REVIEW OF RESEARCH AND EVALUATION ACTIVITIES FUNDED BY THE FAMILY PLANNING AND HEALTH SERVICES PROJECT

OFFICE OF POPULATION AND HEALTH, USAID/DHAKA

CPS, Fertility, Mortality

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Levels and Trends in Demographic Vital Rates

Analysis of demographic data collected by the 1985 CPS indicates that fertility and mortality remain high in Bangladesh despite the substantial increase in the CPR between 1981 and 1985. Results from the 1985 Secondary Analysis Project show that the 1985/86 TFR could plausibly lie within a range from 5.4 to 6.2. Average mortality rates derived for the period 1982-84 suggest that life expectancy at birth e(o) was 50.0 years, the infant mortality rate (IMR) was 138, and the child mortality rate (CMR) was 26.4 per 1,000 children aged 1-4 years. Mortality levels computed from reports of infant, child, and male adult deaths were consistent, which implies that the United Nations South Asian model life table with e(o)= 50 for both sexes provides a reasonably close approximation of 1982-84 mortality conditions in Bangladesh.

Estimates from the 1981-85 biennial CPS indicate that fertility has probably declined in recent years in Bangladesh. The average number of children ever born reported by women aged 40-49 in the 1985 CPS is slightly more than 7 births, which indicates that period fertility levels likely did exceed 7.0 during certain periods over the past twenty-five years. However, period TFR levels as of 1985/86 appear to be substantially below 7.0, with 5.4 serving as a plausible lower bound estimate. Unfortunately, given the evidence currently available, it is not possible to specify a precise magnitude to the fertility decline that has apparently occurred in Bangladesh.

Comparison of 1981-85 CPS data with survey data collected during the nineteen seventies suggests that mortality levels have fallen somewhat, although this decline must be judged to have been more modest than in the case of fertility. Infant mortality rates derived from the 1974 Bangladesh Retrospective Survey of Fertility and Mortality and the 1976 Bangladesh Fertility Survey ranged between 152-155, while the 1982-84 IMR computed from the 1985 CPS was 138. Between 1979 and 1985/86, there is little evidence of any increase in life expectancy in Bangladesh. However, comparison of CPS data with survey data from the nineteen seventies (BRSFM and BFS findings) suggests that e(o) may have increased by around three years between 1972 and 1984. (Fertility and mortality rates estimated from the 1985 CPS and earlier surveys are given in Tables 1-8).

Fertility and mortality differentials derived from the 1983 and 1985 CPS generally indicate that respondents from higher socio-economic backgrounds had fewer births and child deaths. Fertility and mortality rates are higher in rural

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areas, in Muslim households, and in households and localities that are electrified. The effect of education on fertility and mortality is particularly pronounced. Respondent's (women) with higher educational attainment have lower fertility and mortality. These differentials are more substantial than in the case of husband's educational level. In addition, both fertility and mortality are considerably lower among women with some secondary level schooling. In the 1985 CPS, the mean number of children ever-born to women with no schooling was 4.2, to women with primary schooling 4.1, and to women with secondary level education 3.4. Among women aged 25-34, the proportion of children ever-born that had died was 20.3 percent among respondents with no education, 15.3 percent for women with primary education, and only 10.3 percent in the case of women with secondary schooling.

The Coverage of Family Planning Services

The 1985 CPS reported that 29.8 percent of all couples were using either modern or traditional forms of contraception (see Table 10). However, roughly 70 percent of all reproductive age couples in Bangladesh were not using any form of contraception. By the standards of successful family planning programs in South-East Asia (e.g. Indonesia and Thailand), the attainment of a CPR of 29.8 percent must be judged as only a modest success.

Findings from the 1985 CPS indicate that the desire for additional children is the most commonly cited reason for not using contraception. However, of those desiring additional children about two-thirds are those with fewer than two living children, suggesting that the remaining one third are the priority target group for the program, and the two third with fewer than two children move into the priority program target group after they have had two or more children. The above implies that potential exists to significantly increase the use of contraceptives in Bangladesh. This is also supported when CPS 1985 data for Unmet Contraceptive Need (UCN-the proportion of women aged 15-49 who are not using contraception and say they do not want any more children) is examined. Using the conventional UCN measure defined above, UCN was 30.2 percent in 1985 CPS. Only 10.6 percent of all reproductive aged women who were not using contraception and did not want additional children intended to adopt a family planning method in the future. Therefore, the majority of women with unmet contraceptive need (19.6 percent) do not intend to use contraception in the future. When reasons for non use are examined for currently married non users who do not want additional children, issues such as health reasons, religiosity, husband's objections, fear of side effects, and non -availability of methods are

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mentioned. This therefore means that the program with appropriate information, education and motivational messages and improved supply and management of commodities, can have an effect in removing some of the above barriers and recruiting a greater number of new clients into the program.

Determinants of Acceptance and Continuation of Contraceptive Use

An effort was made in the secondary analysis of the 1985 CPS to identify factors most crucial in determining the acceptance and discontinuation of contraceptive use in Bangladesh. Findings were based upon an analysis of women interviewed in both the 1983 and 1985 CPS samples. Multivariate techniques were used to assess the relative importance of demographic, socio-economic and program measures.

Analysis found that women were more likely to begin using contraction if they were older, had more living sons, had more children surviving, did not desire additional children and knew more modern methods of contraception. Factors that appeared to have a clear pattern of association with contraceptive use in bivariate analysis (place of residence, education, religion, employment, land ownership and electrification) were not important determinants of acceptance.

The risk of discontinuing use of contraception over time is higher among women that are unemployed, have fewer children surviving, desire additional children, and know fewer modern methods of contraception. Age, education of the respondent, place of residence, religion, land ownership, total number of living sons, and electrification were not important predictors of discontinuation.

This analysis has several policy implications relating to the use of family planning services in Bangladesh. If women are aware of more contraceptive methods (and by implication are more familiar with the advantages and disadvantages of various methods), there is a significantly greater likelihood that they will accept and continue using contraception. In addition, child survival appears to play a major role in the acceptance and continued use of contraception. Women that report relatively low child survivorship are less likely to accept contraception or continue use. Relatively high child survivorship is positively associated with the acceptance and continued use of contraception. This finding lends support to the proponents of the "child survival hypothesis"; namely, that substantial use of contraception and major reductions in fertility are predicated on the reduction of infant and

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child mortality.

In order for the Bangladesh family planning program to generate sizeable declines in fertility, both the acceptance and continued use of contraception will need to be increased. According to estimates derived from the CPS, current durations of use for modern methods vary considerably. The rate of drop-out for the oral pill and condom during the first year of use was 45 and 37 percent respectively. About 80 percent of first segment IUD acceptors are expected to continue using the IUD for twelve months. However, at the end of 36 months, the IUD continuation rate falls to 43 percent, only two points higher than the condom continuation rate. The lowest twelve month continuation rate is observed for oral pill users (34 percent).

Age and the number of living children were observed to be directly related to the continued use of contraception. However, it is somewhat surprising that educational attainment of respondents and husbands does not show any association with continuation rates. Place of residence, electrification, and landownership are clearly associated with duration of use. It is important to note that, with the exception of education, indicators of higher socio-economic status are linked to higher continuation rates. This finding lends support to the view that the family planning program cannot be successfully implemented if socio-economic levels remain low for the vast majority of the population.

