

CHAPTER - II POPULATION PROJECTIONS AND THEIR IMPLICATIONS TO HEALTH CARE OF WOMEN AND CHILDREN

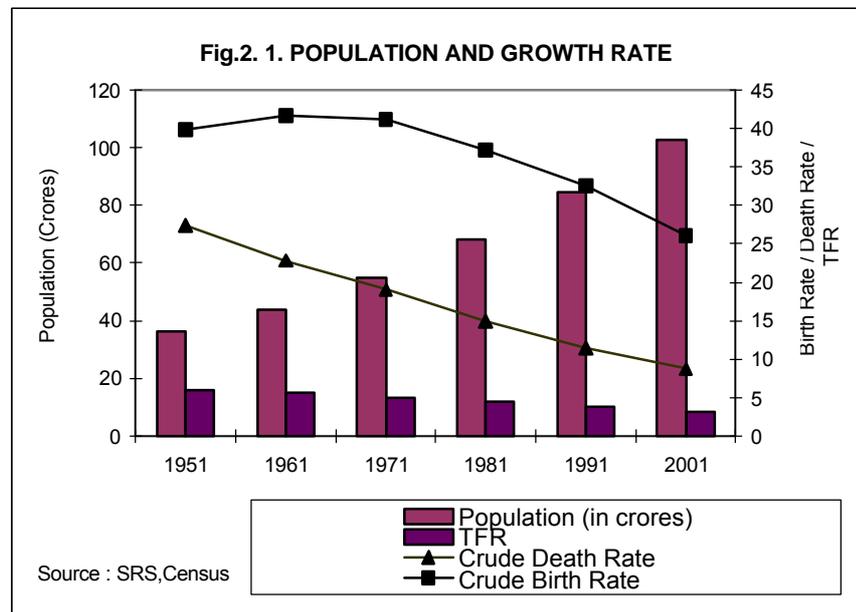
Human development and improvement in quality of life are the ultimate objectives of all Planning. This is to be achieved through policies and programmes aimed at promotion of both equity and excellence. Planning takes into account the resources required for human development and human resources available for carrying out the Plan. India, the second most populous country in the world, has no more than 2.5% of global land but is the home of 1/6th of the world's population. Living in a resource poor country with high population density, planners perceived in the figures of 1951 census the potential threat posed by demographic transition and consequent rapid population growth to the developmental activities, efforts to improve per capita income, availability of food, clothing, education and employment, prevention of environmental deterioration and enhancement of the quality of life.

Demographic transition

Demographic transition is a global phenomenon. The transition is from high fertility, high mortality, stable population scenario, to low fertility, low mortality and stable population scenario. The trend in population growth since 1951 is shown in

Figure-2.1.

During the first phase of demographic transition there is a steep fall in the mortality due to increasing availability and access to improved health care; the fall in birth rate are less steep and so the population grows at a rapid pace. In the next phase population



growth continues though the fall in death rate is not steep and fall in birth rate continues until replacement level of fertility is attained; after attainment of replacement level fertility the population continues to grow because of the large number of persons in reproductive age group. Finally a combination of further fall

in birth rate and reduction in the reproductive age group population results in population stabilization. India's population at the time of Independence in 1947 was estimated to be around 345 million and census 1951 counted 357 million people (excluding the State of Jammu and Kashmir, where the Census had not been conducted).

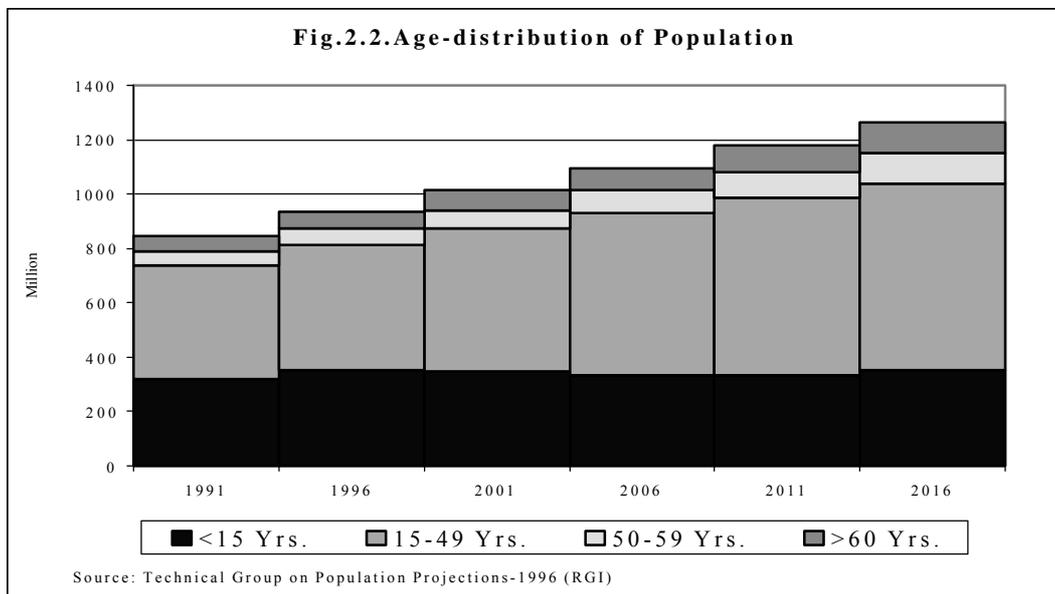
Population Projections (1996)

The Technical Group on Population Projections constituted by the Planning Commission in 1996 had made population projections up to the year 2016 based on the results of 1991 census and estimated probable year by which the replacement level TFR of 2.1 will be achieved by different states in India if the recent pace of decline in Total Fertility Rate observed during 1981-93 continues in the future years. The Group estimated that the country will achieve the replacement level of fertility by the year 2026. The populous states of Bihar, MP, Rajasthan and UP will achieve the replacement level of fertility by the year 2039, 2060, 2048 and after 2100. respectively. The projections for different age groups as shown in Figure-2.2

Population projections 1996-2016

The population will increase from 934 million in 1996 to 1264 million in 2016
Between the periods 1996-2001 and 2011-2016 there will be a decline of :

| | | |
|-------------|----------|-------|
| • CBR from | 24.10 to | 21.41 |
| • CDR from | 8.99 to | 7.48 |
| • NGR from | 1.51% to | 1.39% |
| • IMR | | |
| Male from | 63 to | 38 |
| Female from | 64 to | 39 |



Census 2001

The population has increased from 846 million in 1991 to 1027 million in 2001; the decadal growth rate was 21.3% during 1991-2001 declining from

