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Population Stabilisation In
Madhya Pradesh, India**

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1 Introduction

The state of Madhya Pradesh, as it exists today, came into existence for the first time on 1 November 2000 when the erstwhile state of Madhya Pradesh was divided into the states of Chhattisgarh and the existing state of Madhya Pradesh. According to the 2001 population census, the population of the state was enumerated to be 60.348 million making it the seventh most populous state of the Republic of India. In terms of area, it is the second largest state of the country, next only to Rajasthan. Since 1951, more than 40 million people have been added to the population of state. With the current rate of population growth, approximately 8 million people are projected to be added to the population of the state in the first half of the current century to reach more than 14 million by the year 2051.

Madhya Pradesh is regarded as one of the four problem states of the country in terms of population transition, the others are Bihar, Rajasthan and Uttar Pradesh. During the last fifty years of the twentieth century, the decennial average annual population growth in the state has always been more than 2 per cent per year because of persistent high fertility and mortality. Latest estimates available through the sample registration system indicate that the state has fourth highest birth rate, highest death rate and second highest infant mortality rate in the country (Government of India, 2005). During the last 30 years, Madhya Pradesh had always ranked in the poorest five among the major states of the country in terms of fertility and mortality (Government of India, 2002).

Like the population scenario, Madhya Pradesh is also ranked among the poorest states of the country in terms of social and economic development. Per capita income of the state is among the lowest in the country making the state as one of the poorest state of the country. It is widely argued that the state can do much better in social and economic development and in improving the quality of life of the people if it can achieve and sustain an accelerated reduction in the growth of population in the years to come. It is also argued that if population growth in the state remains unchecked, then the net addition to the population of the state in the coming years will exert considerable additional burden on the economy and pressure on environment in terms of resources needs. This additional burden on the economy and environment of the state will result in substantial slowdown in the economic growth thereby affecting the social and economic development processes. Slowing down of population growth by reducing fertility is therefore recognized as an essential condition for accelerated social and economic development of the state.

The Government of Madhya Pradesh has recently taken a number of key policy decisions to address the problem of rapid population growth. The state has announced, in 2000, a population policy specific to the state and, according to the provisions of the policy, constituted State Population and Development Council under the chairmanship of the Chief Minister and State Population Policy

Implementation Committee under the chairmanship of the Chief Secretary of the state. At the district level, District Population and Development Coordination Committee has been constituted to monitor the implementation of population stabilization efforts and activities. The state government has also disqualified persons with more than two children to become members of *Panchayat Raj* institutions and urban local bodies. Unfortunately, the strong political commitment of the Government of Madhya Pradesh towards population stabilization at the policy level has not yet resulted in a reinvigoration of programmes and activities directed towards population stabilization, especially at the local level - the interface with the people. Even today, population stabilization efforts in the state are virtually confined to the promotion of the use of family planning methods, especially sterilization, under the National Family Welfare Programme.

This paper discusses the past trends and future projections of population scenario in Madhya Pradesh. The next section of the paper discusses the population growth trends during the 1990s as well as during the 100 years between 1901 and 2001.

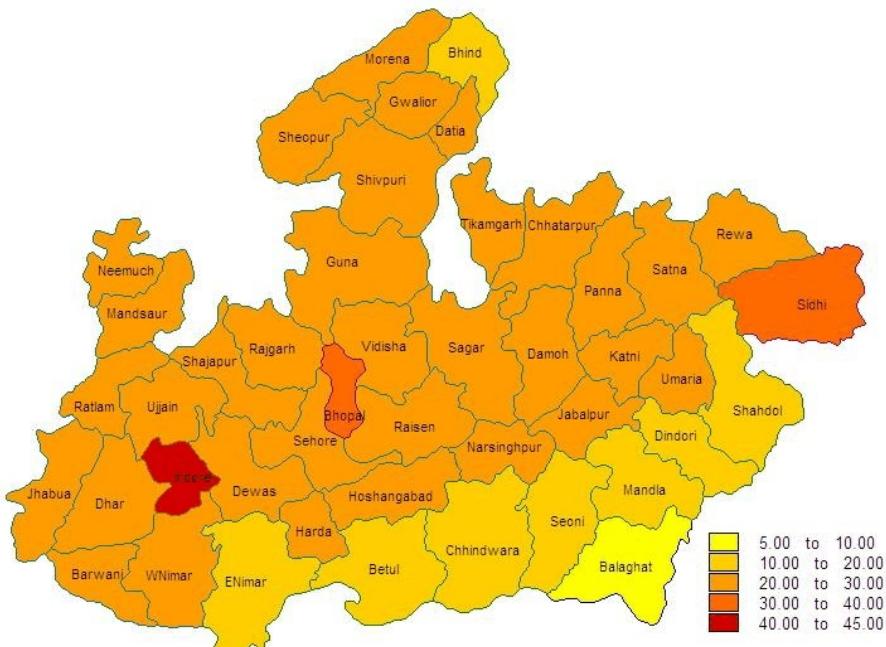
2 Population Growth

The discussion on the quantum and tempo of population growth in the Madhya Pradesh and in its constituent districts has been carried out in two parts - population growth during the 1990s and population growth during the 100 years between 1901 and 2001. A discussion on population growth during the 1990s presents the immediate context of population growth. On the other hand, a discussion on population growth during the last 100 years presents the historical perspective of population growth in the state.

Population growth during the 1990s. According to the 2001 population census, the population of the state was enumerated to be 60,348,023 at 0.00 hours of 1 March 2001. At the 1991 population census, the population of the state, as it exists today, was enumerated to be 48,566,244 (Government of India, 2003). This means that during the ten years between 1991 and 2001, 11,818,876 people were added to the population of the state. In terms of proportions and growth rate, this implies that the population of the state increased by 24.34 per cent between 1991 and 2001 at an average annual growth rate of 2.178 per cent per year. Compared to the 1980s, there has been a considerable slowdown in the growth of population in the state. Between 1981 and 1991, the population of the state increased by 27.24 per cent at an average annual growth rate of 2.409 per cent per year. However, Madhya Pradesh continues to be one of those states of India where population continues to increase at a rate of more than 2 per cent per year.

The decrease in the decennial proportionate increase in population and decennial average annual growth rate in the state has, however, not resulted in a decrease in net additions to the state population. During the 1990s, net addition

Figure 2.1
Increase in Population in Districts of Madhya Pradesh, 1991-2001
(Per cent)



to state population was 11.82 million whereas, during the 1980s, the net addition was 10.40 million, suggesting that the net addition to the state population increased by about 1.42 million in the 1990s as compared to the 1980s.

Among the districts of the state, the population growth varied widely during the 1990s. Population remained almost stagnant in district Balaghat of the state where only 9.67 per cent increase was recorded in the population between 1991 and 2001; net addition to the population of the district during the 1990s was 132,098 only. This suggests that population of the district increased at an average annual rate of growth of only 0.923 per cent per year between 1991 and 2001. Balaghat is the only district of the state where a population growth of less than 10 per cent has been recorded during the decade 1991-2001.

On the other hand, population growth has been most rapid in districts of Bhopal and Indore. In district Bhopal, population increased by more than 36 per cent between 1991 and 2001 whereas in district Indore the increase was more than 34 per cent. In addition to Bhopal and Indore, Sidhi is the only other district of the state which recorded an increase of more than 33 per cent in the population during the 1990s. This means that the population of district Bhopal increased at an average annual growth rate of 3.105 per cent per year.

Table 2.1: Population growth in different geo-cultural regions of Madhya Pradesh: 1991-2001

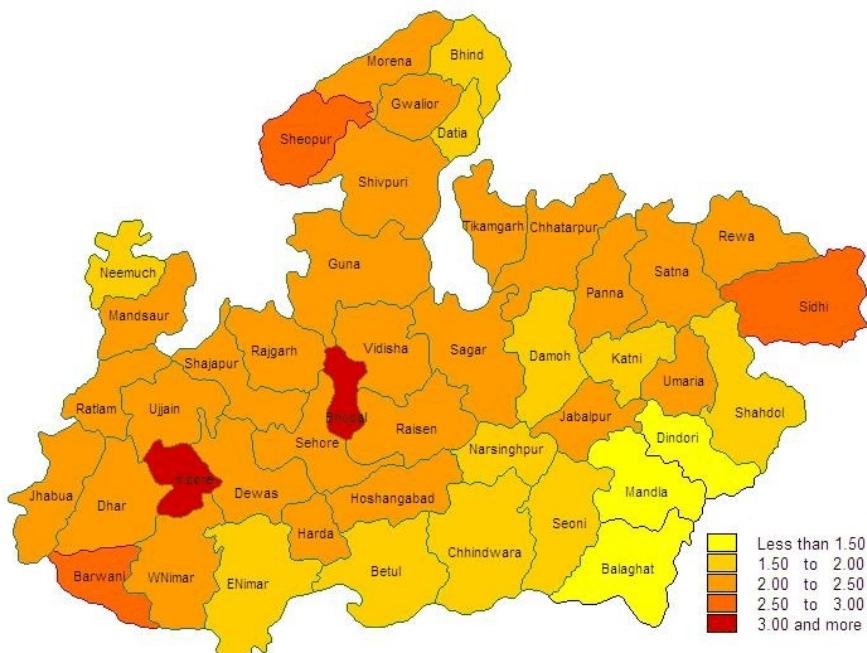
Region	Population		Increase		Average annual growth rate
	2001	1991	Absolute	Proportion	
Northern	8949834	7181795	1768039	24.618	2.201
Vindhya	11300107	8924524	2375583	26.619	2.360
Malwa	14289879	11303733	2986146	26.417	2.344
South-west	7277993	5908519	1369474	23.178	2.085
Central	8368369	6585547	1782822	27.072	2.396
South-east	10161841	8662124	1499717	17.314	1.597

Among different geo-cultural regions of the state, population growth has been most rapid in the western part of the state, popularly known as the Malwa region whereas it has been slowest in the south-east region. In the Malwa region, population increased by more than 26 per cent during the 1990s at an average annual rate of growth of 2.344 per cent as compared to an increase of 17.314 per cent at an average annual growth rate of 1.597 per cent in the south-east region. Population growth has also been very rapid in the central part of the state and in north-east which is also known as the Vindhya region. The south-east region is the only region of the state where the average annual population growth rate has been less than 2.000 per cent during the 1990s. Population growth has also been comparatively slower in the south-west and northern regions of the state.

In majority of the districts of the state, the average annual population growth rate has been found to be vary within the narrow range of 2.00 to 2.50 per cent per year during the 1990s. There are 14 districts where this average annual population growth rate has been less than 2.00 per cent per year whereas in 5 districts, it has been more than 2.50 per cent per year. During the 1980s, average annual population growth rate was less than 2.00 per cent per year in only three districts. Similarly, there were only three districts where average annual population growth rate was more than 3 per cent per year during the 1980s.

It will be interesting to estimate the contribution of different districts of the state to the increase in the population of the state as a whole during the 1990s. This contribution depends upon both, the size of the population of the district in 1991 and the rate of increase in the population during the period 1991-2001. It indicates the concentration of the increase in population during the 1990s within the state.

