## The Future of Thailand's Population Policy: Potential Directions

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Labour shortages are brought about more by Thailand's rapidly growing economy and lagging education than by demographic change

Thailand's reproductive revolution has been accompanied by an economic revolution. This and other trends of modernization have transformed Thai society so much that within one or two generations, parents' attitudes towards childbearing and child-rearing have changed almost completely, from desiring a high quantity of children to desiring a high quality of children. Currently Thailand's fertility is close to or at the replacement level and, according to several projections, it may decline in the future to below the replacement level. Thus, a critical period is approaching when Thailand must re-evaluate its long-term population goals and policies.

Many characteristics of Thailand's fertility transition are unique, mainly because of various aspects of Thai culture and because the Government has taken ility changes in Thailand

Thailand has recently experienced transitions in major demographic phenomena. Compared with other South-East and East Asian countries and areas (table 1) Thailand has had the highest rate of fertility decline among those that are not yet newly industrialized economies (NIEs). The total fertility rate (TFR), i.e. the average number of births during a woman's lifetime, declined from 6.4 in 1960-1965 to about 2.6 in 1985-1990. In other words, Thailand's fertility has dropped about 60 per cent within a period of 25 years. This percentage is higher than that of other non-NIEs in Asia (including China), and close to that of Hong Kong, Singapore and the Republic of Korea.

According to previous studies (Knodel, Havanon and Pramualrathana, 1984; Knodel, Chamratrithirong and Debavalya, 1987), Thailand's fertility transition has involved four major components: (a) rapid economic changes have been accompanied by fundamental changes in society: couples now feel that a large number of children is an unnecessary burden. In other words, fertility decisions are increasingly based on the self-fulfilment of parents (or individuals) rather than concerns for family or children (van de Kaa, 1987). Easterlin (1975) explained such a transition as a change from social concerns to individual concerns; (b) the Thai cultural setting, with its Buddhist attitudes, has facilitated the acceptance of voluntary contraception; (c) there was a latent demand among many couples for a means to control their fertility, even before modern contraceptives were readily available; and (d) the success of the Government's national family planning programme resulted in a much higher awareness of the need for fertility regulation in a modern society. Contraceptive methods, which were made easily available, were widely used.

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Country/area	1960-1965	1985-1990	Percentage decline	Medium projection (1990-1995)		
Thailand	6.42	2.60	59.5	2.20		
Cambodia	6.29	4.71	25.1	4.41		
Indonesia	5.42	3.48	35.8	3.10		
Lao People's Democratic Republic	6.15	6.69	-8.8	6.69		
Malaysia	6.72	4.00	40.5	3.60		
Myanmar	5.94	4.02	32.3	3.69		
Philippines	6.61	4.33	34.5	3.91		
Singapore *	4.93	1.80	63.5	1.80		
Viet Nam	6.05	4.10	32.3	3.70		
China	5.93	2.45	58.7	2.25		
Hong Kong *	5.30	1.35	74.5	1.40		
Japan	2.01	1.68	16.4	74.5		
Japan	2.01	1.68	16.4	1.70		

### Table 1. Total fertility rate by country or area (medium variant)

Republic of Korea *	5.40	1.73	70.0	1.65	
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Source: United Nations, 1991.

*Note:* \* = NIE ( newly industrialized economy).

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Period	Bangkok	Cen- tral	East	West	North	North- East	South	Total (medium projection)	Total (Iower projection)
1985-1990	1.90	2.15	2.41	2.55	2.17	2.99	3.84	2.60	2.60
1990-1995	1.70	1.96	2.06	2.12	1.88	2.54	3.24	2.21	2.15
1995-2000	1.65	1.81	1.89	1.94	1.71	2.30	2.80	2.03	1.97
2000-2005	1.62	1.74	1.81	1.86	1.63	2.17	2.59	1.95	1.89
2005-2010	1.61	1.70	1.75	1.80	1.62	2.09	2.45	1.90	1.82

### Table 2: Total fertility rate by region of Thailand

Source: Human Resources Planning Division, National Economic and Social Development Board, 1991, Population Projections.