23.86% for 1981-91. Census 2001 showed that the country's population was 15 million more than the projections made in 1996. Comparison of the

| Table-2.1 | | | | | | |
|------------------|------------------------|---------------------|-------------------------|---|------------------------|---------------|
| | Major States/ India | Total population | | | Decadal growth rate | |
| | | Census 2001 | Projection 2001(RGI) | Difference as % to census 2001 | 1981- 1991 | 1991- 2001 |
| | 2 | 3 | 4 | $5=(3-4)/3*100$ | 6 | 7 |
| | Major States | | | | | |
| 1 | Andhra Pradesh | 75,727,541 | 76,392,000 | (0.88) | 24.20 | 13.86 |
| 2 | Assam | 26,638,407 | 26,492,000 | 0.55 | 24.24 | 18.85 |
| 3 | Bihar | 109,788,224 | 101,819,000 | 7.26 | 23.38 | 28.43 |
| 3A | Jharkhand | | | | 24.03 | 23.19 |
| 4 | Gujarat ⁵ | 50,596,992 | 48,972,000 | 3.21 | 21.19 | 22.48 |
| 5 | Haryana | 21,082,989 | 20,120,000 | 4.57 | 27.41 | 28.06 |
| 6 | Karnataka | 52,733,958 | 52,720,000 | 0.03 | 21.12 | 17.25 |
| 7 | Kerala | 31,838,619 | 32,530,000 | (2.17) | 14.32 | 9.42 |
| 8 | Madhya Pradesh | 81,181,074 | 81,189,000 | (0.01) | 27.24 | 24.34 |
| 8A | Chhatisgarh | | | | 25.73 | 18.06 |
| 9 | Maharashtra | 96,752,247 | 92,057,000 | 4.85 | 25.73 | 22.57 |
| 10 | Orissa | 36,706,920 | 36,156,000 | | 20.06 | 15.94 |
| 11 | Punjab | 24,289,296 | 23,794,000 | 2.04 | 20.81 | 19.76 |
| 12 | Rajasthan | 56,473,122 | 54,509,000 | 3.48 | 28.44 | 28.33 |
| 13 | Tamil Nadu | 62,110,839 | 62,252,000 | (0.23) | 15.39 | 11.19 |
| 14 | Uttar Pradesh | 174,532,421 | 174,290,000 | 0.14 | 25.55 | 25.80 |
| 14A | Uttaranchal | | | | 24.23 | 19.20 |
| 15 | West Bengal | 80,221,171 | 79,991,000 | 0.29 | 24.73 | 17.84 |
| | India | 1027,015,247 | 1012,388,000 | 1.42 | 23.86 | 21.34 |

projections with SRS data indicate that projections both regarding the birth and

death rates were substantially lower. State-wise comparison (for major states) between projected population as estimated by the Technical Group on Population Projections – 1996 and actual population enumerated in Census 2001 is given in the Table-2.1.

In India the population growth rate is falling since 1991. Two states (Tamil Nadu and Karnataka) have attained replacement level of fertility and one state (Andhra Pradesh) has shown a remarkable fall in birth rate during the nineties. The decadal growth rate in majority of the states has shown a decline. In only one state Bihar has shown substantial increase in decadal growth rate. The National Population Policy has set the goal that the country will achieve the replacement level of fertility by 2010. If this were achieved the decade 2001-2010 will witness a very steep decline in decadal growth rate.

Population projections for the Tenth Plan

Prior to formulation of the Tenth Plan it is not possible to make full scale projections in light of the experience during the nineties as the data on age and sex distribution of the population from the census 2001 will not be available till 2003. Dept of Family Welfare made the necessary adjustment for higher actual population in the base year of 1997 in the projections made by the Technical Group on Population Projection for 1997-2012 (Table 2.1.A).

| Year | 1997 | 2002 | 2007 | 2012 |
|-------------------------|--------|---------|---------|---------|
| Population (millions)* | 951.18 | 1028.93 | 1112.86 | 1196.41 |
| Population (millions)** | 965.28 | 1044.18 | 1129.35 | 1214.14 |

*Technical Group on Population Projections–1996;
 **Adjusted for the 2001 census totals
 Source: Deptt of F.W.

Medium and Long-term Population Projections

Population Foundation of India undertook an exercise of medium and long term projections upto 2050 with the available data and different assumptions regarding mortality and fertility.

Assumptions on Base Year Age Distribution of Population

The census 2001 results available provide information only on the population totals by sex in two broad age groups 0-6 and 7+. It was assumed that the age distribution of the population derived in the earlier projection by the Population Foundation of India (Natarajan and Jayachandran, 2000) made in 1999 based on 1991 census data is applicable to the 2001 census data as well excepting that the totals will be according to 2001 census. The comparability of

the projected data on ages 0 to 4 and 5 to 9 with the populations recorded in the age group 0 to 6 in the 2001 census was checked out and were found to be consistent with each other.

Assumptions on future trends in fertility

Assumptions on future trends in fertility are made for each of the 15 larger states on the basis of extrapolation of the past trends in the values total fertility rates (TFR). With regard to the fertility assumptions for the future, three alternative trajectories have been assumed.

- i. The past trends in TFR available between 1971-96 for each of the larger states were extrapolated to the future years fitting a linear trend. These linear trends were extrapolated in the future with an assumed floor value of TFR of 1.6 based on the current experience of lowest fertility levels achieved in developing countries. Extrapolation of India's TFR during 1971-96 into the future resulted in the replacement level of fertility, or TFR of 2.1 being realized in 2016 but as a weighted average of TFRs projected for different states, replacement level of fertility was achieved only by the year 2026, 10 years later. India's TFR was always considered as the weighted average of the TFR projected for different states. The assumptions of TFR values projected in the future years based on extrapolation of past trends for each of the 15 major states and for India as a whole as a weighted average (Alternative-I).
- ii. The second set of assumptions on fertility is similar to those of the above excepting that the floor values of different states are assumed to be 1 rather than 1.6. TFR was allowed to go below 1.6 in view of the stated goals in state population policies to reduce fertility as quickly as possible. This assumption results in achieving replacement level of fertility by the year 2016 (Alternative-II).
- iii. In the third set of projections assumed that the fertility goals set in the various policy documents at the national and state levels wherever they have been specified would be realized because of the intensive efforts in this direction by the state governments and the National Commission on Population. The states of UP, Rajasthan, MP and Andhra Pradesh have already formulated state level population policies stipulating that they will reach the TFR of 2.1 or replacement level of fertility by the years 2016, 2011, 2011 and 2006 respectively. The National Population Policy 2000 has stipulated that replacement level of fertility for India, as a whole, will be reached by 2010. When the weighted average of the fertility levels of the states was taken, the TFR of 2.1 for the country as a whole is reached by 2012, which is not very different from the goals set in the National Population Policy (Alternative-III).

Assumption on future trends in Mortality

It was assumed in the coming years there will be slow down in terms of fall in mortality and increase in longevity in India as whole and in the states partly because of the historical experience of a slow down in the rise in life expectancy after it reaches higher levels (above 60) and partly because of the HIV epidemic. Tim Dyson (2000) has estimated the likely levels of life expectancy at birth for males and females for the periods 1991-95 (taken from SRS) and projected figures in the context of assumed prevalence and case fatality due to HIV/AIDS for 2011-16 and 2021-26. It was felt that the mortality projections of Dyson are more likely to reflect the future trends in the country in the context of a stagnation of IMR levels during the past 10 years and increasing prevalence of HIV/AIDS in the population. The three values of life expectancy for the periods 1991-95, 2011-16 and 2021-26 were extrapolated, using linear-fit, at five-year intervals from 2001 to 2051. This was done for each of the 15 larger states and the

