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Human Resources Development and Operations Policy

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**Egypt: Recent Changes  
in Population Growth**

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February 1995

HROWP 49

### Human Resources Development and Operations Policy Working Paper Series

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**Egypt: Recent Changes in Population Growth,  
Their Causes and Consequences**

by  
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Ernest E. Massiah

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We would like to thank David Steel, Astra Kenney, Randa El-Rashidi and Mohua Mukherjee of MN2PH for interesting comments and background material, and Amelia V. Menciano, Susan S. Sebastian, Diane Atkinson and Johanna Coenen for editorial assistance. Officials of USAID, Cairo also provided innumerable and valuable insights and materials throughout the preparation. Due to space limitations, many good suggestions and excellent pieces of research done on Egypt could not be included. Needless to say, all mistakes are the author's own.

## Abstract

This paper will examine the determinants and consequences of population growth in Egypt in the recent past and the near future. Since slowing the growth rate of population has long been an objective of Egyptian government policy, it also contains policy recommendations for minimizing growth. Egypt has one of the largest populations in the Middle East. It has increased by almost six times in the last century and three times since 1950. Even under the best case scenario, it will increase from about 58 million currently to 90 million in 2035. If a fast fertility decline is not achieved, it could easily reach 103 million by that time.

Data on migration are so unreliable and the prospects for migration to relieve population pressures are so uncertain that this paper concentrates on changes in mortality and fertility. Life expectancies have increased by about 20 years on average for Egyptian men and women since 1950. Since the late 1970s, infant and child mortality have fallen by 55 percent. These recent reductions have resulted from reductions in fertility, improvements in immunization, and general improvements in living standards. There remain, however, substantial socio-economic inequalities in mortality levels and recent economic stagnation have probably accentuated these.

Fertility rates have fallen erratically since the 1960s, but since the mid 1980s, this decline has accelerated dramatically. These declines have resulted from increases in the age of marriage and, more importantly, earlier reductions in the desired family size which have translated, after a lag, into increases in contraceptive use. Underlying these changes have been mortality reductions which reduce the number of children that parents think they need to have, improvements in education of parents and, recently, improvements in access to contraception, particularly IUDs, through both the public and private sectors. To continue this trend in fertility reduction, it will be necessary to improve the education of rural girls and to make further improvements in the family planning program. It will not be easy to expand education to girls in rural areas, especially in Upper Egypt, but it is necessary. There are three primary factors that are essential to improve the use and effectiveness of contraception: (i) counseling of women needs to be improved so that they know the proper use of methods and the alternative methods available when a method proves unsuitable; (ii) the range of methods available must be increased to include methods compatible with breastfeeding for women who object to IUDs and coital-related contraceptives; and (iii) males must be included more extensively in IEC efforts in family planning.

Historically, Egypt has had excellent access to donor support for its family planning program. In addition, since 1984, it has had a population policy that has been very supportive of the family planning program. USAID has played a particularly valuable role in recent years in expanding the role of the private sector in the provision of family planning services. The question that Egypt faces at this point is how to make the necessary changes in the program and how to make the transition to greater financial self-sufficiency.



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## **I. Introduction**

Egypt is the most populous Arab country, and, with a population of 54 million in 1992, ranks with Turkey and Iran as one of the largest countries in the region. Its population was 10 million in 1897. It increased by almost six times since the beginning of the century and by almost three times from 1950 to the present. The population grew slowly at an average rate of 1.3 percent per annum from 1897 to 1947, but accelerated greatly after World War II. The growth rate was around 2.5 percent from 1950 to about 1970 when it dropped to 2.2 percent due, in part, to postponement of marriage, reductions in marital fertility (because of the 1973 war), and to some changes in age structure echoing the effects of WWII. Once these temporary effects passed, the rate of population growth rebounded to 2.5 percent in 1975-1980 and 2.6 percent from 1980-1985. Since that period, it has begun to fall as decreases in birth rates have exceeded continuing decreases in the crude death rate.<sup>1</sup> The current population growth rate of about 2 percent per annum is one of the lowest in the region.

The objective of this paper is to examine the determinants and consequences of population growth in the recent past and the near future. Since slowing the population growth rate has long been an objective of Egyptian government policy, recommendations for maximizing the rate of decline will be included. The first section of the paper reviews alternative population projections.<sup>2</sup> Section two of the paper examines the prospects for further population growth. The third section examines the consequences of high fertility and rapid population growth. The fourth section contains an analysis of the determinants of population growth in the recent past. The following section focuses on the trends in contraceptive usage and its role in the fertility decline. An analysis of what needs to be done vis-à-vis family planning services to maximize the rate of future fertility decline is contained in section six. The final section highlights policy conclusions.

## **II. Population Growth Projections: 1990 - 2035**

It is estimated that by 1995, the population of Egypt will reach 58 million, an increase of 6 million over the population in mid-1990. Regardless of the rate of fertility decline in the next few years, the population will reach between 63 and 64 million by the year 2000. Thereafter, accumulated differences in the rate of fertility decline will show noticeable impacts. Assuming an average fertility decline used in Bank projections, it is expected to reach 87 million by 2025, an increase of 60 percent over the 1990 population. The population growth rate of 2.0 percent for 1990-95 is expected to decline to 1.6 percent by 2000-05, and 1.0 percent by 2025. This decline in the growth rate notwithstanding, the number of persons added each year will be at least 900,000 even in the 2020-25 period, dropping to 750,000 a decade later.

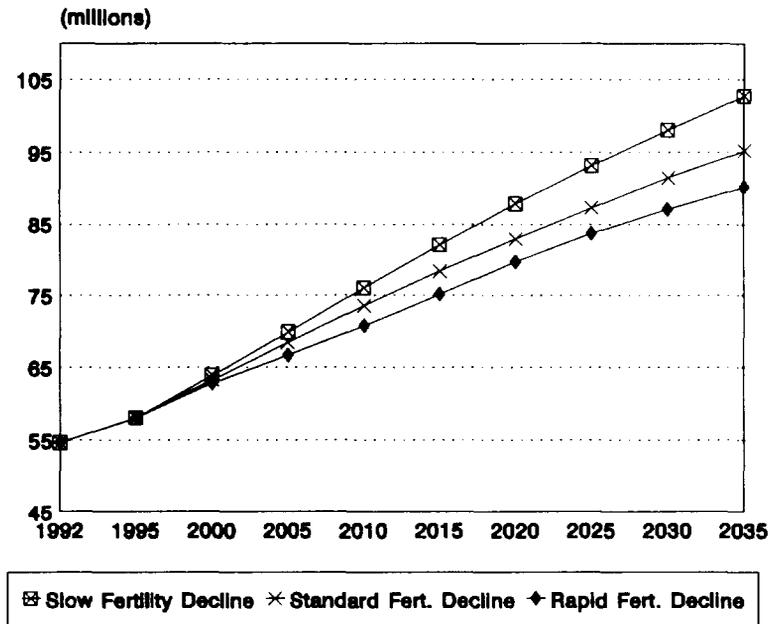
Fertility rates could decline faster or slower than the standard Bank assumptions. Figure 1 shows three alternative assumptions of fertility decline. As shown in Table 1, by the period 2000 and 2005, the differences in fertility decline under the three assumptions would be substantial with total fertility rates (TFRs) of 2.4, 2.9 or 3.3 for the fast, standard and slow decline, respectively, and with differences in population size by 2005 of 66.7, 68.5 or 69.9 million, respectively. By 2025, the difference in population size under the three assumptions would be 10 million and, by 2035, 12.5 million. Thus, it is important to understand what is necessary to obtain the faster declines in fertility.

