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DHS Demographic and Health Surveys

THAI DEMOGRAPHIC AND HEALTH SURVEY

Preliminary Report 1988

Institute of Population Studies
Chulalongkorn University

Preliminary Report of Thai Demographic and Health Survey (TDHS)

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I. Introduction

A. Background

The Thai Demographic and Health Survey (TDHS), was conducted by the Institute of Population Studies (IPS), Chulalongkorn University within the framework of the Demographic and Health Surveys Program of the Westinghouse Institute for Resource Development (IRD). The funding was provided by the U.S. Agency for International Development through IRD. The major objective of the TDHS is to provide current and accurate data on fertility, mortality, family planning, and selected indicators of health status to be used for program assessment and guidance and scientific analysis. The purpose of this preliminary report is to present findings on several major topics covered by the survey. Following a brief description of the methodology and sample, tables are presented providing an overview of fertility levels and reproductive intentions, family planning knowledge, use and sources, and maternal and child health indicators. Results should be considered provisional and subject to revision in the course of analysis leading to the final country report.

B. Methodology and Sample

The TDHS used three questionnaires: one designed to record information on the household; another to record information from current or formerly married women in the reproductive ages; and one to record information on the communities included in the sample. The household questionnaire was used to list all usual household members and any visitors who slept overnight. For each person listed, information was recorded on age, sex, marital status and educational attainment (if age

13 or over), and whether or not the person slept in the household the previous night. From this list, eligible respondents (consisting of women currently married, divorced, separated, or widowed between the ages of 15 and 49 who slept in the household the previous night) were identified. The second, or eligible woman questionnaire, was then administered to each of these women. The community questionnaire focused on community socio-economic characteristics and accessibility to health care and family planning facilities. The present report is based primarily on information collected through the eligible woman questionnaire although data on the marital status distribution of the population based on the household questionnaire are utilized for determining the denominators of fertility measures relating to all reproductive age women (whether ever or never married).

The TDHS is based on a national sample designed to provide independent estimates for the four major regions of the country plus the Bangkok Metropolitan Area as well as for the urban and rural populations. To achieve this, the population was divided into six separate domains for sampling purpose: the Bangkok Metropolitan Area, all provincial urban areas, and the rural areas in each of the four regions. Provincial urban areas are defined as all administratively defined municipal areas outside of Bangkok. The total urban category consists of Bangkok plus provincial urban. National results can be obtained by appropriately weighting the results for each domain. Table 1 indicates the actual and weighted number of eligible women interviewed. The weights were determined so that the total weighted cases would equal the total actual cases. Therefore for most breakdowns of the sample, the weighted number of cases can serve as a rough guide to the actual numbers. The main exception is when the results are

broken down by the criteria used to define the sampling domains, namely region or rural-urban residence, or any characteristic strongly associated with region or rural-urban residence. In the remainder of this report, all results presented are weighted. Thus only weighted numbers of cases are reported (to allow readers to properly combine categories if so desired).

Interviews took place between March and June, 1987. Response rates for both the household and eligible women interviews were high. For the country as a whole, a total of 9,423 target household structures (based on maps and listings) were identified, of which 9,045, or 96 percent, were successfully interviewed. Regionally this varied from 99 percent in the Northeast to 92 percent in Bangkok. Of the total 7,201 eligible women identified in the interviewed households, 6,775 or 94 percent were successfully interviewed. On a regional basis, the success rate was highest in the North and Northeast where 98 percent of identified eligible women were interviewed and lowest in Bangkok where 87 percent were interviewed.

II. Fertility levels

The TDHS eligible woman questionnaire included questions on the total number of live births and surviving children the woman had over her life time as well as a detailed birth history. One innovative feature of the TDHS with respect to eliciting the birth history was to ask respondents, once all the live births were listed by name, to show the interviewer birth certificates or household registration forms, if possible, in order to improve the accuracy and completeness of the reporting of birth dates, thus reducing reliance on the respondent's memory for such information. Respondents were able to provide

documentation of the birth date for about half (52 percent) of all the births reported. The percentage for which documentation was provided does not vary much according to the birth year. For example, documentation of birth dates are provided for 52 percent of the births reported as occurring during the first five years preceding the interview compared to 55 percent of the births reported as occurring during the second preceding five year period.

Table 2 indicates the mean number of children ever born and the mean number of surviving children per ever married woman along with the percent of children ever born that are still surviving according to age of the woman. Comparison results are also provided for 1984 from the Survey of Population Change (SPC), a large scale survey conducted by the National Statistical Office, as well from the 1980 census. Evidence of Thailand's recent history of fertility decline is apparent from the fact that the average number of children ever born to women in each age group is smallest according to the TDHS and largest according to the census (except for the 15-19 year old group for which the census and SPC results are equal). The average number of children ever born to women at the end of childbearing years, as indicated by results for women 45-49, fell from 5.52 in 1980 to 5.18 in 1987.

The percentage of children ever born who are still surviving generally declines with the age of the mother in the TDHS as well as the SPC and the census, reflecting both longer average exposure time to the chance of dying for children of older women and a probable decline in infant and child mortality during recent decades. No clear trend in the percent of children surviving, however, is apparent from a comparison of the three sources. In general, for women in most age groups, the results from the TDHS are closer to those of the census than to those of

the SPC. Given the sensitivity of the percentage of children surviving to the completeness with which children who died are reported, no conclusion about trends in mortality can be drawn from this comparison.

Although the TDHS collected birth histories only from ever married women, it is possible to calculate fertility measures relating to all women regardless of marital status by assuming that women who were reported as having never married had no children. Unfortunately there is very little systematic evidence on the extent of non-marital childbearing in Thailand. Since marital status is not recorded when births are registered, information on non-marital births is not available from the vital statistics reports and there has been little research on the topic. Nevertheless, while some births undoubtedly occur outside of marital unions, most observers agree that the level of non-marital fertility is likely to be quite low. Moreover, if an unmarried woman is living with her child in a sample household, she would likely be reported as having been married at the time of the household listing and be included as an eligible woman. To the extent non-marital fertility has been missed by the survey, however, the assumption of no births to women reported as unmarried will necessarily underestimate the level of fertility.

Data on marital status of all household members (assuming those under age 13 are single) are available from the household questionnaire. Based on this information, the ratio of all women to ever married women, after weighting, at each single year of age from 15 through 49 is calculated. This is done for each reporting category (e.g. region or educational level). The calculation of fertility measures for all women based on fertility information reported in the eligible woman questionnaire, is achieved by expanding the denominators

for these measures by a factor equal to this ratio. Thus each ever married woman respondent, at each single year of age (as reported in the household questionnaire), is multiplied by the ratio of all women to ever married women at that age listed in the sample households in the same reporting category. The numerators of these rates remain the births as reported by the eligible respondents under the assumption that no births occur to women who are reported as single.