As Thailand's drastic decline in fertility continues, TFR is projected to approach or even fall below the replacement level in the near future. Table 2 shows the future trends of TFR in the future as projected by the Thai Government, assuming that fertility will decrease in the same way as in the past. This projection indicates that TFR will fall from 2.6 in the period 1985-1990 to about 1.9 in 2005-2010; however, its assumptions may not be justified. In particular, it neglects the socio-cultural context in which the fertility decline takes place. Moreover, the use of a macroscopic indicator such as TFR in making predictions of future demographic trends fails to provide insight into how this summation of individual fertility comes about, and how it might vary among different groups within Thai society. Furthermore, TFR measures period fertility, which may be different from cohort fertility during a time of changing fertility rates; thus the use of TFR may be misleading.

Therefore, one should not jump to the conclusion that Thailand's fertility rate will definitely fall below the replacement level in every part of the country. One important piece of evidence from previous research on which we can make that statement is that the vast majority of Thai women both prefer and expect to have a minimum of two children, and would prefer to have children of both sexes (Knodel, Chayovan and Frisen, 1988). Table 3 shows the percentage of currently married women aged 15-44 years who want no more children, compared with the women's age, the number of living children and the gender composition of their children. The results indicate that women who have at least one son and one daughter are more likely to want no more children, after controlling for the number of living children.

Number of living children	Want	no more chi	Sterilized			
and gender composition	15-29 years	30-44 years	Total	15-29 years	30-44 years	Total
One child						
One daughter	24	47	29	1	11	3
One son	22	45	29	0	9	3
Two children						
Two daughters	55	74	65	20	35	27
One son, one daughter	72	85	78	26	44	36
Two sons	60	81	72	26	48	39
Three children						
Three daughters	70	80	78	23	47	42
One son, two daughters	87	91	90	43	56	53
Two sons, one daughter	86	92	91	53	51	52
Three sons	59	90	80	20	54	44

# Table 3: Percentage of currently married women aged 15-44 years who want no more children, and percentage sterilized, by age of woman and number and gender composition of living children, 1987

Source: Thailand Demographic and Health Survey (cited in Knodel and others, 1989).

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Background characteristics		Current age of ever-married women							Women married
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	ages	less than 5 years *
Urban-rural residence		:							2
Urban	2.0	2.2	2.3	2.4	2.6	2.8	3.0	2.5	2.2
Rural	2.2	2.4	2.7	2.8	3.1	3.2	3.6	2.9	2.3
Region									
North	2.3	2.3	2.5	2.6	2.9	2.7	3.3	2.7	2.3
North-East	2.3	2.3	2.7	2.9	3.2	3.3	3.8	3.0	2.3
Central	1.8	2.2	2.5	2.7	2.7	2.9	3.4	2.7	2.1
South	2.7	2.7	3.0	2.9	3.2	3.5	3.5	3.1	2.6
Bangkok	2.0	2.2	2.3	2.3	2.6	2.8	3.1	2.5	2.2
Education									
No education	2.5	2.7	3.1	3.2	3.8	3.4	4.0	3.5	3.0
Primary	2.2	2.3	2.6	2.7	2.9	3.1	3.4	2.8	2.3
Secondary	1.9	2.1	2.3	2.5	2.6	2.7	2.4	2.3	2.1
Higher	2.0	2.2	2.3	2.3	2.5	2.5	2.5	2.4	2.3
Religion * *									
Buddhist	2.1	2.3	2.5	2.7	2.9	3.0	3.4	2.7	2.2
Muslim	3.0	3.0	3.3	3.2	3.4	3.9	4.1	3.4	2.9
Total	2.2	2.3	2.6	2.7	3.0	3.1	3.5	2.8	2.3

Table 4: Mean preferred number of children for ever-married women, by current age and background characteristics, and for currently married women married less than 5 years, by background characteristics

Source: Chayovan and others, 1988, table 5.8.

*Note:*\* = Currently married women whose first marriage occurred less than 5 years prior to interview.

\* \* = Excludes cases who are not Buddhist or Muslim, or whose religion is not stated.