Another question arises from these research findings; namely; is there any relationship between socio-economic status and quality of treatment in motivational work and follow-up services in Bangladesh? A positive association was evident from operations research conducted in Nepal. This issue should be seriously considered by policy makers in order to ensure consistently high quality services to all clients regardless of socio-economic status. Although continuation rates are lower, irrespective of method, for women desiring additional children, this magnitude tends to be very small (with the exception of condom). This is also indicative of the fact that the desire and lack of desire for additional children have almost the same impact on a woman's continued use of contraception. Improved motivational work can increase continuation rates for those women who do not desire additional children.

The Use of the Proximate Determinants of Fertility to Assess Family Planning Program Performance and Objectives

Research funded under the FPHSP (primarily the CPS) has generated estimates of the proximate determinants of

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fertility; namely, data on the proportions of women currently married, contraceptive prevalence by method, the level of annual discontinuation by method, and the average duration of breastfeeding. This information, in conjunction with independent estimates of contraceptive use effectiveness, the duration of post-partum infecundability and the induced abortion rate, provides an opportunity to investigate the role of proximate (intermediate) factors determining fertility in Bangladesh. Of particular interest to FP/MCH policy makers is the utilization of the proximate determinants to assess the pattern of association between fertility and the contraceptive prevalence rate, and to review current and projected family planning program performance.

Analysis of the proximate determinants of fertility is undertaken utilizing the Population Council Target Program developed by Bongaarts and Stover (1987). This program estimates the TFR from the following equation:

$$TFR = Cm \times Cc \times Ca \times Ci \times TF$$

where:

TFR = Total Fertility Rate (Total Births Per Women)

Cm = Marriage Index (Cm equals one if all women of reproductive age are married and zero if none are married)

Cc = Contraception Index (Cc equals one if no women are using contraception and zero if all women of reproductive age are using 100 percent effective contraception

Ca = Induced Abortion Index (Ca equals one if no abortion is practiced and zero if all pregnancies are aborted)

Ci = Postpartum Infecundability Index (Ci equals one in the absence of lactation and postpartum infecundability and zero if postpartum infecundability is infinite)

TF = Total Fertility Rate estimated in the absence of the effects of the marriage pattern, contraception, induced abortion and postpartum infecundability (i.e. the level of TFR when Cm = Cc = Ca = Ci = 1). Variations in TF tend to be small and are dependent upon the three remaining proximate determinants of fertility; namely, frequency of intercourse, spontaneous

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abortion and sterility.

From this formulation, it is possible to estimate the level of CPR required to achieve various TFR targets. Conversely, CPR targets can be linked to resultant TFR levels. Projections can also be made of the number of acceptors and users of contraception by method, and the commodity supply requirements needed to reach future TFR and CPR levels.

Two principal analyses are presented below. The first set of estimates describes the level of TFR required to attain a CPR of 40% (modern and traditional methods) by the year 1992. Projected annual numbers of users, acceptors and commodity supply requirements are shown. The second estimation series projects the level of TFR required to reach various CPR targets by the year 2001.

Proximate Determinant Values Employed to Assess FP Program Performance

Tables 11-16 provide the proximate determinant inputs used to assess 1983-1992 TFR and CPR interrelations in the Population Council Target Program. Table 1 gives the total number of women of reproductive age, the proportions of women currently married and the number of currently married women of reproductive age for the period 1983-1992. These estimates are based upon projections of the 1981 Population Census that incorporate the following parameters:

Measures	1981	1986	1992
e(0)	50	51	52
Proportions Currently Married	.898	.890	.882

Female survivorship ratios corresponding to e(o) of 50, 51 and 52 years are derived from the United Nations South Asian model life table. The proportions of women currently married by age are estimated from the 1983 Contraceptive Prevalence Survey. 1981-1992 estimates are based on an assumed increase of 1 year in the average age at first marriage between 1983 and 2001. The 1981 figure of .898 is extrapolated from this trend line.

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Tables 12-13 provide contraceptive prevalence estimates by method that are employed in this exercise. The 1983 and 1986 contraceptive prevalence and method mix figures are derived directly from the CPS for these years (1).

Projected prevalence estimates for 1992 are geared to a moderate increase in contraceptive use between 1986-1992. The 1986-1992 method mix trend is obtained through an extrapolation of the actual change in method mix between 1983 and 1986.

Use effectiveness levels by method are given in Table 14. These values represent standard effectiveness levels for modern methods if use is continuous. Traditional method use effectiveness is essentially unknown. In this analysis, a somewhat notional figure of .600 has been adopted (2). Table 15 presents the method specific annual discontinuation rates estimated in the 1985 CPS Secondary Analysis report. These estimates, along with the underlying use effectiveness values in Table 4, determine the overall effectiveness of contraceptive use (extended use effectiveness) in Bangladesh.

Additional proximate determinants of fertility employed in this analysis are given in Table 16. 1985 CPS analysis found that the average duration of breastfeeding was approximately 22 months in Bangladesh. This estimate was derived from currently married women who (1) had at least one living child under five years of age, and (2) desired additional children. Thus, breastfeeding duration information was not collected from all women eligible for interview in the 1985 CPS. However, this deficiency probably does not bias 1985 CPS breastfeeding duration estimates to any great degree. The duration of postpartum infecundability implied from an average breastfeeding duration of 22 months is around 12 months (Bongaarts and Potter, 1983:25). A

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1. The fieldwork for the 1985 CPS was undertaken during December-April, 1986 (eligible women sample) and May-June, 1986 (couple sample). This staggered schedule resulted from the decision to collect couple sample data once the eligible women sample was already partially completed. Since 1985 CPS data measures reproductive behaviour occurring through mid-1986, results from the 1985 CPS are attributed to 1986 rather than 1985 in this exercise.

2. Use effectiveness as defined by Bongaarts and Stover (1986:51) is "the proportional reduction in the monthly risk of conception" rather than the more commonly encountered "one minus the annual failure rate".

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slight reduction in the duration of breastfeeding and postpartum infecundability is assumed for the period 1986-1992; namely, a reduction in breastfeeding duration from 22 to 21 months and a decline in postpartum infecundability from 12 to 11.8 months.

Table 16 also presents the induced abortion rate per woman utilized in this analysis (1). Unfortunately, reliable national statistics on the incidence of abortion in Bangladesh are not currently available. Data from the Demographic Surveillance System (DSS) in Matlab indicates that the annual induced abortion rate in recent years has averaged between .08 and .12 abortions per woman (e.g. see Shaikh 1983:32). However, these figures are generally thought to underestimate the actual number of abortions occurring in Matlab. Given the lack of reliable national estimates, this analysis has adopted a somewhat notional figure of .20 abortions per woman. There is no evidence that the incidence of abortion is changing in Bangladesh. Therefore, a constant induced abortion rate has been assumed for the period 1986-1992.

The final inputs required in the application of the Target Program are reasonable estimates of the level and age pattern of fertility at the beginning of the projection period (1983). Unfortunately, there is considerable uncertainty surrounding these two measures. This analysis assumes a 1983 TFR of 6.2 births per woman, an estimate essentially in line with a 1983 TFR of 6.1 derived from the CBR of 40.9 obtained by Mauldin and Segal (which is obtained from the 1983 couple sample CPR of 21.7 percent using the formula CBR = 49.07 - (CPR X .43)) (2).

A possible anomaly identified in the analysis of CPS fertility data is that the age patterns of fertility derived from the 1983 and 1985 CPS were not consistent with other evidence considered to be reliable (e.g. the age-pattern of fertility reported from the ICDDR,B Matlab Comparison Area).