Table-2.2

| Year | Projected Population | | | | | | | | | | | |
|------|----------------------|---|------------|------|----------------------|---|------------|------|----------------------|---|------------|------|
| | Alternative I | | | | Alternative II | | | | Alternative III | | | |
| | Population (million) | Percentage of Population in the Age Group | | | Population (million) | Percentage of Population in the Age Group | | | Population (million) | Percentage of Population in the Age Group | | |
| 0-14 | | 15-64 | 65 & above | 0-14 | | 15-64 | 65 & above | 0-14 | | 15-64 | 65 & above | |
| 2001 | 1027.02 | 34.4 | 61.1 | 4.5 | 1027.02 | 34.4 | 61.1 | 4.5 | 1027.02 | 34.4 | 61.1 | 4.5 |
| 2011 | 1186.75 | 28.0 | 66.8 | 5.2 | 1178.94 | 27.6 | 67.2 | 5.2 | 1171.02 | 27.1 | 67.7 | 5.3 |
| 2021 | 1345.24 | 26.1 | 67.5 | 6.4 | 1306.40 | 24.1 | 69.3 | 6.6 | 1287.08 | 23.0 | 70.2 | 6.7 |
| 2031 | 1463.23 | 22.4 | 69.0 | 8.5 | 1552.90 | 17.5 | 73.3 | 9.2 | 1364.36 | 19.4 | 71.4 | 9.2 |
| 2041 | 1559.97 | 20.0 | 68.8 | 11.1 | 1341.30 | 12.1 | 75.0 | 12.9 | 1409.05 | 17.0 | 70.7 | 12.3 |
| 2051 | 1627.96 | 18.9 | 66.5 | 14.6 | 1294.66 | 10.4 | 71.2 | 18.4 | 1415.82 | 15.3 | 67.9 | 16.8 |

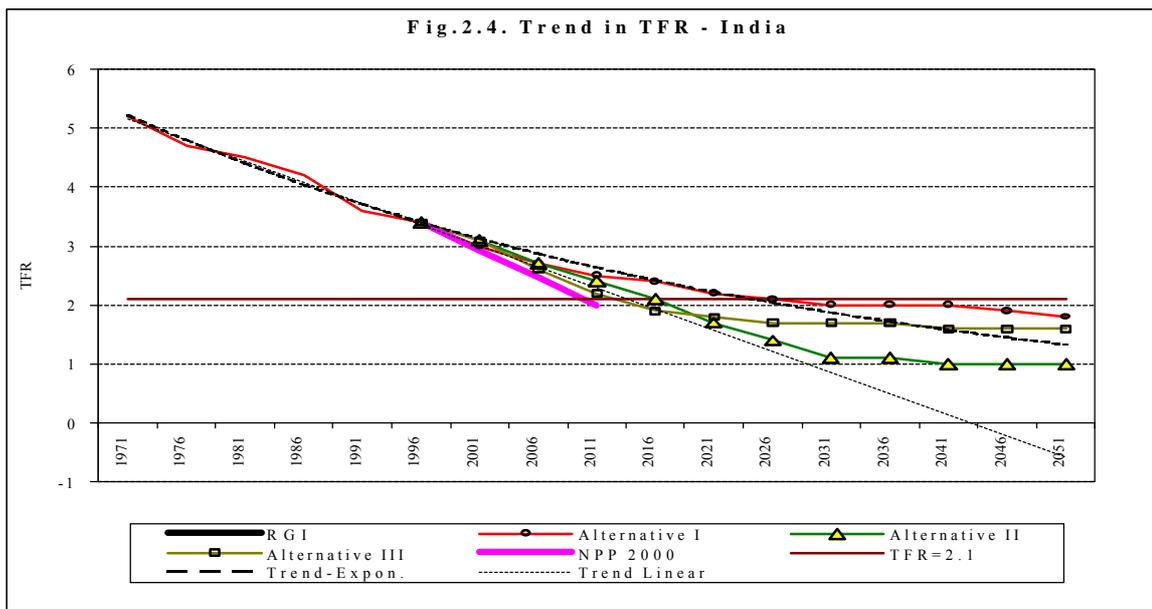
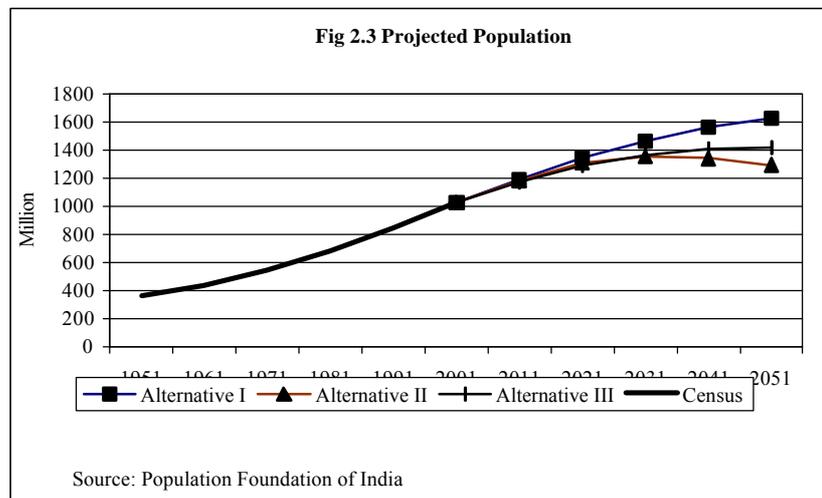
figures for India were obtained as population-weighted average of the figures of the major states. For any given expectation of life the age patterns of mortality, indicated in the United Nations South Asia Model Life Tables were assumed for the purposes of projection. These assumptions are different from the earlier PFI projections (Natarajan and Jayachandran, 2000) and give significantly lower life expectancies in the future because of increasing toll expected due to HIV/AIDS.

Assumptions regarding migration

In the absence of any specific data on the contrary it was assumed that that there would be no large-scale interstate migration in the country in the next 50 years period. Though this is a serious assumption, it was felt that such an assumption may not alter the order of magnitude of population projections in the larger states and the country as a whole. The results of the population projections are summarized in the Tables-2.2 & 2.3.

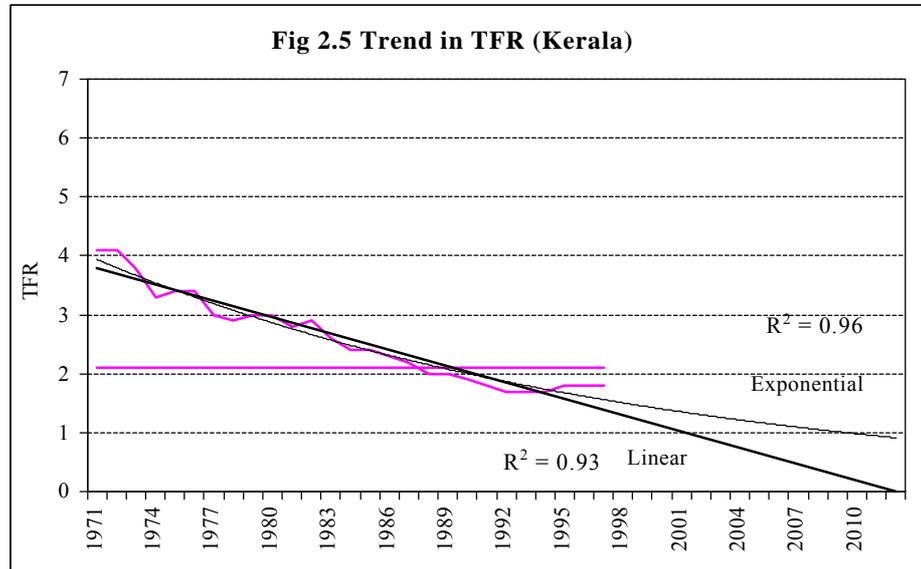
| Table 2.3 | | | | | | |
|-----------|-----------------------------|----------------|-----------------|----------------------|----------------|-----------------|
| Year | Projected Fertility Indices | | | | | |
| | Crude Birth Rate | | | Total Fertility Rate | | |
| | Alternative I | Alternative II | Alternative III | Alternative I | Alternative II | Alternative III |
| 2001 | 23.8 | 23.8 | 23.8 | 3.0 | 3.1 | 3.1 |
| 2011 | 22.2 | 21.1 | 20.1 | 2.5 | 2.4 | 2.2 |
| 2021 | 19.4 | 16.4 | 16.3 | 2.2 | 1.7 | 1.8 |
| 2031 | 15.3 | 9.8 | 13.1 | 2.0 | 1.1 | 1.7 |
| 2041 | 14.5 | 7.6 | 11.4 | 2.0 | 1.0 | 1.6 |
| 2051 | 12.4 | 6.3 | 10.0 | 1.8 | 1.0 | 1.6 |

