

EDITORIAL

FERTILITY DECLINE IN ASIA: TRENDS, IMPLICATIONS AND FUTURES

Asia's fertility decline over the past three decades has been of truly historical significance on a planetary scale. The unexpectedly rapid fertility transition in the continent that is home to more than half of the world's population has brought about a change in circumstance, and perhaps in fortunes, from a prospect of world population explosion with assumed devastating consequences for all of humankind (Ehrlich 1968; Meadows *et al.* 1972) to the currently perceived end of world population growth on the horizon (Lutz, Sanderson and Scherbov 2001). As understood today, this 'end' to world population growth does not come through the involuntary increase in death rates due to famines and disasters as many ecologists predicted, but rather through the voluntary decline in birth rates under conditions of increasing life expectancy and improving material well-being. There are still many old and new challenges in continuing efforts to move towards globally sustainable development, but there is little doubt that the end of world population growth will make these efforts a little easier. It should be noted that the Asian fertility decline has contributed to improving not only these global prospects, but in the first instance, the conditions of livelihood and well-being among the Asian populations themselves.

In the period 1965–1970, Asian women had on average almost six children or, more precisely, a total fertility rate (TFR) of 5.7 (United Nations 2001). Three decades later, the TFR is 2.5, less than half the previous level. In East Asia, a region with 1.5 billion inhabitants, the TFR is below 1.8 children per woman. This spectacular decline in fertility and hence birth rates is part of a secular process called the demographic transition. Today, practically all countries in the world have entered this transition in which, initially, death rates decline while birth rates stay high, thus resulting in significant population growth, then, after a certain time lag, birth rates also start to fall. While the countries of East Asia are already in the very late phases of this transition with very low birth rates, most countries of South and West Asia are still in the midst of this process. A recent review of the global fertility transition (Bulatao and Casterline 2001; Lutz, Prskawetz and Sanderson 2002) shows that many of the most rapid fertility transitions occurred in Asian countries. Among the seven developing countries with the most rapid fertility declines (measured as percentage decline over 25 years), only one, Cuba, was not in East Asia.

Fertility decline is hence an increasingly salient theme in the Asian context. To explore this further, the Asian MetaCentre for Population and Sustainable Development Analysis and the Family Studies Research Programme of the National University of Singapore jointly organized a 'Workshop on Fertility Decline, Below Replacement Fertility and the Family in Asia: Prospects, Consequences and Policies' in Singapore from 10 to 12 April 2002. Papers presented at the workshop, a

selection of which are included in this Special Issue of *JPR*, gave attention to declining Asian fertility in a region characterized by major heterogeneity. In Asia, one can find fertility levels at both extremes. Yemen, with an estimated TFR of 7.6, and Afghanistan (TFR 6.8) are among the countries with the highest fertility in the world where the demographic transition has hardly begun. In contrast, the Hong Kong, Shanghai and Tokyo metropolitan areas are among the lowest fertility areas in the world, while Japan (TFR 1.3), Singapore (TFR 1.4) and the Republic of Korea (TFR 1.5) show patterns of fertility that are not very different from the lowest fertility countries in Europe. In fact, according to Gubhaju and Moriki-Durand, there are altogether 14 countries in the Asian region where the TFR has fallen below the replacement level of 2.1 births per woman during the period 1995–2000. Even in countries where the fertility rate has yet to fall below replacement level, certain regions such as Bali in Indonesia and Kerala in India already experience below-replacement fertility levels. It has also been argued that once the fertility rate falls below replacement level, it is unlikely to recover in the short term (Gubhaju and Moriki-Durand).

Patterns of fertility decline for individual Asian countries are carefully traced in several of the papers in this volume. Ogawa examines the case of Japan, which is unique, as it has experienced below-replacement fertility for a considerable time. After declining by more than half over the period 1947–1957 from 4.5 to 2.0, the fertility rate remained virtually unchanged at replacement level throughout the 1960s and the early 1970s (except in 1966, the ‘year of the fire horse’), following which it began to decrease again, reaching 1.36 in 2000. Tsay focuses on Taiwan, another East Asian country experiencing remarkably rapid fertility decline, where the fertility rate fell from about 7 in 1950 to replacement level in 1983, followed by further reductions to 1.8 in 1997 and to 1.5 in 2001. Among Southeast Asian countries, Thailand has experienced the most rapid fertility decline. From 6.5 in the early 1960s, the TFR began to decline sharply over a decade to reach 5.4 in 1970–1974 and 3.9 in 1975–1979. Replacement-level fertility in Thailand was reached in the late 1980s and early 1990s, and the rate has been below replacement level since 1996, standing at about 1.9.