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1. The total induced abortion rate is measured in the same fashion as the total fertility rate; namely, age-specific abortion rates are summed for all women of reproductive age and then multiplied by 5 (the number of years in each five year age group).

2. The 1983 TFR of 6.1 was obtained by deriving age-specific fertility rates (geared to the average 1981-85 age pattern of fertility reported by the BBS Sample Vital Statistics Registration System) that, in conjunction with the projected mid-year 1983 female population aged 15-49, generated births consistent with a 1983 CBR of 40.9.

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Therefore, 1983 and 1985 CPS age pattern data were not incorporated in this analysis. Reliance is instead placed upon the average 1981-85 age pattern of fertility reported by the BBS Sample Vital Statistics Registration System. While the level of fertility reported by the BBS may be too low, there is no strong reason to doubt the accuracy of the

fertility age pattern. As Figure 1 indicates, ICDDR,B Matlab comparison area and BBS fertility age patterns are quite similar over the 1981-84 period. Since BBS data is supposedly representative of the national population, it has been utilized in this application of the Target Program.

Family Planning Program Objectives and Indicators 1983-1992

Tables 17-20 present results of the Target Program incorporating an increase in the CPR from 21.7 percent in 1983 to 29.8 percent in 1986 (the actual CPS prevalence estimates for these years) and 40.0 percent by 1992. The TFRs associated with these prevalence levels are given in Table 7. Starting with a TFR of 6.2 in 1983, the implied TFR in 1986 (linked to an increase in the CPR from 21.7 to 29.8 percent) is 5.6. A TFR decline from 5.6 in 1986 to 4.8 by 1992 is consistent with an increase in the CPR from 28.9 to 40.0 percent.

One should bear in mind that projected TFR levels associated with various CPR targets are highly sensitive to the initial level and age pattern of fertility. Since there remains much uncertainty surrounding levels and trends of fertility in Bangladesh, one must consider projected TFR figures to be suggestive rather than definitive estimates of actual fertility levels prevailing at any given point in time.

The annual percentage and number of users by method between 1983 and 1986 are given in Tables 18 and 19. These estimates correspond to the prevalence and method mix trends reported by the 1983 and 1985 CPS. Annual numbers of acceptors over the same period are provided in Table 10. Annual acceptors are determined by yearly growth in the number of users (in years t and t+1), annual method discontinuation, and aging of the population (i.e., women who attain age 50+ over the projection period must be replaced by new acceptors). Methods with higher levels of discontinuation (e.g. condoms) require relatively more new annual acceptors than methods with longer durations of use (e.g. the pill).

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The projected percentage and number of users by method needed to attain a CPR of 40.0 percent by 1992 are given in Tables 21 and 22. As noted previously, the projected method mix trend for the period 1986-92 is a linear extrapolation from 1983-86 method mix change identified in the 1983 and 1985 CPS. The total number of users needed by 1992 is 9.040 million. In other words, the number of contraceptive users in Bangladesh will need to increase by 64.3 percent between 1986-92 in order to reach a CPR of 40.0 percent by 1992.

It is anticipated that the most widely used method by 1992 will continue to be tubectomy (8.90 percent of currently married will be tubectomy users by 1992). However, oral pill, vasectomy, and condom use will increase more rapidly than tubectomy between 1986-92. By 1992, prevalence for the oral pill is projected to be 8.32 percent, vasectomy 6.10 percent, and condoms 6.16 percent. Injectables and the IUD are projected to increase in use by 1992, but will likely remain minor methods in the Bangladesh family planning program. Vaginal methods (primarily foam and jelly) will largely disappear from circulation while traditional method use will remain essentially unchanged over the 1986-92 period.

While the 1986-92 gains in prevalence shown in Table 11 may not appear substantial, given the increase in the size of the female population of reproductive age over this period, the absolute number of users that will need to be recruited annually by the family planning program is considerable (see Table 12). Between 1986 and 1992, the absolute and percentage increase in method use needed to reach 40.0 percent prevalence by 1992 is as follows:

Method	Number of Users		Percentage
	1986	1992	Change
Vasectomy	701.7	1378.6	96.5
Tubectomy	1457.8	2011.5	38.0
Injectables	93.7	280.2	199.0
IUD	256.9	433.9	68.9
Pills	938.6	1880.4	100.3
Condoms	737.2	1392.2	88.8
Vaginal Methods	52.2	.9	- 98.3
Traditional	1265.3	1662.5	31.4

The largest percentage increase will be in the use of injectables (199.0 percent), followed by oral pills (100.3 percent), vasectomy (96.5 percent), and condoms (88.8 percent). The annual number of acceptors by method corresponding to these gains in contraceptive use are given in Table 23. These substantial increases over a

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period of just six years constitute a major challenge for the national family planning program in Bangladesh.

Estimates of future commodity supply requirements geared to an increase in CPR of 40.0 percent by 1992. Table 24 provides the annual consumption rates adopted for the four methods considered; namely, injectables (4 doses annually per user), the IUD (1.42 devices annually per user), oral pills (13.94 cycles annually per user) and condoms (180 pieces annually per user) (1). These consumption rates are based upon continuous method use over a one year period.

Commodities that will need to be supplied annually to the family planning program in order to attain a 40.0 percent prevalence rate by 1992 are shown in Table 25. Between 1987-92, the procurement of injectables will need to increase by 140.0 percent, IUDs by 53.6 percent, oral pills by 76.5 percent, and condoms by 68.2 percent.

Analysis of Demographic Trends, 1986-2001

Table 26 presents six population projections based upon different trends in family planning achievement between 1986 and 2001. These projections incorporate the following CPR outcomes by the year 2001: (2) a very rapid increase in CPR (71.8 percent, which is consistent with a replacement level

TFR of 2.4); (2) a rapid increase in CPR (60 percent); (3) a moderate increase in CPR (50 percent); (4) a slow increase in CPR (40 percent); (5) a constant CPR (29.8 percent); and (6) a moderate decline in CPR (25.0 percent) (1).

All of the projections shown in Table 26 assume an increase in life expectancy from 51 years in 1986 to 54 years in 2001; a one year increase in the average age at

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1. Annual consumption rates for injectables, the IUD, and oral pills are values currently employed by the Bangladesh family planning program when procuring commodities. The annual consumption rate for condoms is based upon a study of condom use in Bangladesh by Laing and Walker, (1987).

2. The replacement level TFR commonly cited in demographic studies is 2.1. However, in a high infant and child mortality setting such as Bangladesh (where e(o) is projected to reach only 54 years by the year 2001), the replacement level TFR is higher than 2.1. This analysis considers a TFR of 2.4 to be a closer approximation of the actual level of replacement fertility in Bangladesh.

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first marriage between 1983 and 2001 (.83 years over the period 1986-2001); a decline from 21 to 20 months in the duration of breastfeeding and 11.8 to 11 months in postpartum infecundability; and a constant induced abortion rate of .20. Use effectiveness levels and discontinuation rates measured by the 1985 CPS remain constant throughout the projection period. The previously identified 1986-1992 method mix trend (extrapolated from the pattern of change between 1983-1986) is incorporated in these projections, with the 1992 method mix held constant between 1992-2001.