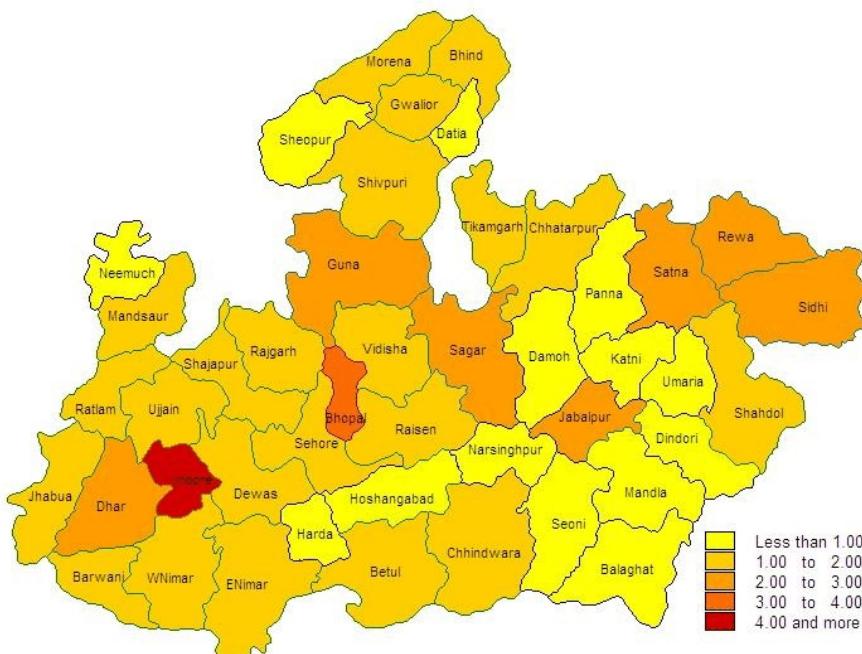
Figure 2.2
Average Annual Population Growth Rate, 1991-2001
(Per cent)



Information available through the 2001 population census indicates that increase in population of only nine districts of the state accounted for almost 34 per cent of the increase in population of the state that had taken place between 1991 and 2001 with district Indore topping the list. The growth of population of district Indore alone accounted for more than 6 per cent of the total increase in the population of the state during the 1990s. Other districts which accounted for more than 3 per cent of the increase in the population of the state are Guna, Sagar, Satna, Rewa, Sidhi, Dhar, Jabalpur and Bhopal. On the other hand, population increase in each of the 14 districts accounted for less than 1 per cent of the total increase in the population of the state.

The observed difference in the pattern of the increase in population in different regions and different districts of the state during the 1990s is a reflection of differing trends in birth and death rates as well as inter-district and interregional movement of the population. Information on current levels of fertility and mortality for the districts of the state are not yet available from the 2001 population census. Similarly, information related to inter-district and interregional movement of population collected during the 2001 population census is not yet available.

Figure 2.3
Contribution of Districts to State Population Growth, 1991-2001
(Per cent)

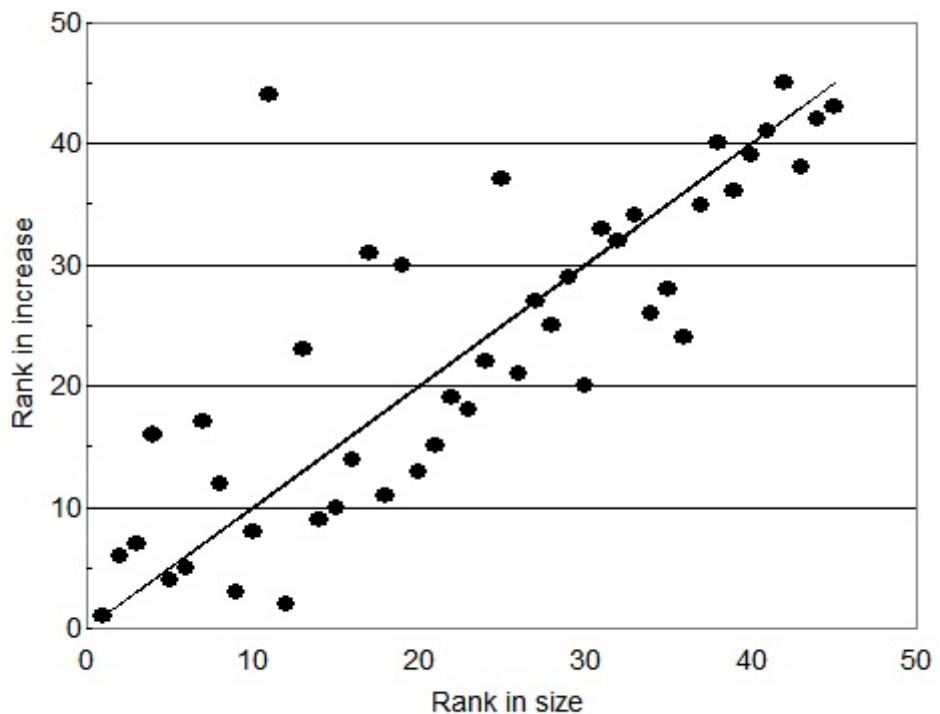


It is possible to identify factors which have been responsible for the observed patterns of population growth in the state once the district level estimates of fertility, mortality and migration are available. An interesting pattern of population growth in the state during the 1990s is that the increase in the population of a district during the 1990s appear to be closely associated with the size of the population of that district at the 1991 population census. In other words, increase in the population during the 1990s had been relatively larger in districts with relatively large population in 1991.

In fact, the correlation coefficient between the rank of the district according to the size of the population in 1991 and the rank of the district according to the size of net additions to the population during 1991-2001 (the rank order correlation coefficient) has been found to be 0.818 which is statistically significant. This correlation indicates that there is a nearly direct relationship between the net additions to the population of the district during the 1990s to the size of the population of the district in 1991.

An implication of the observed correlation between the size of the population of the district in 1991 and net additions to the population during the 1990s is that most of the increase in the population of the district during the

Figure 2.4
Rank in population increase 1991-2001 and
rank in population size 2001



1990s is accounted by what is known as the natural population growth which is determined largely by the levels of and changes in total number of and total number of deaths in the population. Total number of births and total number of deaths are determined by birth and death rates and the size of the population. This implies that even if birth and death rates of two districts are the same, the district with a larger population will have higher number of births and deaths and hence higher net additions to the population than a district with a smaller population. In other words, initial population size of the district, itself, is a major determinant of the population growth as is the case with the districts of the state. In such a scenario, movement of population across the districts contributes only a small proportion of the total increase in the population. Although, information about patterns of migration across the districts of the state are yet to be available through 2001 population census, yet the relationship between the absolute increase in the population between 1991 and 2001 and the population of the district at the time of 1991 census clearly indicates that the contribution of

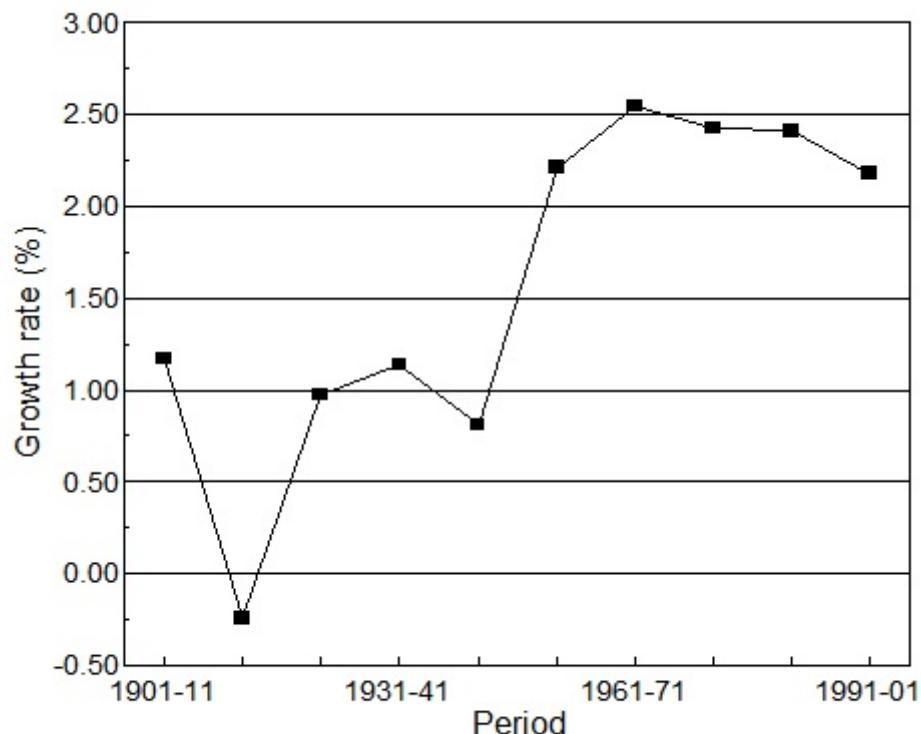
migration to population growth during the 1990s in most of the districts of the state is at the most marginal. Results of the 2001 population census suggest that average population of a district of the state was 1.341 million on 1 March 2001. This number was 0.163 million more than the average population of a district estimated in 1991. District Indore, with a population of more than 2.585 million and accounting for 4.281 per cent of the population is the largest district in terms of population whereas district Harda with a population of 0.474 million was the smallest district of the state accounting for only 0.785 per cent of the population of the state. Besides district Indore, there are only two districts - Jabalpur and Sagar - which had a population of more than 2 million at 2001 census. By comparison, there were 9 districts which had a population of less than 1 million at the 2001 population census.

Population growth during 1901-2001. At the 1901 population census, the population of Madhya Pradesh, as it exists today, was estimated to be 12.679 million. This means that during the 100 years between 1901 and 2001, net additions to the population of the state have been more than 48 million persons. In other words, the population of the state increased by almost five times at an average annual growth rate of 1.561 per cent per year during the last century.

The rate of population growth in the state as well as in its constituent districts has however not been the same in all decades of the last century. In terms of net additions to the population, the first half of the last century is radically different than its second half. In the first half of the last century, the population of the state increased at a very slow place. During this period, net additions to the population of the state were 5.94 million only implying an average annual population growth rate of just 0.768 per cent per year. In all decades of this period, average annual growth rate never exceed 1.2 per cent per year. Most rapid population growth during this period was recorded during the decade 1901-11 when population increased by 12.38 per cent at an average annual growth rate of 1.163 per cent per year. However, largest net additions to the population of the state during this period was in the decade 1931-41 when almost 1.849 million people were added to the state population despite the fact that during this decade, population increased by 12.06 per cent only at an average annual rate of growth of 1.139 per cent per year. Another important feature of population growth trends in the state during this period was that there had been a marked decline in the average annual growth rate of population during the decade 1941-51 as compared to the growth rate during the period 1931-41. In any case, population growth in the state during the first half of the last century was extremely slow; net additions to the population of the state in any decade of this period had never been more than 2 million.

Compared to the first half, population growth patterns in the state and in its constituent districts were very contrastingly different in the second half of the last century. In the 50 years between 1951 and 2001, the population of the state increased at an average annual growth rate of 2.354 per cent per year resulting

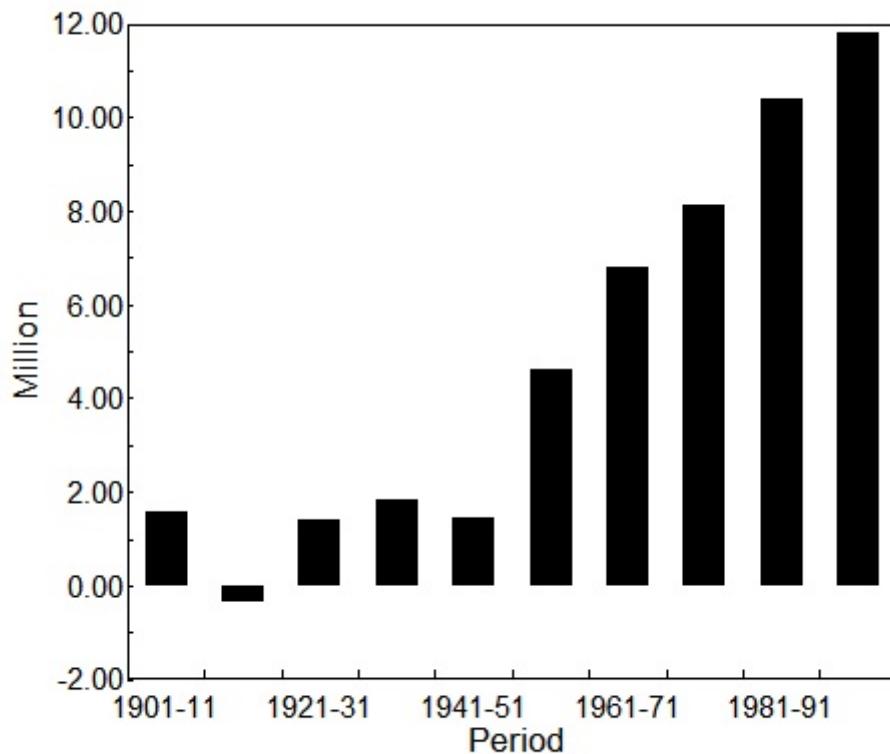
Figure 2.5
Growth rate trends in Madhya Pradesh, 1901-2001



in net additions of 41.77 million persons to state population. There had been a quantum jump in average annual population growth rate from 0.805 per cent per year during 1941-51 to 2.210 per cent per year during 1951-61. This jump is commonly referred as the demographic discontinuity in population growth pattern in India. Since 1950s, average annual population growth rate in the state had always been more than 2 per cent per year.