Table 4 shows the mean preferred number of children for ever-married women versus their age (cohort), where women are classified by their residence, education, or religion. The mean preferred number of children can also be thought of as the desired family size, keeping in mind that many of the respondents had already completed their child-bearing. Several trends can be identified in this table. For each classification of women, the desired family size is lower for women of younger cohorts, possibly indicating that the desired family size is decreasing with time. Rural women in each cohort prefer larger families than their urban counterparts, but the differences have decreased greatly over time. Controlling by region of Thailand, we find that the differences have increased over time. For the latest cohorts, the central region and Bangkok have the lowest desired family size, followed by the northern and north-eastern parts of the country. The southern part of the country consistently shows a higher desired family size than the other regions (except for the oldest cohort); this is probably due to the influence of the Muslim culture in the southern provinces. With regard to women's education, groups with different levels of education show the highest differences in desired family size for the oldest cohorts. However, these differences have decreased greatly over time. Finally, religion has a consistently strong influence on the desired family size for all cohorts. Taken as a group, Muslim women show the highest desired family size of all women in younger cohorts.

Returning to the issue of whether or not TFR is likely to fall below replacement level, we note that even for the youngest cohorts of married women, aged 15-19 and 20-24, the overall number of children desired is still two children. When controlling for different regions, the desired family size is greater than two children for currently married women of all ages and from all regions, with the exception of those aged 15-19 in the central region and Bangkok. This indicates that, on average, the current generation of young mothers, which will dominate the country's fertility for the next one or two decades, prefer to have at least two children. Even if the family planning programme and similar efforts succeed in helping families to control their fertility at the desired level, TFR is likely to remain above the replacement level for some time. TFR will fall below the replacement level only if and when many couples decide they want to have fewer than two children (assuming that the number of children they have is equal to the number they want).

How do preferences for family size change? Changes in such preferences indicate changes in underlying attitudes. As with most societal changes, attitudinal changes progress in fits and starts as new norms are introduced and take over from the old. The new norms are resisted by means of traditional mechanisms for the dissemination of values, such as "socialization processes" in the home, "transmission through institutions such as churches and schools", and the use of

"reference groups" (Mosher and McNally, 1991, citing Mayer and Jenck, 1989:1441), which account for the maintenance and refinement of existing norms, but not of new norms. If these mechanisms are strong, then traditional norms will be maintained longer, but when societal changes weaken or destroy these mechanisms (e.g. by weakening religious or family authority), new norms of individual behaviour emerge more rapidly.

After achieving a certain level of influence in society, the new norms will affect the reproductive behaviour of the rest of society merely by reason of conformity and social pressure. For example, if many women participate in the labour force, so that smaller families become the norm, even non-working women will tend to have a smaller number of children.

### Future policies and suggestions for future research

In view of the possibility of fertility dropping below the replacement level, the issue of what population policy Thailand should adopt becomes quite complex. In 1970, when the national family planning programme was formulated, the goal was relatively straightforward: to reduce population growth rates as quickly as possible. Voluntary contraception was promoted by expanding family planning services throughout the country. The Government's policy has been very successful, to the extent that Thailand's fertility has declined to the level at which the so-called second fertility transition occurred in western Europe in about 1965. This transition consists of a period of long-term population decline after the main demographic transition, which finally results in fertility falling well below the replacement level (van de Kaa, 1987). Designers of Thailand's population policies need to understand the implications of the second fertility transition, and whether or not Thailand is about to undergo such a transition.

The second fertility transition is generally viewed as a transition towards individualism. Even if Thailand does not experience every aspect of this Western European phenomenon, the trend towards individualism is definitely relevant to fertility trends in Thailand. In a modern society, material achievements are based on individual merit and are accompanied by social rewards (prestige and social status). Material achievement has become identified with individual talent and individual enjoyment of the rewards (Lesthaeghe, 1983).

If a country or Government is concerned about the prospect of ever-declining fertility, it can attempt to prevent further fertility decline and even to stimulate higher fertility through monetary incentives. However, in practice such incentives at best have had a small positive effect, and often a negative effect, on the fertility rate (Gauthier, 1991). Few countries, aside from several Eastern European countries and France, have explicitly expressed pro-natalist concerns. Most countries deal with the issue of low fertility in the context of social and family policies.