The Target Program is once again employed to determine the level of TFR associated with various family planning program outcomes. An age-specific component population projection program incorporating specific trends in fertility and mortality is also utilized to project the crude birth rate (CBR), crude death rate (CDR), rate of natural increase (RNI), and the total population resulting from (1) trends in TFR derived from the Target Program) and (2) life expectancy e(o). RNI is assumed to equal the annual rate of population growth (r) since net annual international migration is not considered in this analysis (1). The projection program uses the 1981 Population Census "adjusted" age distribution, the 1981-85 average age pattern of fertility from the BBS Sample Vital Statistics Registration System (VRS), and five year age-specific survivorship ratios from the United Nations South Asian family of model life tables.

Results indicate that the 1986 CPR of 29.8 percent and TFR of 5.6 results in a CBR of 39.4, a CDR of 14.2, and an RNI of 25.2 per 1,000 population (and r = 2.52 with net international migration = 0). The total 1986 mid-year population projected from the 1981 Population Census (incorporating a decline in TFR from 6.2 to 5.6 and an increase in e(o) from 50 to 51 years) is 102.0 million.

The six projections in Table 26 outline a wide range of demographic scenarios that may unfold in Bangladesh by the end of the century. If the CPR can be raised to 71.8 percent by 2001, the TFR will decline to a replacement level of 2.4. This rapid decline in fertility will reduce the annual rate of natural increase from 25.2 to 10.3, which results in a total population of 128.8 million in 2001. On the other hand, a decline in contraceptive prevalence from 29.8 percent in 1986 to 25.0 percent in 2001 would increase the TFR from 5.6 to 5.8, the CBR from 39.4 to 44.7, RNI from 25.2 to 30.4 (r from 2.52 to 3.04), and the total population from 102.0 to 157.4 million.

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1. The level of out-migration estimated to be between 50,000 and 80,000 annually, does not significantly effect the annual population growth rate (BBS, 1988:8).

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These two extreme projections will probably not arise. Projections based upon slow, moderate and rapid increases in CPR are more likely to be within the realm of possibility. These projections generate TFRs ranging from 3.3-4.7, CBRs between 27.6 and 37.9, rates of natural increase from 15.6 to 24.5 percent and total population estimates between 135.5 and 148.1 million in 2001.

It is important to note that even with significant declines in the TFR, the CBR tends to remain relatively high (thereby restraining more rapid reductions in the annual growth rate). This situation can be clearly seen in the moderate projection based upon an increase in CPR to 50.0 percent and a decline in TFR to 4.0 by 2001. Despite the significant fall in fertility, the crude birth rate remains surprisingly high (33.3 births per 1,000 population). More critically, the rate of natural increase is still slightly above 20.0 (r = over 2 percent per annum). This situation arises from the young age structure of the population (i.e. progressively larger female cohorts are entering the child bearing years) and the assumption of falling mortality, which allows more women to survive through the age range 15-49.

It is of course impossible to specify with any assured precision exactly how demographic change will unfold in Bangladesh during the remainder of this century. However, the demographic outcomes generated by the more plausible projections in Table 26 are hardly trivial to future prospects for rapid social and economic development in Bangladesh.

Recent BDG Estimates of Prevalence and Commodity Requirements

Table 27-31 compare recent BDG estimates of prevalence and commodity supply requirements. The MIS Unit of the MOHFP is currently reporting a national CPR of 37.2 percent. This figure is substantially higher than the 29.8 percent estimate derived from the 1985 CPS.

The relatively high MIS estimate is obtained from reports of current users by method divided by the total number of eligible couples registered by the MIS national couple registration program completed during the second quarter of 1988. This registration system reported 13.7 million eligible couples in Bangladesh as of mid-1988. However, this figure is substantially lower that the projected estimate of the number of currently married women projected from the 1981 Population Census; namely, 19.8 million. The clear implication here is that the MIS couple registration system is seriously under-reported, resulting in an inflated CPR estimates.

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The MIS Unit has also issued a new set of prevalence objectives by method. These figures are shown as "revised MIS" contraceptive method mix estimates in Table 28. These method mix goals are substantially different from actual method mix figures obtained from MIS reporting and the 1985 CPS (1988 CPS method mix estimates are based on alinear extrapolation of method mix change between the 1983 and 1985 CPS).

As can be seen in Table 31, the new MIS method mix objectives (for fiscal years 1988-1989 and 1989-90) have major implications for program managers concerned with the procurement of commodities. These are now substantial differences in projections of commodity supply requirements for certain methods. The BDG is projecting that 1.32 million IUSs will need to be procured during fiscal year 1988-89, while projections based upon the 1985 CPS (minus an adjustment for pipeline procurement) indicate that only .48 million IUDs are required. Injectables and oral pill needs also appear to be somewhat overstated by the BDG; namely, 1.98 as opposed to .57 million injectables doses and 19.32 as against 16.8 million oral pill cycles. On the other hand, the BDG appears to be underestimating condom supply requirements. MOHFP program objectives indicate that 148.6 million condoms need to be supplied during fiscal year 1988-89 while CPS projections show that 166.4 million condoms are necessary. These wide inconsistencies in commodity procurement estimates are disturbing and need to be addressed as a priority issue between the BDG and donor community.

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Table 1: Children Ever-Born Per Total Women, 1979-1985 CPS and Other Sources

Age	Census 1961	BRSFM 1974	BFS 1975	CPS 1979	BLDS 1980	CSE 1981	CPS 1981	CPS 1983	CPS 1985
15-19	.7	.4	.6	.4	.4	.5	.5	.6	.4
20-24	2.2	1.8	2.3	2.1	1.7	1.9	2.0	2.2	2.0
25-29	3.3	3.5	4.2	3.6	3.3	3.5	3.7	3.8	3.6
30-34	4.6	4.9	5.7	5.0	4.8	5.0	5.4	5.5	5.1
35-39	5.2	5.9	6.7	6.0	5.8	6.1	6.4	6.5	6.5
40-44	5.5	6.2	7.1	6.5	6.4	6.7	7.3	7.4	7.4
45-49	5.7	6.1	6.7	6.6	6.5	6.8	7.6	7.5	7.2

Table 2: Children Ever-Born Per Ever Married Women, 1985 CPS and Other Sources

Age	Census 1961	BRSFM 1974	BFS 1975	CPS 1979	BLDS 1980	CSE 1981	CPS 1981	CPS 1983	CPS 1985
15-19	.8	.6	.8	.6	.6	.7	.8	.9	.7
20-24	2.2	1.9	2.4	2.1	1.8	1.9	2.1	2.3	2.1
25-29	3.5	3.5	4.2	3.6	3.3	3.5	3.7	3.8	3.6
30-34	4.6	4.9	5.7	5.0	4.8	5.0	5.4	5.5	5.1
35-39	5.2	5.9	6.7	6.0	5.8	6.1	6.4	6.5	6.5
40-44	5.5	6.2	7.1	6.5	6.4	6.7	7.3	7.4	7.4
45-49	5.7	6.1	6.7	6.6	6.5	6.9	7.6	7.5	7.2

CENSUS (1961) - 1961 Population Census
BRSFM - 1974 Bangladesh Retrospective Survey of Fertility and Mortality (1974 Census)
BFS - 1976 Bangladesh Fertility Survey (WFS)
BLDS - 1980 Baseline Demographic Survey (BBS)
CSE - 1981 Census Sample Enumeration (1981 Census)
CPS (1979) - 1979 Contraceptive Prevalence Survey
CPS (1981) - 1981 Contraceptive Prevalence Survey
CPS (1983) - 1983 Contraceptive Prevalence Survey
CPS (1985) - 1985 Contraceptive Prevalence Survey

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Table 3: Period Age-Specific Fertility Rates (Children Born 12 Months Prior to Census/Survey)