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<sup>1</sup> The role of migration in Egypt's population growth is much more difficult to determine since the statistics on migrants are even weaker than those on which fertility and mortality estimates are made.

<sup>2</sup> These projections differ somewhat from those contained in World Bank (1994) because they were calculated with specific reference to detailed knowledge of Egypt, whereas the World Bank estimates were calculated to be comparable with data from other countries of the region.

Figure 1: Population Projections for Egypt, 1992 - 2035



According to a standard projection, replacement fertility would be achieved in 2015 with an ultimate population size of 95.2 million in 2035, roughly double its 1990 level. The slow fertility decline projection suggests that replacement fertility levels would be achieved in 2030 with a population of 102.7 million in 2035. The more optimistic fertility decline scenario suggests that replacement fertility levels will be achieved by 2005 with a population in 2035 at 90.2 million (see Figure 1).

The declines in fertility are related to increases in the number of contraceptive users and acceptors.<sup>3</sup> The number of new acceptors required to achieve these targets will be larger than the number of users, as the two most popular methods used, the pill and the IUD, have relatively high levels of discontinuance. For example, to achieve a TFR of 2.88 by the year 2003, an additional 3 million contraceptive users will be needed, but 14 million contraceptive acceptors will be needed over the period 1993 to 2003. To achieve a rapid fertility decline to a TFR of 2.4, 7.7 million contraceptive users will be needed, an increase of 3.6 million users. Improvements in the family planning program, for example, a wider range of methods, the introduction of more effective long-term methods, and focused program activity in rural areas, could accelerate the rate of fertility decline. More importantly, the rate of discontinuation could be reduced even with pills and IUDs if improved counseling could be introduced, as will be discussed in Section 6.

<sup>3</sup> The relationship between the number of users and population size in no way implies that targets of family planning users are the proper way to approach population strategy, but only reflect the mathematical relationship.

*Table 1: Comparison of Fertility Assumptions and Population Size under Three Alternative Population Projections<sup>1</sup>*

Year	Slow Fertility Decline	Standard Fertility Decline	Rapid Fertility Decline
<b>Total Fertility Rate<sup>2</sup></b>			
1992	3.9	3.9	3.9
1995-2000	3.4	3.1	3.0
2000-2005	3.3	2.9	2.4
2005-2010	3.0	2.6	2.2
2010-2015	2.7	2.3	2.2
2015-2020	2.5	2.2	2.2
2020-2025	2.4	2.2	2.2
2025-2030	2.2	2.2	2.2
2030-2035	2.2	2.2	2.2
<b>Population Size (millions)</b>			
1992	54.7	54.7	54.7
1995	58.1	58.1	58.1
2000	63.9	63.3	62.8
2005	69.9	68.5	66.7
2010	76.1	73.6	70.8
2015	82.1	78.4	75.2
2020	87.9	82.9	79.7
2025	93.2	87.3	83.7
2030	98.1	91.5	87.1
2035	102.8	95.3	90.2

<sup>1</sup> This is based on projections available from the authors. The most recent official World Bank projections most closely approximate the rapid decline.

<sup>2</sup> TFRs refer to the midpoint of the reference period while Population Size refers to the size at the end of the period.

### III. Effects of High Fertility and Rapid Population Growth

#### *Household Level*

If households are aware that high fertility will have negative effects on them and if they have knowledge of and access to low-cost fertility control, their fertility decisions will reflect these perceptions. The dimensions of high fertility that affect the household are the age of childbearing, the spacing of births and the total number of children. The consequences of early child-bearing are particularly important in rural areas where women do not have access to good emergency medical care, but are not as well addressed by family planning as by postponement of marriage.<sup>4</sup> Whether or not husbands and wives are aware of these consequences is debatable and an important research question for the design of information, education and communication (IEC) messages. More stress on delayed marriage in rural

<sup>4</sup> In Egypt, as in most developing countries, as soon as a woman marries, she generally wishes to have a child and thus will not use contraception. Thus, avoidance of very early childbearing must result from a postponement of marriage.

areas to improve maternal and child health and slow population growth needs attention. The most recent USAID/GOE program seems to be addressing this issue.

A child's chances for survival is also significantly affected by close child spacing. Mechanisms to promote child spacing are needed as women's desire to space their next birth is not as well served by existing family planning programs as the desire to have no more children.<sup>5</sup> They lack access to a wide range of family planning methods compatible with breastfeeding and may also lack knowledge of the importance and legitimacy of delaying births. Both of these issues need immediate program attention.

The hypothesis that fertility affects a family's well-being is difficult to test, and the effect of many children on household well-being probably depends on the circumstances of the family. The most testable effect of high fertility is on the ability of families to educate their children. It is generally believed that larger families are less able to educate their children. This is difficult to establish empirically in part because where family planning is available, parents make joint decisions about child schooling and family size that inhibit one from saying that one factor affects the other. Data from the 1980 Egyptian Fertility Survey (EFS)<sup>6</sup> did show that controlling for other factors, men who had high educational aspirations for their daughters wanted significantly fewer children,<sup>7</sup> but this was primarily an urban phenomenon (Cochrane, Mehra and Osheba 1988). Further analysis showed that in urban, but not rural, areas, the actual number of children under 13 in the household had a significant effect on aspirations in most groups. In terms of the actual number of years of schooling attended by children, the number of children under 13 in the household had no effect in rural areas. In urban areas, however, more children in the household meant fewer years of school completed by children controlling for their age. Thus, it is probably only in urban areas, where education beyond primary school is both needed and available, that the quantity/quality trade-off emerges at the household level. This implies that the pressure to educate children has been an important factor in reducing the demand for children in urban areas, but that in rural areas, government can not rely on households to restrict fertility in order to educate their children.<sup>8</sup>

### *Beyond the Household*

The effects of high fertility external to the household that are easiest to trace are those which concern spending pressures on the government for education and health, for example, or, in some cases, where governments are committed to providing food and shelter. The effects of population growth on the labor force, incomes, savings, the environment, and overall development are difficult to measure. It is useful to attempt to examine these effects to determine the degree of subsidization required to

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<sup>5</sup> In 1988, 22 percent of married women were estimated to have a demand to postpone the next birth, and 17 percent of married women were not using contraception even though they wanted to space their next birth. Thus, almost 80 percent of the demand for spacing was unmet. By 1992, the situation had improved. Fifteen percent of women wished to space their next birth and only eight percent were contracepting. Thus, 45 percent of the spacing demand was unmet. (See Table 7.13 in Sayed et al. 1989; Table 8.4 in El-Zanaty et al. 1993; and Table 6 of this report).

<sup>6</sup> For a descriptive list of the Egyptian Surveys cited in this report and their sources, see Annex 1 (p. 22).

<sup>7</sup> The educational aspiration for, and achievements of, sons are less affected by family size than those of daughters.

<sup>8</sup> This might not be the case if higher fees were charged for schooling in rural areas, but the equity implications of such a strategy are not generally acceptable.

encourage fertility change, but it should be stressed that the government of Egypt is well aware of these effects.