The projected total population under three assumptions is given in Figure-2.3. The trend in total fertility rate under three alternatives scenarios projected by Population Foundation of India and Technical Group on Population Projections-1996 is given in the Figure-2.4.

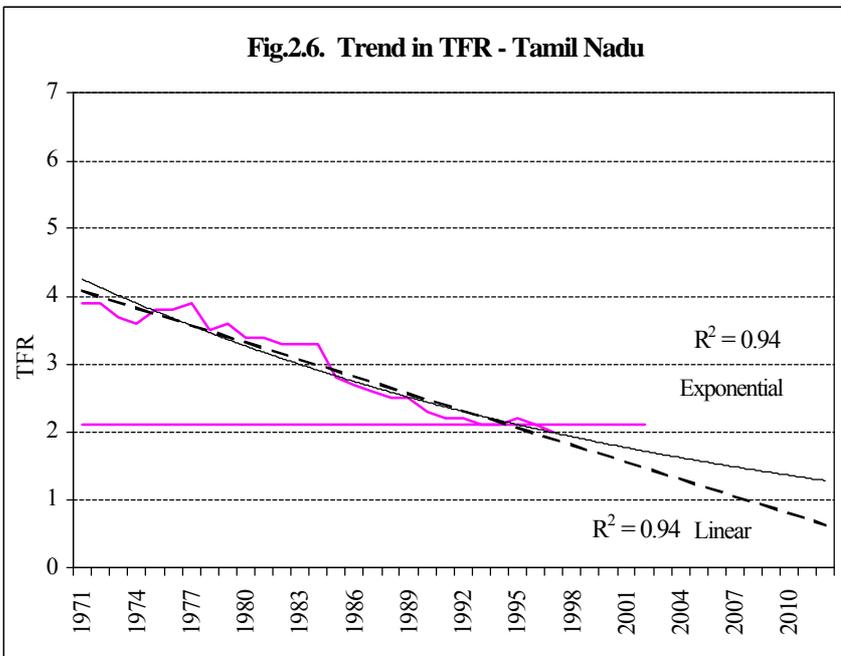


The three alternatives on assumptions on fertility considered for projecting the population may have to be looked critically. The following figure shows the

observed trend in Total Fertility Rate from 1971 to 1997 based on SRS Estimates of the Office of the Registrar General of India. Extrapolating the observed TFR into the



future years indicate that the country will achieve the replacement level of fertility in 2026 if the trend follows an exponential curve. However, assuming a linear trend would indicate achieving this goal in the year 2016 itself. The experience from Kerala and Tamil Nadu has shown that once replacement level of fertility



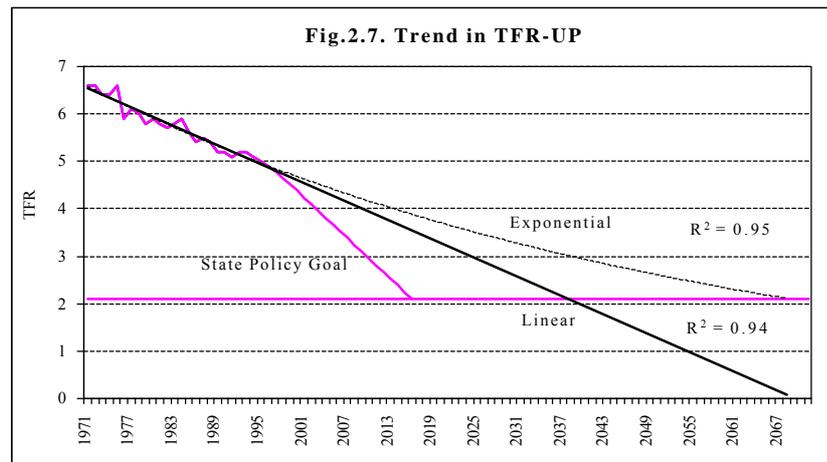
is attained further decline in fertility is very slow. In view of this the exponential curves might represent the more realistic picture. Under alternative II it has been assumed that the fertility would continue to decline even below the level of 1.6. The TFR in Kerala and Tamil Nadu has been assumed to be

1.5 in 2001 and thereafter has declined to a constant level of 1. However, the

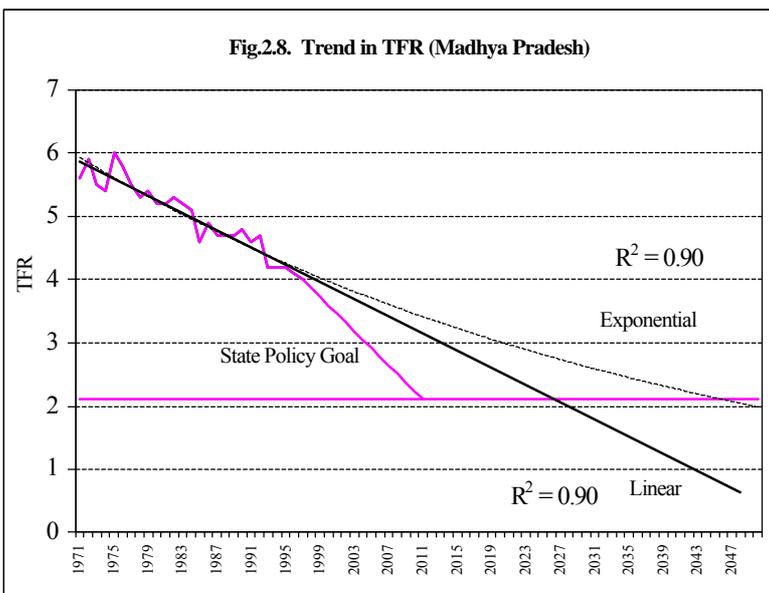
existing evidence points to the contrary. Kerala achieved the replacement level of TFR of 2.1 in 1988. Even after 11 years TFR in the state is, hovering around 1.8. Tamil Nadu achieved the replacement level of fertility in 1993 and the 1997 estimates indicate that the level of TFR in the state is 2 (Figures-2.5 & 2.6)

Under alternative-III it has been assumed that the fertility goals set in the National Population Policy 2000 and state policy announced by UP, MP and Rajasthan of achieving the replacement level in the years 2010, 2016, 2011 and 2011 respectively will be realized and the fertility will fall to the floor value of 1.6 in these states (Figures-2.7 & 2.8).