It is not clear that it is necessary or desirable to take action to prevent a decline in fertility below the replacement level, since such a decline is not necessarily bad for an overcrowded, developing society, and a decline below the replacement level may be prevented anyway by socio-cultural factors. That is believed to be the case for Taiwan Province of China (Feeney, 1991), which is widely believed to be experiencing a permanent transition to below-replacement-level fertility. However, recent studies have shown that period rates such as TFR reflect a temporary effect of the increasing age at child-birth, and not a behaviourial shift to zero- or one-child families (Cleland, 1992). According to Cleland, "nothing could be more disastrous than for governments to switch to pro-natalist policies under the erroneous impression that fertility would otherwise remain below replacement level".

Thailand's current Seventh Five-Year National Economic and Social Development Plan has established the goal of reducing the population growth rate from 1.47 per cent in 1992 to 1.2 per cent (with a population of 61 million) by 1996. This plan focuses on target groups in the north-eastern and southern parts of the country, and special target groups, such as various tribal groups in the northern mountains, members of distinctive cultural groups in the southern part of the country, and slum dwellers and industrial workers in urban areas. The Plan relies on a number of guidelines and measures to attain the set target. These include expanding family planning services to cover all target groups, maintaining high acceptance rates in areas where family planning services are already widely available, and carrying out public relations campaigns on family planning, and population and development.

The intention of this population policy is to set reduction of the population growth rate as the first priority for action. Such action is emphasized in order for the Thai population to grow at a lower rate and to mitigate the effect of momentum factors owing to the increasing number of women entering the child-bearing age group.<sup>1/</sup> Currently, Thailand tends to accept a TFR close to the replacement level. However, there is no clear policy planning for the population growth rate or TFR after completion of the Seventh Plan period. In other words, there is no clear policy planning on whether the post-1996 population growth rate should be below 1.2 per cent per year, or how the future growth rate will be affected by trends in TFR.<sup>2/</sup>

Touching upon the consequences of population change which may affect population ageing and labour shortages, one can say that the topic is beginning to be highly ranked in discussions of future population policy adjustments. However, the following points concerning population ageing and labour shortage do not support a pro-natalist approach of policy adjustment:

Firstly, the phenomenon of population ageing has already begun in Thailand and will persist in future decades. It is mainly a consequence of the transition from high to low fertility that started approximately in 1970. However, the effect of the fertility decline on the absolute size of the elderly population (60 or more years of age) will be manifested only 60 years later

when the birth cohorts affected begin to enter the elderly age group.

For example, the population aged over 60 will reach 20 million by the middle of the next century regardless of fertility trends in the intervening decades. Thus, a policy to influence fertility levels will have no immediate impact upon the size of the elderly population. This notion is accepted among scholars, but usually is overlooked by others in arguments advocating pronatalist policies to mitigate population ageing (Knodel, 1993).

There is an expectation that the fertility decline will have a negative impact upon family support for the elderly. Such a notion is based on the assumption of an association of the number of living children available with the likelihood and the extent of the elderly being supported by children. However, in the case of Thailand, Knodel (1993) suggested that such an impact will probably be relatively moderate since co-residence of the elderly with an adult child — the lynch-pin of the familial support system — is relatively insensitive to the number of children beyond a family size of two children. He maintains that "reductions in the average number of co-resident children in the elderly's households will be more pronounced but probably have limited significance in the context of the traditional Thai preference for a stem family household structure where only one married child eventually remains to care for the parents" (Knodel, 1993:10).

Secondly, a possible labour shortage is another issue usually raised in arguments advocating a policy to increase population growth. However, according to Kiranandana (1993), the issue of labour shortages is in fact induced by the following factors: an imbalance between the demand aspect of employment and the labour-force market, an unclear labour-force policy, and the rather low productivity of the labour force.

This view is also maintained by Hanenberg and Wongboonsin (1991, cited in Frisen, 1993:11):

"At present the labour shortage appears to be primarily in the engineering and some other technical and professional fields. These needs can be met through expansion of training facilities, which is occurring but involves a lengthy time lag, or by permitting migration of qualified persons (assuming that they are permitted to depart legally and are willing to migrate) from other countries".