*Education:* The effects of population growth and high fertility are felt fairly immediately in the educational sector. In recent years, attempts to achieve universal access to basic education have focused on both qualitative and quantitative improvements to the system. The enrollment rates of 90 percent for girls and 97 percent for boys around 1990, while suggesting increases from earlier periods, mask significant urban-rural and regional differences. At the same time, despite efforts to increase the number of schools, the demand for primary school places increased the classroom density by 13 percent over the period 1981-86. It appears that, in recent years, double and, at times, triple shifting has been introduced to meet the needed expansion in class space. The effect of this on school quality is an important policy question to be addressed to determine the true magnitude of the effects of population pressure on human capital development. The literature is clear, however, that reductions in the hours of instruction reduce learning.

In 1990, there were about 8 million primary school children aged 6-11 years. Assuming an average pattern of fertility decline, there will be approximately 12.4 million children between ages 6-11 years in 2015, an increase of about 4.5 million children. Only in the event of a rapid fertility decline will the number of primary school children fall below 8 million before the year 2035. Expenditures will probably have to increase more than proportionally to the population of school age if enrollments of girls in primary school in rural Upper Egypt are to increase. It may be that there, as in Pakistan, a substantially greater investment must be made per student to get girls into school. This may take the form of separate schools for girls, deferment of school fees for them, etc. The issue of the parental demand for educating daughters must be addressed through some form of IEC.<sup>9</sup>

*Labor Force and Employment:* With an unemployment rate of over 14 percent, disguised unemployment in the public and private sectors, and limited opportunities for migration, labor market analysis that is sensitive to changes in population is a high priority. Changes in labor participation, particularly by women, and emigration are the most important factors de-linking the growth of the number of people entering the cohort 15-19 from additions to the labor force.<sup>10</sup> Between 1985 and 1990, the 15-19 year old age group grew very slowly because of the temporary downturn in fertility in the early 1970s. However, over the decade of the 1990s the number of males 15-49 years will increase by 40 percent. After that period, the growth rate in this age group will decline as previous fertility reductions have an effect. Nevertheless, there will be about 3.5 million males in the entry age groups each year until at least 2030. These young men will put a strain on the rural sector and further strain the job markets and infrastructure in urban areas. The frustrations of these young males when employment is not available can be expected to be a source of serious political unrest. Increased female employment will exacerbate employment, but not necessarily infrastructure, pressures.

*Agriculture:* One of the most difficult effects of population growth has been the encroachment onto agricultural land of housing and industrial development. In addition, the use of top soil to produce

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<sup>9</sup> An interesting approach to a similar problem in Bangladesh used IEC for these purposes and found that it was essential to address the IEC messages to males. (See Cabanero-Verzosa et al. 1993).

<sup>10</sup> Retirement and death of older workers are much less important given the relatively small size of the most relevant age groups. The impact of the return of workers as a result of the Gulf Conflict is still unclear. It is estimated that 158,000 workers returned from Kuwait and 282,000 from Iraq. The absorption of approximately 0.5 million returnees was not easy. For families, the loss of remittances from abroad and the prospect of increased unemployment, particularly in rural areas, is a real threat.

bricks has seriously stripped some areas. Until early in this century, this was not a serious problem as annual flooding replenished the soil, but this is no longer the case. Substitution of sand for mud bricks can alleviate the problem, but since sand bricks must be produced commercially and mud bricks can be home-produced, this would deprive poor households of income. The government recognizes the problem and has made top soil mining for bricks illegal, but enforcement is very difficult.

The pressure of population on the land has long been recognized in Egypt, but in earlier decades it was hoped that the development of new communities created by irrigating desert land would solve the problem. The agricultural communities in the desert areas have proven quite expensive, have taken much longer to develop than planned and have not lived up to expectations in term of either food production or employment generation. An analysis of the cost of food production from such new agricultural communities in 1980 showed that it was cheaper to attempt to reduce fertility by expanding the education of girls than it was to try to feed the additional population through such enterprises (see World Bank 1981).

*Environment:* The size, distribution and growth of the population has more or less serious impacts on the environment depending on the efficiency with which natural resources and habitat are utilized. In Egypt, water is scarce, a problem compounded by the drought of the 1980s. All agriculture is irrigated, and about 90 percent of the water comes from the Nile. Inefficient irrigation and drainage systems waste water, lead to water logging, and salinate the soil which reduces productivity and, ultimately, makes the land unusable. In addition, in coastal areas, mining of ground water leads to the intrusion of sea water which is not usable for animals, crops or human consumption.

#### **IV. Determinants of Population Growth**

Given these negative consequences of high fertility and rapid population growth, what are the possibilities of accelerating fertility decline? Since all countries and even regions within countries differ in the specific dynamics of population change, to answer this question, it is necessary to analyze the determinants of recent changes in population growth specifically in Egypt, and, to the extent possible, within different regions of Egypt. The rate of population growth depends on the rate of natural increase determined by mortality and fertility and the net rate of immigration. Although immigration has been very important in Egypt in the last 20 years, the statistics are so poor and the trends so volatile, that they will not be discussed here. We shall therefore, focus on trends in mortality and fertility and their determinants.

##### *Mortality*

Mortality rates have fallen substantially over the last 40 years. Between 1950 and 1992, the average life expectancy increased from 41.2 years for men and 43.6 years for women to 60.4 and 62.8 years, respectively. Interestingly, contrary to biological norms, female under-five mortality is higher than that for boys. In the late 1980s and early 1990s the difference was estimated to be 5 percent by the Egypt: Maternal and Child Health Survey (PAPchild). Comparisons with the 1980 EFS and retrospective data from the PAPchild Survey indicate that the situation of girls has improved somewhat since 1980, but neglect of the health care needs of female toddlers needs to be addressed.

The infant mortality rate (IMR) fell during the period 1950 to 1989, from 200 deaths per 1,000 live births to 56 per 1,000 live births. The decline was slow over the period 1950-1969, modest in the 1970s, and most dramatic in the 1980s when the IMR fell from 115 to 65 deaths per 1,000 live births. Between 1975-80 and 1986-1991, infant mortality and under five mortality fell by about 55 percent. Egypt's infant mortality is relatively low compared with other low income countries, but there are wide socioeconomic differentials in infant and child mortality (see Table 2). These mortality declines have

been the result of reductions in fertility, improved immunization and to some degree, improvements in living conditions.

*Table 2: Child Survival by Residence and Education<sup>1</sup>*

	1975-1980 <sup>2</sup>		1978-1988		1982-1992		1986-1991	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Cairo	120	167	62	76	55	68	34	43
Alexandria	(85)	(119)						
Lower urban	108	145	27	89	44	56	37	50
Lower rural	110	175	49	131	73	99	49	68
Upper urban	144	193	39	109	65	93	53	74
Upper rural	182	252	63	200	119	164	89	126
<b>Wife's Education</b>								
No school	140	205	113	161	98	133	69	96
Illiterate, some school	133	192	89	122	75	100	59	85
Read and write	129	160						
Primary complete	(91)	(122)	64	84	62		48	58
Secondary +	88	(99)	39	49	36		28	34
<b>Husband's Education</b>								
No school	144	216	NA	NA	NA	NA		
Illiterate, some school	140	(216)	NA	NA	NA	NA		
Read and write	125	174	NA	NA	NA	NA		
Primary	136	187	NA	NA	NA	NA		
Secondary +	106	128	NA	NA	NA	NA		
All Egypt	132	191	94	132	80	108	59	82

*Sources:* EFS 1980 (1975-80); Egyptian Demographic and Health Survey (EDHS) 1988 (1978-1988); EDHS 1992 (1982-1992); PAPchild 1991 (1986-91).