Age	BRSFM 1974	BFS 1974-6	BLDS 1980	CPS 1983	CPS 1985
15-19	.104	.186	.121	.157	.130
20-24	.230	.322	.244	.256	.248
25-29	.215	.300	.228	.227	.201
30-34	.182	.227	.195	.186	.160
35-39	.133	.148	.127	.108	.117
40-44	.064	.069	.060	.049	.048
45-49	.034	.016	.025	.006	.018
Unadjusted TFR	4.8	6.3	5.0	4.9	4.6

Table 4: Adjusted Age-Specific Fertility Rates, 1974 BRSFM, 1980 BLDS, 1983 and 1985 CPS

Age	BRSFM 1974	BLDS 1980	CPS 1983	CPS 1985
15-19	.189	.189	.263	.220
20-24	.348	.323	.359	.347
25-29	.320	.297	.317	.278
30-34	.268	.249	.254	.221
35-39	.192	.159	.145	.157
40-44	.089	.074	.060	.062
45-49	.042	.039	.006	.020
P/F Ratio K	1.500	1.320	1.428	1.413
Adjusted TFR (P/F Ratio Method)	7.2	6.6	7.0	6.5

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Table 5: Urban/Rural Children Ever-Born, Period Fertility and Adjusted Period Fertility, 1983 and 1985 CPS

	1983 CPS		1985 CPS	
	Children Ever Born		Children Ever Born	
Age	Urban	Rural	Urban	Rural
15-19	.6	.6	.4	.4
20-24	1.9	2.2	1.8	2.0
25-29	3.6	3.9	3.2	3.6
30-34	5.1	5.5	4.6	5.2
35-39	6.0	6.6	6.0	6.5
40-44	7.1	7.3	7.0	7.5
45-49	7.5	7.5	7.4	7.4
	Period Fertility		Period Fertility	
Age	Urban	Rural	Urban	Rural
15-19	.136	.157	.131	.129
20-24	.259	.255	.222	.249
25-29	.198	.231	.136	.212
30-34	.164	.188	.113	.168
35-39	.104	.109	.096	.119
40-44	.021	.052	.028	.056
45-49	.007	.007	.021	.022
Unadjusted TFR	4.4	5.0	3.7	4.8
	Adjusted Period Fertility		Adjusted Period Fertility	
Age	Urban	Rural	Urban	Rural
15-19	.215	.265	.209	.220
20-24	.333	.363	.282	.355
25-29	.253	.327	.176	.298
30-34	.208	.260	.149	.234
35-39	.124	.148	.120	.162
40-44	.025	.065	.036	.073
45-49	.007	.007	.022	.025
Adjusted TFR (P/F Ratio Method)	5.88	7.2	5.0	6.8

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Table 6: Proportions of Children Dead by Age of Mother; 1974 BRSFM, 1976 BFS, 1979-85 CPS

Age	BRSFM 1974	BFS 1976	CPS 1979	CPS 1981	CPS 1983	CPS 1985
15-19	.185	.250	.143	.144	.197	.165
20-24	.206	.208	.190	.190	.197	.188
25-29	.213	.214	.194	.216	.207	.197
30-34	.228	.246	.180	.222	.230	.229
35-39	.240	.254	.183	.234	.249	.250
40-44	.264	.282	.185	.274	.282	.265
45-49	.285	.299	.227	.303	.286	.287

Table 7: Average Number of Children Ever-Born and Children Dead by Age of Mother; 1974 BRSFM, 1976 BFS, 1981 CSE and 1979-85 CPS

	BRSFM 1974		BFS 1976		CPS 1979		CPS 1981	
Age	CEB	CD	CEB	CD	CEB	CD	CEB	CD
15-19	.4	.1	.6	.2	.4	.6	.5	.1
20-24	1.8	.4	2.3	.5	2.1	.4	2.0	.4
25-29	3.5	.8	4.2	.9	3.6	.7	3.7	.8
30-34	4.9	1.1	5.7	1.4	5.0	.9	5.4	1.2
35-39	5.9	1.4	6.7	1.7	6.0	1.1	6.4	1.5
40-44	6.2	1.6	7.1	2.0	6.5	1.2	7.3	2.0
45-49	6.1	1.7	6.7	2.0	6.6	1.5	7.6	2.3

	CPS 1983		CPS 1985	
Age	CEB	CD	CEB	CD
15-19	.6	.1	.4	.1
20-24	2.2	.4	2.0	.4
25-29	3.8	.8	3.6	.7
30-34	5.5	1.3	5.1	1.2
35-39	6.5	1.6	6.5	1.6
40-44	7.4	2.1	7.4	1.9
45-49	7.5	2.1	7.2	2.1

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Table 8: Estimation of Child Mortality from Proportions of Children Dead q(x) (Obtained from Coale-Demeny West Mortality Pattern) and Corresponding Reference Period Estimates t(x)

	BRSFM 1974	BFS 1976	CPS 1979	CPS 1981	CPS 1983	CPS 1985
q(1)	.1728	.2137	.1529	.1266	.1666	.1706
q(2)	.2058	.2019	.1900	.1861	.1883	.1889
q(3)	.2098	.2082	.1949	.2106	.2071	.1904
q(5)	.2291	.2458	.1741	.2219	.2300	.2248
l(1)	.8272	.7863	.8471	.8734	.8334	.8294
l(2)	.7942	.7981	.8100	.8139	.8177	.8111
l(3)	.7902	.7918	.8151	.7894	.7929	.8096
l(5)	.7709	.7542	.8259	.7781	.7700	.7752
t(1)	.81	.96	.49	.91	.96	.63
t(2)	2.20	2.42	2.04	2.36	2.50	2.08
t(3)	4.12	4.38	4.37	4.32	4.56	4.19
t(5)	6.32	6.58	7.12	6.53	6.87	6.65

Table 9: Levels of Infant Mortality and Life Expectancy Implied from Estimates of q(1), q(2), q(3) and q(5), 1985 CPS (Using UN South Asian Model Life Tables)

	BRSFM 1974	BFS 1976	CPS 1979	CPS 1981	CPS 1983	CPS 1985
q(1)						
e(0)	42.8	35.2	46.8	52.3	44.0	43.3
e(10)	51.8	48.1	53.7	56.4	52.4	52.0
IMR	174	214	153	127	167	171
CMR	39.8	59.1	31.8	22.6	37.3	38.8
q(2)						
e(0)	46.3	46.9	48.5	49.1	48.8	48.6
e(10)	53.5	53.7	54.4	54.8	54.6	54.6
IMR	155	152	145	142	143	144
CMR	32.7	31.6	28.8	27.7	28.2	28.6
q(3)						
e(0)	48.9	49.1	52.0	48.8	49.2	51.3
e(10)	54.7	54.8	56.2	54.6	54.8	55.9
IMR	143	142	128	143	142	131
CMR	28.0	27.7	23.1	28.2	27.6	24.1
q(5)						
e(0)	49.2	47.5	53.3	49.0	49.1	49.5
e(10)	54.8	54.0	57.7	54.8	54.8	55.0
IMR	142	149	112	142	142	140
CMR	27.6	30.6	17.9	27.9	27.7	27.1

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Table 10: Contraceptive Prevalence Rates, 1979-1985, and Maudlin/Segal and BBS (VRS) CBR and TFR Estimates