The observed trends in TFR in the states of UP and MP as given in the figure would suggest that this may not be a realistic assumption and is unlikely to happen.



Thus the steep decline envisaged in the projections under assumptions II & III may not come through either for the states with high TFR or those who have already attained replacement level of fertility. This may have implications



for the national level projections as well as achievement of the national goals set in the NPP 2000. However the remarkable decline in fertility in Andhra Pradesh during the nineties has shown if all the unmet needs for contraception are met through well coordinated efforts it is possible to achieve very steep decline in fertility. If this can be replicated in other states, the states and

through their efforts the country can indeed achieve the goals set in the state and National Population Policies.

The observed trends in fertility at the national level and in different states indicate that the fertility has declined in all parts of the country though the rate of decline has not been uniform in all the regions. The country is passing through a rapidly changing demographic scenario especially with regard to fertility. This makes the population projections go astray especially with regard to long-term projections. The Table 2.4 gives the details of the projections made at different points of time by different organizations. The projections made by the Technical Group on Population Projections has under- estimated the population by 15 million for the year 2001 as compared to the Census 2001 results possibly because the fertility has not declined as rapidly or as widely as assumed.

Table 2.4

Projected Population of India in 2000/2001 by different individuals and organizations in the last fifty years

| Serial Number | Year of Projection/ Publication | Name of the individual/ organisation | Population Projection for the year 2000/2001 (in millions) |
|----------------------|--|---|---|
| 1 | 1950 | K.Davis | 790.0 |
| 2 | 1958 | Coale-Hoover | 1,146.0 |
| 3 | 1984 | Office of the Registrar General, India | 991.5 |
| 4 | 1985 | Planning Commission / O/o The Registrar General, India | 986.1 |
| 5 | 1986 | US Bureau of Census | 1,023.7 |
| 6 | 1987 | Department of International Economic & Social Affairs, UN | 1,005.5 |
| 7 | 1989 | Planning Commission | 1,003.1 |
| 8 | 1996 | Planning Commission / O/o The Registrar General, India | 1,012.4 |
| 9 | 1996 | USAID | 1,012.9 |
| 10 | 1998 | Population Division, UN | 1,007.0 |
| 11 | 1999 | Institute of Economic Growth, New Delhi | 1,043.0 |
| 12 | 1999 | Population Division, UN | 1,013.7 |
| 13 | 2000 | Population Foundation of India, New Delhi | 1,011.8 |
| 14 | 2000 | Dyson et al | 1,010.6 |

The exercise of medium and long term population projection for India by 2000 AD has been undertaken by several individuals/organizations it is obvious that while short and medium term projections have been more or less comparable to actual census figures the long term projections have been widely off the mark. This is perhaps inevitable in view of the massive diversity within the country and extreme rapidity with which different states/strata of society adapt themselves to ongoing demographic transition. Learning from the past

experience it would appear that while medium term projections up to 2016 to 2020 may, perhaps, be reliable and accurate, realistic projections for 2050 may not be feasible at the present phase of demographic transition.

Implications of ongoing demographic transition Economic Implications

Population growth and its relation to economic growth has been a matter of debate for over a century. The early Malthusian view was that population growth is likely to impede economic growth because it will put pressure on the available resources, result in reduction in per capita income and resources; this, in turn, will result in deterioration in quality of life. Contrary to the Malthusian predictions, several of the East Asian countries have been able to achieve economic prosperity and improvement in quality of life inspite

Economic implications of demographic transition

The next two decades will witness:

- Increase in the 15-59 age group from 519 –800 million
- Low dependency ratio

Challenge is to ensure:

- Adequate investment in HRD
- Appropriate employment with adequate emoluments

Opportunity is to:

- Utilise available abundant human resources to accelerate economic development

of population growth by increasing productivity through development and utilisation of innovative technologies by the young educated population who formed the majority of the growing population. These countries have been able to exploit the dynamics of demographic transition to achieve economic growth by using the human resources as the engine driving the economic development; improved employment with adequate emoluments has promoted saving and investment which in turn stimulated economic growth.

However, it is noteworthy that not all countries which have undergone similar transition have been able to transform their economies. Sri Lanka still continues to have poor economic indices. It is likely that population growth or demographic transition can have favourable impact on economic growth only when there are optimal interventions aimed at human resource development and appropriate utilisation of available human resources to accelerate economic growth.

Currently, India's population is undergoing a relatively slow but sustained demographic transition. During the next two decades, the proportion of the population in the age-group 15-59 years in the country will be very large, because of the high birth rates during the last three decades. Increasing literacy and decreasing birth rates may result in more women seeking economically productive work outside home. Planners have to ensure that there is sustained high economic growth rate, in sectors, which are labour-intensive to ensure

adequate employment generation for productively utilizing this massive work force. This challenging task could be viewed as a major opportunity; this large group of literate, skilled, aware men and women if utilised as human resource could trigger off a period of rapid economic development.

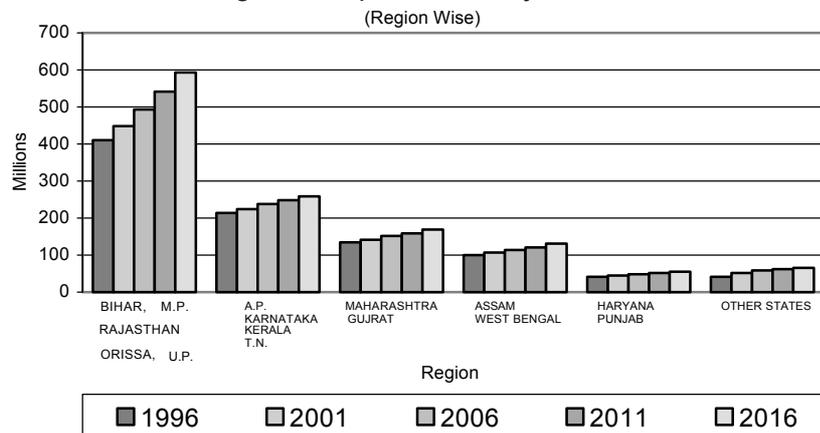
The challenge is to utilise these human resources fully, give them appropriate jobs with adequate emoluments; if this challenge is met through well planned schemes for employment generation which are implemented effectively, there will be improved national productivity and personal savings rates; appropriate investment of these savings will help the country to achieve the economic transition from low economic growth - low per capita income to high economic growth - high per capita income. It is imperative to make the best of this opportunity so as to enable the country and its citizens to vault to the high income- high economic growth status.

During the next two decades, there will be a substantial reduction in birth rates and therefore a reduction in the proportion of the dependent child population. In India the proportion of the dependent population beyond 60 years is relatively small and will expand relatively slowly over the next two decades. Thus for the next two or three decades the country will have relatively low dependency ratios. If the massive work force in age group 15-59 years get fully employed and adequately paid, the relatively low level of dependent children and elders might result in increased savings and investments at household level; this in turn will improve the availability of resources for accelerated economic growth.