<sup>1</sup> These are actual estimates. They may not agree with estimates projected for later periods.

<sup>2</sup> (1) reports infant mortality, (2) reports under 5 mortality.

Although the effect of reduced fertility on mortality is hard to quantify, Hobcraft (1991) showed that in Egypt, for the period 1983-1988, if women could have the birth spacing they desired, under five mortality could be reduced by 21 percent. Since 1988, the expanded use of family planning has increased birth intervals. The latest survey showed that the percentage of birth intervals that were less than 24 months decreased from 40 to 31 percent. Thus, perhaps a 10 percent decline in infant and child mortality resulted from better spacing.

The expansion of immunization coverage and reduced incidence of diarrheal diseases also explain part of the decrease in infant and child mortality. In 1992, the EDHS revealed that only 4 percent of children had not received any vaccination and 90 percent had received BCG and the first two doses of polio and DPT. Approximately 80 percent of children had received the third doses of these vaccines. In 1988, only 11 percent of mothers reported that they had received tetanus injection, but by 1992, the corresponding statistic had improved to 57 percent. Diarrheal diseases accounted for over half

the infant deaths over the period 1970-82. By the late 1980s, this had dropped to about 30 percent.<sup>11</sup> According to the PAPchild study, the availability of piped water<sup>12</sup> and soap in the household had the biggest impacts on diarrheal morbidity. Either one reduced the incidence within the past two weeks from about 40 percent to about 30 percent.

Large declines in mortality occurred in every residential and educational group, but the relative differentials between the rural and uneducated and the urban and most educated widened substantially during the period. The variation in mortality rates according to region, gender and socioeconomic status suggests that changes in socioeconomic conditions may have also been responsible for the observed improvements. Between 1980-1991, the annual GNP grew at a rate of 1.9 percent per year. However, because the rate of population growth during that period was even larger, actual GNP per person actually declined from \$650 to \$610. This may well have contributed to greater income inequality. While improvements in socioeconomic conditions can be cited, such as expanded access to electricity from 65 percent to 91 percent, the provision of social services in rural areas, especially in Upper Egypt, remains inadequate. This is not from lack of trained personnel. Egypt is one of the best-endowed countries in the developing world with respect to doctors. Despite these high levels of personnel, equality of access to services still remains problematic.

### *Fertility*

Over the period 1950-1993, the total fertility rate declined from 6.6 to 3.9 children per woman. The number of births per thousand women and the TFR were roughly constant between 1930 and 1960, with the exception of some temporary reduction in fertility during WWII. During the 1950s, fertility levels were relatively constant and evidenced small regional differentials. Between 1960 and 1975, the TFR declined by 1.5 children per woman. The TFR was rather constant over the period 1976-1980 while between 1980 and 1988 it fell by about half of a child. This decline was slightly greater in urban areas. The picture for the most recent period, 1988-1992, is more dynamic, as the TFR fell from 4.7 to 3.9 children according to the EDHS.<sup>13</sup> A sharp urban-rural differential is still evident, however, with the highest TFR occurring in rural Upper Egypt (6.0, see Table 3). The last four years show, however, very hopeful signs, since even the region with the most persistent high fertility began to show signs of decline. Changes in the age of marriage and in the demand for children which, given improved contraceptive supply in recent years, translated into increased contraceptive use are responsible for these changes in fertility.

*Changes in the Age of Marriage:* Marriage behavior affects fertility not only through the age of marriage, but also through divorce and widowhood. For Egypt as a whole in 1980, it was estimated that, as a result of the exposure factor, fertility was only 70 percent of what it would have been if women

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<sup>11</sup> For the period 1983-1988, the 1988 EDHS estimates this as 29 percent. For the period 1986-1991, the PAPchild survey estimates it at 31 percent.

<sup>12</sup> Data from the second round of the 1980 EFS and 1992 EDHS showed that availability of piped water increased from 34 to 70 percent over the 12 year period.

<sup>13</sup> PAPchild data covers a five year period of 1987 to 1991, while the EDHS estimates the TFR for the 1990-92 period. Thus, it is not too surprising that the PAPchild survey showed a higher fertility level in general. The major unexplained incongruity between the two surveys exists in rural Upper Egypt where the PAPchild Survey showed a TFR of 6.7, which was above the rates of EDHS, even in 1988.

had married at the beginning of their reproductive life and remained married until menopause.<sup>14</sup> This is about the same as Morocco. Over the last 25 years, the age of marriage for women has increased by two years on the average for Egypt as a whole. The change was greatest in urban governorates where it increased from 18 to 23 years. In rural Lower Egypt, it has remained constant at about 18 years, while it increased marginally in rural Upper Egypt.

*Table 3: Total Fertility Rates*

	1960	1976	1980	1988	1992
Urban			4.27	3.69	2.92
Rural			6.14	5.73	4.91
Metropolitan	5.8	3.9	3.8		
Lower Egypt	6.9			4.83	3.70
Urban		5.0	4.29	3.95	2.80
Rural		6.0	6.0	5.22	4.10
Upper Egypt	6.8	NA		5.60	5.17
Urban			5.87	4.35	3.58
Rural		7.0	6.32	6.30	5.97
Total	6.7	5.5	5.27	4.66	3.9

*Source:* EFS 1980; EDHS 1988; EDHS 1992.

Low levels of female education in rural Egypt, the lack of off-farm employment and the lack of legislation ensuring the rights of women play an important role in keeping the rural age of marriage low. The differences in age of marriage across education groupings are very dramatic for all age groups. The difference was about eight years between those who had no schooling and those who completed secondary school. Very few women had attained a secondary-level education, however, but even with completed primary school, women marry about three years later than women with no schooling. In Jordan, the median age of marriage of rural women was 20.7 years in 1990, compared to 18.4 years in rural Egypt in 1992. This reflects in part the fact that only 12 percent of rural women in Jordan had no schooling, compared with 29.4 percent in Egypt. In Tunisia, where social legislation protecting the rights of women was introduced early, the median age of marriage of rural women is 21.8. This proves that education and social legislation can play an important part in determining the age of marriage.

*Development and the Demand for Children:* Desired family size declined from 4.1 in 1980 to 2.9 in 1988 and 1992,<sup>15</sup> but there are substantial regional differentials in the demand for children, as shown in Table 4. Husband's desired family size fell as well from 4.2 in 1980 to 3.3 in 1992. Although

<sup>14</sup> To put this in context, changes in the marriage pattern reduced fertility more in the late 1970s than did contraceptive use. The "index of contraceptive use" indicated that fertility was 80 percent of what it would have been if women used no contraception. That is, marriage behavior reduced fertility by 30 percent and contraceptive use by 20 percent.

<sup>15</sup> PAPchild figures for 1991 are slightly higher than the EDHS figures for 1988 or 1992. They do document, however, a substantial decline in desired family size between 1980 and the early 1990s, especially in rural areas.

currently, husbands want on average almost half a child more than wives, there is substantial agreement within couples.<sup>16</sup> It indicates the importance of including husbands in family planning activities.