The result of consistently higher than 2.00 per cent per year growth rate in all decades of the second half of the last century is well reflected in decennial net additions to the population. In contrast to the first half, the net additions to the population of the state had increased very rapidly in every decade of the second half of the last century. During the decade 1951-61, around 4.5 million people were added to the state population; this number increased to around 11.8 million during the decade 1991-2001 despite the fact that average annual population growth rate has shown a declining trend since 1971. Interestingly, net additions to the population of the state in ten years between 1991 and 2001 alone are almost two times the net additions to the population during the first half of the last century and are very close to the total population of the state enumerated at

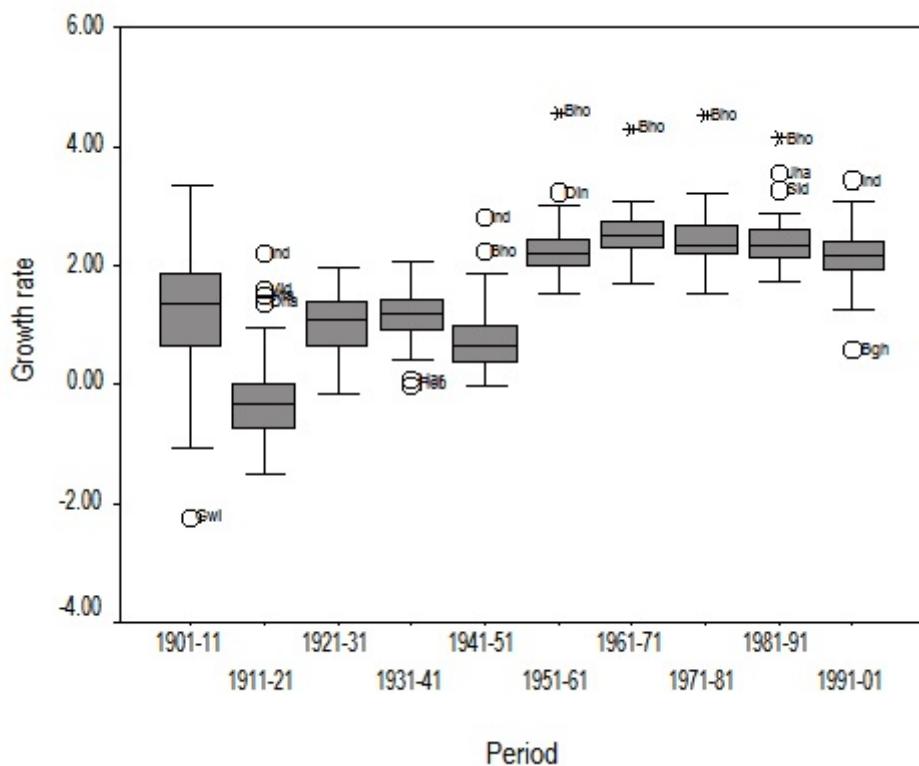
Figure 2.6
Net addition to the population in different decades



the 1901 population census. Since, rapid population growth in the past generates a very substantial population momentum, there is every possibility that in the coming years, net additions to the state population will continue to increase in the near future even if it is assumed that the declining trend in the average annual growth rate observed during the period 1971-2001 will continue in future also.

An interesting feature of population growth in the state is that in the first half of the last century, there were some very wide inter-district variations in average annual population growth rate whereas during the second half, the variability in population growth rate across the districts has somewhat reduced and average annual growth rates appear to have become more consistent over time as well as across districts. The widest variation in average annual population growth rate across the districts of the state has been observed during the period 1901-11 when the average annual growth rate ranged from a high of 3.333 per cent in districts Jhabua to a low of -2.236 per cent in district Gwalior. By contrast, the range of average annual population growth rate has narrowed down

Figure 2.7
Trends and inter-district variations in growth rates



considerably in all decades of the later half of the last century. Moreover, in all decades of the period 1901-51, there had always been some districts in the state which had recorded negative population growth but in the post 1951 period, there was no district which had recorded a negative population growth in any decade. Similarly, in all but one decades of the period 1901-2001, there had been one or two districts where the average annual population growth rate had been either very rapid or very slow. During the period 1951-91, for example, population growth rate in district Bhopal has been extremely rapid compared to other districts of the state. Similarly, population growth rate has been very rapid in district Indore in a number of decades. By contrast, population growth has been extremely slow in district Balaghat compared to other districts of the state during the decade 1991-2001.

There has been little exploration of the reasons behind the observed variation in the average annual population growth rate across districts of the state during the last century. It is well known that during the process of social and economic development, increasing proportion of population is concentrated in areas of high productivity. Historically also, areas of high productivity either in terms of agriculture or in terms of industrial production have been found to be the

areas of high concentration of population. In this context, an analysis of population distribution patterns over administrative areas and change in this pattern over time has important implications for social and economic development.

3 Determinants of Population Growth

The current population growth trends in the state are largely determined by the difference between the annual number of live births and annual number of deaths. Immigration and emigration do take place but they either balance each other or the size of net migration is very small as compared to the difference in the number of live births and number of deaths. Assuming that annual net migration in a population is negligible as compared to the difference between total number of live births and total number of deaths taking place every year, the growth of population depends upon the ratio of annual number of live births to annual number of deaths. If B denotes the number of live births in a given year and D denotes the number of deaths in that year then the population, in that year, will neither increase nor decrease if $B/D=1$; it will increase if $B/D>1$ and will decrease if $B/D<1$. Thus, more the ratio B/D deviates from the limiting value of 1, the more rapid will be the increase or decrease in population.

An analysis of the trend in the ratio B/D over time requires estimates of annual number of births and annual number of deaths. In the absence of imperfect registration system, estimates of annual number of births and annual number of deaths are usually derived from the estimates of birth rate and death rate and the estimates of the size of the population. For the existing Madhya Pradesh estimates of birth rate and death rate are available through the sample registration system for the year 1999 onwards only. For the period prior to 1999, estimates of birth and death rate are available for the undivided Madhya Pradesh only. These estimates, however, do not reflect the actual fertility and mortality situation prevailing in the state.

In order to estimate the levels of fertility and mortality for the existing Madhya Pradesh for the period prior to 1999, we have used a projection approach. This approach had the following steps:

- Using the estimates of contraceptive prevalence rate and other proximate determinants of fertility available from the National Family Health Survey and 1991 population census, first approximation of the total fertility rate were derived for the state.
- Using the 1991 population and the age and sex structure, the population of the state was projected to 2001 using the first approximation of total fertility rate and an assumed levels of expectation of life at birth based on United Nations South Asian model life tables.
- The levels of fertility and mortality were adjusted in a manner that these estimates closely matched with the estimates of birth rate and death rate

- from the sample registration system around the year 2001 as well as the projected 2001 population of the state closely matched with the population of the state enumerated at the 2001 population census.
- The adjusted levels of total fertility rate and expectation of life at birth were assumed to be the approximations of fertility and mortality levels that actually prevailed in the state during the 1990s.

Table 3.1: Estimates of selected indicators of fertility and mortality for Madhya Pradesh, 1991-2001.

Year	Crude birth rate	Crude death rate	Total fertility rate	Expectation of life at birth	
				Male	Female
1991	38.6	14.8	5.13	54.1	53.8
1992	37.9	14.5	5.05	54.5	54.2
1993	37.1	14.2	4.95	54.8	54.5
1994	36.3	13.8	4.86	55.2	54.8
1995	35.5	13.5	4.76	55.6	55.2
1996	34.7	13.1	4.67	56.0	55.6
1997	34.0	12.8	4.58	56.4	56.1
1998	33.3	12.4	4.48	56.8	56.5
1999	32.7	12.1	4.40	57.3	56.9
2000	32.2	11.8	4.32	57.7	57.4
2001	31.7	11.6	4.25	58.1	57.8

Results of the projection exercise suggest a population of 60.388 million for the state in the year 2001, a birth rate of 31.7, a death rate of 11.6 per 1000 population and an infant mortality rate of 100 infant deaths per 1000 live births. According to the preliminary results of 2001 population census, the population of the state was enumerated to be 60.385 million on 1 March 2001 (Government of India, 2001). On the other hand, the sample registration system suggests a birth rate of 30.8, a death rate of 10.1 per 1000 population and an infant mortality rate of 86 infant deaths per 1000 population for the state in the year 2001(Government of India, 2003). The projection exercise, thus, closely approximates the population scenario of the state in 2001as reflected through the 2001 population census and the sample registration system.

Based on the projection exercise, the estimates of crude birth rate, crude death rate, total fertility rate, expectation of life at birth separately for males and for females for different years of the period 1991-2001 for the existing Madhya Pradesh above are presented in table 3. According to these estimates, the crude birth rate in the state decreased by about 7 absolute points between 1991 and 2001 while the total fertility rate 0.88 absolute points during this period. Similarly, the crude death rate decreased by about 4 absolute points and male and female expectation of life at birth increased by 4 years. According to the sample registration system, for India as a whole, the crude birth rate declined by about 4 absolute points while the death rate decreased by about 1 absolute point during the same period.

The projection exercise also provides estimates of annual number of births and annual number of deaths in the state for different years of the decade 1991-2001. According to these estimates, there were 1.876 million births and 0.720 million deaths in the state in the year 1991 with the result that the number of births exceeded the number of deaths by about 1.156 million. By the year 2001, annual number of births were estimated to have increased to 1.916 million while the estimated annual number of deaths decreased to 0.699 million with the result that annual number of births exceeded the annual number of deaths by 1.217 million. Because of this increase in the gap between total number of births and total number of deaths, the ratio of annual number of births to annual number of deaths which was 2.605 in 1991 increased to 2.741 in 2001. In other words, despite a declining trend in the levels of fertility and mortality in the state during 1991-2001, the net additions to the population of the state continued to increase. The annual number of births in any population are determined by the size and age structure of the population and the level of fertility. Similarly, annual number of deaths are also determined by the size and age structure of population and the level of mortality. It is possible to decompose the annual change in the ratio of annual number of births to annual number of deaths into annual changes in the levels of fertility and mortality and changes in the age structure effects on crude birth rate and crude death rate (Ranjan, 1999)

The decomposition of change in the ratio of annual number of births to annual number of deaths into change in the total fertility rate, life table death rate and the age structure effects on crude birth rate and crude death rate is presented in table 4. Both total fertility rate and the life table death rate had declined in the state throughout the period 1991 through 2001 and the decline in total fertility rate had been more rapid than the decline in the life table death rate. This means that the net effect of the change in fertility (as measured by total fertility rate) and mortality (as measured by life table death rate) during the decade 1991-01 had contributed towards a decrease in the ratio of annual number of births to annual number of deaths suggesting that changes in the levels of fertility and mortality in the state during the 1990s had been towards the slowing down of the growth of population.