To the extent that smaller family size facilitates higher education, fertility decline and continued low levels of fertility may help to alleviate the labour shortage problem rather than exacerbate it (Knodel, 1992). Moreover, in the case of unskilled and semi-skilled workers in Thailand, they are often unwilling to take on jobs of the following nature: menial or dangerous jobs, or those offering substandard conditions or wages. Such jobs are left to illegal migrants from poorer neighbouring countries or areas (Frisen, 1993).

Such a situation implies that the problem of labour shortages in Thailand is more attributable to the demand than to the supply aspect of the labour force. In other words, it is not so much the result of demographic change as of the rapid growth of the economy and lagging educational levels of the population.

With these points in mind, there are several policy alternatives concerning Thailand's population size and growth. Jones (1992) suggests that there are four possible objectives. The first objective would be to force the continuation of the fertility decline regardless of the ultimate result. If the fertility rate does fall below the replacement level, this policy may eventually result in a decline in the actual population size.

The second possible objective is to reach zero population growth as soon as possible, and to then maintain a stationary population afterwards. The main difficulties with this approach are in implementing the policy to (a) rapidly push fertility to below the replacement level in order to reach zero population growth immediately, and then (b) ensure that fertility rises back to the replacement level later so as to maintain a stationary population. Note that the Thai Government has been successful in promoting a fertility decline mainly because it made contraception more widely available, which helped families to achieve their desired number of children, and because socio-economic changes have put pressure on families to have fewer children. It would be much more difficult to suddenly stop the fertility decline if socio-economic factors continue to encourage a fertility decline. If that were the case, parents would have to be persuaded to have more children than they desire, which is almost antithetical to the past and present policy of improving the status of women and their ability to make their own fertility choices.

A third possible objective is to concentrate on keeping the number of births stable, which may lead to problems of a very large increase in population size. Aside from the obvious disadvantages of such an increase, difficulties would be encountered in manipulating fertility to maintain a fixed number of births.

The fourth and final option presented by Jones (1992) is to set an optimum population size, and to attempt to reach such a size as quickly as possible. In our opinion, it seems inappropriate to define an "optimum population size" as an arbitrary number of people. The optimum population size could be defined as that which is necessary for or can be sustained by a country's resources, economy etc. Thus, if one wants to define an optimum population size, one needs to consider many factors, such as trends in infrastructure, pressures on the environment, trends of economic growth, social welfare and the population's quality of life. While optimum population size may be a useful theoretical concept, it is difficult to define, much less to attain, such a goal.

In deciding between these various policy options, one important type of information which we need relates to the

attitudes and behaviour of individuals with respect to fertility. As socio-economic pressures continue to discourage a large family size, are an increasing number of parents choosing to have fewer than two children? If not, then the fertility rate will eventually stabilize near the replacement level. Otherwise, it is likely to drop below that level, which would result in major changes in Thailand's population growth rate and age structure.

Armed with such information, we could construct more reliable projections of fertility behaviour in the future and make predictions based on the resulting age structure and population growth rates. Aside from the general applications of such predictions, an understanding of parents' attitudes towards fertility would be particularly useful in that it would help the Thai Government to decide between fertility policy alternatives such as those discussed above. In addition, such information would be useful in formulating policies concerning the improvement of human resources and the quality of life (e.g. concerning the education system, support for the elderly, child care and health care).

Socio-cultural factors affecting the fertility decline and the end levels that eventually emerge are often neglected in conventional theories, which stress the role of mortality and modernization. However, the Thai fertility experience has shown the importance of such factors (Knodel, Chamratrithirong and Debavalya, 1987), and hence the need for socio-cultural research. For example, the status of women, which depends on the surrounding society and culture, is believed to have direct and indirect influences on the fertility level. More research is needed on this topic (Mason, 1989).

There are two basic assumptions in the socio-cultural approach. Firstly, as society evolves, there is an "incompatibility", or tension, between the traditional family and the industrialized society (Davis, 1986). This tension is borne mainly by women, who must reconcile their roles as housewives or mothers with their ever-increasing role in the workplace. Also, an industrial economy encourages competition and mobility and rewards individual achievements, whereas the concept of a family hinges on togetherness and stability. Secondly, this tension results in new behaviour as changes occur in social norms and family norms. The latter are particularly relevant to the process of fertility (Preston, 1986, cited in United Nations, 1992:61).