*Table 4: Mean Desired Family Size for Ever Married Women by Their Region of Residence and Education*

	1980 <sup>1</sup>	1988	1991	1992
<b>Region</b>				
Urban Governorates	3.0	2.6	2.6	2.6
Urban Lower	3.1	2.5	2.8	2.6
Rural Lower	3.8	2.8	3.0	2.8
Urban Upper	4.1	2.9	3.1	2.8
Rural Upper	5.9	3.6	3.9	3.5
Egypt	4.1	2.9	3.1	2.9
<b>Level of Education</b>				
Illiterate: No School	4.6	3.1	3.5	3.1
Illiterate: Some School	4.0			
Can Read or Write	3.7	2.8	3.0 <sup>2</sup>	2.9
Primary	3.0			
Secondary	2.5	2.7	2.8 <sup>3</sup>	2.6
University	2.5	2.5	2.5	2.6
All Egypt	4.1	2.9	2.9	
<b>Comparative</b>				
North Africa	4.4	3.4		
Middle East	5.2	NA		
Asia	4.0	3.0		
L. America	4.3	3.6		
Sub-Saharan Africa	7.5	5.9		

*Source:* Egypt data: EFS 1980; EDHS 1988; EDHS 1992; PAPchild 1991. Other regions from UN 1987.

<sup>1</sup> For Level of Education category, 1980 data represent currently married women.

<sup>2</sup> For 1991, defined as less than complete primary education.

<sup>3</sup> For 1991, defined as complete primary through secondary education.

Changes in mortality are also related to fertility trends. According to the replacement effect hypothesis, couples replace children who have died. Since couples cannot predict how many children may die after they themselves have passed their prime reproductive age, they may also have an additional number of children beyond the desired number for insurance purposes. Thus, as mortality declines, so does the number of children demanded.<sup>17</sup> It is believed that reduced infant and child mortality probably had substantial effects on reducing the demand for children in Egypt. This has translated into higher contraceptive use.

<sup>16</sup> The 1992 data has no regional comparisons of the opinions of husbands and wives.

<sup>17</sup> At early stages of demographic transition, a reduction in mortality may also have a rather profound qualitative effect. At very high levels of mortality, parents feel fatalistic about their ability to control their own fate and that of their children and may not consider fertility a variable of control. Thus, a fatalistic attitude would prohibit fertility control. As mortality comes more under control, parents may begin to realize that "family planning" in its fullest sense is possible and fertility control becomes a reasonable option.

Urbanization and education, particularly female education, are associated with reductions in fertility through several channels. Women in urban areas and those with more schooling marry later, want fewer children and are better able to limit their fertility to the number of children that they actually want.<sup>18</sup> The effects of urbanization and education (especially for women) on the number of children that parents want is well-established. However, since 1980, most of the decline in desired family size in Egypt occurred because of changes in the preferences of women in the same educational/residential groups, rather than because of the expansion of education. These declines were greatest among the least educated and those in rural areas, especially in rural Upper Egypt. This implies that some changes were occurring within groups. These fairly large-scale changes could have occurred as a result of greater exposure to family planning messages, greater access to family planning, or socioeconomic or cultural changes. A multivariate study by Rashad et al. showed that the desired family size declined by an average of one child between 1980 and 1988 after controlling for the education of husband and wife, number of living children, mortality experience and work status of the wife. Again, this effect was most dramatic in rural Upper Egypt where, controlling for other factors, the desired family size fell by 2.3 children. Clearly in terms of the recent acceleration of fertility decline in Egypt, a major question that needs to be explored is what has happened to change fertility preferences in rural areas, especially in Upper Egypt. It was not simply expanded education.

Thus, over the last dozen years, both increases in the age of marriage and changes in the desired number of children, which translated into lagged use of contraception as discussed in the next section, contributed to fertility decline. The changes in age of marriage largely depended on changes in education. Changes in the demand for children appears to have resulted from several factors: reduced infant and child mortality, increases in education and urban residence and, perhaps most important, a change in the general view of the value of a large number of children. These latter changes may have resulted from general modernization, IEC messages about high fertility and changes in the consequences of high fertility for the family or perceptions thereof.

## V. Trends and Differentials in Contraceptive Use

### *Contraceptive Prevalence*

Contraceptive use in 1976 was approximately 27 percent among married women, with usage ranging from 53 percent in the metropolitan areas to 6 percent in rural Upper Egypt. As shown in Table 5, the percentage of married women using contraception rose from 32 percent in 1980<sup>19</sup> to 38 percent in 1988, and to 47 percent in 1992. Between 1980-88, all the change that occurred was in the rural areas and among those who had completed less than primary school. Among those with education beyond primary school, the usage of contraception actually fell in this period. This probably reflected the fact that this group was only 8 percent of the population in 1980 and 26 percent in 1988, thus sampling variation may have been high. Another important factor was that the composition of this age group was young — young women are at an early stage of their reproductive lives and are less likely to use

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<sup>18</sup> More educated women also breastfeed less and are less likely to observe sexual taboos about having sexual intercourse while they are breastfeeding. These factors tend to be associated with a rise in fertility, but the breastfeeding taboo is not prevalent in Arab culture.

<sup>19</sup> Usage in 1984 was estimated at 30 percent, however. This was possibly the result of sampling error, but probably also indicates that usage was fairly stagnant in the first part of the decade.

contraception. Examined by age and parity (numbers of children ever born), usage increased for all age groups except for women over 45, and all parities above one in this period.

Between 1988 to 1992, both the EDHS and the PAPchild Surveys show an equal increase of two percentage points per year in contraceptive use. Contraceptive usage increased in urban and rural areas, but the increases were greatest in rural areas, followed by the urban regions of Lower and Upper Egypt, and was smallest in the Urban Governorates where usage was already high, even in 1980. Contraceptive use also increased for all educational age and parity groups beyond zero.

*Table 5: Current Use of Contraception by Exposed Women by Socio-demographic Characteristics*

	1980	1988	1991	1992
<b>Region</b>				
Urban	51.7	51.8	61.0	57.0
Rural	16.3	24.5	38.0	38.4
Cairo Urban	55.2	56.0	64.0	59.1
<b>Lower Egypt</b>	32.7	41.2		53.5
Urban	52-55 <sup>1</sup>	54.5	62.0	60.3
Rural	24.1	35.6	51.0	50.5
<b>Upper Egypt</b>	12.1	22.1		31.4
Urban	24-47 <sup>1</sup>	41.5	56.0	48.1
Rural	5.6	11.5	23.0	24.3
<b>Age</b>				
15-19	5.3	5.5	15.0	13.3
20-24	17.5	24.3	32.0	29.7
25-29	31.6	37.1	46.0	46.0
30-34	39.9	46.8	59.0	58.8
35-39	41.1	52.8	61.0	59.6
40-44	43.5	47.5	56.0	55.5
45-49	39.8	23.5	34.0	34.5
<b>Number of Children</b>				
0	2.1	0.7	0.3	0.5
1	21.4	23.1	26.5	31.6
2	34.4	43.4	54.2	52.5
3	36.6	47.8	60.7	59.3
4+	40.1	44.4	NA	54.3
<b>Education</b>				
No Education	21.0	27.5	40.0	37.5
Some Primary	30-56 <sup>2</sup>	42.5	54.0	53.5
Compl. Primary/ Some Secondary	66.1	52.3	57.0	56.1
Compl. Second./ Higher	69.1	53.2	61.0	58.0
	31.9	37.8	47.6	47.1
North Africa	25.0		44.0	
Asia	25.0		51.0	
Latin America	42.0		44.0	
Sub-Saharan Africa	6.0		15.0	

*Source:* EDHS 1988; 1992; PAPchild 1991; EFS 1980 and various Fertility and Demographic and Health Surveys for other countries.

