

Short Report

DEALING WITH CHINA'S FUTURE POPULATION DECLINE: A PROPOSAL FOR REPLACING LOW BIRTH RATES WITH SUSTAINABLE RATES

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Summary. Decreasing population levels due to declining birth rates are becoming a potentially serious social problem in developed and rapidly developing countries. China urgently needed to reduce birth rates so that its population would decline to a sustainable level, and the family planning policy designed to achieve this goal has largely succeeded. However, continuing to pursue this policy is leading to serious, unanticipated problems such as a shift in the country's population distribution towards the elderly and increasing difficulty supporting that elderly population. Social and political changes that promoted low birth rates and the lack of effective policies to encourage higher birth rates suggest that mitigating the consequences of the predicted population decline will depend on a revised approach based on achieving sustainable birth rates.

Recent decades have witnessed a remarkable decline in the industrialized world's fertility rates (Jensen *et al.*, 2004), with fertility dropping below the historical replacement rate of slightly more than two children per woman (Pearce, 1999). In 1960, five developed countries had fertility rates at or below the replacement level. By 2000, 64 such countries existed, comprising about 44% of the world's people (Cohen, 2003). There is an estimated 85% chance that the world's population will stop growing before the end of the 21st century (Lutz *et al.*, 2001), as the world's population growth rate has declined since reaching a peak of 2.2% annually in the early 1960s (Wilson, 2004). Since then, population growth has declined to between 1.48 and 1.57% annually (Greep, 1998). The overall global fertility rate fell from five children per woman in the early 1950s to 2.7 children by the early 2000s (Cohen, 2003). Although many researchers believe that human populations are unsustainably high, decreasing popu-

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lations may pose several problems: when fertility drops below the replacement rate, small ethnic groups face the risk of extinction; increased lifespans lead to an increasing proportion of older people, who must be supported by the economic activities of a shrinking group of younger people; and reductions in the labour pool as older workers retire may slow the economic activity required for a nation's prosperity. For these reasons, future population declines may have serious impacts (Bongaarts, 1998).

Understanding of the huge stresses imposed by China's population growth and the potential crisis that would result from failing to control this growth led China to launch a rigorous family planning policy in the 1970s that provided strong incentives for families to have only a single child. As a result, China's population growth rate fell to less than 1% per year by 2000 (China Statistics Bureau, 2005) and is expected to decline further, reaching negative values by 2040 (Liu, 2006). In 2003, China's fertility rate (1.35 births per woman) and population growth rate (0.07%) were the fourth lowest among fifteen major countries (Liu & Diamond, 2005). Although some researchers believe these values are underestimates, and that the actual fertility rate lies between 1.6 and 1.8 (Wang, 2002), all believe that China's fertility rate remains well below the replacement level.

The declining fertility rate is being exacerbated by adverse changes in sex ratios. A cultural bias in favour of male children has caused drastic changes in sex ratios at birth. From 1982 to 2000, the sex ratios at birth increased from 108.5 to 116.9 males per 100 females (Liu, 2006), reaching values as high as 130.3 in Guangdong Province and 135.6 in Hainan Province (Guo & Yi, 2005). Because fewer men will be able to marry, these distorted ratios will further decrease birth rates.

Increasing migration from rural to urban areas is also a problem. In China's biggest cities, the desired family size averaged 1.3 children, versus 2.0 children for rural women (Wang, 2002). The desire of Chinese women to live in cities is likely to create a potentially serious population decline because urban populations will soon stabilize, and at that point, the declining birth rate will lead to population decreases. A continued fertility decline will increase the average age of the population; for example, the proportion of China's population older than 60 years is expected to increase by 3.2% annually, exceeding 25% by 2040 (Hu, 2006) – 30% higher than the global average (United Nations Population Division, 2003). This elderly population is creating an economic problem because increasing numbers will require government support, which must be funded by the taxes and economic activities of a proportionally shrinking number of workers.

The current birth rate decline is occurring because more and more women are choosing to have smaller families, or no children at all. In an agricultural economy, children are the future labourers who learn agricultural techniques from their parents, and economic development depends on their labour, not on capital investments. As a result, large families are necessary. But in an industrialized society, technology has increased family incomes and reduced the need for a large labour pool, making large families less necessary. Moreover, citizens must be trained in knowledge work and the use of technology. Because of the long duration and high cost of modern schooling, technological progress has increased the cost of raising children (Wang, 2002), making it difficult to support large families. Therefore, family planning by young couples relates more to their lifestyle and economic desires, not to the labour required to sustain their family.

Other factors are placing downward pressure on fertility, including increased divorce rates and migration from rural to urban areas (Cohen, 2003; Chi, 2006). The Chinese divorce rate increased by 7.8% annually from 1978 to 1994, and by 14.3% annually from 1995 to 2001 (Tang & Xia, 2006). From 1995 to 2004, the urban population increased by 60.0%, to 563 million, while the rural population decreased by 14.2%, to 737 million (China Statistics Bureau, 2005). Unfortunately, citizens who move from a rural area to a city do not receive the social benefits provided to registered urban residents, such as subsidized medical care and unemployment insurance (China Statistics Bureau, 2005). The lack of social welfare strongly discourages such women from desiring children and is creating serious short-term social issues that will persist in the long term (Chi, 2006).