Table 3 shows the mean number of children ever born and surviving to all women (both single and ever married together) as well as age specific fertility rates and total fertility rates for periods of 12, 24 and 60 months preceding the survey. The mean number of children ever born and surviving for any particular age group of women are of course lower than those presented in the previous table which is based only on ever married women. In Table 3 the denominators are expanded to include non-married women while the numerators remain unchanged.

Current fertility levels are reflected in the age specific fertility rates and in the summary total fertility rate (TFR). Rates are given for three alternative time periods spanning the preceding 12, 24 and 60 months respectively. The longer the period covered, the greater is the amount of fertility experience taken into account and hence the less subject the rates are to random fluctuaion. Note should be made of the fact that since these rates are based on retrospective reports of births during the past, and only women up through age 49 were interviewed, the fertility experience of women in the 45-49 age group presented in Table 3 are censored to varying degrees depending on the length of the time period covered. For this reason, TFR's are presented both up to age 44 only (since censoring does not affect rates up to this age for the five year period preceding the survey) as well as to age 49

(the more conventional age span covered by a TFR). Given the very low level of fertility of women 45-49 in Thailand, censoring has little effect on the value of the overall TFR in any case.

The recent decline in fertility in Thailand is reflected in the results shown in Table 3 in several ways. There is a large difference between current fertility as measured by the TFR and cumulative fertility of women at the end of the childbearing ages, as represented by the mean number of children ever born to women aged 45-49. This latter measure reflects the fertility levels prevailing in the past when these women passed through the reproductive ages and at almost five births per woman is more than twice as high than the current TFR. In addition, fertility appears to have continued to decline during the five year period preceding the survey judging from a comparison of the TFR for the three alternative time spans. The 12 month TFR is lower than the 24 month TFR which in turn is lower than the 60 month TFR. Note that the TFR for each successively longer period is inclusive of the preceding shorter period and thus minimizes the appearance of change.

The very low level of current fertility found by the TDHS as indicated by the values of the TFR in Table 3 is quite striking and merits comment. When compared with the most recent previous Contraceptive Prevalence Survey, CPS3 taken in 1984, or with recent birth registration data, the current fertility level indicated by the TDHS is lower than would be expected. For example, according to CPS3, the TFR was 3.47 for the previous 12 months (spanning approximately May 1983 - April 1984) and 3.36 for the previous 24 months (approximately from May 1982 - April 1984). A comparison of the 24 month rates from the two surveys therefore implies a decline during the three year

intervening period of one third while a comparison of the 12 month rates implies a decline of almost two fifths. Such a large decline over such a short period is unlikely to be genuine. Moreover, it is inconsistent both with the trend in fertility indicated internally from the TDHS data as well as with recent trends indicated by birth registration data. For example, when the TFR for approximately the same 24 month period as that preceding CPS3 is calculated based on births recorded in the birth histories collected by the TDHS, a TFR of only 2.64 results.

There is some reason to believe that the estimates of current fertility from the CPS3 are too high. A policy followed during CPS3 fieldwork, but not in the TDHS, permitted substitution of originally selected sample households when none was found at home after repeated visits. Such a policy could conceivably lead to a disproportionate selection of households in which a recent birth occurred, since such households are more likely to have someone at home, especially during the daytime. As a result, the CPS3 fertility rates might be inflated. However, as indicated by the following comparison of TDHS results with fertility rates based on birth registration data, it is also likely that the TDHS estimates are lower than the true fertility level. Thus, for reasons yet to be fully determined, the fertility estimates from CPS3 and TDHS are clearly not directly comparable and it would be inappropriate to interpret the difference in the fertility level estimated by these two surveys as a true indication of the change in fertility during the intervening period.

Annual statistics on births compiled by the Ministry of Public Health from the registration system, provide another source against which the TDHS fertility estimates can be compared. It is widely acknowledged that births are underregistered in Thailand. Although the

precise extent of underregistration is in dispute, most estimates suggest registration is between 75 and 90 percent complete, probably closer to the higher figure in recent years. Based on the number of registered births by age of mother for 1982 through 1984 and unpublished preliminary registration data for 1985 and 1986, and utilizing the most recent official population projections to obtain the number of women in reproductive age groups, it is possible to calculate the TFR for each year from 1982 through 1986. Without making any correction for underregistration, the TFR based on these data declines steadily by 23 percent from 2.76 to 2.12 during this five year period and averages 2.41 for the entire five years.

When the TFR is calculated from the birth histories collected in the TDHS for the same calendar years (rather than for the 60 month period preceding the survey as shown in Table 3), the resulting TFR declines by 19 percent from 2.73 in 1982 to 2.22 in 1986 and averages 2.44 during the entire period. Hence the extent of decline and the level of fertility are very similiar between the TDHS and the birth registration data unadjusted for underregistration. While it is reassuring that similiar trends are apparent in the two sets of data, the fact that the TDHS indicates only a slightly higher TFR than implied by the raw registration data suggests that the TDHS may underestimate the level of recent fertility.

A fuller assessment of the fertility estimates from the TDHS is beyond the scope of the preliminary report. At this point it seems likely that the TDHS results may understate the true level of current fertility to some moderate but unknown extent. At the same time, the continuing trend of declining fertility during the most recent five year

period indicated by the TDHS results may well be accurate and is consistent with the trend indicated by birth registration data.

III. Desire for Additional Children

The distribution of currently married women according to their desire for additional children is presented in Table 4. For the purpose of this tabulation, women who are sterilized or whose husbands are sterilized are assumed to wish no additional children. In the case of a currently pregnant women, desire for additional children was asked with respect to children after the birth of the expected child. Approximately 66 percent of currently married women in reproductive ages want no more children. This is slightly higher than the 64 percent found in CPS3 three years earlier. An additional 17 percent want more children but wish to delay the next birth at least two years while 16 percent of women want another birth either soon (within two years) or are uncertain or indifferent as to when. Only about 1 percent of respondents are uncertain if they want more children at all.

Desire for additional children is strongly associated with age. The proportion wanting no more children increases with age while the proportion wanting a child soon decreases with age, undoubtedly reflecting the more advanced stages of family building associated with increasing age.