<sup>1</sup> The 1980 EFS reported rates for towns and cities in Upper and Lower Egypt separately. The lower figure in this range reflects the contraceptive use in towns, the upper range for cities.

<sup>2</sup> Different educational groupings were used in 1980. Thirty percent of women with some schooling but who were illiterate used family planning, compared with 51 percent for those who could read and write and 56 percent who had incomplete primary schooling.

### *Contraceptive Supply*

Rising contraceptive prevalence over the period 1988-92 is explained by the expansion of IUD use. This increase was so great that total modern contraceptive use expanded despite a decrease in the proportion of women using oral contraceptives. In urban areas, contraceptive use increased from 42 percent to 48 percent. In rural areas, contraceptive use increased from 25 percent to 38 percent and, in rural Upper Egypt, it doubled from 12 percent to 24 percent.<sup>20</sup>

The change in contraceptive use has been accompanied and, probably caused, by a rather large change in the pattern of contraceptive supply. Substantial efforts by the Government to provide IUDs through public clinics and the private sector was heavily subsidized by USAID. Between 1984 and 1988, the proportion of users of modern methods who got their services from the private sector increased slightly from 70 to 74 percent, but between 1988 and 1992, the proportion dropped to 60 percent. This is largely explained by the shift from pills to IUDs. Private pharmacies supply the majority of pills, (85-87 percent) while the private sector provided about 57 percent of IUDs in 1988, compared with 53 percent in 1992. Given the expansion of IUD use, the proportion using the public sector increased.<sup>21</sup>

The expansion of the private sector can not explain the most recent expansion in the use of contraceptives in Egypt, at least at the national level, but it plays a much more important role in Egypt than in most countries. The role of the commercial and private sector in Egypt is the result of two factors: (i) the lack of dynamism in the public sector until recently; and (ii) a substantial subsidization of the private sector in the provision of family planning by USAID.

The lack of dynamism in the public sector can be traced historically to the Ministry of Health's (MOH) lack of interest and resources and government health personnel's limited desire to serve in rural areas or even to devote much time to jobs in urban areas that carry low salaries. In addition, the government placed its mandate for reducing population growth in the National Family Planning Board beginning in the early 1970s,<sup>22</sup> which initially focused on reducing fertility through economic development (see Stycos et al., 1988). USAID recognized these obstacles in the public sector and decided to encourage private sector development. Later, when Egyptian Government policy was more receptive to the provision of family planning through the public health system, USAID began to support this initiative as well. Now a family planning system has been institutionalized in MOH with USAID support and the impact is reflected in the substantial expansion of usage between 1988 and 1992.

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<sup>20</sup> At levels below 20 percent, contraceptive use does not show much observable effect on fertility. Thus, the recent expansion in rural Upper Egypt will probably now begin to have noticeable effects on fertility.

<sup>21</sup> In 1992, the public sector role in the provision of family planning was greater in rural than urban areas, 39 percent versus 32 percent. What is somewhat surprising is that the role of the public sector was smaller in the less developed area of rural Upper Egypt than in the more developed area of rural Lower Egypt. It is possible that at this early stage of transition, only the better-off rural women in Upper Egypt are seeking contraceptives and that they have more access to the private sector than poorer women. Alternatively, the private sector may offer more needed anonymity. This issue should be further explored.

<sup>22</sup> Earlier efforts to provide family planning services through clinics failed through problems of funding, staffing, lack of organization and publicity, as well as a possible lack of demand for services. This latter factor seems less important than constraints on service delivery, because, initially, there was some acceptance of family planning which later fell off substantially.

### *The Effects of Policy and Program Reform*

The improvement in contraceptive usage can be traced in part to a change in the way population policies and programs were organized and coordinated after 1984. A new National Population Council was organized in 1984, and in 1986, the Third National Population Policy was adopted. This policy was based on seven basic premises: (i) the couple's right to decide on their fertility on the basis of their religion and values, and to obtain information about the means to enable them to achieve their decision within the framework of their religion; (ii) the avoidance of the use of abortion or sterilization as a means of family planning; (iii) recognition of a citizen's right to migrate and to move from place to place within Egypt; (iv) adoption of a positive incentive system based on increased awareness of the role of the individual and the community and the avoidance of any method of coercion, negative incentives or punitive methods; (v) educational, cultural and health development of individuals to help them become a source of productive energy; (vi) assignment of local government bodies with the responsibility for implementing all programs; and (vii) encouragement of voluntary efforts and community participation in the solution of the problem (see the 1992 EDHS). As a result of program reorganization and donor assistance, experts who initially ranked the Population Policy as weak, gave the program in 1989 a high, moderate ranking (see the 1992 EDHS). In late 1993, a Minister of State for Population and Family Welfare was appointed to advance the population agenda and to focus the thrust of program initiatives. The implications of this decision for the coordination of population activities in Egypt are still under review, as is the structure of a new Ministry of Population.

### *Unmet Need*

One way of determining the prospect for further fertility decline is to examine the level of unmet need for family planning. Considerable debate exists both about the measurement and meaning of unmet need for family planning. At its most basic, unmet need is measured as the proportion of women who say they want no more children or wish to postpone their next birth, but are not using contraception.

Between 1980 and 1992, desired family size in Egypt dropped from four to three children and the proportion wanting no more children increased from 53 to 66 percent. The demand for spacing also increased from 12 percent in 1988<sup>23</sup> to 16 percent in 1992 (see Table 6). In 1980, 40 percent of those who wanted no more children were using some form of family planning, that is, the demand of 60 percent of those who wanted to limit fertility was unmet. This represented 33 percent of all eligible women. By 1988, unmet need among those who wanted no more children was still about 30 percent<sup>24</sup> of currently married women of reproductive age. In addition, the 1988 survey showed that 17 percent

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<sup>23</sup> The measurement of the percentage of women who are in need of spacing seems to be highly dependent on definition. A simple definition — the percentage of women who say they want to postpone their birth by at least two years — yields 12 percent of women in 1988 and 16 percent of women in 1992 who have a demand to space. Other definitions include women who are uncertain *when* they want another birth or *if* they want another. According to this definition, the demand for spacing actually dropped between the two years from 22 percent to 19 percent. In addition, some researchers add to this the percentage of women who are currently pregnant and whose birth is mistimed.

<sup>24</sup> The proportion of women who wanted no more children and were contracepting had increased to about 50 percent, but the proportion wanting no more children had also increased.

of women wanted to postpone their next birth, but were not contracepting.<sup>25</sup> From 1988 to 1992, improvements in service provision made substantial inroads into unmet need. Overall, unmet need dropped from 47 percent of married, fecund women to 20 percent. Of this, unmet need for spacing dropped from 17 to 7 percent and unmet need for limiting fertility dropped from 30 to 13 percent.