It appears too that the downward trend in fertility and family size in several countries in Southeast Asia was not affected by the 1997 economic crisis in the region. Hull, for example, argues that the crisis in Indonesia did not have any negative effect on family planning practices. Interestingly, contraceptive users simply changed from cheaper to more expensive methods that were provided by international aid donors. Similarly, Prachuabmoh and Mithranon find that the crisis had no significant impact on family planning in Thailand, and even that those who were affected by the crisis were more likely to use contraceptives than those who were not affected. In general, trends of fertility and mortality have tended towards demographic convergence, that is, demographic parameters in Asian countries may eventually converge to a small range of values. As Wilson (2001) has argued, countries which may not be economically modern will soon become ‘demographically’ modern.

Studies on the drivers of fertility decline in various Asian countries have also burgeoned. In a nutshell, the literature suggests that both social and economic development, and in particular female education, as well as government policies have contributed to fertility decline. It has been noted that the role of population

policies seems to have been especially significant in China and Southeast Asia (Concepcion 1996). Drawing equal attention is the question of the effect of rapid fertility decline, particularly to below-replacement levels. Rapidly declining fertility in many Asian countries has already left a major imprint on the age structure of the populations concerned and will continue to modify the age distribution over the coming decades. As a direct consequence of fertility decline the proportion of children in the total population has been declining, resulting in a decrease of the so-called young age dependency ratio. At the same time, since the proportion of the elderly is still relatively low in these societies owing to high fertility in the past, what is currently being created is a unique 'demographic window', characterized by a high proportion of the population in the working ages and a low total dependency ratio. Although the positive economic consequences of an age structure modified by fertility decline have been discussed since Coale and Hoover (1958), there has recently been a new wave of studies describing the opportunities associated with the effects of this one-time demographic window (Mason 1988; Birdsall, Kelley and Sinding 2001). Most of the examples used to illustrate these stem from Asia, particularly from countries that have used this opportunity to invest heavily in human capital formation, public health and infrastructure.

Until recently, international population projections have mostly assumed that at the completion of the demographic transition, the fertility of all countries will converge at replacement level (United Nations 2000). Such an assumption results in long-term population stabilization associated with only moderate population ageing. However, the Asian experience has clearly shown that the fertility transition typically does not stop at a TFR of 2.1. In almost all Asian countries where the fertility decline reached this level, it has dropped below and, in an increasing number of countries, to even well below this level. In the absence of immigration, such very low levels of fertility bring population growth to a rather rapid end, and eventual reversal, and result in very significant population ageing. Since few Asian societies are well prepared for rapid ageing with old-age security systems, these ageing prospects are already of major policy concern in the countries most affected. Thus in Asia is seen the emergence of the duality of concerns that characterizes the current global population debate: while in some countries the problems anticipated with rapid population growth are still a major concern, in other countries the possible problems associated with population ageing are high on the policy agenda. To cover both concerns together, a comprehensive analytical framework for 'population balance' has recently been developed (Lutz and Sanderson, in press), demonstrating that both rapid growth and rapid population ageing can put stress on existing infrastructures and result in social, economic and environmental problems. Thus for Asia, as well as for most other countries around the world, the fertility decline to very low levels does not mean an end to population-related concerns. Rather, the concerns are changing from that of the consequences of growth and a very young age structure to that of the social, economic and health consequences of rapid ageing.

Population ageing and the prospect of declining population size have thus emerged as new issues challenging Asian countries. They are often perceived as posing serious burdens for economic and social support and health care requiring, as a response, substantial changes in educational, health care and social protection systems. For example, older populations will require a greater variety of health

services and a dramatic increase in caregivers, with implications for their recruitment, training and retention. Funding the increasing demand for health services will pose a major challenge for public policy as will labour shortages.