How does the crucial decision of whether or not to accept fewer than two children depend upon the cultural context, e.g. rural or urban residence, religion, or ethnicity? If parents do desire fewer than two children, do their attitudes about gender preference then change? How do they reconcile a decreasing number of children with the cultural expectation that they will be cared for by their children when they grow old? To answer these questions, we must study details such as the distribution of and attitudes towards family sizes, which are essential to understand these issues in order to realistically project macroscopic indicators such as TFR.

If we can find specific reasons why individuals in various segments of society do or do not intentionally reduce their fertility, and why they select the family size they achieve, then these reasons can be addressed by specific policies. With a knowledge of the socio-cultural determinants of individual fertility decisions, one can predict, or even design, policies to influence aggregate fertility trends.

Further research should give particular attention to the status of women and its relationship with fertility. Understanding this relationship is important for designing effective human resource development programmes and family planning policies. For example, a declining fertility rate or an increasing tendency not to have children at all could cause a significant increase in the number of women who want to work, or who obtain advanced education or training so as to pursue a long-term career. Similarly, aspects of women's status, such as their autonomy and labour-force participation, are likely to affect individual decisions concerning family formation (when and whether or not to marry) and fertility behaviour, which lie at the root of the aggregate, macro-level demographic trends. The need for research on this topic has been stressed by the United Nations Population Fund (UNFPA, 1991). Moreover, future research should study newly married couples, since their attitudes and preferences will be particularly critical in determining the levels of fertility in the future and the demand for children.

### Conclusion

Previous projections indicate that Thailand's fertility rate will probably approach or even fall below the replacement level in some parts of the country in the near future. In anticipation of this occurrence, the issues of population ageing and labour shortages have arisen in arguments advocating the pro-natalist approach of policy adjustments. However, there is a very long time lag before a fertility decline affects the absolute size of the elderly population, an issue usually lost sight of in arguments appealing for policies to slow population ageing. As for the issue of labour shortages, previous studies suggest that such shortages are brought about more by Thailand's rapidly growing economy and lagging education than by demographic change. Moreover, previous research also shows that the mean desired family size of married couples is still about two children. This suggests that the fertility rate is unlikely to fall below the replacement level unless there is a substantial change in the country's social and cultural context. Thus, Thailand is approaching a critical time when its long-term fertility goals and policies need to be evaluated. One important tool for designing such policies is the socio-cultural approach to investigate fertility and family formation behaviour.

### Footnotes

1. According to population projections made by the National Economic and Social Development Board (NESDB) (1992), women aged 15-45 years who were estimated at 14.010 million (50.1 per cent) of the population in 1990, will increase to 17.482 million in 2010, followed by a slower rate of growth in 2011.

2. According to NESDB, Thai TFRs will be 2.03, 1.95 and 1.90 in 1995-2000, 2000-2005 and 2005-2010, respectively.

#### References

Chayovan, Napaporn, Peerasit Kamnuansilpa and John Knodel (1988). *Thailand Demographic and Health Survey*, 1987, (Bangkok, Institute of Population Studies, Chulalongkorn University; and Columbia, MD, Westinghouse Institute for Resource Development).

Cleland, John (1992). "New problems of population in low fertility Asian countries", in: *Impact of Fertility Decline on Population Policies and Programme Strategies*, (Seoul, Korea Institute for Health and Social Affairs).

Davis, Kingsley (1986). "Low fertility in evolutionary perspective", in: *Below-Replacement Fertility in Industrial Societies: Causes, Consequences, Policies*, Kingsley Davis, M.S. Bernstam and Rita Ricardo-Campbell (eds.), *Population and Development Review*, (Supplement 12):48-65.

Easterlin, R.A. (1975). "An economic framework for fertility analysis", Studies in Family Planning, 6(3):54-63.

Feeney, Griffith (1991). "Fertility decline in Taiwan: a study using parity progression ratios", Demography, 28(3):467-479.

