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Evidence for Early Fertility Transition Among the Hmong in Northern Thailand

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Introduction

Recent demographic studies in Thailand have revealed the growing success of the national family planning program and subsequent fertility decline over the past decade or so (see, for example, Leoprapai and Thongthai 1988; Pardthaisong, 1988; Knodel et al., 1987; Krannich and Krannich, 1980). This, does not mean that the same levels of contraceptive prevalence and decline in marital fertility have reached all segments of the population. In fact, people of some peripheral groups and minorities have not yet experienced a significant change in their reproductive behavior. These groups include the Thai Muslim population in the four southern-most provinces and several ethnic minorities scattered in the hill areas of the North. It is believed that geographical distance coupled with their cultural and socioeconomic characteristics are the major constraints to fertility control among these groups. Although some of them have been exposed to the idea of family planning for quite some time, it was not until national fertility had been more or less under control around the early 1980's that intensive family planning efforts have been made to reach them. Just as there is work to be done to further reduce fertility of the larger components of the population, so is there more to be done among these minority groups.

In this paper we will demonstrate that, the Hmong, a high fertility group who are the second largest hill tribe of Northern Thailand numbering over 80,000 people, seem to be receptive to the idea of family planning after some years of exposure. High fertility of this population seems to be at an early stage of transition, although a real change in the aggregate fertility will not be readily evident for some time.

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Explaining Fertility Decline in the Third World

Early explanations of fertility decline have drawn upon the classical demographic transition model. Modernization of society, defined in terms of urbanization, industrialization, literacy, and the like, results in a shift from major dependence on relatively self-contained local institutions (such as the family and household) to dependence upon larger economic, social and political units (Freedman, 1979:63). The shift has a number of impacts on the individual and the family; important among these is the change it brings on the economic calculus of childbearing (Cleland and Hobcraft, 1985). As modernization increases and the units of interdependence expand and take over family functions, the benefits and satisfaction derived from a large number of children decline. At the same time the costs of raising children (both monetary and opportunity costs) increase. For example, with the increase of modern education children are required to remain in school longer and hence contribute less labor to the family. There is also the indirect cost of lost opportunity for the mother of young children to exploit increasing employment opportunities outside the home. Thus, the modernization of society, particularly the changes in the functions of the family, leads to a new perception of the costs and benefits of children which, in turn, results in a desire for fewer children.

The classical demographic transition model was believed to apply well to the experience of developed countries in Europe. But, as Coale (1973) pointed out, this probably is not the case since many European countries which differed widely in industrialization and urbanization began their declines about the same time. For the contemporary developing countries, the demographic transition model may have little relevance (Teitelbaum, 1975).

Another set of explanations of fertility decline focuses primarily on social factors. In transitional societies there is a shift from a corporate kinship system to the extended family and, finally, to the nuclear family. This brings about a decline in the social and economic advantages of large family size and, consequently, a desire to limit the number of children. Caldwell (1982, 1983), for example, explains this in terms of the intergenerational wealth flow (defined as the net flow of labor and services, goods and money, present and future guarantee including old age support). Such flow is upward in pre-transitional societies and downward in post-transitional societies. The reversal of the flow is determined largely by social and cultural factors such as the transmission of Western ideas through education and mass media, and the replacement of an extended family system by the child-centered nuclear family. Fertility in both pre-

transitional and post-transitional societies is seen as economically rational, but the agent of change is primarily of a socio-cultural nature.

Recent theoretical explanations of fertility decline in developing countries, while recognizing the significance of social and economic modernization at the macro-level and of mortality decline, tend to draw upon short-term development of certain aspects of society and the role of the diffusion of contraceptive ideas. Freedman (1979) argues that under current conditions, a high level of Western-type modernization is not a necessary condition for fertility decline. The motivations for low fertility may arise from a relatively small subset of developmental changes, without the high standard of living, urbanization and other hallmarks of the Western industrial complex. A similar argument is also raised by Cleland and Hobcraft (1985). In their critical examination of WFS data Cleland and Hobcraft found no support to the view that a fundamental shift in the economic role of the family, or of its members, particularly women and children, are necessary for marital fertility decline. Instead, WFS data seem to suggest that the fertility decline due to birth control bears the hallmarks of a diffusion of a new behavioral trait, spreading to all sectors of society within a short span of time. Diffusion of birth control resulting from state policy is, indeed, recognized as having independent effects on fertility regulation in many contemporary developing countries (Retherford and Palmore 1983).