Table 3.2: Pattern of population growth in Madhya Pradesh and its decomposition, 1991-2001.

Year	Annual number of births	Annual number of deaths	B/D	Change in				
				B/D	f	l	ab	ad
1991	1,876,22	720,136	2.605					
1992	1,884,25	720,797	2.614	0.003	-0.016	-0.006	-0.004	-0.017
1993	1,886,85	721,459	2.615	0.000	-0.020	-0.007	-0.002	-0.015
1994	1,888,47	719,882	2.623	0.003	-0.018	-0.005	-0.003	-0.019
1995	1,889,40	717,716	2.633	0.004	-0.021	-0.007	-0.001	-0.018
1996	1,889,82	713,675	2.648	0.006	-0.019	-0.007	-0.003	-0.020
1997	1,889,62	710,319	2.660	0.005	-0.019	-0.009	-0.002	-0.017
1998	1,888,76	706,274	2.674	0.005	-0.022	-0.007	0.001	-0.020
1999	1,896,69	703,456	2.696	0.008	-0.018	-0.007	0.001	-0.018
2000	1,905,81	701,164	2.718	0.008	-0.018	-0.007	0.003	-0.017
2001	1,916,28	699,147	2.741	0.008	-0.016	-0.009	0.001	-0.015
Change between 1991 and 2001				0.051	-0.188	-0.072	-0.009	-0.177

The trend, however, had been different in case of age structure effects on crude birth rate and age structure effects on crude death rate. There has been only a marginal change in the age structure effects on crude birth rate and, in the later half of the period 1991-2001, the age structure effects on crude birth rate had turned positive indicating that they contributed towards increase in the ratio of annual number of births to annual number of deaths. By contrast, the age structure effects on crude death rate continued to decrease throughout the nineties. Moreover, the magnitude of the age structure effects on crude death rate has been larger than the magnitude of the age structure effects on crude birth rate with the result that the net effect of age structure effects on crude birth rate and crude death rate on the ratio of annual number of births to annual number of deaths had contributed towards an increase in the ratio. In other words, the age structure changes in the population of the state during the nineties have contributed towards increase in the population growth rate. Since the magnitude of the age structure effects has been larger than the magnitude of the levels effects, the ratio of annual number of births to annual number of deaths increased indicating an increase in the net additions to the population.

Changes in the age structure effects on the birth rate seem attributable mainly to changes in the proportion of female population in reproductive ages. The proportion of females in the reproductive age group to the total population was 22.82 per cent in 1991 according to the projection exercise. This proportion increased to 23.70 per cent in the year 2001. This increase in the proportion of females in the childbearing ages appears to be the reason behind the increasing trend in the ratio of crude birth rate to total fertility rate. One reason for the increase in the proportion of females in the child bearing ages is the high fertility that had prevailed in the state in the past. Another reason is that decrease in fertility has resulted in a decrease in the proportion of child population thereby raising the proportion of the other age groups including reproductive ages.

Similarly, the change in the age structure effects on crude death rate are attributed largely to the changes in the age structure of the population - the shift of the population from age groups having relatively higher risk of death to age groups having relatively lower risk of death tends to lower the crude death rate and a resulting decrease in the age structure effects on crude death rate. On the other hand, a concentration of the population in age groups with relatively higher risk of death results in an increase in the age structure effects on crude death rate as measured by the ratio of crude death rate to life table death rate. In any case, table 4 clearly shows that the achievements in terms of reduction in fertility and mortality levels in the state during the last decade of the last century have not been able to offset changes in the age structure effects on crude birth rate and crude death rate with the result that the propensity of population increase, measured by the ratio of total number of births to total number of deaths has increased over time. The analysis shows that reduction in both fertility and mortality levels should have to be accelerated to a substantial extent to ensure a decrease, instead of an increase, in the ratio of annual number of births to annual number of deaths in the state. A decrease in the ratio of annual number of births to annual number of deaths will only ensure that the net addition to the population of the state starts decreasing.

4 Age and Sex Structure

As a basic demographic variable, age structure of the population is intertwined with all other demographic variables. Age structure of the population affects and is affected by fertility, mortality and migration. The intricacies of these interrelationships may be judged by the fact that even with a moderate gross reproduction rate, a high proportion fo women in the reproductive age group makes for a high birth rate. The high birth rate, in turn, results in a high proportion of children and consequently helps to keep the future birth rate high. A young age structure working via a high birth rate thus tends to perpetuate itself. When fertility control efforts are implemented in such a population, the young age structure puts up a resistance against their effectiveness.

Table 4.1: Levels and trends in selected indicators of age and sex structure of the population of Madhya Pradesh: 1961-2001.

SN	Indicator	1961	1971	1981	1991	2001
1	Population 0-4 years (<i>per cent</i>)	16.75	16.17	13.88	13.84	12.24
2	Population 0-14 years (<i>per cent</i>)	41.32	44.07	41.69	39.85	38.63
	Population 15-59 years (<i>per cent</i>)	53.80	50.19	51.89	53.47	54.25
3	Population 60+ (<i>per cent</i>)	4.89	5.74	6.41	6.68	7.11
4	Females 15-49 (<i>per cent</i>)	22.97	21.14	21.85	22.57	23.04
5	Dependency ratio	859	993	927	870	843
6	Child-woman ratio	729	765	635	613	531
7	Sex ratio (<i>Males per 100 females</i>)	107	108	109	109	109
8	Sex ratio (0-14)	107	108	107	108	109
9	Sex ratio (15-59)	109	110	111	111	110
10	Sex ratio (60+)	90	100	100	108	96

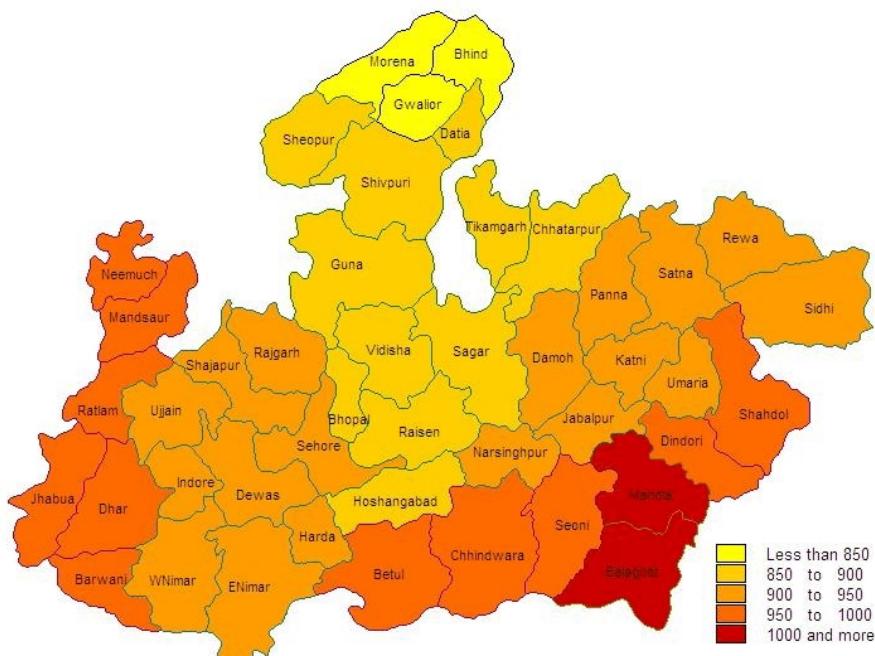
The age structure of the population of Madhya Pradesh may be classified as a young age structure with a large base of young age population and a thin top of old age ones. According to the 2001 population census, almost 39 per cent of the population of Madhya Pradesh was below 15 years of age while slightly more than 7 per cent was of age 60 years and more. As the result, the population of the state had a high dependency ratio of 843 dependents (persons with age below 15 years and persons with age 60 years and more) for every 1000 persons in the working age (15-59 years). Similarly, females in the reproductive age group accounted for about 23 per cent of the population of the state.

The trend in the age structure of the population of the state suggests that the proportion of the population below 15 years of age to the total population is decreasing since 1971 whereas the proportion of the population with at least 60 years of age is increasing. A decrease in the proportion of population 0-14 years of age indicates towards a decrease in the levels of fertility. Similarly, an increase in the proportion of population with at least 60 years of age indicates towards a decrease in the levels of mortality. The decrease in the proportion of population aged 0-14 years has also resulted in an increase in the population in the working ages (15-59 years) resulting in the decrease in the dependency ratio from 993 dependents (children below 15 years of age and persons at least 60 years older) per 1000 persons in working age group in 1971 to 843 in 2001. The decrease in the levels of fertility is also reflected in the decrease in the child-woman ratio (children below 5 years of age per 1000 women in the age group 15-49 years) which decreased from 765 in 1971 to 531 in 2001.

Like the country as a whole as well as in most of the South Asian countries, the population sex ratio of the combined population of the two states is also unfavourable to females. At the 2001 population census, there were 109 males for every 100 males in the state. This population sex ratio is well below the national average of about 107 males for every 100 females. In fact, the population sex ratio has always been relatively more unfavourable to females in Madhya Pradesh as compared to the country as a whole (Government of India, 2001). At the same time, the population sex ratio has turned more and more unfavourable to females in the state during the forty years between 1961 and 2001. In 1961, there were about 107 males for every females. This ratio increased to more than 109 males for every 100 females in 1991. However, in the year 2001, a marginal decrease in this ratio has been recorded.

A more disturbing trend in the sex ratio of the state is that this ratio is turning more and more unfavourable to females in the age group 0-14 years. The sex ratio in the age group 0-14 years increased from 107 males for every 100 females to 109 males for every 100 females in the year 2001. In the age group 15-59 years, on the other hand, the sex ratio has remained highly unfavourable to females currently as well as in the past - a reflection of high female mortality in the reproductive age group. Finally, in the old population, there has been a very remarkable decrease in the sex ratio between 1991 and 2001.

Figure 4.1
Population Sex Ratio, 2001
Females per 1000 males



Among the districts of the state, the population sex ratio varies widely and there are clear regional patterns (Figure 13). The population sex ratio is relatively more unfavourable to females as compared to males in the north and central Madhya Pradesh whereas in the southern and western Madhya Pradesh, the population sex ratio appears to be comparatively more balanced. At the one extreme are districts of Morena and Bhind in the north west corner of the state where there appears to be a serious deficiency of females as compared to males according to the 2001 population census. A population sex ratio of 822 females per 1000 males appears to be the lowest sex ratio in the country. On the other hand, in districts Balaghat and Mandla of the state, females outnumbered males at the 2001 population census. Both these districts are located in the south-east corner of the state. There is a clear geographical pattern in the population sex ratio. As one moves from the north-est corner of the state towards its south-west corner of the state, the sex ratio gets more and more favourable to females. This pattern in the sex ratio of the population is also associated with the change in the social, castes and kinship structures of the society - the northern part is dominated by a feudal society with strong castes and kinship considerations whereas the south-eastern part is dominated by the tribal population.

A population sex ratio unfavourable to females may be attributed to a host of social and cultural factors, the most important of which is the status of females in the society. In societies where females have got a lower status as compared to males, gender disparity and gender discrimination are common. This gender discrimination and gender disparity in almost all walks of the society get translated into higher mortality among females relative to males at least up to the age 50 years which, in turn results in an unfavourable sex ratio for females as is the case for Madhya Pradesh as well as for its all but two districts. The gender disparity and gender discrimination is most striking in the northern part of the state, especially in the north-west corner, primarily because of a feudal society built around a very strong caste and kin system. On the other hand in the southern part of the state, the population is largely constituted by the tribal population which has radically different social and cultural system than the feudal society of the north.