Interstate differences:

The projected values for the total population in different regions is shown in the Figure 2.9. Total Fertility Rate (TFR) and the probable year

Fig 2.9. Population Projections



Source: Registrar General India

by which the replacement level TFR of 2.1 will be achieved by different States and India, if the pace of decline in TFRs observed during 1981-93 continues in the years ahead and expectation of life at birth are shown in the Table 2.5. Total Fertility Rate (TFR) and the probable year by which replacement level

level TFR of 2.1 will be achieved by different States and India, if the pace of decline in TFRs observed during 1981-93 continues in the years ahead and expectation of life at birth are shown in the Table 2.5. There are marked differences between States in size of the population, population growth rates (Fig 2.9) and the time by which TFR of 2.1 is to be achieved . If the present

| Table 2.5 PROJECTED LEVELS OF TFR'S FOR MAJOR STATES AND INDIA , 1996-2016 | | | | | | |
|---|------|-----------|-----------|-----------|-----------|------------------------------|
| Major States | SRS | Period | | | | Year of achieving TFR of 2.1 |
| | | 1996-2001 | 2001-2006 | 2006-2011 | 2011-2016 | |
| Andhra pradesh | 3.00 | 2.27 | 2.03 | 1.88 | 1.78 | 2002 |
| Assam | 3.50 | 2.82 | 2.55 | 2.33 | 2.17 | 2015 |
| Bihar | 4.40 | 2.92 | 2.53 | 3.19 | 2.93 | 2039 |
| Gujarat | 3.10 | 2.73 | 2.48 | 2.26 | 2.11 | 2014 |
| Haryana | 4.00 | 3.25 | 2.93 | 2.68 | 2.47 | 2025 |
| Karnataka | 3.10 | 2.54 | 2.31 | 2.14 | 2.01 | 2009 |
| Kerala | 1.80 | 1.62 | 1.61 | 1.60 | 1.60 | Achieved in 1988 |
| Madhya Pradesh | 4.60 | 3.99 | 3.72 | 3.49 | 3.27 | Beyond 2060 |
| Maharashtra | 3.00 | 2.51 | 2.28 | 2.10 | 1.97 | 2008 |
| Orissa | 3.30 | 2.64 | 2.36 | 2.16 | 2.01 | 2010 |
| Punjab | 3.10 | 2.65 | 2.43 | 2.25 | 2.11 | 2019 |
| Rajasthan | 4.60 | 3.91 | 3.58 | 3.30 | 3.06 | 2048 |
| Tamil Nadu | 2.20 | 1.87 | 1.75 | 1.69 | 1.65 | Achieved in 1993 |
| Uttar Pradesh | 5.10 | 4.75 | 4.50 | 4.27 | 4.05 | Beyond 2100 |
| West Bengal | 3.20 | 2.56 | 2.31 | 2.13 | 1.99 | 2009 |
| India(Pooled) | 3.64 | 3.13 | 2.88 | 2.68 | 2.52 | 2026 |
| India | 3.60 | 3.05 | 2.75 | 2.52 | 2.33 | |

Source: -REPORT OF THE TECHNICAL COMMITTEE ON POPULATION CONSTITUTED BY PLANNING COMMISSION 1996, RGI, INDIA

trend continues, most of the Southern and the Western States are likely to achieve TFR of 2.1 by 2010. Urgent energetic steps to assess and fully meet the unmet needs for maternal and child health (MCH) care and contraception through improvement in availability and access to family welfare services are needed in Rajasthan and undivided states of UP, MP and Bihar in order to achieve a faster decline in their mortality and fertility rates. The performance of these States would determine the year and size of the population at which the country achieves population stabilisation.

Interstate differences

There are massive interstate differences in population, population growth rates, time by which TFR of 2.1 and population stabilisation will be achieved.

These differences will have major impact on

- ☛ Health and nutritional status
- ☛ Education and skill development
- ☛ Appropriate employment with adequate emoluments
- ☛ Rural – urban and interstate migrations
- ☛ Social and economic development.

Efforts are to provide adequate inputs to improve performance

There are also marked differences between States in socio-economic development.

Increasing investments and rapid economic development are likely to occur in the States where literacy rates are

high, there is ready availability of skilled work force and adequate infrastructure. In these States, population growth rates are low. If equitable distribution of the income and benefits generated by development is ensured, substantial increase in per capita income and improvement in quality of life could occur in these States in a relatively short time.

Majority of States with high population growth rates, have abundant mineral, agricultural and human resources; the major problem is in making optimal use of the available resources. Poverty, illiteracy, inequitable distribution of services and resources, poor governance and poor development co-exist and reinforce each other. Efforts should be directed to optimally utilize the potential of these resources so that these states and along with them India's economic, health and demographic indices improve rapidly.

In order to promote equity and reduce disparity between States, special assistance has been provided to the poorly performing States. The benefits accrued from such assistance has to a large extent depended upon :

- ☛ The States' ability to utilise the available funds and improve services and facilities, and
- ☛ Community awareness and ability to utilise the available services.

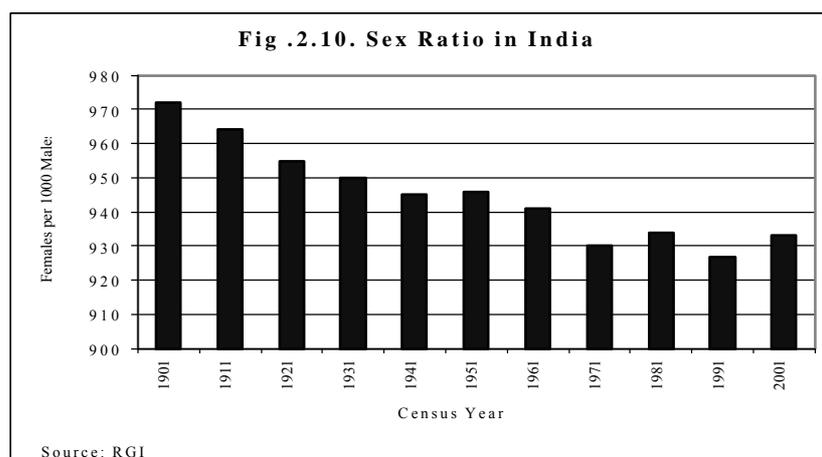
In spite of the additional assistance provided, improvement in infrastructure, agriculture and industry have been sub-optimal and the per capita income continues to be low in most of the poorly performing States. These States also have high birth rates and relatively low literacy rates. It is imperative that special efforts are made during the next two decades to break this vicious self perpetuating cycle of poor performance, poor per capita income, poverty, low literacy and high birth rate so that the further widening of disparities between States in terms of per capita income and quality of life is prevented.

The higher population growth rates and low per capita income in poorly performing States are likely to have a major impact on several social sector programmes. The health status of the population in these States is poor; the health sector programme will require inputs not only for improving infrastructure and manpower, but also increasing efficiency and improving performance. The Family Welfare Programme has to address the massive task of meeting all the unmet needs for MCH and contraception in a rapidly growing population in an effort to achieve rapid decline in mortality and fertility rates. Due to high birth rate, the number of children requiring immunization, health and nutrition care as well as schooling will be large. The emphasis in the education sector on primary education is essential to ensure that the resource constraints do not result in an increase in either proportion or number of illiterates. Emphasis on prevocational and vocational training in schools will enable these children to acquire skills through which they will find gainful employment later.

The available data from census shows that until 1991 both internal and international migration has been negligible. The Technical Group while computing the population projection up to 2016 has assumed that the component of migration between major states and from India will be negligible. This assumption may not be valid if there is further widening of the disparity between states in terms of economic growth and employment opportunity. Given the combination of high population growth, low literacy and lack of employment opportunities in the poorly performing states, there may be increasing rural to urban migration as well as interstate migration especially and unskilled workers. Such migration may in the short run assist the migrants in overcoming economic problems associated with unemployment. However, the migrant workers and their families may face problems in securing shelter, education and health care. It is essential to build up a mechanism for monitoring these changes. Steps will have to be taken to provide for the minimum essential needs of the vulnerable migrant population.