IV. Knowledge and Use of Contraceptive Methods

As shown in Table 5, awareness of contraceptive methods, knowledge of sources of supply or services, and prevalence of use of contraception are all high in Thailand. Knowledge of at least some method of contraception is practically universal among married women in

reproductive ages. Over 99 percent of both ever married and currently married women are aware of at least one modern contraceptive method. Knowledge of oral contraception, the IUD, injection, and both female and male sterilization are all close to universal with well over 90 percent of respondents either spontaneously mentioning these methods when asked what methods they know or indicating recognition when the method was read out to them by the interviewer. Condoms are also widely known although to a somewhat lesser extent than the other modern methods. In contrast, vaginal methods (diaphragm, foam or jelly) are not widely known. Likewise, familiarity with periodic abstinence and withdrawal is acknowledged by only a minority of respondents.

Sources for most of the modern contraceptives are also widely known. Almost all respondents who indicate that they know any particular method are able to cite some source for obtaining the method or information about it.

The vast majority of either ever married or currently married women in the reproductive ages indicate they have used contraception at sometime. About four out of five ever married women aged 15-49 and an even higher proportion of currently married women indicate that they have ever used at least one modern method. The pill is by far the most common method ever used, with more than half (56 percent) of ever married women indicating use at sometime. Injection is the second most common method ever used with more than one in four (27 percent) of ever married women indicating use either at the present time or in the past. Female sterilization is a close third. Only very small proportions of respondents indicate they have ever used periodic abstinence or withdrawal. Use of vaginal methods is almost entirely absent among Thai women.

The TDHS indicates that contraceptive prevalence as measured by current use of a contraceptive method is now higher than ever before, continuing the rapid increase evident from previous surveys. Rates are shown both for currently married women aged 15-49 and aged 15-44. Previous studies of contraceptive prevalence in Thailand have typically focused on the 15-44 age range given the very low reproductive potential of women aged 45-49. To maintain comparability, the following discussion of contraceptive prevalence likewise focuses on currently married women aged 15-44. Among this group, contraceptive prevalence has reached 67.5 percent by 1987. This represents an increase over the equivalent prevalence rate of 64.6 for 1984 found by CPS3.

Female sterilization is practiced by 22 percent of currently married women 15-44 which is equivalent to one third of all current users and hence is the most common contraceptive method currently practiced. Male sterilization is considerably less common with a prevalence level of 5 percent. Together, a total of 28 percent of married couples in which the wife is aged 15-44 are sterilized. The contraceptive pill, used by 20 percent of currently married women aged 15-44, is the second most common method while injectable contraceptives, used by 9 percent and the IUD, used by 7 percent, take a more distant third and fourth place. Condoms are used relatively rarely as the current method and vaginal methods are virtually not used at all. Likewise, periodic abstinence and withdrawal are quite rare. Thus virtually all the contraceptive use among married couples in Thailand is attributable to modern and potentially very efficient methods.

Contraceptive practice according to selected background characteristics is examined in Table 6 based on currently married women aged 15-44. (Parallel results refering to currently married women in

the 15-49 age range are presented in an appendix table to permit comparison with results from other countries participating in the international DHS project). Current contraceptive use is high both among younger and older currently married women although a considerable difference in the choice of method is apparent. Of the 61 percent of women under 30 practicing some form of contraception, the vast majority rely on a modern temporary method and only a little over one in six users practices sterilization (either female or male). In contrast, of the 73 percent of married women aged 30-44 using contraception, well over half rely on sterlization.

The association between number of living children and contraceptive practice is curvilinear. Prevalence is highest among couples with 3 to 4 children compared to those with either more or less children The lower percentage practicing among couples with 5 or more children compared to those with 3 or 4 probably reflects a selection process whereby couples who do not practice contraception are more likely to reach higher family sizes than those who do practice. Permanent methods are relatively rare among women with 0-2 children but quite common among women with 3 or more children.

There is almost no difference in the prevalance rate between rural and urban women and only minor differences in the mix of methods practiced. Sterilization is somewhat higher among urban women, perhaps reflecting the easier availability of the method in urban areas where hospitals and medical personnel are disproportionately concentrated. Likewise differences in contraceptive practice according to educational attainment are quite modest. Except for women with no education, for whom prevalence is somewhat lower than for the remainder, there is no clear association with educational level.

Regional differences in the contraceptive prevalence rate are apparent. The South is clearly characterized by the lowest prevalence level while only modest differences are evident among the remaining regions including Bangkok. Contraceptive practice in the North is extremely high with 75 percent of married women aged 15-44 currently practicing some method. In comparison with results on contraceptive prevalence measured in CPS3 in 1984, the largest regional increase is evident for the Northeast where prevalence rose from 61 to 67 percent. The level in the North and Central regions increased by about three percentage points each, while the South increased by only one percentage point. Finally, Bangkok actually shows a decline from 72 to 67 percent.

Some regional differences are also evident in the method mix practiced. The North is notable for the high prevalence of contraceptive injectables which were popularized there before other regions through the private program of McCormick Hospital. Pill use is also unusually high in the North. The South stands out with respect to the practice of withdrawal which, although at a low absolute level even in the South, is almost totally absent elsewhere. Its use is associated with the large representation of Moslems in South. Indeed, religious differences in contraceptive prevalence are quite pronounced with Moslem characterized by only half the rate experienced by Buddhists. With respect to the practice of specific methods, the Moslems exceed the Buddhists only in the practice of withdrawal. It is also notable that the prevalence of female sterilization, the most common method nationally, is only one third as high among Moslems as among Buddhists. The much lower contraceptive prevalence among Moslems, their more frequent practice of withdrawal, and the relative avoidance of sterilization are all consistent with previous findings from CPS3.

The source of contraceptive supply or service is examined in Table 7 for specific methods based on all current users. Those methods for which supply or service is unnecessary are omitted. Sources have been categorized to the extent possible as to whether they belong to the government or to the private sector. Since both government and private agencies operate mobile clinics, it is not possible to know in which category to place respondents who reported a mobile clinic as their source. For this reason, mobile clinics are treated as indeterminant with respect to the government - private sector dichotomy. Also considered as indeterminant in this respect were respondents whose source is coded as "friends or relatives," "others," "and don't know." All together, only 3 percent of current users stated sources which were ambiguous with respect to belonging to either the government or private sector.

The government sector is clearly the major provider of contraception in Thailand. Over four fifths of current users of a method requiring supply or service indicated that a government outlet provided them with their current method. Government hospitals, including MCH centers, are particularly important as a source for female sterilization and, together with health centers, provide virtually all IUD's. Nevertheless, the private sector plays a substantial role in providing several methods, especially the pill and the condom. Although the condom is relatively insignificant in Thailand as a contraceptive method among married couples, the pill is of considerable importance and the private sector, particularly through drug stores, is the source for over one fourth of married pill users.