It would be interesting to analyze the patterns of age and sex structure for different population sub-groups as the levels of fertility and mortality vary according to the different social classes. Selected indicators of age and sex structure of for scheduled castes population, scheduled tribes population and other (non-scheduled castes and non-scheduled tribes) population are given in table 6 for the year 2001 separately for rural and urban areas. Two observations are clear from the table. First, the age and sex structure varies widely across different population sub-groups. Second, in all population subgroups, significant rural-urban differentials in the age and sex structure of the population persist. If the age and sex structure is any indication then it is clear that the demographic scenario is relatively poorest among the tribal population of the state whereas the demographic scenario appears to be comparatively much better in the non-scheduled castes and non-scheduled tribes population (the population comprising of upper castes and backward classes). Since the prevailing age and sex structure of the population is the reflection of the prevailing levels of fertility and mortality and patterns of migration, table 6 suggests that the levels of fertility and mortality in Madhya Pradesh are relatively highest in the tribal population as compared to other population groups closely followed by the scheduled castes population. According to the 2001 population census, the scheduled castes and scheduled tribes in Madhya Pradesh account for more than 35 per cent of the population of the state. Obviously, the demographic transition in Madhya Pradesh as a whole is substantially influenced by the demographic transition in the scheduled castes and scheduled tribes population of the state. The information available through the 2001 population census clearly suggests that accelerating the pace of demographic transition in the scheduled tribes and scheduled tribes population of the state is crucial for accelerating the pace of demographic transition for the population of the state as a whole. It is important in this context that the social and cultural context of fertility and mortality in the tribal population is different from the non-tribal population.

Table 4.2: Levels of selected indicators of age and sex structure for different population sub-groups in Madhya Pradesh: 2001.

SN	Indicator	Total	Rural	Urban
Total Population				
1	Population 0-4 years (<i>per cent</i>)	12.24	13.05	10.00
2	Population 0-14 years (<i>per cent</i>)	38.63	40.24	34.17
	Population 15-59 years (<i>per cent</i>)	54.25	52.39	59.45
3	Population 60+ (<i>per cent</i>)	7.11	7.38	6.38
4	Females 15-49 (<i>per cent</i>)	23.04	22.28	25.14
5	Dependency ratio	843	909	682
6	Child-woman ratio	531	586	298
7	Sex ratio (<i>Males per 100 females</i>)	109	108	111
8	Sex ratio (0-14)	109	109	111
9	Sex ratio (15-59)	110	109	114
10	Sex ratio (60+)	96	96	94
Scheduled Castes Population				
1	Population 0-4 years (<i>per cent</i>)	13.09	13.64	11.41
2	Population 0-14 years (<i>per cent</i>)	40.80	41.59	38.37
	Population 15-59 years (<i>per cent</i>)	52.12	50.84	56.05
3	Population 60+ (<i>per cent</i>)	7.08	7.57	5.59
4	Females 15-49 (<i>per cent</i>)	21.83	21.19	23.81
5	Dependency ratio	919	967	784
6	Child-woman ratio	600	644	479
7	Sex ratio (<i>Males per 100 females</i>)	110	111	110
8	Sex ratio (0-14)	111	112	109
9	Sex ratio (15-59)	113	112	114
10	Sex ratio (60+)	92	93	85

SN	Indicator	Total	Rural	Urban
Scheduled Tribes Population				
1	Population 0-4 years (<i>per cent</i>)	14.78	14.98	12.34
2	Population 0-14 years (<i>per cent</i>)	43.53	43.80	39.55
	Population 15-59 years (<i>per cent</i>)	50.51	50.12	56.05
3	Population 60+ (<i>per cent</i>)	5.97	6.08	4.40
4	Females 15-49 (<i>per cent</i>)	22.34	22.22	24.08
5	Dependency ratio	980	995	784
6	Child-woman ratio	662	673	512
7	Sex ratio (<i>Males per 100 females</i>)	103	102	110
8	Sex ratio (0-14)	105	105	107
9	Sex ratio (15-59)	102	102	114
10	Sex ratio (60+)	90	90	85
Non-Scheduled Castes Non-Scheduled Tribes Population				
1	Population 0-4 years (<i>per cent</i>)	11.25	12.06	9.61
2	Population 0-14 years (<i>per cent</i>)	36.59	38.31	33.12
	Population 15-59 years (<i>per cent</i>)	55.93	53.79	60.24
3	Population 60+ (<i>per cent</i>)	7.48	7.90	6.64
4	Females 15-49 (<i>per cent</i>)	23.54	22.60	25.44
5	Dependency ratio	788	859	660
6	Child-woman ratio	478	534	378
7	Sex ratio (<i>Males per 100 females</i>)	110	110	112
8	Sex ratio (0-14)	110	110	111
9	Sex ratio (15-59)	113	112	114
10	Sex ratio (60+)	98	99	96

5 Future Population Growth

The exercise carried out to project the population of the state in the year 2001 on the basis of 1991 population and prevailing levels of contraceptive prevalence rate and other proximate determinants of fertility suggests that the total fertility rate in the state around the year 2001 was 4.25 while the birth rate was 31.7 and the death rate was 11.6 per 1000 population. The projection exercise was based on the assumption that the expectation of life at birth around 2001 was 58.1 for males and 57.8 years for females. These estimates obtained through the projection exercise closely matched with the estimates available through the sample registration system. According to the sample registration system, the total fertility rate in Madhya Pradesh in 2001 was 3.9, the birth rate was 31.0 and the death rate was 10.1. Moreover, the projection exercise suggests that the total fertility rate decreased by about 0.88 absolute point between 1991 and 2001 whereas the expectation of life at birth increased by about 4 years for both males and females during this period.

Based on the above assumptions, two projections of the future trends in fertility levels in the state have been made. The first projection assumes that total fertility rate will decrease by about 1 absolute point during the decade 2001-11 to reach 3.25 by the year 2011 and then it will decreased by 1.15 absolute point between 2011 and 2021 so as to reach the replacement level by 2021. The second projection, on the other hand assumes and state will be able to reach the goal of replacement fertility by the year 2011 as targetted in the Madhya Pradesh Population Policy 2000 (Government of Madhya Pradesh, 2000). It is also assumed that the increase in the expectation of life at birth in Madhya Pradesh state will follow the United Nations model schedule of change in the expectation of life at birth in the years to come. This schedule assumes that the expectation of life at birth, for both males and females, increases by 2.0 to 2.5 years over each five year period when the expectation of life at birth is less than 60 years and at a slower rate when the expectation of life at birth is more than 60 years (United Nations,). According to the United Nations model schedule, the expectation of life at birth in Madhya Pradesh is projected to increase to 66.9 years for males and 67.3 years for females by the year 2021.

Based on the above assumptions, the projection based on the assumption of the replacement fertility by the year 2021 suggests that the population of the state will increase to approximately 83.795 million by the year 2021. On the other hand, the projection based on the assumption of the replacement fertility by the year 2011 suggests that the population will reach around 77.987 million by the year 2021. This means that approximately 18 to 24 million population is expected to be added to the state population in the 20-year period between 2001 and 2021 depending upon whether the replacement fertility is achieved in the year 2011 or in the year 2021. This net addition, incidently, is more than the total population of the state enumerated in the 1951 population census.

Table 5.1: Future population growth in Madhya Pradesh 2001-2021.

Indicator	Year				
	2001	2006	2011	2016	2021
<i>Replacement fertility by 2021</i>					
Population	60.385	66.645	72.966	78.897	83.795
CBR	32.0	29.1	26.3	22.3	17.9
CDR	11.6	10.1	9.0	8.1	7.5
TFR	4.3	3.8	3.3	2.7	2.1
E ₀ Male	58.1	60.6	62.9	64.9	66.9
E ₀ Female	57.8	60.3	62.8	65.3	67.3
<i>Replacement fertility by 2011</i>					
Population	60.385	65.940	70.041	73.770	77.987
CBR	32.0	25.3	17.8	18.8	19.0
CDR	11.6	9.8	8.4	8.0	7.9
TFR	4.3	4.3	3.2	2.1	2.1
E ₀ Male	58.1	60.6	62.9	64.9	66.9
E ₀ Female	57.8	60.3	62.8	65.3	67.3

The projection exercise indicates that there will be massive net addition to the population of the state in the next 20 years irrespective of when the replacement fertility is achieved and irrespective of the future trend in the levels of mortality. This massive net addition to the state population will pose serious demographic and development challenges to the state in the years to come. What is even more important is the fact that most of this increase in the population will be due to the population momentum which is generated by high fertility and high mortality that has prevailed in the state in the past. Because of this population momentum related population growth, the impact of Madhya Pradesh Population Policy 2000 in curtailing the growth of population will at best be limited, at least in the next 20 years.

The results of the projection exercise presented in table 5.1 also suggest that achieving the goals of Madhya Pradesh Population Policy 2000 is expected to result in a curtailment of the net addition to the population of the state by approximately 2.925 million between 2001 and 2011 and by approximately 6.80

million between 2001 and 2021. This curtailment is less than 15 per cent of the total population of the state enumerated in the year 2001. Clearly, even if the goals and objectives of Madhya Pradesh Population Policy 2000 are achieved, massive net additions to the existing population of the state in the years to come are almost inevitable largely because the impact of rapid reduction in fertility as envisaged in the policy will be offset to a significant extent by the population momentum that has been generated as the result of persistent high fertility and mortality in the past.

Achievement of the goals of Madhya Pradesh Population Policy 2000 will however require massive enhancements in the capacity, efficiency and effectiveness of population stabilization efforts in the state, especially in the capacity, efficiency and effectiveness of the family welfare programme. In order to achieve the goals of the population policy, the total fertility rate that is estimated to have prevailed in the state around 2001 will have to be curtailed by more than half, or by more than 2 absolute points with a period of ten years. In view of the fact that total fertility rate is estimated to have decreased by only about 0.88 absolute points between 1991 and 2001, it appears highly unlikely that a massive curtailment of the order of more than 2 children per woman of reproductive age will be ensured with the current population stabilization efforts. Such a massive reduction in fertility in a short duration of ten years will require a complete reinvigoration of population stabilization efforts in the state.

6 Population Stabilization Efforts

Population stabilization efforts can be grouped into programme efforts and non-programme efforts. Since the context, te content and the scope of the two categories of efforts are essentially different, it would be useful to discuss the two categories of efforts separately.

6.1 Programme Efforts. The family welfare programme has been the mainstay of population stabilization efforts in the state. The programme is aimed at universalizing the use of modern methods of family planning to reduce fertility and to achieve the small family norm. Over the years, the programme has been able to create a state wide network of family welfare services delivery system. The programme has also been able to improvement popular awareness about issues related to human fertility and family planning. Being part of the National Family Welfare Programme of Government of India, family welfare activities in Madhya Pradesh are almost entirely guided by programme concepts and programme designs adopted by the Government of India. Government of India also meets almost entire cost of family welfare activities in the state.

Administration and Management. Under the existing administrative and managerial set up, the responsibility of implementing the programme in the state rests entirely with the Department of Health and Family Welfare which implements the programme in a near vertical manner. There is very little, only

symbolic, involvement of other government departments and other non-government organizations and agencies. The current administrative and managerial structure of National Family Welfare Programme was evolved almost 25-30 years ago. Since then, the scope, approach and coverage of the programme have changed drastically but there has been little systematic investigation of the appropriateness of the existing administrative and management structure in the context of the current approach to programme implementation.

Being part of the traditional top-down bureaucratic administrative system, the existing administrative and management structure of the family welfare programme is found wanting in such critical areas as harnessing political support, institutionalizing inter-sectoral coordination and integration of family planning with social and economic development processes. The programme continues to be organized in an isolated, vertical manner with little integration with other development and welfare activities and programmes.

Programme Inputs. Family welfare programme may be viewed as an organization in the larger distributive network of development services. The authority and resources in such organizations are deliberately established to achieve specific goals. Programme inputs, therefore, constitute an important element of programme strength and its capacity to meet family welfare needs of the people.