According to these explanations society may not be fully modernized in all aspects, yet fertility decline can take place. Relatively low levels of development in such aspects as economy, literacy, or mass communication, if accompanied by a reasonable policy for a family planning program, can provide a sufficient motivation for low fertility. In fact, this is the condition under which fertility decline in Thailand took place in the last decade. The country as a whole then, as now, was largely rural while the economy remained agricultural. Yet, with a strong national family planning program the idea and the practice of family planning spread to the major component of the population within a relatively short span of time. This, however, by no means implies that other socio-cultural variables do not have any role to play. But given the socio-cultural variables specific to a population, fertility control through use of modern contraception can be possible even where macro-environmental development has not reached a high level.

The Hmong described in this paper provide evidence in support of the above argument. As will be seen in the following discussion, fertility transition can begin despite a low level of economic and social development where swidden (slash and burn)

agriculture is the main source of household income, the majority of the population remains illiterate, and transportation is generally poor. In addition the Hmong data support an argument for a response to resource constraint as well as exposure to family planning and other modern ideas as key factors leading to acceptance of family planning in less developed societies.

Method and Data

The data upon which this paper is based are drawn from an on-going research project on Household Economics and Population Behavior jointly conducted by the Institute for Health Policies Studies, University of California, San Francisco, USA, and the Institute for Population and Social Research, Mahidol University, Thailand. The project is funded by the National Institutes of Child Health and Human Development. To provide more comprehensive data the survey was conducted at the community as well as the household level. The community survey was carried out in 1987, covering almost all Hmong villages known to date in the Northern region of Thailand[1]. The community survey provides rich information on the village physical and socioeconomic environment upon which samples for the household survey were subsequently selected. Household survey data are from villages located in Nan, Chiang Mai, Tak and Petchabun Provinces. Survey communities were selected to represent different physical and socioeconomic characteristics. These range from villages with traditional swidden agriculture, located in remote mountains connected to the outside world only by poor dry-season roads, to those resettled in the lowland with fairly good road, school and health facilities. In addition, all 37 households of Hmong who recently settled in the urban center of Chiang Mai were interviewed. The survey completed to date covers about 1,000 households with about 2,000 ever married women being interviewed.

The data set for the present paper is taken from the household survey of 8 villages in Chiang Mai province, including those Hmong households who live in the city of Chiang Mai, The data set contains demographic information on 457 ever married women aged 14-49. In terms of the type of community, the cases presented here may be divided into three groups : those who are from villages with traditional economy having relatively easy access to swidden land, those who are from transitional villages with limited access to land, and those who are from the urban center. For our purpose here only selected variables are used.

The Hmong in Thailand

The following description is intended to provide background information on the Hmong in Thailand who form only a fraction of the larger Hmong population in South China, North Viet Nam, Laos, and other parts of the world where they were recently resettled. Hmong are believed to have come into Thailand from Laos, crossing the border in small and large groups, to Chiang Rai, Nan and Loei provinces. Their presence in the North was first noted about 100 years ago (Smyth, 1898 vol. 1 : 174). Rapid natural increase coupled with continued in-migration have made the number of Hmong in Thailand rise constantly. At present, the Hmong population is the second largest hill tribe group following the Karen, accounting for about 15 percent of the total hill tribe population.

Two major dialects of Hmong are found in Thailand, Hmong Der (White Hmong) and Hmong Njua (Blue Hmong); both are largely intelligible. There are only relatively minor cultural distinctions between the two groups, which share many clan names and which occasionally intermarry. Statistics on the number of Hmong Der and Hmong Njua are not available to date. Members of both the groups are included in the present study.