V. Diarrhea among Children

Mothers of children under 5 years of age were asked about episodes of diarrhea occurring to their children during the previous 24 hours as well as the previous two weeks. For each child for whom an episode was reported, the mother was asked if the child was given oral rehydration therapy to treat the diarrhea. Results are shown in Table 8 according to selected background characteristics. Overall, 6 percent of children were reported as experiencing diarrhea within the 24 hours preceding interview and 16 percent were reported as experiencing diarrhea within the preceding two weeks. Of those children who experienced diarrhea in the last two weeks, 40 percent received oral rehydration therapy (ORT).

Prevalence of diarrhea differs little according to age of mother. It is more common in rural than in urban areas, but except for the lower rate in Bangkok, differs little according to region. There is an inverse association between diarrhea and the mother's educational level up through the secondary level. Islamic mothers report a substantially higher incidence of diarrhea than Buddhists or mothers of other religions.

The practice of ORT differs little by age of mother. Urban mothers are somewhat more likely to provide ORT than are rural mothers. Regionally, ORT is most commonly practiced in the Northeast and Bangkok and is least common in the North and Central regions. A marked association between educational level and ORT is evident with the practice of ORT being almost twice as common among mothers with an education beyond the secondary level compared to mothers with no education.

VI. Immunization of Children

Information on immunization of children under 5 years old was obtained in two ways in the TDHS. In Thailand, a card or booklet may be given to mothers when they bring their child for certain health services including immunizations in order to provide the mother with a record of such services for her child. The system is not universal and in some places the health center keeps the card rather than allowing the mother to take it home with her. In the survey, mothers were first asked to show the interviewer a health record card/booklet if they had one for the child and the dates of all immunizations received by the child were then recorded. This included information on the BCG immunization against tuberculosis, the DPT vaccination against diphteria, tetanus toxoids, and pertussis, as well as immunization against polio and measles. For children who did not have a health record card or booklet or whose mother did not show it to the interviwer, the mother was asked if the child ever had a vaccination. In these cases the interviewer only recorded whether the child had any vaccination but did not ask about specific ones.

Table 9 presents results on immunization status including information on how the data were obtained. Results are shown for children between ages 12 and 59 months according to selected background characteristics. The first column in Table 9 shows that health record cards or booklets were available for only 26 percent of the children overall. The percentage of children with such record shows a pronounced association with the age of the child. Younger children are far more likely to have a health record card/booklet than older children probably reflecting the impact of an ongoing spread of the health record card/booklet system and in part the fact that the older a child is, the

more likely the parent will be to have lost or discarded the health record card/booklet. The system has progressed further in urban than in rural areas and regionally the highest proportion of children with a health record card or booklet is clearly in Bangkok. The Northeast is considerably behind other regions with respect to provision of health record cards/booklets. Possession of such a record shows a strong positive association with educational level of the mother. Coverage among Buddhists is considerably higher than among Moslems or children of other religious groups.

The percent of children who received at least one immunization is equal to the sum of the percent for whom a vaccination was indicated in the heatlh record card/booklet and the percent whose mother reported that the child was immunized. Overall, approximately 85 percent of Thai children aged one to four years received at least one immunization. There is little difference according to the age of the child except that one-year-olds were somewhat more likely to have been vaccinated than two-to-four-year-olds. Immunization is more common for urban than rural children, is lowest in the South and highest in Bangkok, increases with the education of the mother and is more common among Buddhists than Moslems.

Table 10 shows the percent of children with specific immunizations among those for whom a health record card/booklet was shown. It is important to note that children with no such record or whose mother did not show the interviewer the card or booklet are excluded from these tabulations on specific immunizations. Among the 26 percent with health record cards/booklets, overall coverage is quite high for BCG (90 percent), three doses of DPT (85 percent), and three doses of polio vaccine (84 percent) and does not vary greatly among the

different groups shown. However, only 49 percent overall of children with health record cards/booklets have been covered against measles.

Coverage against measles is higher for younger than older children. Specific immunization coverage among children with records is generally higher in the North and Bangkok than elsewhere, especially with respect to coverage against measles. Likewise, coverage is generally positively associated with educational attainment of the mother. Islamic children are generally characterized by lower coverage than Buddhist children.

VII. Prenatal Care, Assistance at Delivery and Tetanus Toxoid Injections.

For each birth during the last 5 years, mothers were asked if they received a tetanus toxoid injection, prenatal care from a doctor or a trained nurse or midwife, and whether they received assistance at delivery from medically trained personnel. Table 11 presents the results from these questions. Overall, for almost two thirds of the births, mothers received tetanus toxoid injections and assistance at delivery, and for over three fourths of the births, prenatal care was received. Despite the fact that prenatal care was reported more often in connection with births to urban than rural mothers, little difference is apparent in coverage with tetanus toxoid injections suggesting that some respondents, particularly in rural areas, may not have fully understood the question, possibly confusing a tetanus toxoid injection with other injections. If the results are taken at face value, tetanus toxoid injections appear to be given more frequently in the Northeast than in other regions, are more common among mothers with higher levels of education, and are more common among Buddhists than Moslems or members of other religions. In addition to prenatal care being more frequent in

cases of births to urban mothers, it is most common in Bangkok and least common in the South, is positively associated with the mother's educational attainment, and more common among Buddhists than among Moslems and others. Finally, medical assistance at delivery is far more common in urban areas, most common in Bangkok and least in the Northeast, strongly associated with educational level, and more common among Buddhists than among Moslems or others.

VIII. Summary

Fieldwork for the TDHS was conducted during March through June 1987. The survey collected a variety of information on demographic and health topics from a nationally representative sample of ever married women in the reproductive ages. The results indicate that the longer term decline in fertility that started two decades ago has been continuing during recent years. The very low total fertility rate of 2.36 estimated by the TDHS for the 60 month period preceding the survey, however, appears to be lower than would be expected based on other sources of evidence, thus suggesting a possible understatement of births in the survey.

Contraceptive awareness is virtually universal among the sample and almost every woman could name a source for at least one modern contraceptive method. The contraceptive prevalence documented by TDHS reached a level of 67.5 percent of currently married women aged 15-44, the highest ever recorded at the national level in Thailand. Of these women, fully 97 percent were practicing a modern method and over 40 percent were either sterilized or had a husband who was. Contraceptive prevalence is highest in the North (75 percent) and lowest

in the South (52 percent). Among current users of modern contraception, at least 82 percent obtained their method from a government source.

Among children under age five, 6 percent experienced diarrhea during the preceding 24 hours and 16 percent experienced diarrhea during the preceding two weeks, of whom 40 percent received oral rehydration therapy. Approximately 85 percent of children aged 1-4 years received at least one immunization. Among the 26 percent of children aged 1-4 years for whom health record cards or booklets were shown to the interviewer, the vast majority received BCG, the full three doses of DPT, and the full three doses of polio vaccines. Only about half, however, have been immunized against measles. Mothers of 65 percent of the births during the last five years received tetanus toxoid injections, 77 percent received prenatal care, and 66 percent were assisted by medical professionals at the time of delivery.