One possible policy response that has been widely discussed is to raise the retirement age. Another possibility given some consideration in this volume is encapsulated in the concept of 'replacement migration'. Replacement migration can be a successful way to avoid 'hyper-ageing' and future falls in population and labour supply (McDonald 2002). On the basis of these ideas, the United Nations Population Division (2001), as presented by Huguet, carried out a study to determine the net number of international migrants that would be necessary to prevent declines in several national populations, in their productive-age populations, and in the ratios between the productive-age and elderly populations. Huguet shows that in the absence of immigration the population of Japan will decline after 2010, while the populations of China and the Republic of Korea will start declining after 2035. Furthermore, the working-age population will start declining earlier than will the total population. Thus, these countries can avoid a decline in the strength of the labour force if they begin allowing for replacement migration earlier on.

In reality, large numbers of foreign workers, mainly employed on a temporary basis, are already shoring up manpower needs in a number of countries such as Japan, the Republic of Korea, Taiwan, Malaysia, Singapore and Thailand. However, as noted by Huguet, the economic, social and cultural environment is often a greater factor in determining the demand for migrant workers than the demographic structure alone. Tsay, for example, argues that in the case of Taiwan, while the import of foreign workers constitutes an efficient choice, it is a difficult and sensitive matter. Similarly, in Singapore, the question of welcoming large numbers of foreign workers, both skilled and unskilled, has generated considerable debate as to whether migrants will 'make the pie bigger or take away the icing' (Yeoh and Chang 2001: 1031). While the concept of replacement migration provides a theoretical standpoint from which to gauge the need for foreign workers, it also needs to be qualified by wider socio-political considerations in order to render the concept more viable in policy terms.

A number of papers deal with possible fertility futures confronting Asian countries. Thailand provides an interesting example of the debate about whether fertility will keep declining once it reaches replacement level. Prachuabmoh and Mithranon discuss many of the factors that need to be considered, including the current economic conditions, fertility preferences and changes in marriage patterns in Thai society. While some demographers believe that fertility will continue to decline further, others argue that it will fluctuate around replacement level. Caldwell and Caldwell argue that the fertility level is likely to drop to below replacement after 2020 for India and after 2030 for Bangladesh. They believe that the driver of replacement and below-replacement fertility levels in these countries is likely to be economic growth, which will push down infant and child mortality rates and induce replacement fertility.

The decline in fertility has often been related to the decline in mortality. However, there has been little study on the possible relationship between declines in fertility and mortality on the one hand and changes in migration policy on the other. Tsay examines the implications of future declines in fertility and mortality for the

supply of labour in Taiwan in the next 50 years. He argues that low fertility bears important consequences for the size of the labour force. If present rates of fertility and labour-force participation persist, and given the current stock of foreign workers, the size of the labour force will increase only slightly in the next 15 years, begin to decline soon after 2015, and return to its current size of 9.8 million in 2034. This situation may prompt Taiwan to consider accepting an increasing number of foreign workers in the future despite the controversy surrounding such a policy.

Finally, Lutz considers the uncertainty in all demographic parameters and the need to treat them simultaneously. Demographic parameters are also heavily influenced by unforeseeable political developments. How should population forecasters deal with these major uncertainties? Lutz discusses how uncertainty may be dealt with and presents probabilistic population projections for five regions of Asia: South Asia, Central Asia, China, Pacific OECD and Pacific Asia. As the first probabilistic population projection for Asia, Lutz's method may hold much promise for country-based projections in the future.

Changes in fertility and mortality patterns are intricately intertwined with changes in societal values. As Hugué puts it, rapid fertility and mortality decline in Asia has become one of the most fundamental social changes in the region during the second half of the twentieth century.