Traditionally, Hmong villages were usually located at high altitudes, about 3,000 feet above sea level or higher. At this altitude the climate is suitable for growing opium as a cash crop. The traditional Hmong economy is based on swidden (slash-and-burn) agriculture with upland rice and maize as the main subsistence crops, supplemented by vegetable gardening and animal husbandry (largely pigs and chickens). The practice of swidden agriculture uses a simple technology, but it requires frequent relocation or periodic fallowing of fields. The Hmong traditionally moved to new locations when the old field was exhausted or over-taken by weeds. In this way, traditional Hmong villages may be seen as a "temporary" aggregates of households which stay together in one place as long as no epidemic diseases happen and swidden fields of reasonable quality are available within walking distance.

Recent socioeconomic and political changes have brought to some Hmong, as well as other tribes, new opportunities for development. These include roads, new cash crops as an alternative to opium growing, school and primary health facilities. As a result some Hmong households are able to enjoy a new form of wealth; their children begin school education and an increasing number of them become literate. However, since these changes have just begun, Hmong and other tribal populations in general

still find themselves living in their traditional conditions. Within the past five years the government has begun vigorous enforcement of laws against poppy cultivation and against clearing forest land for farming. This has constrained both the cash and subsistence economy. Many of the people live in poverty and the vast majority of the population are illiterate. (A study of the Hmong in Tak Province which is close to Chiang Mai to the South reveals that about 70 percent of the population aged 15-34 had no school education, presumably illiterate. See Kamnuansilpa et al., 1987:27). Moreover rapid population growth in the hill areas coupled with increasing environmental deterioration has put Hmong and other tribal groups under resource constraints never before experienced.

Hmong society is a patriarchal society with numerous exogamic patri-clans. The people practise a patrilocal rule of post-nuptial residence. Their extended household is large, usually consisting of an old man and his wife or wives, married sons and their wives and children. If the old couple live long enough, there may be a fourth generation in the household. An average household consists of about 8 persons, but the household size in our surveyed population ranges from 1 to 89 people. Hmong probably have the largest households of all highland and lowland populations in Thailand.

In Hmong society although children of both sexes contribute to the household economy at an early age, sons are strongly preferred because of their role in future economic support, and for continuation of the family line and its associated ancestral rituals. Daughters are seen as a source of labor before they marry, a source of bride price at the time of marriage, and a source of expanded kin ties after they have moved to their husband's households.

Hmong Fertility

Before discussing evidence for fertility transition we should indicate that evidence from this survey and other recent studies (see, e.g. Kunstadter, 1983; Kamnuansilpa et al., 1987:33-4) shows that the Hmong in Northern Thailand have very high fertility. Data in Table 1 show that by the time an average Hmong woman reaches the end of her reproductive career she has about 7 live births, out of whom about 6 children survive. With a Total Marital Fertility Rate (TMFR) of 6.6, current Hmong fertility is close to natural fertility. Such a high level of fertility is perhaps shared by very few other minority groups in the country. Because of declining mortality among the highland population in recent years (Kunstadter et al., 1989), the

current Hmong fertility rate implies a very high rate of natural increase. This rapid increase is reflected in age structure of the Hmong. Our survey data show that the median age of the Hmong in Chiang Mai is 13 years.

Table 1. Mean number of live births, mean number of surviving children, age specific marital fertility rate (ASMFR) and total marital fertility rates (TMFR) by age group, 1988

Age group	Live births	Surviving children	ASMFR*
15-19	0.9565	0.9130	.3333
20-24	2.1728	1.9630	.1975
25-29	3.7789	3.3579	.2842
30-34	5.1125	4.7375	.1875
35-39	6.6406	5.7344	.1563
40-44	7.7556	5.9778	.1111
45-49	7.5000	6.4500	.0500
Total	4.1608	3.7115	TMFR* = 6.5995

Note : * Rates for age specific and total fertility are calculated on the basis of ever married women. Never married (single) women are not available for the present analysis. However, given early marriage of the Hmong in general and a near universal marriage of women after age 20 (Kamnuansilpa, 1987 : 32), the rates calculated here represent a fairly close estimate.