Another way of looking at unmet need is to look at the proportion of women who say that their last birth was unwanted. In 1988, 32 percent of births in the last five years were reported as unwanted by the mother. This had declined to 26 percent by 1992, reflecting the greater effectiveness of the program in reaching those in need of family planning. Mis-timed births had also decreased from 15 percent to 9 percent of all births in the last five years. A third way of looking at the need for family planning relates to maternal health and child health rather than fertility preferences. Almost 60 percent of the births in the five years prior to 1988 occurred to women who had one or more risk factors.<sup>26</sup> Data are not available on which of these women had, or had not, been using family planning. By 1992, the proportion of births to women at risk because of short birth intervals, over the age of 34 or with five or more children had declined substantially, indicating another measure of the success of the program in recent years.<sup>27</sup>

*Table 6: Unmet Need - Proportion of Women Wanting to Restrict Fertility and, of those, Proportion Not Contracepting (percent)*

	1980	1988	1992
Proportion of Married Women Who Want No More Children	50.0	60.5	65.6
Proportion of Women Who Want No More Children and Are Not Contracepting	30.0	30.2	13.3
Proportion of Women Who Want to Postpone Childbirth	NA	12.0 (21.8) <sup>1</sup>	16.0 (18.8) <sup>1</sup>
Proportion of Women Who Want to Postpone and Are Not Contracepting	NA	16.8	6.8
Total Unmet Need	NA	47.0	20.1

*Source:* EFS 1980; EDHS 1988, Table 7.13; EDHS 1992, Table 8.4.

<sup>1</sup> These figures include those who wish to delay their next birth at least two years, those who are uncertain of when they want their next birth and those who are uncertain if they want another birth.

Unmet need is greatest among those in rural areas, especially Upper Egypt, and women with little schooling. In 1988, about a third of urban women had unmet need, compared with almost 60 percent in rural areas. About a third of women with primary education or above had unmet need, compared with 45 percent of those with less than primary school and 55 percent of those with no school.

<sup>25</sup> Although the EDHS report does not make it clear, this number must include not only those who wish to delay their next birth by at least two years, but also those who are uncertain about when they want their next birth or are uncertain if they want another birth.

<sup>26</sup> This included women under 18, over 35, women with five or more births and women who had their previous birth within the last 24 months (see the 1988 EDHS).

<sup>27</sup> Exact numerical comparisons are not possible for high parity because the EDHS changed the definition of high risk from five or more children in 1988 to three or more in 1992.

As of 1992, between 15 and 20 percent of urban women had unmet need, compared with 20 percent in rural Lower Egypt and 30 percent in rural Upper Egypt.

## VI. Access and Quality of Family Planning Services

One of the most hotly debated questions in the field of family planning is the relative importance of the demand to restrict fertility and the access to contraception. A paper done by Easterlin et al. (1988) using the 1980 data showed that for rural Egypt,<sup>28</sup> the demand to restrict fertility had a significantly positive effect on contraceptive use. Access to contraception measured by the presence of midwives in the village or distance to a family planning center or a rural health center also had significant effects when fertility preferences were controlled. Thus, even the inadequate kinds of access in 1980 had a significant impact on usage.<sup>29</sup> Another study using 1982 data (Entwistle et al. 1989) found that the number of pharmacies in the village had a positive effect on contraceptive use among women under 24. The number of midwives<sup>30</sup> in the village had a significant effect on contraceptive use among women between 25 and 34 who wanted to limit fertility. More recent work has indicated that it is not only distance to services, but also the quality of those services that matters.

Service quality has a significant influence on the level of contraceptive prevalence, quality of contraceptive use and continuation of family planning methods. In Egypt, two major issues emerge when examining the quality of family planning services: (i) the level of service providers' interpersonal communication skills and their lack of incentives for communicating information accurately; and (ii) the narrow range of methods available. The cost of contraception did appear to restrict usage of the IUD in 1988, but the 1992 EDHS indicated that recent improvements in public sector access to IUDs eliminated this problem.

### *Limited Interpersonal Communication Skills of Service Providers*

Counseling on the use, side effects and alternatives to oral contraceptives seems particularly deficient.<sup>31</sup> Approximately 90 percent of the women who got their pills through pharmacies report that they were given no counseling on the proper use of the pill, on the availability of alternative methods, or on side effects. Nearly 25 percent of women reporting pill use were unable to show a packet of pills, and an equal proportion had taken pills out of sequence, or had missed a pill. The interpersonal communication skills of public and private sector medical practitioners were better. Counseling for IUDs appear to be much better. Still, over 65 percent of women in public and private facilities were not informed about alternative methods. The informational deficits reflect the two-pronged delivery system in which pills are provided by pharmacies and IUDs by clinics and private doctors. Neither type of provider has any self-interest in informing the client about alternatives available from other sources.

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<sup>28</sup> Facilities data were not collected for urban areas.

<sup>29</sup> It is not possible to replicate this analysis with the newer data sets, however, since data on community access to family planning were not available to us for multivariate analysis.

<sup>30</sup> Midwives were used to distribute pills in the program.

<sup>31</sup> For detailed data see Table 6.8 in the 1992 EDHS.

*Broadening of the Method Mix*<sup>32</sup>

The need for a wider range of methods is evidenced by information on the reasons for discontinuing use. For the pill and IUDs, the major modern methods in the program, 23 and 9 percent of women, respectively, reported that they discontinued use due to method failure. For traditional methods of periodic abstinence and breastfeeding, 50 percent and 29 percent, respectively, became pregnant while using the method. Side effects led 33 percent of women to quit using the pill in the last five years and about 38 percent to discontinue using the IUD. An additional 11-12 percent discontinued both methods for health concerns. Less than 4 percent discontinued because of husband's disapproval, inconvenience, access or cost. The progesterone-only pill is not widely available in Egypt<sup>33</sup> so that existing oral contraceptives are not recommended for breastfeeding women and many traditional women are reluctant to use IUDs. Thus, there is a very limited range of methods available for breastfeeding women.<sup>34</sup> Norplant is being introduced by UNFPA but constitutes less than one-half percent of current use. This is one reason the relative unmet need for spacing has not declined as fast as the unmet need for limiting births. The availability of a wider range of methods would enable women to pick the one that reflected their own health concerns and reproductive needs. Injectables, progesterone-only pills and female sterilization are the most cost effective methods available to expand the method mix. The use of female sterilization, however, is not considered an acceptable method of family planning under the 1986 population policy and very few women in Egypt have used it for that purpose. Tubal ligations, however, are used for health reasons. If reversible female sterilization were possible, it might be better accepted by the medical and religious community.

**VII. Conclusions**

The TFR, which remained relatively unchanged at around 5.3 during the 1970s, has steadily declined in the last 10 years. Contraceptive acceptance has also increased. Whereas in 1992 approximately 47 percent of married women reported that they were currently using contraception, the contraceptive prevalence rate in 1980 was only 32 percent. Perceptions of ideal family size have also altered. In the 1980s, the mean desired family size was 4.1 children. It had declined to 2.9 by 1988 and has not changed thereafter. Importantly, men shared the desire for smaller family sizes. There have also been improvements in the mortality profile; the IMR declined from 115 deaths per 100 live births in 1982 to about 56 in 1992. Life expectancy at birth is now 60.4 years for men and 62.8 years for women.

