOUSE
- 615. HELP WITH FARMING/HARVESTING
- 616. HELP LOOK AFTER YOUNGER SIBLINGS
- 617. HELP WITH PARENTS DAILY WORK

AFTER CHILD STARTS WORK:

- 618. GIVE MONEY FOR CEREMONIES AND DAILY NEEDS OF FAMILY
- 619. REGULARLY GIVE PART INCOME TO PARENTS
- 620. SUPPORT PARENTS IN THEIR OLD AGE

621. Are there any other ways in which you expect your children to help you?

622. If your child decided he/she did not want to help you and your husband, in the ways listed above (Qs.614-620), what would you do?

(NOTE: was husband present at (a) start, (b) end of interview?)