The high fertility of the Hmong is best understood within the context of the socioeconomic conditions in which they live. First, traditional Hmong household economy is based almost entirely on swidden agriculture with relatively simple technology, the practice of which requires intensive human labor. Under such a circumstance, more able hands means more wealth to the household. This is true especially where access to swidden land is relatively easy. Second, in the traditional Hmong community where there are no public institutions upon which one can depend for welfare in time of need, one's kin and relatives play a very important part in one's life. Children and siblings are the best source of immediate and future support. Third, Hmong culture gives a strong preference to sons who are expected to take care of the parents, especially in their old age, and to carry on the family name and worship of ancestral spirit. Ideally, one would like to have, not just one or two sons, but as many

as possible. The pressure to have at least one son (regardless of the number of daughters) is among the key factors that keep Hmong fertility high.

Hmong men and women begin family life at an early age. Average age at first marriage among the Hmong in Chiang Mai province (from which the data for this paper are collected) is 20 for men and 18 for women (National Statistical Office, 1986 : 18). After age 20, the proportion of men and women who are never married is minimal. Celibacy beyond age 30 is virtually absent in Chiang Mai province. Within marriage, most couples want to have a large number of children.

Table 2 shows the total number of children wanted by ever married women aged 14-49. Although the number of children wanted is often affected by the number of living children that one has, Table 2 generally suggests that the majority of the respondents (more than two-thirds) want to have 3-6 children. The mean total number of children wanted, calculated on the basis of the present survey, is 5 children.

What has been discussed so far confirms that Hmong fertility is high. Despite this, however, there is some evidence which indicates that changes are taking place in Hmong fertility behavior. Over time, this may lead to a fertility transition in Hmong society.

Table 2. Distribution (in percent) of women by total number of children wanted and number of living children

Number of living children	Total number of children wanted						
	1-2	3-4	5-6	7+	other responses	Total	(N)
0	19.0	64.3	11.9	0.0	4.8	100	(42)
1-2	13.9	60.7	20.5	0.0	4.9	100	(122)
3-4	0.8	50.8	40.7	2.5	5.1	100	(118)
5-6	0.0	1.1	82.8	11.8	4.3	100	(93)
7+	0.0	1.4	0.0	88.4	10.1	100	(96)
Total	5.9	36.7	34.9	16.9	5.6	-	444

Note : Total number of women in this table does not include 13 cases with missing information.

Evidence for Early Fertility Transition

Theoretically, there are many behavioral as well as socioeconomic characteristics which can be taken as evidence for fertility transition within a particular population experiencing high fertility. A list of demographic evidence includes at least some or all of the following : changes in attitude toward norms about family size; widespread knowledge of family planning; deliberate birth control using modern contraceptive methods; increase in age at marriage and decline in proportion married during reproductive ages due to celibacy, separation or divorce. In short, anything that indicates "modern" reproductive behavior can be regarded as evidence for the transition. For the Hmong of Northern Thailand, such evidence may be best illustrated by the people's knowledge of contraceptive methods and their practice of modern family planning.

a) Knowledge of contraceptive methods

Table 3 gives the proportion of married women in the sample who know or do not know each contraceptive method when prompted (by mentioning names of the methods to the respondents). Overall, the people's knowledge of family planning methods is quite good. Most of the temporary and permanent methods that are common to the lowland population are also well known to them. The proportions who know these methods range from about 52 percent for IUD to about 99 percent for sterilization. For the less common methods, the proportion who know or ever heard about them decreases from about 40 percent for induced abortion to 8 percent for implant (norplant) which was first introduced within the past three years.

The finding in this respect is consistent with what was reported by Kamnuansilpa et al., (1987:44) for Hmong women in Tak Province. There, the more common methods such as oral pill, injectable and sterilization (tubal ligation) were found to be known by some 90 percent or more of the respondents. What is interesting about this is the fact that we are here dealing with knowledge of Hmong women who are known to be more "conservative" than men in almost all aspects. One may speculate that men's knowledge of contraceptive methods is at least the same, or very likely at a higher level. It may also be reasonable to say that Hmong are similar or close to the lowland population with regard to knowledge of contraceptive methods.