Gender Bias

The reported decline in the sex ratio during the current century (Fig 2.10.) has been a cause for concern. The factors responsible for this continued decline are as yet not clearly identified. However, it is well recognised that



the adverse sex ratio is a reflection of the gender disparity. There is an urgent need to ensure that all sectors collect and report sex disaggregated data; this will

be of help in monitoring for evidences of gender disparity; continued collection, collation, analysis and reporting of sex disaggregated data from all social sectors will also provide a mechanism to monitor whether girls and women have equal access to these services.

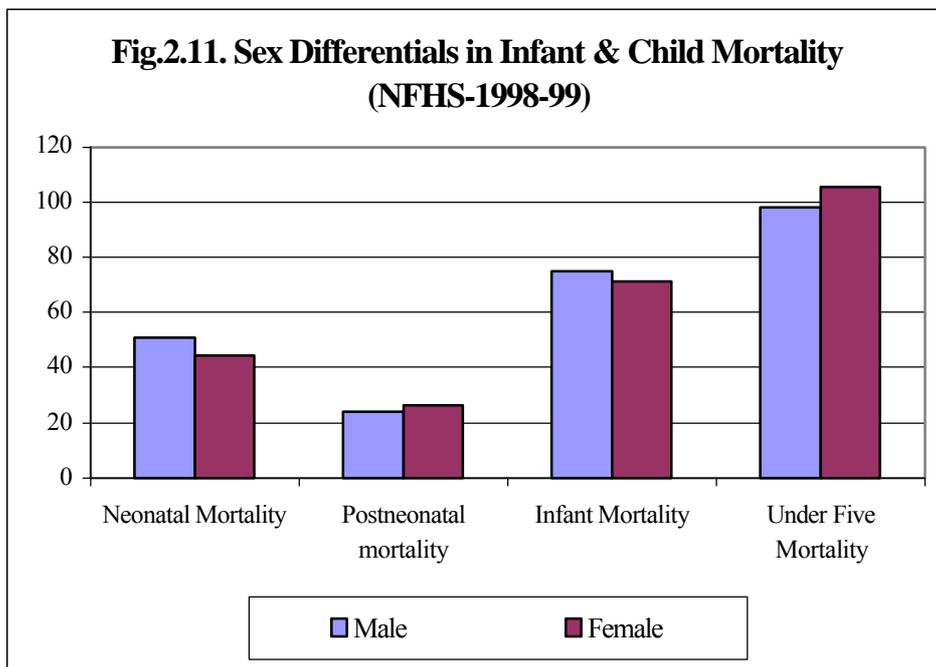
The Census 2001 based estimates of sex ratio in 0-6 age group for all

| Year | Urban | Rural | Total |
|------|-------|-------|-------|
| 1981 | 931 | 963 | 962 |
| 1991 | 935 | 947 | 945 |
| 2001 | 903 | 934 | 927 |

the the major States and India. There are massive interstate and urban rural (Table 2.6) differences . In addition data indicate that over the last three decades there has been a decline in the 0-6 sex ratio. There had been speculations as to whether female infanticide, sex determination and selective female foeticide are at least in part responsible for this. The Government of

India has enacted a legislation banning the prenatal sex determination and selective abortion; female infanticide is a cognizable offence. However, unless there is a change in social attitudes these legislations cannot achieve the desired change. Intensive community education efforts to combat these practices, especially in pockets from where female infanticide and foeticide have been reported are urgently required.

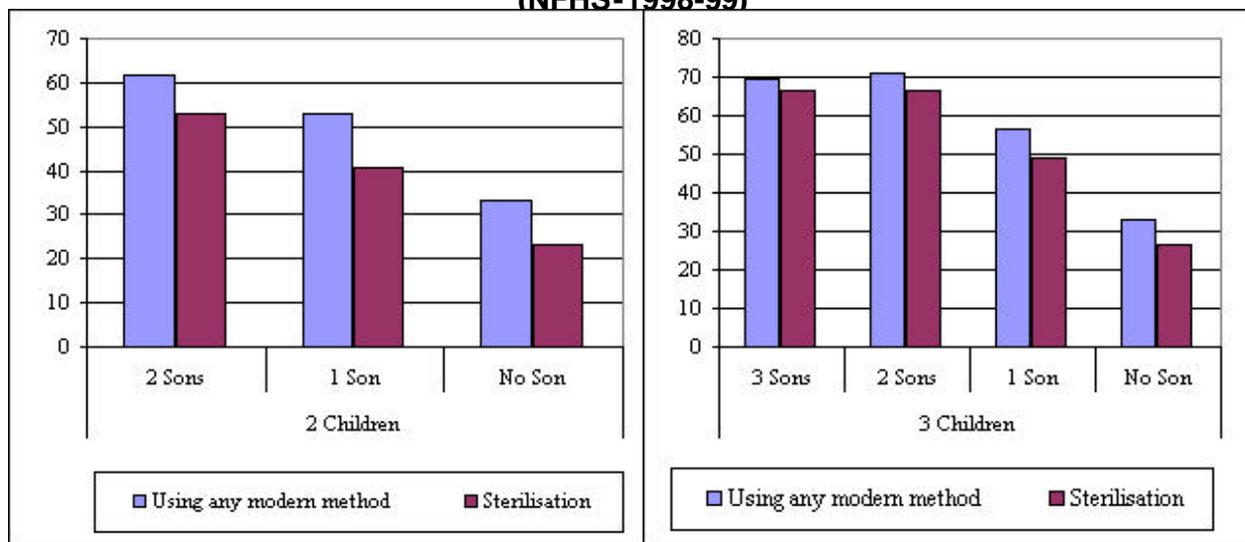
The National Family Health survey clearly brought out the sex differentials in the neonatal, post neonatal, infant and under five mortality rates (Fig 2.11) . As



there is no biological reason for the higher mortality among the girl children these differences are an indication of existing gender bias in caring for the girl child.

In the reproductive age-group the mortality rates among women are higher than those among men. The continued high maternal mortality is one of the major factors responsible for this. Effective implementation of the Reproductive and Child Health Programme is expected to result in a substantial reduction in maternal mortality. At the moment, the longevity at birth among women is only marginally higher than that among men. However over the next decade the difference in life expectancy between men and women will progressively increase. Once the reproductive age group is crossed the mortality rates among women are lower. The proportion of women in the over- 60 age- group is expected to increase. Steps to ensure that these women do get the care they need are being taken by concerned Departments including the Departments of Health, Family Welfare and Women and Child Development.

Fig.2.12&2.13 Acceptance of Family Planning by No. and Gender of Living Children (NFHS-1998-99)



The National Family Health Survey, 1998-99 has brought out one of the most clear evidence of existing gender bias in India. Figures 2.12 & 13 clearly show that if a couple has two or more boys nearly 60% undergo tubectomy; if, however, the couple have only two or more girls the figure drops down by 50%. Intensive community education is critical for bringing about the attitudinal change to correct these biases.