Table 1 Weighted and Unweighted Number of Eligible Women Interviewed, by Sampling Domain, Region and Rural-Urban Residence

	Number of women	
	Unweighted	Weighted
Sampling domain:		
Bangkok	1,248	732
Other urban	1,175	501
Rural North	1,168	1,287
Rural Northeast	1,064	2,222
Rural Central	1,112	1,301
Rural South	1,008	732
Total	6,775	6,775
Region		
North	1,448	1,396
Northeast	1,384	2,364
Central	1,469	1,450
South	1,226	833
Bangkok	1,248	732
Total	6,775	6,775
Rural-urban residence		
Rural	4,352	5,542
Urban	2,423	1,233
Total	**6,775**	**6,775**

Table 2 Mean Number of Children Ever Born, Mean Number of Surviving Children and Percent Surviving for Ever Married Women, by Age of Woman

	Thailand DHS, 1987				Survey of Population Change, 1984		Census 1980	
Age of women	Children ever born	Surviving children	Percent surviving	Weighted number of women	Children ever born	Percent surviving	Children ever born	Percent surviving
15-19	.52	.51	97.9	(342)	.69	94.5	.69	97.9
20-24	1.15	1.10	95.7	(1,004)	1.31	95.9	1.43	95.4
25-29	1.83	1.76	95.9	(1,309)	2.03	94.7	2.32	94.4
30-34	2.52	2.37	94.3	(1,328)	2.88	93.3	3.28	93.4
35-39	3.34	3.10	92.8	(1,110)	3.77	91.6	4.26	92.0
40-44	4.18	3.76	89.9	(877)	4.81	89.0	5.05	90.2
45-49	5.18	4.54	87.6	(805)	5.65	86.7	5.52	88.1
Total	**2.75**	**2.53**	**92.0**	**(6,775)**	**3.07**	**90.9**	**3.34**	**91.6**

Table 3 Mean Number of Children Ever Born and Surviving and Fertility Rates for 12, 24 and 60 Months Preceding the Survey, for All Women (Including Never Married Women), by Maternal Age

Maternal age	Mean number of children		Fertility rates for preceding		
	Ever born	Surviving	12 months	24 months	60 months
15-19	0.09	0.09	0.049	0.056	0.052
20-24	0.60	0.57	0.124	0.124	0.132
25-29	1.40	1.34	0.110	0.131	0.129
30-34	2.18	2.06	0.065	0.070	0.079
35-39	3.03	2.81	0.042	0.041	0.052
40-44	3.91	3.52	0.026	0.017	0.022
45-49	4.98	4.36	0.006	0.004	0.007
15-49	1.82	1.68	2.11	2.22	2.36
15-44 only	1.56	1.45	2.08	2.20	2.32

Notes: The preceding time period to which the fertility rates refer exclude the month of interview. The total for fertility rates represents the total fertility rate (TFR) for women aged 15-49 and 15-44 respectively. Since women aged 45-49 are progressively censored as one moves back in time from the time of interview to five years preceding the survey, total fertility rates are presented both including and excluding women in this age group.

Table 4 Percent Distribution of Currently Married Women by Desire for Additional Children, by Age

Age	Want no more	Want later*	Want soon**	Want, but undecided when	Undecided if want more	Total	Weighted number of women
15-19	19.2	45.3	24.2	10.2	1.0	100	334
20-24	29.9	44.9	17.7	6.9	0.7	100	957
25-29	53.4	26.0	14.8	4.9	0.9	100	1,243
30-34	73.5	9.9	10.7	4.9	0.9	100	1,250
35-39	84.4	3.7	7.2	3.8	0.9	100	1,019
40-44	91.8	1.1	4.1	2.8	0.3	100	758
45-49	92.7	0.4	3.8	2.5	0.7	100	676
All ages	**66.0**	**17.3**	**11.2**	**4.8**	**0.8**	**100**	**6,236**

* Wants to sait at least 2 years before having next birth
** Wants next birth within next two years

Table 5 Percent of Ever Married Women (EMW) and Currently Married Women (CMW) Aged 15-49 Who Know a Contraceptive Method, Know a Source for Method, and Have Ever Used a Method and Percent of Currently Married Women Aged 15-49 and Aged 15-44 who are Currently Using a Method, by Specific Method

Method	Knowing any method		Knowing any source		Ever using		Currently using	
	EMW 15-49	CMW 15-49	EMW 15-49	CMW 15-49	EMW 15-49	CMW 15-49	CMW 15-49	CMW 15-44
Any method	99.4	99.6	99.2	99.3	81.5	83.6	65.5	67.5
Any modern method*	99.4	99.5	99.2	99.3	80.3	82.4	63.6	65.6
Pill	98.5	98.7	97.3	97.6	55.8	57.2	18.6	20.0
IUD	94.5	94.7	90.6	91.0	15.3	15.9	6.9	7.2
Injection	96.9	97.2	95.3	95.7	27.1	28.1	8.5	9.2
Vaginal methods	16.6	16.8	13.8	14.0	0.5	0.5	0.0	0.0
Condom	87.8	88.5	78.3	79.3	12.5	12.8	1.1	1.2
Female sterilization	97.6	97.8	96.1	96.3	22.3	22.9	22.8	22.4
Male sterilization	95.6	96.0	91.6	92.5	5.7	6.0	5.7	5.5
Any non-modern method**	43.2	43.9	33.3	33.8	9.7	10.0	1.8	1.9
Periodic abstinence	28.2	28.6	26.4	26.8	5.6	5.7	0.9	1.0
Withdrawal	27.1	27.5	-	-	5.5	5.7	0.9	0.9
Other methods	15.0	15.4	12.8	13.1	0.5	0.5	0.1	0.1
Weighted number of women	6,775	6,236	6,775	6,236	6,775	6,236	6,236	5,561

* Includes pill, IUD, injection, diaphragm, foam or jelly, condom, female sterilization, male sterilization, and Norplant. Norplant is not shown separately because knowledge of method and source were not asked specifically for this method and the number of users is less than .05 percent of currently married women.