Hanenberg, R. and K. Wongboonsin (1991). "Labor force shortages in Thailand and surpluses in neighboring countries: recent trends and implications for the future", in: *Population and Labor Force of the Southeast Asian Region*, Publication No. 181/34, (Bangkok, Institute of Population Studies, Chulalongkorn University).

Frisen, Carl M. (1993). "Labor shortages and consequent migration from neighboring countries". Paper presented at the Institute of Population Studies Panel Discussion on Future of Thailand's Population Policy: Potential Directions, 22 February, Bangkok.

Jones, Gavin (1992). "Population trends and policy issues for Thailand". Paper presented at the UNFPA/NESDB Workshop on Population Program Policies: New Directions, Chiangmai, Thailand.

Kiranandana, Thienchay (1993). "A pronatalist policy? pros and cons". Paper (in Thai) presented at the Institute of Population Studies Panel Discussion on Future of Thailand's Population Policy: Potential Directions, 22 February, Bangkok.

Knodel, John (1992). "Fertility decline and children's education in Thailand: some macro and micro effects", Working Paper No. 41, The Population Council, Research Division.

\_\_\_\_\_ (1993). "Population ageing and fertility: some implications for Thailand". Paper presented at the Institute of Population Studies Panel Discussion on Future of Thailand's Population Policy: Potential Directions, 22 February, Bangkok.

\_\_\_\_\_, A. Chamratrithirong and N. Debavalya (1987). *Thailand's Reproductive Revolution: Rapid Fertility Decline in a Third-World Setting*, (Madison, University of Wisconsin Press).

\_\_\_\_\_, N. Chayovan and C. Frisen (1988). "Has Thailand's fertility decline stalled? Asia-Pacific Population Journal, 3(3):3-20.

\_\_\_\_\_, N. Havanon and A. Pramualratana (1984). "Fertility transition in Thailand: a qualitative analysis", *Population and Development Review*, 10(2):297-328.

Lesthaeghe, R.J. (1983). "A century of demographic and cultural change in Western Europe: an exploration of underlying dimensions", *Population and Development Review*, 9(3):411-435.

Mason, K.O. (1989). "The impact of women's social position on fertility in developing countries", in: *Demography as an Interdiscipline*, J.M. Stycos (ed.), (New Brunswick, NJ, Transaction Publishers), 100-127.

Mayer, S.E. and C. Jencks (1989). "Growing up in poor neighborhoods: how much does it matter?", Science, 243 (2497):1441-1444.

Mosher, W.D. and J.W. McNally (1991). "Contraceptive use at first premarital intercourse: United States, 1965-1988", *Family Planning Perspectives*, 23(3):108-116.

National Economic and Social Development Board (1991). Population Projections for Thailand 1980-2015, Bangkok.

\_\_\_\_\_ (1992). Thailand's Seventh National Economic and Social Development Plan, Bangkok.

Preston, S.H. (1986). "The decline of fertility in non-European industrialized countries", in: *Below-Replacement Fertility in Industrial Societies: Causes, Consequences, Policies*, Kingsley Davis, M.S. Bernstam and Rita Ricardo-Campbell (eds.), Population and Development Review, (Supplement 12):26-47.

United Nations Population Fund (UNFPA) (1991). Aide Memoire: Programme Review and Strategy Development Mission of Thailand, Bangkok.

United Nations (1991). *World Population Prospects 1990*, Population Studies No. 120, (New York, Department of International Economic and Social Affairs), Sales No. E.91.XIII.4.

\_\_\_\_\_ (1992). Patterns of Fertility in Low-Fertility Settings, (New York, Department of Economic and Social Development, ST/ESA/SER.A/131), Sales No. E.92.XIII.II.

van de Kaa, D.J. (1987). "Europe's second demographic transition", *Population Bulletin*, 42(1).

Wongboonsin, Kua, Jawalaksana Rachapaetayakom and Vipan Prachuabmoh Ruffolo (1993). "Thailand's fertility future: prospects for below replacement levels". Paper presented at the Institute of Population Studies Panel Discussion on Future of Thailand's Population Policy: Potential Directions, 22 February, Bangkok.

Asia-Pacific Population Journal, www.unescap.org/appj.asp

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