Direct inputs into the family welfare programme can be classified into three broad categories - financial inputs measured through programme expenditure, manpower inputs measured in terms of the work force employed to provide and manage family welfare services delivery, and family welfare services delivery infrastructure. These three broad categories of programme inputs are discussed in some detail in the context.

Family Welfare Programme Expenditure. Total expenditure under the family welfare programme in the existing Madhya Pradesh was Rs 949.574 million in 2001-02 at current prices. This expenditure increased to Rs 1112.148 million in 2004-05 or by 162.574 million (Table 2). Programme expenditure prior to 2001-02 is not comparable to programme expenditure in and after 2001-02 because of the politico-administrative division of the erstwhile state of Madhya Pradesh into the states of Madhya Pradesh and Chhattisgarh on 1 November 2000. At the constant, 1993-94 prices however, the total expenditure under the family welfare programme actually decreased from 604.043 million in 2001-02 to 627.465 million in 2004-05 or by just by 23.422 million. Obviously, most of the apparent increase in the expenditure under the family welfare programme has been accounted by the rate of inflation. In terms of per capita expenditure on or expenditure per new acceptor at constant prices, there has, in fact, been very little increase in family welfare expenditure in the state over time. In fact, the per capita expenditure on family welfare as well as the expenditure per new acceptor recruited under the programme decreased during 2002-03 and 2003-04 as compared to the expenditure during 2001-02.

An important feature of the expenditure under the family welfare programme is the wide gap between the budgetary provision and the actual expenditure under the programme. In all the four years under reference here, the actual expenditure under the programme has never exceeded four fifth of the budgetary outlay. This inability of the state to fully utilize the budgeted amount in family welfare related activities and services clearly indicates towards the poor administrative capacity and organizational efficiency of the family welfare programme in the state. It also indicates towards poor planning for family welfare services delivery in meeting the family welfare needs of the people.

Table 6.1: Family welfare programme expenditure in Madhya Pradesh.

Year	Total expenditure (Million Rupees)		Per capita expenditure (Rupees)		Expenditure per new acceptor recruited (Rupees)	
	Current prices	1993-94 prices	Current prices	1993-94 prices	Current prices	1993-94 prices
2001-02	949.574	604.043	16	10	372	236
2002-03	948.768	581.404	15	9	354	217
2003-04	1003.982	595.868	16	9	357	212
2004-05	1112.148	627.465	17	10	435	246

Another disheartening feature of family welfare expenditure in the state is that nearly all of this expenditure is met by the Government of India through the National Family Welfare Programme. The contribution of the state government to the expenditure under the programme has been insignificant and appears to be decreasing over time. In the year 2004-05, the state contribution to the family welfare expenditure was zero (Government of Madhya Pradesh, 2006).

Services Delivery Infrastructure. The infrastructure available for the delivery of family welfare services may be divided into two components - the public health care delivery infrastructure and the private health care delivery infrastructure. Very little is currently known about the private health care delivery system as it is unorganized and unregulated. Available evidence suggests that the involvement of this system in the delivery of family welfare services is, at best, marginal.

Today, there are 8874 sub-health centres, 1192 primary health centres, 229 community health centres that have been established primarily to cater the family welfare needs of the rural population. However, many of the primary health centres and almost all community health centres are located in the urban towns as defined in the 2001 population census. The entire rural population of the state has been distributed across these institutions in a normative manner.

In the urban areas, family welfare services are provided through 53 civil hospitals, 95 civil dispensaries, 97 urban family welfare centres and 80 urban health posts. Moreover, in 38 district hospitals, post partum centres have been established. However, unlike the rural areas, a comprehensive coverage of the urban population has not been attempted. Unlike the rural areas, no norms have been prescribed for the urban areas for family welfare services delivery. This is so when the urban population is increasing at a faster rate than the rural population largely because of migration from rural to urban areas and because of reclassification of rural areas into urban areas as the result of increase in the size of the population. With the increase in urban population, the number of urban poor are also increasing at a brisk pace. An urban family welfare service delivery structure, on the lines of the rural family welfare service delivery structure is the need of the time.

Despite the fact that the number of family welfare services delivery institutions have increased over time, the gap between the number of institutions required in the rural areas according to the norms and number in existence continues to persist (table 6.2). As the population of the state continues to increase, new family welfare services delivery institutions need to be established every year to meet the norms. This requires substantive expenditure in terms of new buildings, staff and equipments putting additional burden on the state exchequer. In the absence of this substantive additional investment, existing service delivery institutions have to serve a population more than the prescribed norm causing increased work load thereby affecting service delivery efficiency.

Table 6.2: Number of family planning services delivery points required according to the norms and number actually in existence in the rural areas.

Type of services delivery point	Number required as per norm	Number available	Gap in availability
Sub-health centre	10524	8835	1689
Primary health centre	1691	1153	538
Community health centre	428	266	162
District hospital	48	47	1

Source: Government of Madhya Pradesh

What is important, however, is that there has been little thinking at the state level about the appropriateness of the institutional norms laid down by the Government of India in the state context. The population density in Madhya Pradesh is substantially lower than the population density for the country as a whole according to the 2001 population census. One implication of this

difference in population density is that a family welfare services provider in Madhya Pradesh has to cover a larger geographical area and travel more to reach the normative population than states like West Bengal, Kerala, Uttar Pradesh, etc. where population density is well above the national average. There is however little progress in developing standards for establishing health and family welfare services delivery institutions which are appropriate to the needs of the state. The situation gets complicated in view of the fact that population density varies widely across the districts of the state. Very low population density also implies that a user or a potential user of family planning services has to travel a longer distance to reach a family welfare services delivery point in Madhya Pradesh than in West Bengal and Kerala.

It is worth pointing out here that because of the basic orientation and nature of family welfare services as compared to health services, establishing a rural or an urban family welfare centre is significantly less cost intensive than establishing a rural or urban health centre or hospital. However, the family welfare services delivery system has not been able to expand with the growing demand for family welfare services simply because expansion of family welfare services delivery system is linked with the expansion of public health care delivery system. For universalizing the availability of and access to family welfare services, it is imperative that expansion of family welfare services delivery system should be independent of the expansion of public health care delivery system.

Family Welfare Staff. The staffing pattern for different category of family planning services delivery institutions in Madhya Pradesh is the same as recommended by the Government of India. Under the integrated set up, this staff is supposed to deliver both health as well as family welfare services to the people. It is however not known, at present, what proportion of total time of different category of health and family welfare services providers, on average, is spent in delivering family welfare services and what proportion is spent in delivering other health services. If responsibilities assigned to health and family welfare services providers at the grass roots level are any indication, then, these services providers devote only a small proportion of their total time in the delivery of family welfare services and even lesser time in the delivery of family planning services.

At the district level, a core supervisory and administrative staff has been provided exclusively for managing the family welfare programme. However, even this staff has been overloaded with multiple responsibilities which have resulted in a residual attention to the administration and family welfare programme related activities. The concept of District Family Welfare Bureau and State Family Welfare Bureau mooted to focus specifically on the administration and management of the family welfare programme has been diluted as the result of the integration of the programme with the health care delivery system. The staff appointed under these Bureaux have been assigned a number of health

related responsibilities in addition to the management and provision of family welfare services.

A major concern in improving the quality of family welfare services is the knowledge, skills and motivation of family welfare services providers and programme managers. This requires regular training and orientation. Unfortunately, human resources development is perhaps the weakest area of family welfare programme efforts in the state, at least, in terms of quality. The state lacks a comprehensive training policy and a training programme that ensures that all family welfare services providers and programme manager undergo training and orientation in various aspects related to population stabilization at regular intervals. There is no human resources development unit at the state level to specifically focus on human resources development issues related to population stabilization. The state has an elaborate network of training institutions at state, regional and district levels. However, most of the training institutions are under-staffed. At the district level, most of the district training institution established as an innovative intervention have been encroached by the Chief Medical and Health Officer to establish its administrative office leaving little room for organizing training and research activities. Whatever training activities are organized, they are vertical and normative in nature, primarily based on the guidelines and modules developed by the government of India. There have been little efforts to develop and training programmes and activities that are specific to the needs of the state.

Information, Education, Communication. Information, Education and Communication activities have been an integral part of the family welfare programme. However, recognition of these activities as an essential component of the programme has gone through its share of evolutionary ups and downs. During late 1960s and early 1970s, there was considerable focus on these activities largely because of the limited success of classical model of family planning which assumed that there existed an inherent demand for family planning. However, because of their narrow scope, these activities had not been very effective in generating the demand for family planning services and the interest towards these activities gradually waned. One fall out of this situation was that an active and sustained participation of the community in the delivery of family planning services could not be achieved. In 1995, the state government constituted Information Education Communication Bureau in an attempt to reinvigorate this important component of the programme. which was converted into an independent fully functional unit in 1997 with the appointment of a full time Director and merging of the staff and facilities available under the erstwhile Health Education Bureau and the state Information, Education, Communication Unit of the family welfare programme. These policy level changes reflected the commitment of the state government to give a professional, competitive orientation to family welfare related information, education and communication activities.

Enthused by the policy level initiative and support, the State Information, Education, Communication Bureau was able to radically change the scope, the context and the approach for the planning and implementation of information, education and communication activities in the State. These activities no longer remained an appendage to the health and family welfare services delivery system. The Bureau was able to demonstrate the potential of information, education and communication activities in influencing the reproductive behaviour and in promoting community participation in health and family welfare activities. The change brought in by the Bureau was characterized by the identification of health and family welfare needs of the people, a focused attention toward expanding community participation, especially at the grass roots level and promotion of community level health and family welfare action.

Family Welfare Services Delivery. The immediate objective of the family welfare programme is the delivery of family welfare services to the people in an efficient and effective manner. The efficiency and effectiveness of family welfare services delivery is determined, collectively, by the strengths of different functional areas of the programme - management; training; commodity and logistics; information, education, communication; research and evaluation. A number of indicators have been developed to assess the strength of different functional areas of family welfare programme (Betrand, Magnanai, Knowles, 1994). It is possible to make an assessment of the strength of family welfare services delivery on the basis of these indicators. The list of indicators selected for the purpose is given in table 6.3. For each indicator, a score ranging between 0 to 10 has been given on the basis of the prevailing situation in the related functional area of the family welfare services delivery system in the state. The higher is the score, the better is the strength of that programme component. The un-weighted average the individual scores allocated for each of the ten indicators provides a comprehensive assessment of the strength of family welfare services delivery operations under the family welfare programme.

The scores obtained in different functional areas of the family welfare programme in the state are given in table 6.3. The un-weighted sum of the score given in the ten indicators is estimated to be 23 out of the maximum of score of 100 or an average of just 2.3 out of the maximum of 10. The strength of the family welfare programme in areas like regular process evaluation and appropriate remedial measures and regular efficiency, effectiveness and impact assessment and evaluation is almost zero. Similarly, there is practically no system to assess the frequency of stock outs of family welfare commodities in the more than 8000 sub-health centres of the state. In any case, a score of 23 out of a maximum of 100 clearly suggests that the strength of the family welfare services delivery operations under the family welfare programme in Madhya Pradesh are well below the expectations and there is ample scope of improvements in the service delivery and innovations in the management of the family welfare service delivery system. The poor strength of the family welfare services delivery system

in the state coexists with nearly stagnant per capita expenditure on family welfare at constant prices and a near total lack of planning for family welfare services delivery taking into consideration that specific needs and constraints of the state. The state indifference to these critical issues is reflected from the fact, that almost family welfare services and activities in the state are dependent upon the financial support from the Government of India.

Table 6.3: Assessment of the strength of service delivery operations of family welfare programme in Madhya Pradesh.