	Eligible Women Sample				Couple Sample (Working Rates)	
Methods	1979	1981	1983	1985	1983	1985
Modern Methods	8.9	10.9	13.8	18.4	16.2	22.9
Oral Pill	3.6	3.5	3.3	5.1	3.3	5.1
Condom	1.5	1.6	1.5	1.8	2.7	4.0
Vaginal Method	.1	.3	.3	.2	.3	.2
Injection	.2	.4	.2	.5	.2	.5
IUD	.2	.4	1.0	1.4	1.0	1.4
Tubectomy	2.4	4.0	6.2	7.9	6.2	7.9
Vasectomy	.9	.8	1.2	1.5	2.5	3.8
Traditional Methods	3.8	7.7	5.4	6.9	5.5	6.9
Safe Period	2.2	3.9	2.4	3.8	2.4	3.8
Withdrawal	.2	1.8	1.3	.9	1.3	.9
Abstinence	.8	1.2	.4	.5	.4	.5
Other	.6	.7	1.4	1.7	1.4	1.7
Any Method	12.7	18.6	19.1	25.3	21.7	29.8
No Method	87.3	81.4	80.9	74.7	78.3	70.2
<u>CBR and TFR Estimates</u>						
Mauldin/Segal						
CBR	43.6	41.1	40.9	38.2	39.7	36.3
TFR	6.4	6.1	6.1	5.6	5.8	5.3

1. The 1983 CPS eligible women survey results do not add exactly to 19.1% owing to rounding errors.

2. The Mauldin/Segal estimates are obtained from the level of CPR using the equation CBR = 49.07 - (.43)(CPR). This association is obtained by comparing relationships between the CPR and CBR in a large cross-section of developing and developed countries.

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Table 11: Number of Women of Reproductive Age, Currently Married Women of Reproductive Age, and the Proportion of Women Currently Married, 1983-1992

Total Women of Reproductive Age (Thousands)

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
1983	4664	3838	3418	2814	2292	1941	1490	20457
1984	4947	3925	3479	2947	2360	1992	1580	21230
1985	5246	4014	3540	3087	2431	2045	1675	22038
1986	5564	4105	3603	3233	2504	2099	1776	22884
1987	5832	4349	3686	3291	2623	2162	1823	23766
1988	6113	4608	3770	3350	2748	2228	1872	24690
1989	6408	4883	3856	3410	2879	2295	1922	25654
1990	6717	5173	3945	3472	3016	2365	1973	26660
1991	7041	5481	4035	3534	3160	2436	2026	27713
1992	7009	5746	4276	3616	3218	2553	2088	28506

Married Women of Reproductive Age (Thousands)

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
1983	2845	3454	3145	2561	1994	1591	1148	16737
1984	2984	3520	3200	2682	2054	1635	1218	17292
1985	3129	3587	3256	2810	2117	1679	1292	17869
1986	3281	3655	3312	2943	2182	1725	1371	18468
1987	3400	3858	3387	2996	2287	1778	1408	19115
1988	3522	4073	3464	3050	2397	1833	1447	19787
1989	3648	4300	3543	3106	2513	1890	1486	20485
1990	3779	4539	3623	3162	2634	1948	1527	21212
1991	3913	4792	3705	3219	2760	2008	1569	21967
1992	3848	5005	3926	3294	2812	2106	1618	22609

Proportions Currently Married

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	Total
1983	.610	.900	.920	.910	.870	.820	.770	.820
1984	.603	.897	.920	.910	.870	.821	.771	.818
1985	.596	.894	.920	.910	.871	.821	.771	.816
1986	.590	.890	.919	.910	.871	.822	.772	.813
1987	.583	.887	.919	.910	.872	.822	.772	.810
1988	.576	.884	.919	.911	.872	.823	.773	.807
1989	.569	.881	.919	.911	.873	.823	.773	.805
1990	.563	.877	.918	.911	.873	.824	.774	.803
1991	.556	.874	.918	.911	.874	.824	.774	.801
1992	.549	.871	.918	.911	.874	.825	.775	.799

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Table 12: Contraceptive Prevalence by Method, 1983, 1986 and 1992

Method	1983	1986	1992
Vasectomy	2.5	3.8	6.1
Tubectomy	6.2	7.9	8.9
Injectables	.2	.5	1.2
IUD	1.0	1.4	1.9
Pills	3.3	5.1	8.3
Condoms	2.7	4.0	6.2
Vaginal Methods	.3	.3	.0
Traditional	5.5	6.9	7.4
Total	21.7	29.8	40.0

Table 13: Contraceptive Method Mix, 1983, 1986, and 1992

Method	1983	1986	1992
Vasectomy	11.5	12.8	15.3
Tubectomy	28.6	26.5	22.3
Injectables	1.0	1.7	3.1
IUD	4.6	4.7	4.8
Pills	15.2	17.1	20.8
Condoms	12.4	13.4	15.4
Vaginal Methods	1.4	.8	.0
Traditional	25.3	23.0	18.4

Table 14: Use Effectiveness of Contraceptive Methods Utilized in the Bangladesh Family Planning Program

Method	Use Effectiveness
Vasectomy	1.000
Tubectomy	1.000
Injectables	.980
IUD	.950
Pills	.900
Condoms	.700
Vaginal Methods	.700
Traditional	.600

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Table 15: Annual Discontinuation Rates by Method, 1985 CPS

Method	1985
Vasectomy	.010
Tubectomy	.010
Injectables	.300
IUD	.210
Pills	.350
Condoms	.450
Vaginal Methods	.300
Traditional	.700

Table 16: Average Duration of Breastfeeding, Duration of Postpartum Infecundability, and the Induced Abortion Rate

Average Duration of Breastfeeding	
1983	22.0 Months
1986	22.0 Months
1992	21.0 Months
Duration of Postpartum Infecundability	
1983	12.0 Months
1986	12.0 Months
1992	11.8 Months
Induced Abortion Rate (Per Woman)	
1983	.20
1986	.20
1992	.20

Table 17: Total Fertility and Age-Specific Fertility Rates Corresponding to Trends in the Contraceptive Prevalence Rate, 1983-1992

		Age-Specific Fertility Rate						
	TFR	15-19	20-24	25-29	30-34	35-39	40-44	45-49
1983	6.20	134.3	332.5	311.9	228.6	154.1	58.6	20.0
1984	6.00	129.1	323.4	303.6	221.0	148.1	55.9	19.1
1985	5.80	123.8	314.4	295.3	213.5	142.0	53.1	18.2
1986	5.60	118.5	305.3	287.0	205.9	136.0	50.4	17.2
1987	5.47	115.0	299.2	281.4	200.8	131.9	48.6	16.6
1988	5.33	111.5	293.1	275.9	195.8	127.9	46.7	16.0
1989	5.20	107.9	287.1	270.3	190.7	123.8	44.9	15.3
1990	5.07	104.4	281.0	264.7	185.7	119.8	43.1	14.7
1991	4.93	100.9	275.0	259.2	180.7	115.8	41.3	14.1
1992	4.80	97.4	269.0	253.7	175.7	111.8	39.4	13.4

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Table 18: Percentage of Women Using by Method, 1983-1986

Method	1983	1984	1985	1986
Vasectomy	2.50	2.91	3.34	3.80
Tubectomy	6.21	6.81	7.37	7.89
Injectables	.22	.30	.40	.51
IUD	1.00	1.13	1.26	1.39
Pills	3.30	3.86	4.45	5.08
Condoms	2.69	3.11	3.54	3.99
Vaginal Methods	.31	.31	.30	.28
Traditional	5.49	5.98	6.44	6.85
Total	21.71	24.40	27.11	29.80