Table 3. Percentage of women who know or ever heard about each contraceptive method (prompted question)

Method	Know	Don't know	No information	Total (N = 457)
Sterilization	98.9	0.4	0.7	100
Injectable	97.4	2.6	0.0	100
Oral pill	97.2	2.4	0.4	100
Vasectomy	94.7	3.3	2.0	100
Condom	74.9	24.9	0.2	100
Abstinence	54.7	45.1	0.2	100
IUD	51.6	47.5	0.9	100
Induced abortion	40.5	59.1	0.4	100
Cycle (safe period)	24.3	75.3	0.4	100
Traditional medicine	24.2	75.1	0.7	100
Withdrawal	10.8	88.8	0.4	100
Norplant	7.9	44.0	48.1	100

b) Use of contraception

The best evidence for behavior leading to the fertility transition is the use of contraception to limit family size. Despite their current high fertility and general desire for a large number of children, a sizeable number of Hmong couples are practising birth control. Tables 4 and 5 give the proportion of current users and non-users of family planning methods by age group and number of living children. Overall, nearly one-third (30 percent) of the women in the sample are currently using modern methods of family planning. This rate of contraceptive prevalence is very low compared to what was currently found at the national level which is about 70 percent (Leoprapai and Thongthai, 1988). But is more or less similar to that found among Thai Muslim whose rate of contraceptive prevalence is 35 percent (Chayovan et al., 1988:59)

Patterns of contraceptive use indicated in Tables 4 and 5 seem to suggest that the main purpose for using contraception is to limit the number of children when women already have substantial numbers rather than to stop or limit births early in their reproductive career. Table 4, in particular, shows that the proportion of current users increases almost steadily as the age of women increases; it drops only in the

oldest age group of 45-49. The drop in the proportion of users aged 45-49 is perhaps due to the absence of need for contraception among some women who reach menopause in this age group.

An implication of the pattern derived from Table 4 is that as women become older and consequently have had more births (in average about 5 births by the age of 30-34, see Table 1 above), they are more likely to feel the need for limiting the number of children. That probably explains why the proportion who are currently using contraception is higher in age 30 to mid-40's than in the age groups below 30. This observation is well supported by Table 5 which shows a steady increase in the proportion of users as the number of surviving children increases. The proportion drops only among those with 7 children and more, perhaps because they are "too old" to need contraception.

Table 4. Proportion who are using or not using contraception by age group

Age group	Current users	Non-users	Total	(N)
14-19	9.7	90.3	100	(72)
20-24	24.7	75.3	100	(81)
25-29	31.6	68.4	100	(95)
30-34	45.0	55.0	100	(80)
35-39	34.4	65.6	100	(64)
40-44	37.8	62.2	100	(45)
45-49	20.0	80.0	100	(20)
Total	29.8	70.2	100	-
(N)	(136)	(321)	-	(457)

Table 5. Proportion who are currently using or not using contraception by number of living children

Number of living children	Current users	Non-users	Total	(N)
0	9.3	90.7	100	(43)
1-2	18.6	81.4	100	(129)
3-4	32.2	67.8	100	(121)
5-6	48.4	51.6	100	(93)
7+	33.8	66.2	100	(71)
Total	29.8	70.2	100	-
(N)	(136)	(321)	-	(457)

Another aspect of contraceptive use patterns may be seen in the choice of the methods. Table 6 provides summary data for this. It is interesting that the methods used the most (by about three-fourths of all users) are semi-permanent and permanent methods (injectable, sterilization and implant (norplant), respectively). Implant (norplant), which was recently introduced to people in remote areas including the hill tribes, is well accepted by the Hmong clients in Chiang Mai. Perhaps, the choice of methods as shown in Table 6 also reflects the policy of the service providers, i.e., to encourage people in remote areas to use semi-permanent and permanent methods.