Indicator	Current situation	Score
Existence of mission statement	No mission statement. Only some disjoint directives.	2
Clearly defined organizational structure	Organizational structure is well defined but roles and responsibilities are not well defined	4
Adequacy of staffing	Proportion of staff is position is satisfactory but staffing norms are inadequate	5
Staff competent to provide specific family planning services	No information available. Some rudimentary training is imparted.	2
Frequency of stock-outs at SHC level	No information available.	0
Communications produced and disseminated	Information not available but there are some activities.	3
Active research and evaluation unit	A unit exists but no in-house research and evaluation activity.	3
Use of service statistics system	Very elementary use of service statistics only at the state and district levels.	4
Regular process evaluation	No process evaluation.	0
Effectiveness, efficiency, impact evaluation	No effectiveness, efficiency, impact evaluation.	0
Total score		23

Programme Output. There are two dimensions of output of the family welfare programme - quantitative and qualitative. In the past, programme output was used to be measured in terms of service utilization and prevalence of contraception. These quantitative output show the extent to which the programme achieves the expected results but give little indication of why the programme has succeeded or failed in realizing the expected results. Qualitative output, on the other hand, provide an insight into service delivery. They focus primarily on three aspects - access, quality and programme image. These three aspects, incidentally, are also important to a family welfare service provider to improve family welfare service delivery.

Table 6.4: New acceptors recruited under the family welfare programme in Madhya Pradesh, 1998-02.

Year	New acceptors recruited (million)				
	Sterilization	IUD	Condom	Oral Pill	Total
2001-02	0.328	0.466	1.240	0.521	2.555
2002-03	0.373	0.465	1.288	0.555	2.681
2003-04	0.353	0.458	1.422	0.582	2.815
2004-05	0.369	0.447	1.218	0.520	2.554

Information about the number of new acceptors of different family planning methods recruited under the family welfare programme in Madhya Pradesh is given in table 6.4. The table clearly shows a lack of direction in the implementation of the programme and leaving sterilization, programme outputs are more or less stagnant. Even the figures given in the table confound the actual situation because of the way these figures are arrived at. Most importantly, the manner of estimating the number of new acceptors of condom and oral pill recruited in a year does not take into account the drop-outs and defaulters. It is based on the assumption that all new acceptors are recruited in the first month of the year and all of them use either condom or oral pill throughout the year without any drop-out or default.

Another interesting procedure adopted in estimating new acceptors of condom and oral pill recruited every year is that acceptors recruited in the previous years are not followed in the following years. Rather all acceptors recruited in the previous years are treated as the new acceptors in the beginning of the next year and in subsequent years. The monitoring system evolved and adopted by the programme management does not distinguish between the past users who have been recruited in previous years and the news acceptors who have been recruited in a given year. As the result, the actual number of new

acceptors of condom and oral pill may be significantly less than the reported number of new acceptors.

Estimates of couple protection rate generated from the programme service statistics are given in table 6.5. These estimates are based on the methodology suggested by the Government of India (Government of India, 1996). According to these estimates, approximately 47 per cent of the couples in the state were protected under the programme through one or the other method of family planning around the year 2001-02. Out of the total couples protected, nearly 60 per cent were sterilized while an additional around 18 per cent are protected through the use of intra-uterine devices. In addition, nearly 10 per cent of total couples protected are protected respectively through the use of condom and oral pill.

Table 6.5: Estimates of couple protection rate for Madhya Pradesh, 1999-2002.

Year	Couple protection rate (Per cent)				
	Sterilization	IUD	Oral Pill	Condom	All methods
1999	27.4	8.9	5.5	4.2	46.0
2000	27.5	8.5	4.3	4.8	45.1
2001	28.6	9.2	4.6	6.2	48.6
2002	28.0	8.7	4.9	4.7	47.3

Estimates of other indicators of programme output such as failure rates and discontinuation rates of different family planning methods and characteristics of acceptors, etc. are not available. In any case, even in quantitative terms, the performance of the family welfare programme in the state does not appear to be satisfactory. Although the programme service statistics are known to be associated with errors of duplication over time, place and method, yet even the estimates of programme outcome based on these statistics suggest that the family welfare programme in Madhya Pradesh lacks initiative and innovation.

Measuring the qualitative output of the family welfare programme is somewhat tricky and complicated as the concept of quality is primarily subjective in nature. Quality of family welfare services has two perspectives - the user perspective and the provider or manager perspective. The management of family welfare programme usually focuses on the provider perspective of quality because of at least two reasons. First, the provider perspective of quality of family welfare services is always subject to managerial control. Second, improvements in the quality of family welfare services in the context of user

perspective can be achieved only by improving the provider perspective of the quality.

Some information about the quality of family welfare services in the state is available through the National Family Health Survey which was carried out in the state in 1992 and 1998-99. This information is given in table 6.6. The table reflects extremely poor quality of family welfare services in the state. The fact that less than 10 per cent of ever-married women surveyed reported that they were visited by a service provider highlights the extremely poor reach of the programme. The median number of visits and the time since last visit suggest that even these visits are not regular and frequent. Similarly, a very small proportion of women using a family planning method at the time of the survey reported that they were told about the side effects and other problems related to the method or informed about at least one method other than that they were using. Clearly, quality of family welfare services remains a grossly neglected area and there is no system in place to improve the quality of services even under the provider perspective.

Table 6.6: Qualitative output of family welfare programme in Madhya Pradesh.

SN	Indicator	Proportion
1	Ever married women who reported at least one visit by health and family welfare service provider in the 12 months preceding the survey	8.9
2	Median number of visits per woman (For women who received at least one visit)	1.9
3	Median number of months since the most recent visit	2.2
4	Ever married women who reported that health and family welfare service provider discussed family planning during the home visit (For women who received at least one visit)	26.5
5	Ever married women who reported that service provider discussed family planning during the visit to health facility (For women who visited a facility at least once)	2.3
6	Current users of modern contraceptive methods who were told about at least one method other than that they were using by the service provider	14.4
7	Current users of modern contraceptive methods who were told about the side effects or other problems	12.1

Programme Impact. It is possible to make an assessment of the impact of the family welfare programme on birth rate and in terms of the number of births averted by the application of the prevalence model (Bongaarts, 1985). The inputs required for the application of the model are given in table 6.7.

Table 6.7: Inputs used in the prevalence model for assessing impact of family welfare programme in Madhya Pradesh.

Year	Input data		Crude birth rate <i>CBR</i>	Estimated from the model	
	Prevalence of programme contraception <i>u'</i>	Prevalence of non- programme contraception <i>u''</i>		Natural crude birth rate <i>NCBR</i>	Gross potential crude birth rate <i>GPCBR</i>
1991	31.62	3.87	38.60	60.05	59.10
1992	31.83	4.87	37.90	60.10	58.88
1993	32.04	5.88	37.10	59.99	58.50
1994	32.25	6.88	36.30	59.87	58.10
1995	32.46	7.89	35.50	59.75	57.70
1996	32.67	8.90	34.70	59.62	57.29
1997	32.88	9.90	34.00	59.66	57.03
1998	33.09	10.91	33.30	59.71	56.77
1999	33.30	11.92	32.70	59.93	56.67
2000	33.51	12.92	32.20	60.36	56.75
2001	33.72	13.93	31.70	60.80	56.84

Estimates of the impact of the family welfare programme in terms of the number of births averted are summarized in table 6.8. In 1991, the family welfare programme averted approximately 1.00 million births in the state. This number is estimated to have increased to about 1.52 million births in the year 2001. In the absence of the family welfare programme, the total fertility rate in the state, around the year 2001, would have been about 8.15 children per woman against the estimated total fertility rate of 4.25 children per woman in the year 2001. Similarly, in the absence of the family welfare programme, the crude birth rate, around 2001, would be have been 56.84 against the estimated 31.7 births per 1000 population. These figures indicate that the family welfare programme in the state has contributed quite substantially in lowering the levels of fertility. However, fertility levels in the state continue to be abnormally high.

Table 6.8: Estimates of the impact of family welfare programme on fertility in Madhya Pradesh.

Year	Crude birth rate	Gross crude birth rate effect of		Gross births averted by	
		Programme contraception	Non-programme contraception	Programme contraception (million)	Non-programme contraception (million)
1991	38.60	20.50	0.95	1.00	0.05
1992	37.90	20.98	1.22	1.04	0.06
1993	37.10	21.40	1.49	1.09	0.08
1994	36.30	21.80	1.76	1.14	0.09
1995	35.50	22.20	2.05	1.18	0.11
1996	34.70	22.59	2.33	1.23	0.13
1997	34.00	23.03	2.63	1.28	0.15
1998	33.30	23.47	2.94	1.33	0.17
1999	32.70	23.97	3.26	1.39	0.19
2000	32.20	24.55	3.61	1.45	0.21
2001	31.70	25.14	3.97	1.52	0.24

The above brief review suggests that the family welfare programme in the state has definitely been able to avert a substantial proportion of births. This has been so despite poor efficiency and effectiveness of the service delivery system. The programme has the potential of reducing fertility even further if the organizational efficiency, administrative capacity and the managerial effectiveness of the programme is improved.

The family welfare programme needs a reinvigoration. The impact of the programme in averting births and in lowering down fertility levels can be enhanced significantly by infusing innovations in family welfare service delivery system and by introducing new initiatives towards programme management. Major challenges to improving the efficiency and effectiveness of the programme are extending the reach of the services to reach the unreacheds and improving the quality of family welfare services. An alternative, more pragmatic approach of planning, implementation and monitoring and evaluation of activities under the programme needs to be evolved to give a new image to the programme. This approach, obviously should have a development orientation rather than a demographic necessity.

6.2 Non-programme Efforts. Information about the non-programme efforts towards population stabilization in the state is very scanty and incomplete. Population stabilization efforts outside the family welfare programme can be divided into two categories - efforts directed towards the promotion of contraceptive use and efforts addressing proximate determinants of fertility other than contraception. Some idea about the non-programme contraception in the state can be made on the basis of non-programme contraceptive prevalence rate through the National Family Health Survey. The non-programme contraceptive prevalence rate in the state was around 5 per cent in the year 1991 which increased to 7 per cent in 1998-99. The non-programme contraception appears to account for less than 15 per cent of the total contraceptive use in the state. The increase in the non-programme contraceptive prevalence rate in the state has been comparatively slower than the programme contraceptive prevalence rate. This shows that the non-programme contraception in the state is yet to pick up the momentum.

Table 6.9: Prevalence of non-programme contraception in Madhya Pradesh.

Method	1992		1998-99	
	Proportion of non-programme source of supply (Per cent)	Estimated prevalence rate (Per cent)	Proportion of non-programme source of supply (Per cent)	Estimated prevalence rate (Per cent)
Oral Pill	59.8	0.42	68.7	0.69
IUD	23.4	0.26	33.5	0.27
Condom	74.1	1.63	85.3	2.47
Female Sterilization	5.3	1.40	6.1	2.18
Male Sterilization	3.1	0.60	5.2	0.11
Others	100.0	1.00	100.0	1.40
All methods		4.86		7.12

The application of the contraceptive prevalence model also provides estimates of births averted due to non-programme contraception in the state (Table 6.10). In 1991, about 0.05 million births were averted in the state due to the non-programme contraception. This number more than doubled to 0.24 million in the year 2001. In 1991, the total number of births averted through non-programme contraception were less than 5 per cent of the total number of births

averted through programme contraception. In the year 2001, this proportion increased to more than 15 per cent suggesting the expansion of non-programme family welfare services delivery system in the state.