** Includes periodic abstinence, withdrawal, and other methods (generally folk methods).

Table 6 Percent Distribution of Currently Married Women Aged 15-44 according to Current Contraceptive Use Status and Method, by Selected Background Characteristics

Background characteristic	Currently using any method	Pill	IUD	Injection	Vaginal methods	Condom	Female sterilization	Male sterilization	Periodic abstinence	Withdrawal	Other	Norplant	Not using	Total percent	Wtd number of women
Age															
< 30	61.0	26.1	8.3	11.6	0.0	1.1	10.2	2.0	1.0	0.8	0.1	0.1	39.0	100	2,534
30 +	73.0	15.0	6.3	7.3	0.1	1.3	32.7	8.4	1.0	1.0	0.1	0.0	27.0	100	3,027
Number of living children															
0 - 2 children	61.2	23.3	7.5	10.1	0.0	1.3	12.9	3.9	1.2	0.9	0.1	0.0	38.8	100	3,513
3-4 children	80.7	15.8	6.4	7.5	0.0	1.2	40.2	7.7	0.8	0.9	0.1	0.0	19.3	100	1,530
5 + children	71.4	10.3	7.4	8.7	0.0	0.5	34.2	9.6	0.0	0.5	0.1	0.0	28.6	100	517
Rural-urban residence															
Rural	67.3	20.0	7.9	9.8	0.0	0.9	21.6	5.4	0.7	0.8	0.1	0.0	32.7	100	4,532
Urban	68.5	20.3	4.1	6.6	0.1	2.5	25.8	5.7	2.0	1.1	0.1	0.2	31.5	100	1,029
Region															
North	74.7	27.9	3.4	16.3	0.0	0.7	19.0	6.0	0.8	0.3	0.1	0.0	25.3	100	1,161
Northeast	66.5	16.5	13.8	6.5	0.0	0.7	25.3	2.6	0.7	0.3	0.0	0.0	33.5	100	1,943
Central	71.4	21.4	2.7	10.0	0.1	1.5	25.6	9.0	0.7	0.4	0.1	0.0	28.6	100	1,165
South	51.8	12.2	4.9	6.8	0.0	2.1	14.1	5.4	1.6	4.5	0.2	0.1	48.2	100	680
Bangkok	67.4	22.5	4.2	5.6	0.1	2.1	22.8	7.0	2.1	0.7	0.1	0.1	32.6	100	611
Education															
No education	59.4	14.7	4.9	9.6	0.0	1.3	19.4	8.8	0.7	0.0	0.0	0.0	40.6	100	445
Primary	68.6	21.0	7.5	9.8	0.0	0.8	23.0	5.2	0.4	0.8	0.1	0.0	31.4	100	4,409
Secondary	66.0	19.4	6.0	7.0	0.0	3.6	20.0	5.1	3.4	1.5	0.0	0.3	34.0	100	454
More than secondary	65.7	14.1	6.9	3.6	0.0	3.9	21.6	6.0	6.3	2.9	0.3	0.2	34.3	100	253
Religion*															
Buddhist	69.7	21.0	7.6	9.2	0.0	1.2	23.4	5.4	0.9	0.8	0.1	0.0	30.3	100	5,154
Islamic	35.1	10.0	1.5	7.7	0.0	0.8	8.2	3.0	0.7	3.0	0.1	0.0	64.9	100	292
Other	54.6	1.9	1.4	16.9	0.0	1.4	15.1	14.5	3.3	0.0	0.0	0.0	45.4	100	113
Total	**67.5**	**20.0**	**7.2**	**9.2**	**0.0**	**1.2**	**22.4**	**5.5**	**1.0**	**0.9**	**0.1**	**0.0**	**32.5**	**100**	**5,561**

*Excludes a small number of cases for whom religion is not stated

Table 7 Percent Distribution of Ever Married Women Aged 15-49 Currently Using a Modern Method of Contraception according to Source for Method, by Specific Method

Source	Pill	IUD	Injection	Condom	Female sterilization	Male sterilization	**Total**
Government sector							
Government hospital	9.2	65.7	21.4	12.4	85.6	55.2	49.3
Health center	53.7	25.2	60.5	30.8	1.6	9.6	28.0
Health volunteer	4.9	0.0	0.0	3.7	0.0	0.0	1.5
MCH or Bangkok health center	2.2	4.0	3.2	2.8	4.0	1.0	3.1
Private sector							
Family planning clinic	0.5	0.1	0.2	2.1	0.1	6.3	0.8
Private hospital or clinic	4.6	3.2	11.5	3.6	8.0	10.7	7.1
Pharmacy	20.6	0.0	1.1	39.9	0.0	0.0	6.7
Shop	2.3	0.0	0.0	0.0	0.0	0.0	0.7
Indeterminant							
Mobile clinic	0.1	1.7	1.5	1.1	0.3	14.5	1.8
Friend/relative	1.0	0.0	0.0	0.0	0.0	0.0	0.3
Other	0.8	0.0	0.6	0.8	0.0	0.0	0.3
Don't Know	0.0	0.0	0.0	2.9	0.4	2.7	0.5
Total							
Government	70.0	94.9	85.1	49.7	91.2	65.8	81.9
Private	28.0	3.3	12.8	45.6	8.1	17.0	15.3
Indeterminant	1.9	1.7	2.1	4.8	0.7	17.2	2.9
Total percent	100	100	100	100	100	100	100
Weighted number of women	1,169	435	530	67	1,510	359	4,073

Note: Total includes three women (weighted) who reported using a diaphragm or Norplant

Table 8 Among Children Under 5 Years of Age, the Percentage Having an Episode of Diarrhea 24 Hours to 2 Weeks Preceding the Survey and among Children Who Had Diarrhea, the Percentage Receiving Oral Rehydration Therapy (ORT), by Selected Background Characteristics

Background characteristic	% of children having diarrhea:		Among children with diarrhea, the percentage receiving ORT for last episode	Weighted number of children
	In past 24 hours	In past 2 weeks*		
Age				
< 30	5.9	15.7	39.5	2,163
30 +	6.3	15.5	40.5	1,357
Rural-urban Residence				
Rural	6.6	16.8	39.0	2,911
Urban	3.7	9.8	46.7	609
Region				
North	7.3	17.5	35.7	672
Northeast	6.0	16.6	44.0	1,234
Central	5.9	14.1	35.2	671
South	6.6	16.1	39.4	571
Bangkok	3.7	10.6	43.3	373
Education level				
No education	9.6	22.6	33.7	330
Primary	6.1	15.9	39.2	2,728
Secondary	3.2	8.1	56.0	204
More than secondary	4.3	10.2	62.0	158
Religion**				
Buddhist	5.7	14.8	40.2	3,136
Islamic	10.8	24.1	39.9	275
Other	5.6	17.1	32.3	103
Total	6.1	15.6	39.9	3,520

* Includes children with an episode of diarrhea in past 24 hours

** Excludes a small number of cases for which religion is not stated

Table 9 The Percent Distribution of Children 1-4 Years of Age According to Immunization Status and Method of Reporting Immunization Status, by Selected Background Characteristics