Table 6. Distribution (in percent) of current users of contraceptive methods by method used (in order of prevalence)

Method used	Number	Per cent
Injectable	50	36.8
Female sterilization	34	25.0
Implant (Norplant)	21	15.4
Pill	14	10.3
IUD	6	4.4
Cycle (safe period)	6	4.4
Traditional medicine	3	2.2
Condom	1	0.7
Abstinence	1	0.7
Total	136	100

c) Reasons for using contraception

Users (both past and current users) were asked what their reasons were for using contraception. Table 7 shows that most Hmong, like most other users, use contraceptive methods to space births and to stop childbearing. Those who use contraception for these two reasons alone account for 88.5 percent of all users. There are, of course, variations across age groups, but in general they simply reflect normal reproductive behavior; that is, most younger women who have not reached their desired number of children use contraception for the purpose of spacing and most older women who already have the number of children they wanted use it to stop childbearing. There are only a small number of women who say they use contraception for health and child care reasons.

Table 7. Distribution (in percent) of women by reasons for using contraceptive methods and by age group

	Age group							Total	
Reasons	14-19	20-24	25-29	30-34	35-39	40-44	45-49	N	%
Spacing birth	100	80.0	34.3	30.9	34.5	5.6	0.0	66	40.0
Stop childbearing/ don't want any more	0.0	11.5	54.3	54.8	51.7	88.8	66.7	80	48.5
Maternal health problem	0.0	0.0	11.4	11.9	6.9	5.6	33.3	14	8.5
No time for child care	0.0	7.7	0.0	2.4	3.4	0.0	0.0	4	2.4
Advised by King's project or health worker	0.0	0.0	0.0	0.0	3.4	0.0	0.0	1	0.6
Total %	100	100	100	100	100	100	100	-	100
N	9	26	35	42	29	18	6	165	-

Note : Total number of women in this table includes ever users and current users. Those women who never used contraception are excluded.

d) Reasons for not using contraception

In order to understand the Hmong fertility transition it is important to know what the reasons are for those who do not use contraception. Table 8 gives the data in this respect. Needless to say, most of the non-users (71.1 percent) are people who still wanted to have more children or thought they have too few children. Most of these women are under 30 years of age. Perhaps, an interesting thing in Table 8 is that a sizeable number of women are not using contraception for fear of side-effects (13.1 percent) and for lack of knowledge in family planning (8.6 percent). This finding certainly has an important program implication.

e) Community differentials of contraceptive use

The following discussion is based on the hypothesis that use of contraception to limit family size is positively associated with socioeconomic development of the society or community. The higher the level of development is, the more prevalent the use of contraception can be, other things being equal. Since the present study covers a variety of Hmong communities, it is possible to see the relationship between community type and contraceptive behavior.

Table 8. Distribution (in percent) of women by reasons for not using contraception and by age group

	Age group							Total	
Reasons	14-19	20-24	25-29	30-34	35-39	40-44	45-49	N	%
Wanted more children/have none or too few	93.7	98.2	73.8	68.4	40.0	24.0	21.4	207	71.1
Naturally wide space/ don't want to interfere with nature	0.0	0.0	4.9	5.3	11.4	4.0	7.1	11	3.8
Fear of side-effects	1.5	1.8	9.8	15.8	28.6	36.0	35.7	38	13.1

(Cont.)

Table 8 (Cont.)

	Age group							Total	
Reasons	**14-19**	**20-24**	**25-29**	**30-34**	**35-39**	**40-44**	**45-49**	**N**	**%**
No knowledge of FP	0.0	0.0	4.9	10.5	20.0	28.0	28.6	25	8.6
Pregnant/not yet decided	0.0	0.0	4.9	0.0	0.0	4.0	7.1	5	1.7
Not currently living with husband	4.8	0.0	1.6	0.0	0.0	4.0	0.0	5	1.7
Total %	100	100	100	100	100	100	100	-	100
N	63	55	61	38	35	25	14	291	-

Note : Total number of women in this table does not include those who ever used FP and those cases with missing information.

For our purpose here, Hmong communities in Chiang Mai are classified into 3 types, namely, (i) traditional villages characterized by fairly good access to agricultural (swidden) land; (ii) transitional villages characterized by poor quality swidden land and limited access to cultivatable land; and (iii) urban community, in this case, urban Chiang Mai which is the major urban center of the North.