Table 19: Annual Number of Users by Method, 1983-1986

Method	1983	1984	1985	1986
Vasectomy	417.8	502.8	597.4	701.7
Tubectomy	1039.4	1172.4	1317.4	1457.8
Injectables	36.5	52.2	71.2	93.7
IUD	167.2	195.1	225.1	256.9
Pills	551.6	667.0	795.4	938.6
Condoms	450.3	537.1	632.7	739.2
Vaginal Methods	51.5	53.2	53.5	52.2
Traditional	918.9	1034.9	1150.9	1265.3
Total	3633.2	4219.7	4844.1	5503.4

Table 20: Annual Number of Acceptors by Method, 1984-1986

Method	1984	1985	1986
Vasectomy	111.1	124.4	127.2
Tubectomy	165.3	169.4	150.4
Injectables	33.0	42.1	50.8
IUD	73.4	82.2	87.4
Pills	357.9	417.1	466.5
Condoms	339.0	391.9	437.2
Vaginal Methods	16.0	16.1	15.7
Traditional	854.4	936.1	996.6
Total	1950.1	2179.3	2331.8

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Table 21: Percentage of Women Using by Method Required to Reach 40% Prevalence by 1992

Method	1987	1988	1989	1990	1991	1992
Vasectomy	4.15	4.51	4.89	5.28	5.69	6.10
Tubectomy	8.13	8.33	8.52	8.67	8.80	8.91
Injectables	.61	.72	.84	.97	1.10	1.24
IUD	1.48	1.57	1.65	1.74	1.83	1.92
Pills	5.57	6.08	6.61	7.16	7.73	8.32
Condoms	4.33	4.67	5.03	5.40	5.77	6.16
Vaginal Methods	.25	.21	.17	.12	.06	.00
Traditional	7.01	7.13	7.23	7.30	7.34	7.35
Total	31.53	33.23	34.94	36.64	38.33	40.00

Table 22: Annual Number of Users by Method Required to Reach 40% Prevalence by 1992 (Thousands)

Method	1987	1988	1989	1990	1991	1992
Vasectomy	793.6	893.2	1002.1	1120.4	1248.9	1378.6
Tubectomy	1554.0	1648.8	1744.4	1838.9	1932.9	2011.5
Injectables	116.6	142.6	171.9	204.7	241.4	280.2
IUD	282.7	309.8	338.9	369.6	402.3	433.9
Pills	1065.5	1203.5	1354.8	1519.4	1698.8	1880.4
Condoms	827.5	924.7	1030.6	1144.9	1268.5	1392.2
Vaginal Methods	47.7	41.8	34.3	25.1	14.0	.9
Traditional	1339.5	1410.9	1481.1	1548.3	1613.0	1662.5
Total	6027.2	6575.4	7158.1	7771.3	8419.8	9040.3

Table 23: Annual Number of Acceptors by Method Required to Reach 40% Prevalence by 1992 (Thousands)

Method	1987	1988	1989	1990	1991
Vasectomy	128.5	140.6	153.6	167.4	177.5
Tubectomy	129.7	131.0	132.4	133.1	126.7
Injectables	59.4	70.4	82.6	96.2	110.2
IUD	90.9	98.6	106.8	115.5	123.2
Pills	509.0	569.8	636.5	708.5	780.3
Condoms	475.2	527.6	584.6	645.9	707.2
Vaginal Methods	9.8	6.4	2.4	0.0	0.0
Traditional	1027.9	1076.3	1123.8	1168.5	1205.2
Total	2430.4	2620.7	2822.7	3035.1	3230.3

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Table 24: Annual Consumption Rates for Commodities, 1986-1992

Method	
Vasectomy	.00
Tubectomy	.00
Injectables	4.00
IUD	1.42
Pills	13.94
Condoms	180.00
Vaginal Methods	.00
Traditional	.00

Table 25: Projected Commodity Requirements Needed to Reach a CPR of 40% by 1992 (Thousands)*

Method	1987	1988	1989	1990	1991	1992
Vasectomy	-	-	-	-	-	-
Tubectomy	-	-	-	-	-	-
Injectables	467	570	688	819	966	1121
IUD	401	440	482	525	571	616
Pills	14854	16777	18887	21181	23681	26213
Condoms	148954	166455	185511	206076	228333	250597
Vaginal Methods	-	-	-	-	-	-
Traditional	-	-	-	-	-	-

(*) To build to 18 months stock in country, additional amounts would have to be calculated and ordered.

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Table 26: Alternative Population Projections Assuming Different Trends in the Contraceptive Prevalence Rate, 1986-2001, (With RNI = r and Users and Total Population in Thousands)

	Users	CPR	TFR	CBR	CDR	r	Total Population (Mid-Year)
1. CPR Required to Reach Replacement Fertility by 2001							
1986	5504	29.8	5.6	39.4	14.2	2.52	101978
1987	6218	32.5	5.4	38.3	14.1	2.42	104126
1988	6975	35.3	5.2	37.2	14.1	2.31	106274
1989	7780	38.0	5.0	36.1	14.0	2.21	108422
1990	8633	40.7	4.8	35.0	14.0	2.10	110570
1991	9540	43.4	4.5	33.9	13.9	2.00	112718
1992	10438	46.2	4.3	32.9	13.7	1.93	114644
1993	11438	49.0	4.1	32.0	13.4	1.86	116569
1994	12444	51.9	3.9	31.0	13.2	1.78	118495
1995	13538	54.7	3.7	30.1	12.9	1.71	120420
1996	14697	57.6	3.5	29.1	12.7	1.64	122346
1997	15772	60.4	3.3	27.6	12.4	1.52	123637
1998	16899	63.3	3.0	26.1	12.1	1.40	124928
1999	18082	66.1	2.8	24.5	11.8	1.27	126218
2000	19325	69.0	2.6	23.0	11.5	1.15	127509
2001	20613	71.8	2.4	21.5	11.2	1.03	128800
2. Rapid Increase in CPR							
1986	5504	29.8	5.6	39.4	14.2	2.52	101978
1987	6067	31.7	5.4	38.7	14.2	2.45	104328
1988	6662	33.7	5.3	38.0	14.2	2.38	106677
1989	7293	35.6	5.1	37.4	14.2	2.32	109027
1990	7961	37.5	5.0	36.7	14.2	2.25	111376
1991	8668	39.5	4.8	36.0	14.2	2.18	113726
1992	9363	41.4	4.7	35.3	14.0	2.13	116048
1993	10121	43.5	4.5	34.6	13.8	2.08	118370
1994	10923	45.5	4.4	34.0	13.6	2.04	120691
1995	11774	47.6	4.2	33.3	13.4	1.99	123013
1996	12675	49.7	4.0	32.6	13.2	1.94	125334
1997	13501	51.7	3.9	31.6	13.0	1.86	127367
1998	14367	53.8	3.7	30.6	12.7	1.79	129400
1999	15278	55.9	3.6	29.6	12.5	1.71	131432
2000	16234	57.9	3.4	28.6	12.2	1.64	133465
2001	17244	60.0	3.3	27.6	12.0	1.56	135497

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Table 26 (Continued)