Background characteristic	Received at least one immunization as determined from		Total percent receiving immunization	Percent not receiving immunization	Total Percent	Weighted number of Children
	Health record card or booklet	Mother's report				
Age of child						
12-23 months	36.0	53.4	89.4	10.6	100	759
24-35 months	30.9	52.0	82.9	17.1	100	689
36-47 months	22.2	61.5	83.7	16.3	100	695
48-55 months	14.5	68.5	83.0	17.0	100	729
Age of woman						
< 30	26.8	59.3	86.1	13.9	100	1,699
30 +	24.8	58.2	83.0	17.0	100	1,183
Rural-urban residence						
Rural	22.8	60.0	82.8	17.2	100	2.382
Urban	41.5	53.2	94.7	5.3	100	490
Region						
North	33.8	49.7	83.5	16.5	100	549
Northeast	17.0	69.9	86.9	13.1	100	1,005
Central	27.5	57.0	84.5	15.5	100	564
South	22.6	52.0	74.6	25.4	100	458
Bangkok	44.0	52.0	96.0	4.0	100	296
Education						
No education	11.7	58.9	70.6	29.4	100	265
Primary	24.9	59.4	84.3	15.7	100	2,240
Secondary	39.8	57.0	96.8	3.2	100	245
More than secondary	47.7	51.7	99.4	0.6	100	122
Religion*						
Buddhist	27.1	59.8	86.9	13.1	100	2,568
Islamic	15.8	51.2	67.0	33.0	100	215
Other	17.3	51.2	68.5	31.5	100	85
Total	26.0	58.6	84.6	15.4	100	2,872

*Excludes a small number of cases for which religion is not stated

Table 10 Of Children 1-4 Years of Age with Health Record Cards/Booklets, Percentage Who Received Specific Immunizations, by Selected Background Characteristics

Background characteristic	Of children with health record cards/booklets, the percentage immunized								Weighted number of children
		DPT			Polio				
	BCG	1	2	3	1	2	3	Measles	
Age of child									
12-23 months	92.7	98.7	94.4	83.5	98.6	93.4	83.7	53.5	273
24-35 months	91.6	98.0	94.3	89.5	96.4	93.0	88.3	55.8	213
36-47 months	85.8	94.1	92.6	83.0	93.2	92.2	81.2	36.4	154
48-59 months	87.8	94.6	85.8	81.7	94.6	84.9	81.4	41.8	106
Age of woman									
< 30	91.1	96.7	93.9	84.5	96.6	92.7	83.7	48.5	455
30 +	89.0	97.3	91.1	85.4	95.8	90.6	84.8	49.7	293
Rural-urban residence									
Rural	88.8	96.6	91.9	82.8	95.9	90.9	82.3	46.3	543
Urban	94.2	97.9	95.2	90.1	97.2	94.4	89.1	56.0	203
Region									
North	92.3	97.8	96.1	90.8	98.0	94.1	90.7	57.0	189
Northeast	89.3	97.7	90.4	80.4	96.7	90.4	79.2	39.2	171
Central	84.7	94.7	90.7	80.4	93.5	89.6	79.1	41.9	155
South	89.1	96.0	89.5	78.9	95.3	89.2	79.6	49.1	104
Bangkok	96.2	98.3	96.2	92.0	97.4	95.3	91.0	58.5	130
Education									
No education	94.9	93.0	86.4	80.6	93.0	86.4	82.7	46.5	31
Primary	88.9	97.0	93.3	83.9	96.4	92.7	83.4	46.0	558
Secondary	93.5	96.1	88.6	85.6	95.6	86.3	84.5	59.1	98
More than secondary	95.4	100.0	98.0	94.7	97.9	95.9	92.1	62.0	58
Religion*									
Buddhist	90.0	97.0	93.0	85.2	96.4	92.1	84.5	49.3	696
Islamic	92.3	95.3	85.7	72.7	92.6	83.0	72.7	31.4	34
Total	90.3	97.0	92.8	84.8	96.3	91.8	84.2	49.0	747

*Excludes 15 cases (weighted) for which religion is other than Buddhist or Islam and a small number of cases for whom religion is not stated

Table 11 For Births in the Five Years Preceding the Survey, the Percentage of Children Whose Mothers Received a Tetanus Toxoid Injection, Prenatal Care from a Doctor or Trained Nurse/Midwife, and Assistance at Delivery from a Doctor or Trained Nurse/Midwife, by Selected Background Characteristics

	% of Children Whose Mothers Received:			
Background characteristic	Tetanus toxoid injection	Prenatal care from doctor or trained nurse/midwife	Assistance at delivery from doctor or trained nurse/midwife	Weighted number of births
Age				
< 30	69.7	78.6	66.4	2,226
30 +	58.7	74.9	65.4	1,423
Rural-urban residence				
Rural	66.0	73.7	59.9	3,027
Urban	62.8	94.2	95.7	622
Region				
North	64.4	71.6	64.8	702
Northeast	71.9	75.4	50.4	1,288
Central	64.7	85.3	85.7	687
South	59.3	66.0	58.8	592
Bangkok	56.2	95.8	96.6	380
Education level				
No education	47.5	48.1	43.7	350
Primary	66.6	77.6	63.9	2,834
Secondary	72.7	94.5	94.3	306
More than secondary	69.5	99.6	99.2	158
Religion*				
Buddhist	67.4	80.1	69.2	3,247
Islamic	51.3	60.2	41.6	288
Other	44.1	37.5	34.9	108
Total	65.4	77.2	66.0	3,649

* Excludes a small number of cases for which religion is not stated

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Appendix A

Table A.1 Percent Distribution of Currently Married Women Aged 15-49 according to Current Contraceptive Use Status and Method, by Selected Background Characteristics