Table 9 shows the relationship of contraceptive use to community type. Although some women from communities of all types are using family planning methods, the proportion who are users increases steadily from traditional to transitional villages and to urban Chiang Mai. Note that the woman who live in urban Chiang Mai most resemble the urban Thai in their contraceptive behavior (84 percent are using contraception), despite the fact that they are migrants most of whom moved to city in the recent past. Both "traditional" and "transitional" villages have schools and health stations in or nearby the communities, but the health stations are more conveniently located in the "traditional" communities. The "traditional" communities are closer to a district town within a full range of preventive, curative and family planning services than are the "transitional" communities, but the use rate is higher in the transitional communities. This implies that something in addition to economic development has caused the difference between "traditional" and "transitional" communities.

Table 9. Percentage of women who are currently using contraceptive method by type of community

Type of community	Current users	non-users	Total	(N)
Traditional village with fairly good access to land	20.6	79.4	100	(214)
Transitional villages with limited access to land	29.3	70.7	100	(205)
Urban Chiang Mai	84.2	15.8	100	(38)
Total	29.8	70.2	100	(457)

Discussion and Conclusion

We have demonstrated that although Hmong fertility is high and will remain so at least for some time, there emerges some evidence for fertility transition which will eventually bring fertility down to a lower level. Questions arise as to what the forces are that cause the Hmong, who are best characterized socially and economically as "traditional," to begin to perceive benefits of limiting family size and to practice family planning.

What does the Hmong case tell us about the significance of socioeconomic development in changing reproductive behavior ? While we cannot provide hard evidence now to answer these questions, we will speculate on what might be possible answers to the questions.

We believe that at least two major forces are at work simultaneously to cause changes in reproductive behavior of the Hmong and possibly other hill tribes. One of these forces has to do with resource constraints resulting from a steady increase of highland populations over the past decades and enforcement of government regulations limiting the practice of traditional forms of subsistence and cash crop farming.

Highland populations in Northern Thailand, including the Hmong, live on swidden farming the practice of which requires a long fallow period for the fields that have been used repeatedly for some years. When the fields around the village have been exhausted and no old fields can be reused, the people traditionally cleared new fields. In the long run, this process, when practised conservatively by low density populations, causes little deterioration to the forest and to the environment as a whole. But with

high population density and repeated use over a short time, environmental effects are serious. With steady population growth and with recent government measures stepped up to protect the forest land and watersheds (such as reforestation projects), the highland populations are under increasing resource constraints. The traditional response to such a constraint by migrating to better places, where swidden land is abundant, does not help very much now that such places hardly exist. Even when they do, the government measures may prevent the highland people from using new forest land. This constraint probably acts as one motive that causes highland people to opt for limiting their family size when it is possible to do so. People say that they want to limit their family size because there is not enough land to make a living, or not enough land to share with their children.

The other force may be characterized as social and economic development. Although socioeconomic development on the highland in general has not kept up with that in the lowland society, it does provide the highland people with new opportunities for social and economic improvement. These include extension of roads (mainly dry-season dirt-roads), school education, mass media (radio with some programs broadcast in minority languages, and television in some places), health facilities or access to sources of health services including family planning, and new cash crops and labor-saving cropping methods. Although the impact of such development on the people's reproductive behavior is difficult to measure, together with increasing resource constraints it probably works toward the benefits of limiting the family size for individual couples.

In the urban area the motives for limiting family size are explicitly economic : Children are too expensive, they interfere with work, and school and health benefits for government workers are limited to a maximum of three children.

Evidence in hand now seems to suggest that for reproductive behavior to change in the direction of family size limitation, macro-environmental development, although desirable, need not reach a high level. For a society under similar circumstance as that of the Hmong in Northern Thailand, what may be needed most is program efforts organized toward creating demand for family planning and providing accessible services with good information and education systems. The family planning education program could easily emphasize ideas related to family planning already recognized by the Hmong, such as the relationship between birth interval and the health of the mother and child, and the lack of land resources for future generations if the population continues to grow.

Notes

[1] According to statistics compiled by the Tribal Research Institute around 1985-1987 Hmong are found in 230 villages scattered in 12 provinces of the North and 1 province of the Northeast.

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