	Users	CPR	TFR	CBR	CDR	r	Total Population (Mid-Year)
3. Moderate Increase in CPR							
1986	5504	29.8	5.6	39.4	14.2	2.52	101978
1987	5938	31.1	5.5	39.1	14.3	2.49	104533
1988	6397	32.3	5.4	38.9	14.3	2.46	107089
1989	6880	33.6	5.3	38.6	14.4	2.42	109644
1990	7390	34.8	5.2	38.4	14.4	2.39	112200
1991	7928	36.1	5.1	38.1	14.5	2.36	114755
1992	8452	37.4	5.0	37.7	14.3	2.34	117478
1993	9026	38.8	4.8	37.3	14.2	2.31	120200
1994	9634	40.2	4.7	36.9	14.0	2.29	122923
1995	10278	41.6	4.6	36.5	13.9	2.26	125645
1996	10961	43.0	4.5	36.1	13.7	2.24	128368
1997	11576	44.4	4.4	35.5	13.5	2.20	131142
1998	12222	45.8	4.3	35.0	13.3	2.16	133916
1999	12902	47.2	4.2	34.4	13.2	2.13	136689
2000	13618	48.6	4.1	33.9	13.0	2.09	139463
2001	14373	50.0	4.0	33.3	12.8	2.05	142237
4. Slow Increase In CPR							
1986	5504	29.8	5.6	39.4	14.2	2.52	101978
1987	5810	30.4	5.5	39.4	14.3	2.51	104668
1988	6131	31.0	5.5	39.4	14.4	2.50	107358
1989	6467	31.6	5.4	39.4	14.4	2.50	110047
1990	6819	32.2	5.3	39.4	14.5	2.49	112737
1991	7188	32.7	5.2	39.4	14.6	2.48	115427
1992	7540	33.4	5.2	39.4	14.5	2.49	118550
1993	7930	34.1	5.1	39.4	14.4	2.50	121673
1994	8343	34.8	5.1	39.5	14.3	2.52	124795
1995	8781	35.5	5.0	39.5	14.2	2.53	127918
1996	9245	36.2	5.0	39.5	14.1	2.54	131041
1997	9648	37.0	4.9	39.2	14.0	2.52	134462
1998	10073	37.7	4.9	38.9	13.8	2.50	137883
1999	10522	38.5	4.8	38.5	13.7	2.49	141305
2000	10997	39.2	4.8	38.2	13.5	2.47	144726
2001	11499	40.0	4.7	37.9	13.4	2.45	148147

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Table 26 (Continued)

	Users	CPR	TFR	CBR	CDR	r	Total Population (Mid-Year)
5. Constant CPR							
1986	5504	29.8	5.6	39.4	14.2	2.52	101978
1987	5679	29.8	5.6	39.8	14.3	2.55	104869
1988	5859	29.8	5.6	40.2	14.5	2.57	107760
1989	6045	29.8	5.6	40.6	14.6	2.60	110652
1990	6237	29.8	5.6	41.0	14.8	2.62	113543
1991	6434	29.8	5.6	41.4	14.9	2.65	116434
1992	6610	29.8	5.5	41.4	14.8	2.68	119958
1993	6813	29.8	5.5	41.7	14.8	2.72	123483
1994	7027	29.8	5.5	42.0	14.7	2.75	127007
1995	7254	29.8	5.5	42.2	14.7	2.79	130532
1996	7496	29.8	5.5	42.8	14.6	2.82	134056
1997	7683	29.8	5.5	42.7	14.5	2.82	138123
1998	7883	29.8	5.5	42.6	14.4	2.82	142190
1999	8097	29.8	5.5	42.4	14.2	2.82	146258
2000	8325	29.8	5.5	42.3	14.1	2.82	150325
2001	8569	29.8	5.4	42.2	14.0	2.82	154392
6. Decline in CPR							
1986	5504	29.8	5.6	39.4	14.2	2.52	101978
1987	5618	29.4	5.6	39.9	14.4	2.56	104936
1988	5732	29.0	5.6	40.5	14.5	2.60	107895
1989	5847	28.5	5.6	41.0	14.7	2.63	110853
1990	5963	28.1	5.7	41.6	14.8	2.67	113812
1991	6079	27.0	5.7	42.1	15.0	2.71	116770
1992	6172	27.3	5.7	42.5	15.0	2.75	120454
1993	6287	27.0	5.7	42.9	14.9	2.80	124137
1994	6408	26.7	5.7	43.3	14.9	2.84	127821
1995	6536	26.4	5.7	43.7	14.8	2.89	131504
1996	6672	26.2	5.7	44.1	14.8	2.93	135188
1997	6758	25.9	5.7	44.2	14.7	2.95	139626
1998	6852	25.7	5.8	44.3	14.6	2.97	144064
1999	6955	25.4	5.8	44.5	14.5	3.00	148501
2000	7067	25.2	5.8	44.6	14.4	3.02	152939
2001	7189	25.0	5.8	44.7	14.3	3.04	157377

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Table 27: Number of Eligible Couples, Contraceptive Prevalence Rate, and Number of Users, 1987 MIS and 1985 CPS

	MIS (1987)	MIS FY 1988-89	CPS 1985	CPS(1) 1988	CPS(2) 1988
Eligible Couples (Million)	13.7	17.0	18.5	19.8	19.8
CPR	37.2%	37.0%	29.8%	33.2%	29.0%
Users (Million)	5.1	6.3	5.5	6.6	5.8

1. Estimates are based upon "moderate" linear increase in CPR from 29.8 percent in 1986 to 40.0 percent by 1992.
2. Estimates are based upon a slow linear decline in the CPR from 29.8 percent in 1986 to 25.0 percent by 2001.

Table 28: Contraceptive Method Mix According to 1987 MIS Service Statistics and 1985 CPS

Methods	Previous MIS	Revised MIS	1985 CPS
Sterilization	35%	25%	49.3%
IUD	10%	20%	4.7%
Oral Pill	30%	22.5%	17.1%
Condom	17%	15%	13.4%
Injectables	2%	7.5%	1.7%
Others	7%	10%	23.8%

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Table 29: Total Users by Method in 1988 According to MIS Estimates and 1985 CPS Projections (Thousands)

Methods	MIS FY 1988-89	CPS 1985	CPS (1) 1988
Sterilization	1572	2169	2542
IUD	1258	257	310
Oral Pill	1415	939	1204
Condom	935	737	925
Injectables	472	94	143
Others	629	1310	1457
Total	6290	5503	6575

1. Estimates are based upon "moderate" linear increase in CPR from 29.8 percent in 1986 to 40.0 percent by 1992. The method mix for 1988 is based upon a 1986-1992 extrapolation of method mix change between 1983-1985.

Table 30: Annual Consumption Rates for Commodities, MIS and USAID Estimates

Methods	MIS	USAID
Sterilization	0.0	0.0
IUD	1.0 (pieces)	1.4 (pieces)
Oral Pill	13.0 (cycles)	13.9 (cycles)
Condom	150 (pieces)	180 (pieces)
Injectables	4 (doses)	4 (doses)
Others	0.0	0.0

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able 31: Projections of Commodity Procurement Requirements as Estimated by MIS and USAID (1988-1990) In Thousands

Methods	MIS FY 1988-89	USAID (1) 1988
Sterilization	0	0
IUD	1320	440
Oral Pill	19318	16777
Condom	148610	166445
Injectables	1981	570
Others	0	0

Methods	MIS FY 1989-90	USAID 1989
Sterilization	0	0
IUD	1428	482
Oral Pill	20804	18887
Condom	160650	185511
Injectables	2142	688
Others	0	0

1. Estimates are based upon "moderate" linear increase n CPR from 29.8 percent in 1986 to 40.0 percent by 1992. he method mix for 1988 is based upon a 1986-1992 xtrapolation of method mix change between 1983-1985.

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