Sustained fertility decline appears to have begun, stemming from a combination of the increasing age at marriage and increased contraceptive use. In the last four years, this decline has accelerated due to fairly rapid expansion of contraceptive use, primarily IUDs, and an expansion of pill and IUD use in rural Upper Egypt — a region that had previously been very slow to adopt contraception. There is potential for the age at marriage to increase and for contraceptive use to expand. There are obstacles to both. Furthering reductions in fertility will require attention to:

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<sup>32</sup> See Ravenholt and Russell (1993) for a detailed discussion of the legal and regulatory environment constraining family planning in Egypt.

<sup>33</sup> These types of pills are available to doctors for uses other than contraception, but are not available through pharmacies off prescription where 85 percent of women get their oral contraceptives.

<sup>34</sup> An excellent review is now available on the factors restricting access to methods other than pills and IUDs (see Ravenholt and Russell 1993).

1) **The Role of the Public Sector and Donor Dependency:** The use of contraception in Egypt is unusual because it depends on a highly subsidized private sector whose subsidy comes largely from one major donor, USAID. Two problems arise: (i) can even a subsidized private sector reach the unmet need for contraception for the most rural, most uneducated and most ambivalent women; and (ii) what will happen to the private sector when the subsidies are removed? The question of whether to subsidize the public or private sector is academic in Egypt, since both have and will need to play a role.

Most countries, for which we have data, show that the government sector is much more likely to service rural, uneducated women than is the private/commercial sector. Thus, while Egypt does not need more public health facilities, the availability of high quality family planning services in the public sector would need to be improved if the poor are to be reached. Up to 1988, the urban and rural areas depended equally on the private sector, but the recent expansion of use in rural areas has relied more heavily on the public sector than previously. Nonetheless, in all areas, and especially in rural Upper Egypt, the private sector plays an important role. This pattern probably arises from the heavy degree of subsidization of the private sector in family planning. USAID provides condoms, pills and IUD commodities at nominal prices to the private sector at the present time as well as training for private physicians. Plans to eliminate these subsidies in the near future may undermine the ability of the poor and the least educated to obtain services from the private sector. Further analysis of the existing data on the provision of family planning in Egypt would contribute to a better understanding of the potential role for the private sector and cooperation between the public and private sectors.

The public policy question that must be addressed is: to what extent should the government subsidize family planning? The evidence that family planning is a cost-effective health intervention are laid out in the *1993 World Development Report* on health (World Bank 1993). The strain of high fertility on education systems is also well established. Labor market and infrastructure effects are also quite real, if longer term and harder to document.<sup>35</sup> How fertility affects the environment is hardest to document, but with respect to at least one resource — water — the situation is critical. Thus, there is a strong argument for the Egyptian government to subsidize family planning. Whether Egypt will be willing and able to make the shift to greater family planning support as USAID gradually reduces its support is the key question. USAID strategy has been to help the sector develop so that it can be weaned from support on donors. The pace of transition and the sources of assistance are continuing policy questions that the Government must address.

2) **Broad-based Behavior Change Strategies:** Most surveys in Egypt indicate that men want only slightly more children than their wives, and in rural Upper Egypt, in fact, men want substantially fewer. However, their limited involvement is indicative of a somewhat passive program that waits for people to come to them. The social jurisdiction of men over their wives and the effect of their veto on their wives' contraceptive intentions argue for the development of communication programs targeting men. These programs must elicit support for familial discussion of fertility options and encourage men to use contraceptives. In Turkey, Tunisia, Morocco and Jordan, traditional methods are popular; this is

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<sup>35</sup> See the World Bank (1994) for a discussion of these issues for the region as a whole.

not the case in Egypt.<sup>36</sup> This may reflect the fact that males have not been as involved in the program as they should be, another feature of a private sector program.<sup>37</sup>

The provision of information and counseling is particularly deficient in the private sector. Private pharmacies do not have an incentive to provide the necessary information, particularly to rural, uneducated women with whom it may be hard to communicate. In addition, many of the "pharmacies" in rural areas are probably no more than small stores that do not have staff who are trained in family planning or have any medical training at all. Counseling training should focus on improving clients' understanding of the use and side effects associated with the two main methods, the pill and the IUD. It is particularly necessary to give women information about methods of family planning that are compatible with breastfeeding. Improvements in interpersonal skills and wider dissemination of information on sources of family planning will improve access to contraception and perception of the quality of services, both of which are priority policy concerns.

3) Expanding Female Education, Women's Rights and Employment Opportunities: Structural changes external to the family planning program are needed in order to initiate, support and further the fertility decline and improve reproductive health for women. Between 1980 and 1988, the proportion of women in rural areas with no schooling changed relatively little. Since 1988, there appeared to be a significant decrease in the proportion of women over 15 with no schooling, from 68 percent in the 1988 EDHS to 56 percent in the PAPchild survey.<sup>38</sup> The slow progress in expanding the education of girls in rural Upper Egypt and the lack of comprehensive personal status legislation and job opportunities for women keep the age of marriage low. Recommendations for raising the age of marriage would include expansion of female schooling and enactment of personal status legislation which outlines women's rights over issues of property ownership, rights to refuse or accept marriage partners, divorce, child custody, and employment rights. Further comparative work on the age of marriage is clearly called for, as is work on why female education is not expanding more rapidly in rural areas.

In summary, Egypt must face several challenges in its evolution from a country with a single-method, highly donor-dependent program to a more independent multi-method program. A great deal of progress has been made in this direction in the last ten years with the increased availability of the IUD through the public and private sector. It is now necessary to widen the method mix with hormonal contraceptives compatible with breastfeeding as well as long-term contraception. UNFPA is assisting with this through the provision of Norplant, but this is an expensive method. It is also important to improve counseling of women and men. The improvements in providing information and counseling as well as service must recognize that different strategies are needed for the more traditional groups of the population, particularly in Upper Egypt.

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<sup>36</sup> The very high use of these methods in Tunisia and Turkey arises in part because there, unlike in Egypt, these riskier methods can be backed up by abortion.

<sup>37</sup> Traditional methods such as periodic abstinence and withdrawal require some education, but these are not commodities or services sold by the private sector. Thus, there is no motivation for the private sector to promote their use.

<sup>38</sup> The EFS 1980 showed "only" 58 percent of the women had no schooling. Whether the educational system actually educated a smaller proportion of younger women between 1980 and 1988 than in previous years, or whether there were definitional differences is uncertain. Likewise, the Tables in the 1988 and 1992 EDHS are hard to compare. It is necessary to study in more detail what has happened to female education, especially among rural women.

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**Annex 1: Egyptian Survey Sources**

Acronym	Survey Name	Survey Date	Source and Publication Date
EDHS 1988	Egyptian Demographic and Health Survey	1988	Sayed et al., 1989
EDHS 1992	Egyptian Demographic and Health Survey	1992	El-Zanaty et al., 1993
EFS	Egyptian Fertility Surveys	1980	World Fertility Survey/CAPMAS, 1983
EMS	Egyptian Male Survey	1991	Sayed et al., 1992
ESAS	Egyptian Service Availability Survey	1989	Sayed, 1991
PAPchild	Egypt: Maternal and Child Health Survey	1991	Abdel-Azeem et al., 1993

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