Health Implication of the demographic transition

It was earlier assumed that population growth demographic transition will lead to overcrowding, poverty, under-nutrition, environmental deterioration, poor quality of life and increase in disease burden; this view has been challenged. The period during demographic transition with increase number and proportion of persons in the age group 15-59 years who are better educated; they are healthy with low morbidity and mortality rate represents an opportunity window ; if appropriate health services are made available, there will be substantial

improvement in the health status of the population during this phase. However in India currently communicable diseases continue to take their toll. The advent of HIV infection in the eighties will inevitably result in deaths due to this disease among reproductive age group especially men and women in their thirties and young children. As a result the decline in age specific mortality in these critical groups will either get arrested or may even get reversed. Increasing accidents and trauma also takes their toll in this age group; life style related non-communicable diseases and morbidity is increasing in persons beyond 40 years. Tackling these problems will be one of the major priorities in health sector. The health sector should promote healthy life styles, improving access to and utilization of health care in order to achieve substantial reduction in mortality and morbidity Occupational health and environmental health programme need be augmented to ensure that working population remain healthy and productive. With these interventions, it is possible at least to arrest any increase in morbidity and mortality rate in this age group.

Implications of increasing longevity

Over the next 20 years, there will be a small but significant increase in number and proportion of persons in the group over 60 years of the age; the subsequent decades will witness massive increase in this age group. Over the next two decades longevity at birth will be greater in women than in men. Increasing longevity will inevitably bring in its wake increase in the prevalence of non-communicable diseases. The growing number of senior citizens in the country poses a major challenge; the cost of providing socio-

Socio –economic and Health Problems among the elderly

- As many as 70 per cent of the aged had to depend on others for their day-to-day maintenance.
- The situation is still worse for elderly women. Among them about 85 to 87 per cent were economically dependent either partially or fully
- Of the economically dependent aged, 74 per cent had to depend on their children and 14 to 16 per cent on their spouses for their economic support.
- The common problems include: hypertension, cataract, osteoarthritis, chronic obstructive pulmonary disease, ischemic heart disease, diabetes, benign prostatic hypertrophy, gastrointestinal motility disorders, depression, osteoporosis, dementia, cerebrovascular disease and cancer.
- The five most frequent causes of death in the elderly are bronchitis and pneumonia, ischemic heart disease, stroke, cancer and tuberculosis.

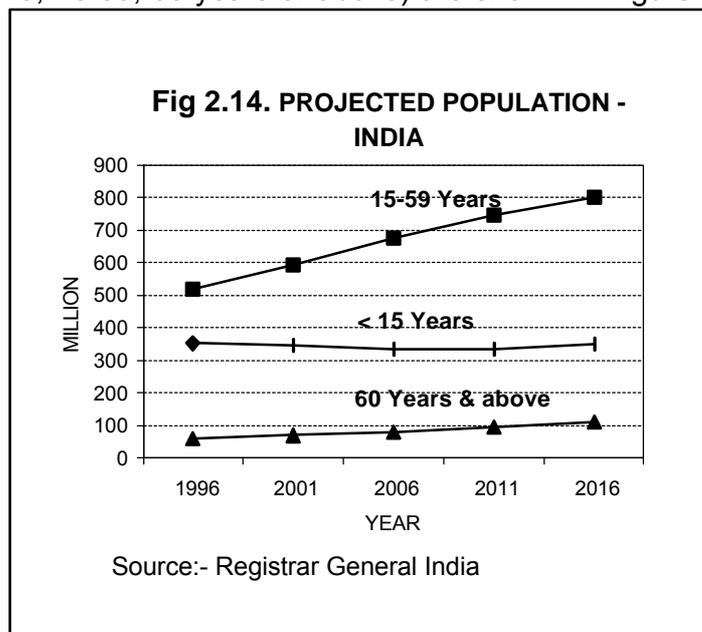
economic security and health care to this population has to be met; currently several region and culture specific innovative interventions to provide needed care to this population are underway; among these are efforts to reverse the

trend of break up of joint families. If these efforts succeed, it will be possible to provide necessary inputs for the care of rapidly increasing senior citizens population in the subsequent two decades. Majority of the people in their sixties will be physically and psychologically fit and would like to participate both in economic and social activities. They should be encouraged and supported so that they do lead a productive life and also contribute to the national development. Senior citizens in their seventies and beyond and those with health problems would require assistance. So far, the families have borne major share in caring for the elderly. This will remain the ideal method; however there are growing number of elderly without family support; for them, alternate modes for caring may have to be evolved and implemented. Improved health care has "added years to life". The social sectors have to make the necessary provisions for improving the quality of life of these senior citizens so that they truly "add life to years."

The impact of growing number of senior citizens is likely to result in substantial increase in for health care needs especially for management of noncommunicable diseases in this population. Increasing availability and awareness about technological advances for management of these problems, rising expectations of the population and the ever escalating cost of health care are some of the challenges that the health care system has to cope with. Health care delivery systems will have to gear up to taking up necessary preventive, promotive, curative and rehabilitative care for this population.

Population projections and their implications for the FW programme

The projected population of India in the three major age groups (less than 15, 15-59, 60 years or above) are shown in Figure 2.14. .



In the country as a whole there will be a marginal decline in the population less than 15 years of age (352.7 million to 350.4 million) even though in poorly performing states there will be continued increase in the number of children requiring care. The health care infrastructure will therefore be not grappling with ever increasing number of children for providing care and they will be able to concentrate on

➤ improving quality of care;

- ☛ focus on antenatal, intranatal and neonatal care aimed at reducing neonatal morbidity and mortality;

Age group < 15 years

There will be no increase in numbers
Focus will be to improve

- ☛ quality and coverage of health and nutrition services and achieve improvement in health and nutritional status
- ☛ improve access to education & skill development

and nutritional status;

- ☛ improve coverage and quality of health care to vulnerable and underserved adolescents;

The economic challenge is to provide needed funds so that these children have access to nutrition, education and skill development. The challenge faced by the health sector is to achieve reduction in morbidity and mortality rate in infancy and childhood, to improve nutritional status and eliminate ill-effects of gender bias.

There will be a massive increase of population in the 15-59 age group (from 519 million to 800 million). The RCH care has to provide the needed services for this rapidly growing clientele. The populations in this age group is more literate and has greater access to information; they will therefore have greater awareness and expectation regarding both the access to a wide spectrum of health care related services and the quality of these services. The Family Welfare Programme has to cater to wider spectrum of health care needs of this population – including maternal and child health care, contraceptive care, management of gynaecological problems, STD/RTI/HIV management and control; quality of services need also be improved.

There will be a substantial increase in the population more than 60 years (62.3 million to 112.9 million) in the next two decades. Increasing numbers of the population beyond 60 years would necessitate provisions for management of some of the major health problems in this age group including early detection and management of cancers.. All these have to be taken into account while planning for the health care for women and children in the next few decades.

- ☛ improve coverage for immunization against vaccine preventable diseases.
- ☛ promote intersectoral coordination especially with ICDS programme so that there is improvement in health

Age group 15-59

Challenge is the massive increase in the number of people in this age group. They will:

- ☛ need wider spectrum of services
 - Maternal and child health services
 - Contraceptive care
 - Gynaecological problems
 - RTI /STD management
- ☛ expect better quality of services
- ☛ expect fulfillment of their felt needs for MCH/FP care

Opportunity is that if their felt needs are met through effective implementation of RCH programme, it is possible to accelerate demographic transition and achieve rapid population stabilisation.