Background characteristic	Currently using any method	Pill	IUD	Injection	Vaginal methods	Condom	Female sterilization	Male sterilization	Periodic abstince	Withdrawal	Other	Norplant	Not using	Total percent	Wtd number of women
Age															
< 30	61.0	26.1	8.3	11.6	0.0	1.1	10.2	2.0	1.0	0.8	0.1	0.1	39.0	100	2,533
30 +	68.5	13.5	5.9	6.4	0.0	1.0	31.5	8.3	0.9	0.9	0.1	0.0	31.5	100	3,703
Number of living children															
0 - 2 children	60.5	22.7	7.4	9.8	0.0	1.3	13.0	4.2	1.2	0.9	0.1	0.0	39.5	100	3,622
3-4 children	77.4	14.5	6.3	6.6	0.0	1.0	39.1	8.1	0.8	0.9	0.1	0.0	22.6	100	1,753
5 + children	62.1	9.8	6.0	6.9	0.0	0.3	31.0	7.3	0.1	0.7	0.1	0.0	37.9	100	861
Rural-urban residence															
Rural	65.0	18.6	7.5	9.0	0.0	0.8	21.9	5.7	0.7	0.8	0.1	0.0	35.0	100	5,113
Urban	67.8	18.9	4.1	6.3	0.1	2.3	27.1	5.9	2.0	1.0	0.1	0.2	32.2	100	1,123
Region															
North	71.3	25.8	3.4	14.8	0.0	0.7	19.4	6.0	0.7	0.3	0.1	0.0	28.7	100	1,298
Northeast	64.6	15.7	13.1	6.0	0.0	0.6	25.5	2.8	0.6	0.3	0.0	0.0	35.4	100	2,180
Central	69.7	19.5	2.8	9.3	0.1	1.3	26.1	9.6	0.6	0.4	0.1	0.0	30.3	100	1,322
South	49.9	11.2	4.5	6.2	0.0	1.9	14.5	5.6	1.5	0.4	0.2	0.1	50.1	100	769
Bangkok	66.6	20.9	4.2	5.5	0.1	1.9	24.0	6.9	2.1	0.6	0.1	0.1	33.4	100	667
Education															
No education	55.6	12.2	4.7	7.7	0.0	1.0	20.5	9.0	0.7	0.0	0.0	0.0	44.4	100	585
Primary	66.6	19.7	7.2	9.0	0.0	0.7	23.4	5.3	0.4	0.8	0.1	0.0	33.4	100	4,810
Secondary	66.1	18.5	5.8	6.7	0.0	3.4	21.0	5.8	3.6	1.0	0.0	0.3	33.9	100	477
More than secondary	64.8	13.4	6.6	3.5	0.0	3.7	21.9	6.3	6.3	2.7	0.2	0.1	35.2	100	266
Religion*															
Buddhist	67.6	19.5	7.3	8.4	0.0	1.1	23.8	5.7	0.9	0.7	0.1	0.0	32.4	100	5,781
Islamic	32.5	8.9	1.4	6.9	0.0	0.7	8.0	2.7	0.6	3.2	0.1	0.0	67.5	100	326
Other	51.5	1.7	1.3	15.0	0.0	1.2	15.5	13.8	3.0	0.0	0.0	0.0	48.5	100	127
Total	**65.5**	**18.6**	**6.9**	**8.5**	**0.0**	**1.1**	**22.8**	**5.7**	**0.9**	**0.9**	**0.1**	**0.0**	**34.5**	**100**	**6,236**

*Excludes a small number of cases for whom religion is not stated

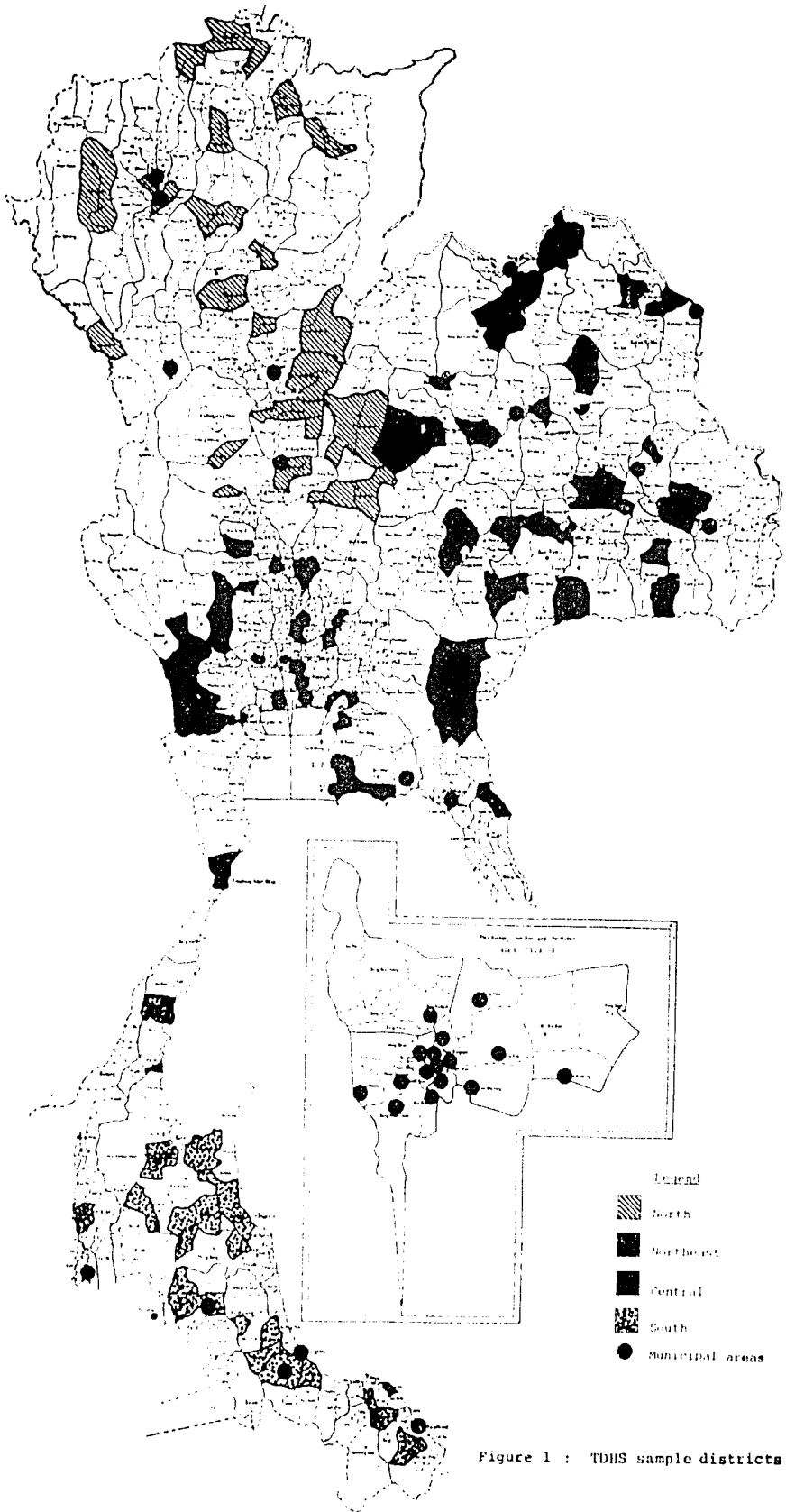

Figure 1 : TDHS sample districts

Appendix B

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