7 Madhya Pradesh Population Policy 2000

Madhya Pradesh Population Policy 2000 is the official response to the prevailing state of population and population stabilization efforts in the state. The mission of the Madhya Pradesh Population Policy 2000 is to improve the quality of life of the people by achieving a balance between population, resources and environment. The Policy advocates that rapid reduction in fertility and mortality is essential to achieve population stabilization and improvements in the quality of life of the people. The Policy also recognizes that although the family welfare programme has been successful in slowing population growth rate through a reduction in fertility, its primary and continued focus on family planning, especially the reliance on terminal methods, particularly female sterilization, cannot be considered as a holistic approach to address population issues and concerns specific to the state. The Policy, therefore, calls that efforts to promote voluntary family planning through organized activities and programmes are more effective when they are coupled with the implementation of other policies and programmes such as those related to increasing the age at marriage, improved provision of comprehensive reproductive health services, universal education, empowerment of women, and social welfare, etc. As such, the Policy attempts to give a development orientation to strategies and programmes designed to address population issues and concerns of the state (Government of Madhya Pradesh, 2000).

The intermediate goal of the Policy is to achieve a total fertility rate of 2.1 by the year 2011 through an increase in contraceptive prevalence rate to around 65 per cent; a reduction in infant mortality rate to around 62 infant deaths per 1000 live births; and a reduction in the maternal mortality ratio to around 220 maternal deaths for every 100000 live births. The Policy calls for policy level initiatives in the following key areas:

- Creating an environment conducive to planned family and creating the demand for family planning and reproductive health services.
- Increasing collaboration and involvement of all stakeholders, particularly *Panchayat Raj* Institutions, urban local bodies, the private sector and the non-government organizations in community mobilization and programme implementation.
- Defining and securing active and effective involvement of government departments, especially, development departments in achieving population policy goals and objectives.
- Improving the management of the family planning programme to achieve excellence in meeting the needs of clients.

Table 7.1: Specific objectives of Madhya Pradesh Population Policy 2000.

Intermediate objectives	Immediate objectives
Reduce total fertility rate to 3 children per woman by 2005 and to 2.1 children per woman by 2011	<ul style="list-style-type: none"> a. Increase the use of modern contraceptive methods to 55 per cent by 2005 and to 65 per cent by 2011 through universal access to full range of safe and reliable family planning methods. b. Reduce the proportion of couples having an unmet need for contraception to space and limit births by half by 2005, by 75 per cent by 2009 and by 90 per cent by 2011. c. Increase the proportion of male sterilization acceptors to total sterilization acceptors to 7 per cent by 2005 and to 20 per cent by 2011. d. Increase the use of spacing methods by at least 50 per cent among young married couples with wives aged 15-24 years and ensure counseling and follow up care for all spacing methods users. e. Increase the average age at marriage for girls to at least 18 years by 2011. f. Increase the age of mother at birth of her first child to 20 years by 2005 and to 21 years by 2011. g. Increase the gap between first and second child to three or more years by 2005. h. Motivate all eligible couples with two or more children to adopt terminal contraceptive methods. I. Take account of regional variations in mortality and fertility and formulate appropriate service delivery strategies and system suitable for each region.

Intermediate objectives	Immediate objectives
Reduce maternal mortality to 330 per 100,000 live births by 2005 and to 220 by 2011.	<ul style="list-style-type: none"> a. Increase registration of pregnant women in first trimester to 70 per cent by 2005 and to 90 per cent by 2009 and provide full range of ANC services to all pregnant women. b. Raise proportion of institutional deliveries to 25 per cent by 2005 and to 50 per cent by 2011. c. Ensure that trained birth attendants assist at least 75 per cent of births by 2005 and 90 per cent by 2011. d. Create pregnancy testing facility at each sub-health centre by 2003. e. Create necessary facilities in 50 per cent of block-level health institutions for emergency obstetric care, medical termination of pregnancy and prevention and management of reproductive tract infections including sexually transmitted infections by 2005 and in all institutions by 2011.
Reduce infant mortality rate to 75 infant deaths per 1000 live births by 2005 and to 62 by 2011. Reduce child mortality to 90 by 2005 and to 65 by 2011.	<ul style="list-style-type: none"> a. Full immunization to 70 per cent children by 2005 and 90 per cent by 2009. b. Increase the use of oral rehydration salts(ORS) packets and recommended home available solutions among children suffering from diarrhoea to 80 per cent by 2005 and to 90 per cent by 2009. c. Reduce the incidence rate of acute respiratory infections (ARI) to 50 per cent by 2005 and to 75 per cent by 2009. d. Introduction of facilities of treatment of acute respiratory infections in all block level institutions by 2005. e. Creation of appropriate facilities of treatment of diarrhoea at all sub-health centres by 2005.

Intermediate objectives	Immediate objectives
	f. Ensure that at least 50 per cent of the children receive all required doses of vitamin 'A' by 2005 and 90 per cent by 2009.
Others	<p>a. Educate, counsel and provide services including voluntary HIV testing, etc. and improve access to male and female condoms to prevent transmission of sexually transmitted infections.</p> <p>b. Provide quality services to infertile couples at the district level by the year 2003.</p> <p>c. Achieve universal primary education by 2005 and ensure that at least 30 per cent of girls in the age group 14- 15 compete elementary education by 2005 and 50 per cent by 2011</p>

In order to strengthen political support for the cause of population stabilization, ensure inter-sectoral coordination and institutionalize integration at district level and below, the Madhya Pradesh Population Policy 2000 outlines an elaborate implementation mechanism. This mechanism consists of

- State Population and Development Council to be chaired by the Chief Minister as the apex policy making body in population and development related issues in the state.
- State Population Policy Implementation Committee to be chaired by the Chief Secretary.
- District Population and Development Coordination Committee in each district to be headed by the Chairperson of District Planning Committee.

The Madhya Pradesh Population Policy 2000 outlines a framework that is radically different from the traditional approach. The Policy suggests a holistic, multi-sectoral approach to addressing population related issues. This approach is directed towards the well being of the individual and the family through meeting out the felt family welfare needs.

Another innovative feature of the Policy is its focus on decentralized approach to planning for population stabilization efforts. The policy recognizes that population related issues and concerns can best be addressed only through a decentralized, district-based approach of planning and implementation of population stabilization efforts. This approach is also instrumental in securing sustained support and active involvement of the community through its representatives.

Recently, the issue of implementing broad-based, multi-sectoral population policies has been subject to an intensive discussion and debate (Population Council, 1997). The conclusion, based on the experiences from different countries, was that effective implementation of broad-based, multi-sectoral population policy is fraught with a number of problems. These include, among others, institutionalization of multi-sector population policy, compartmentalization of multi-sectoral activities and programmes and the capacity of implementing such policies at the local level. The consensus during the debate was that population should be treated as a cross-cutting perspective in social and economic development processes rather than a sector at its own as is the popular wisdom at present. It was stressed during these discussion and debate that successful implementation of multi-sectoral population policy requires a broad-based constituency of support which is based on compelling rationale and empirical evidence.

Effective implementation of Madhya Pradesh Population Policy 2000 requires a strong and sustained policy environment. The policy environment is composed of the factors that influence the implementation process but that are beyond the control of the management of population stabilization efforts. These factors play a very crucial role in operationalizing the Policy as they are related to decision making at the highest level. In the absence of a strong policy

environment, implementation of the policy may lose direction, especially at the local level and the achievements of individual department and agency involved in population stabilization may not add to achievements that are necessary to realize the policy goals.

The policy environment of population stabilization efforts is defined as the factors affecting the performance of these efforts that are beyond the complete control of the management of population stabilization programme. The policy environment is modified over time through the planned implementation of the policy activities such as the process of policy planning and policy development (Bertrand, Magnani, Rutenberg, 1994).

The importance of the policy environment in the effective implementation of Madhya Pradesh Population Policy is obvious. Improvements in the policy environment may lead to stronger service delivery (access, quality, image), increased service utilization and use of family planning methods and enhanced institutionalization of population stabilization activities within the social and economic development system. Institutionalization also effects levels of domestic policy inputs in the following period through the feedback loop.

The policy environment has implications to both the demand and supply sides of population stabilization efforts and activities. On the supply side, the policy environment contributes directly both to improved service delivery and service utilization in the short run and to enhanced sustainability of population stabilization activities in the long run. On the demand side, on the other hand, the policy environment affect the demand for population stabilization efforts and activities through political support and stated policy towards population stabilization. As such improving the policy environment of population stabilization activities and programmes is crucial for effectively planning and implementing population stabilization activities and programmes and integrating these programmes and activities in the social and economic development processes.

A number of indicators have been suggested for measuring and analyzing the policy environment of population stabilization activities and programmes (Bertrand, Magnani, Rutenberg, 1994; Lapham and Mauldin, 1985; Ross et al. 1988, 1992). It is possible to make an assessment of the prevailing policy environment of population stabilization efforts in Madhya Pradesh by using these indicators. The results of the exercise are presented in table 7.2 in which scores are given for a set of 10 indicators ranging from a minimum of 0 to a maximum of 10. A value of 10 for any of the ten indicators indicates an ideal policy environment in favour of population stabilization. On the other hand, a value of 0 indicates the most unfavourable policy environment. In this way the policy environment of population stabilization efforts in the state can be represented in a ten dimensional space. The ideal and the most favourable policy environment is reflected through a score of 100 whereas the most unfavourable policy environment is reflected through a score of zero.

Table 7.2: The Policy environment for population stabilization in Madhya Pradesh: Results of the scoring exercise.

Indicator	The prevailing situation	Score
1 Degree of decentralization of political-administrative system	There are some efforts towards village level planning but they are not sufficient. There are little efforts to strengthen local institutions in areas of planning and integration.	4
2 Existence of population stabilization policy unit	The population stabilization policy unit does not exist. However, State Population Resource Centre has been established which can bear the responsibilities of population stabilization policy unit.	5
3 Existence of a population policy development plan	There is no policy development plan to evolve a perspective vision of population stabilization activities for the next 10-15 years. There is currently no system of institutionalizing the policy development process within the existing political-administrative framework.	3
4 Number of appropriately disseminated policy analyses	Policy level research in population stabilization specific to Madhya Pradesh is perhaps the weakest dimension of the policy environment. There is no system of disseminating the findings of whatever limited research is there in simple and easy to understand forms.	1
5 Number of awareness-raising events targeted to leaders	There is little focus on raising the awareness of the political class and peer groups for building up consensus for population stabilization activities.	3
6 Existence of a strategic plan for population stabilization	A strategic plan for conceptualizing, planning and implementing population stabilization activities and programmes does not exist. There is little attempt in this direction.	2

Indicator	The prevailing situation	Score
7 Integration of population factors in development planning	Frameworks or models of integration are missing. Moreover, the information base and the technical expertise required for such integration is lacking.	3
8 Formal population policy addressing fertility and family planning	A well defined and clearly targeted population policy addressing fertility and family planning exists. The current population policy has been developed through an external initiative rather than through a domestic thinking and debate.	5
9 Coordination of population stabilization activities	Institutional mechanisms for coordinating population stabilization activities at the highest level of the government have been created in the form of State Population and Development Council headed by the Chief Minister and State Population Policy Implementation Committee headed by the Chief Secretary of the state. However, a comprehensive system of monitoring the implementation of the policy is not in existence.	5
10 Level of population stabilization programme within the public administration system	The population stabilization programmes and activities have got a low place in the political-administrative system. The National Family Welfare Programme is the mainstay of population stabilization activities. It is linked with the primary health care delivery system. At the policy level, there is no person who is specifically responsible for the implementation of Madhya Pradesh Population Policy 2000.	4

The assessment exercise suggests that Madhya Pradesh has a score of 35 out of maximum 100 in terms of the policy environment for population stabilization. This score may be termed as weak. The processes and institutions required to translate the policy options to the desired policy outputs are missing in the state. There is a need to evolve a systems approach for maximizing the

effects and benefits of population stabilization efforts. This systems approach should be institutionalized in the existing political-administrative system by creating necessary administrative structures so that it can be sustained irrespective of any external initiative or push. Creating these institutions and establishing these processes will require substantial additional resources but there are no short-cuts.

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