The strong correlation between declining fertility rates and increasing economic development is a common phenomenon (Zhang, 1999). Several demographic factors that accompany economic development – high income, education, living in bigger cities, employment as a ‘knowledge worker’ – are all strongly negatively correlated with the desire to bear children (Lutz *et al.*, 2001; Wilson, 2004). The effects of this change will be intensified if China’s one-child policy persists. Recently, women reported that their reasons for preferring smaller families related primarily to economic concerns related to the burden of supporting children and the adverse impacts on the mother’s employment, the difficulty of finding employment for children, and concerns over a lack of access to modern medical care (Cao, 2008). To encourage larger families, the government should develop economic policies to provide the support these women require, such as providing access to improved medical care, particularly in rural areas.

The remarkable social changes we have experienced during our own lives make it clear that dramatic changes are not always positive. The overly simplistic view in which reducing population levels is the only goal must evolve into a more nuanced view that aims for sustainable fertility levels that balance the environment’s carrying capacity with the need for economic growth (Cao *et al.*, 2007) and the right of women to choose whether to have children (Ehrlich, 2001). Whether traditional Chinese culture will be receptive to such changes in fertility-related behaviour remains speculative, though the fertility reduction that has occurred in Japan since the 1920s, especially after World War II, and in Taiwan, Hong Kong, Singapore and South Korea since the 1950s, may have some lessons for China (Coale, 1983). The challenge that faces China will be to create a balanced policy that accounts for differences in geographic and cultural factors so as to attain short-term reductions in population pressure without sacrificing long-term social development.

Although drastically reducing China’s birth rate was clearly necessary, this goal has now largely been achieved, creating the new problems discussed in this paper. In order to replace low birth rates with sustainable rates, governments must address the root causes of declining birth rates. For example, governments should cover all the costs of childbirth and provide ongoing economic and other support for raising children. Additional powerful social safeguards must be provided, such as protecting the right of women to advance their careers despite the additional burdens of childbirth and raising children. In particular, more research will be necessary to identify the policies and practices that will make it both safe and desirable for women to bear more children.

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References

- Bongaarts, J.** (1998) Global population growth: demographic consequences of declining fertility. *Science* **282**, 419–420.
- Cao, S.** (2008) Crisis of population decline and race diversity extinction: low birth rate institutions. *Scientific Research Monthly* **7**(8), 58–60.
- Cao, S., Chen, L. & Liu, Z.** (2007) Disharmony between society and environmental carrying capacity: a historical review, with an emphasis on China. *AMBIO* **36**(5), 409–415.
- Chi, L.** (2006) The moving problem on the national minority population in Eastern Foreland of Shandong. *Manchu Minority Research* **2**, 14–20 (in Chinese).
- China Statistics Bureau** (2005) *Statistical Yearbook of China, 2005*. China Statistics Press, Beijing.
- Coale, A. J.** (1983) Population trends in China and India (a review). *Proceedings of the National Academy of Sciences of the USA* **80**, 1757–1763.
- Cohen, J. E.** (2003) Human population: the next half century. *Science* **302**, 1172–1175.
- Ehrlich, P. R.** (2001) Intervening in evolution: ethics and actions. *Proceedings of the National Academy of Sciences of the USA* **98**, 5477–5480.
- Greep, R.** (1998) Whither the global population problem. *Biochemical Pharmacology* **55**, 383–386.
- Guo, X. & Yi, J.** (2005) A reflection to our country's policy about planned parenthood. *Theory Monthly* **11**, 68–74 (in Chinese).
- Hu, H.** (2006) Exploiting the aged talent resources to promote the sustainable development of Chinese harmonious society. *Journal of the Changsha Social Work College* **13**(2), 10–12.
- Jensen, T. K., Andersen, A. N. & Skakkebaek, N. E.** (2004) Is human fertility declining? *International Congress Series* **1266**, 32–44.
- Liu, J. & Diamond, J.** (2005) China's environment in a globalizing world: How China and the rest of the world affect each other. *Nature* **435**, 1179–1186.
- Liu, S.** (2006) Reflection on cultural anthropology of sex imbalance of Chinese population. *Journal of the Second Northwest University Nationalities* **70**(2), 28–30 (in Chinese)
- Lutz, W., Sanderson, W. & Scherbov, S.** (2001) The end of world population growth. *Nature* **412**, 543–545.
- Pearce, F.** (1999) Counting down. *New Scientist* **164**, 20–21.
- Tang, X. & Xia, M.** (2006) Treat objectively divorce, build common harmonious families. *Northwest Population Journal* **108**(2), 63–65.
- United Nations Population Division** (2003) *World Population Prospects*. United Nations, New York, ESA_P_WP, p. 180.
- Wang, X.** (2002) The economic analysis of reproductive behavior. *Population Journal* **134**, 14–19 (in Chinese).
- Wilson, C.** (2004) Fertility below replacement level. *Science* **304**, 207–209.
- Zhang, Z.** (1999) Relationship between China's birth rate decline and the consequence of macroeconomics. *Population Research* **23**(5), 10–17 (in Chinese).