Accompanying the long continuance of low fertility in Japan, Ogawa notes significant change in values with respect to marriage and the family. As arranged marriages have declined, Japan is experiencing the end of the 'universal marriage' pattern. The 'new single concept', where an adult person continues to live with his or her parents without having to pay much towards household expenses, is gaining popularity. Premarital sex is on the rise and the incidence of cohabitation expected to rise dramatically. Turning to Indonesia, Hull examines changes in what constitutes the social 'norm' with regard to family behaviour as fertility declines, arguing that Indonesia has experienced a fundamental shift of focus from the family to the individual. The changing role and status of young women are clearly reflected by their growing levels of school enrolment and labour-force participation in the formal sector. Women's struggle to gain equity in employment is influenced by their marital status and maternity in a society that still contextualizes reproduction in terms of 'normal' nuclear families. Non-familistic arrangements have been found among young Indonesian women, with many adopting behaviour construed as 'deviant' from socially accepted norms. Similarly, Prachuabmoh and Mithranon note that the process of globalization in Thailand is likely to foster departures from traditional family ties and a greater acceptance of individualism.

Of possible relevance here is the concept of the second demographic transition, a term coined by van de Kaa (1987) to denote a phase when fertility falls below replacement level. In this second demographic transition, the behaviour of individuals is determined more by individual values, individual rights and self-fulfilment than by social and institutional norms. Marriage becomes more fragile, while the government's role in influencing reproduction becomes irrelevant. Most studies on the second demographic transition have been conducted in European and North American countries, although Matsuo (2001) has applied the concept to Japan. As several countries and regions in Asia now have fertility levels below replacement, and many more will enter this state in the near future, it is important to consider

the possible effects on reproductive behaviour and, more broadly, on changing values in Asian societies. Will Asia retain its 'Asian' values, especially regarding marriage and the family?

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Guest Editors

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References

- Birdsall, N., A.C. Kelley and S. Sinding. 2001. *Population Matters – Demographic Change, Economic Growth, and Poverty in the Developing World*. Oxford: Oxford University Press.
- Bulatao, R.A. and J.B. Casterline. 2001. *Global Fertility Transition*. New York: Population Council.
- Coale, A.J. and E. Hoover. 1958. *Population Growth and Economic Development in Low-Income Countries*. Princeton: Princeton University Press.
- Concepcion, M.B. 1996. Population policies and family-planning in Southeast Asia. Pp. 88–101 in W. Lutz (ed.), *The Future Population of the World. What Can We Assume Today?* Revised edition. London: Earthscan.
- Ehrlich, P. 1968. *The Population Bomb*. New York: Ballantine.
- Lutz, W., A. Prskawetz and W.C. Sanderson. 2002. *Population and Environment. Methods of Analysis. Population and Development Review* 28 (Supplement). New York: Population Council.
- Lutz, W. and W. Sanderson. In press. *The End of World Population Growth, Human Capital and Sustainable Development in the 21st Century*. London: Earthscan.
- Lutz, W., W. Sanderson and S. Scherbov. 2001. The end of world population growth. *Nature* 412: 543–545.
- Mason, A. 1988. Saving, economic growth and demographic change. *Population and Development Review* 10(2): 177–240.
- Matsuo, H. 2001. *The First Child: The Transition to Motherhood in Japan and the Netherlands*. Master Thesis Series. Groningen: Population Research Centre.
- McDonald, P. 2002. Below replacement fertility in Asia: determinants and consequences. Paper presented at International Workshop on Fertility Decline, Below-Replacement Fertility and the Family in Asia: Prospects, Consequences and Policies, National University of Singapore, Singapore, 10–12 April.
- Meadows, D.H., D.L. Meadows, J. Randers and W.W. Behrens III. 1972. *The Limits to Growth*. New York: Universe Books.
- United Nations. 2000. *Long-range World Population Projections: Based on the 1998 Revision*. ST/ESA/SER.A/189. New York.
- United Nations. 2001. *World Population Prospects: The 2000 Revision*. New York.
- United Nations Population Division. 2001. *Replacement Migration: Is It a Solution to Declining and Ageing Populations?* ST/ESA/SER.A/206. New York.

- van de Kaa, D.J. 1987. Europe's second demographic transition. *Population Bulletin* 42(1): 1–38.
- Wilson, C. 2001. On the scale of global demographic convergence 1950–2000. *Population and Development Review* 27 (1): 155–171.
- Yeoh, B.S.A. and T.C. Chang. 2001. Globalising Singapore: debating transnational flows in the city. *Urban Studies* 38 (7): 1025–1044.