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The Quality of Population in Madhya Pradesh

Alok Ranjan

Introduction

Madhya Pradesh is widely regarded as one of the chronically sick states of the Republic of India in terms of both demography and development, along with the states of Bihar, Rajasthan, Uttar Pradesh and Orissa and the newly created states of Chhattisgarh, Jharkhand and Uttaranchal. This is so when it is repeatedly stressed that Madhya Pradesh has probably the best potential to get rid of its chronic sickness and leap forward on the development front. The challenge is how to translate this oft repeated potential into reality. For example, most of the Madhya Pradesh has agro-climatic potential to yield high returns of agriculture because of reasonable-to-high rainfall and availability of perennial river waters. But the cropping intensity in Madhya Pradesh (132 per cent) is lower than the national average (134 per cent). Similarly, the proportion of net irrigated area to the net sown area in Madhya Pradesh (37.4 per cent) is lower than the national average (40.2 per cent). A similar situation prevails in case of consumption of fertilizers per hectare gross cropped area.

It is argued that the main cause of persisting underdevelopment and poor demographic situation in Madhya Pradesh lies in human failure rather than natural factors. It appears that the human activity required to translate the potential of development into reality is missing in the state. Poor human activity, it may be emphasized, has a number of ramifications for improving the population quality. Poor human activity may result in poor political commitment to development issues and issues related to human welfare, bad governance, corruption and coercion in public systems, poor upkeep of development infrastructure, etc. Poor human activity also leads to poor efficiency of the production processes, poor performance of the social and economic production systems and a very high degree of distribution inequality.

One reason for the poor human activity in Madhya Pradesh is the poor quality of population. Improving the quality of population is necessary to promote the type of human activity which is necessary for social and economic progress and for improving the living standards of an average individual. The impact of social and economic progress on the living standards is increased substantially when the population quality is good as compared to the population with a poor quality. On the other hand, the impact of population stabilization efforts is limited when the population quality is poor.

In India, concerns about the impact of population issues on the processes of social and economic development and standards of living are now more than half a century old. These concerns are amply reflected by Pt. Jawaharlal Nehru in his famous *The Discovery of India* as early as in 1938. Pt. Nehru was of the view that with the eastward sweep of modern medical technology, the population of the country was bound to increase rapidly and the major challenge for the country will be the productive utilization of the rapidly increase population. This wisdom of Pt. Nehru was largely responsible for the adoption of an official population policy as early as in 1952 and to launch the official National Family Planning Programme which is now known as the National Family Welfare Programme. However, the

programme was focused on population control through birth limitation. Issues related to the quality of population were given little attention in programme conceptualization and programme implementation.

It may be argued that a shift of the emphasis from population control to population quality may not only help in accelerating the social and economic progress thereby leading to an accelerated improvements in the standards of living but will also contributes to addressing the problem of rapid population growth. Population control and population stabilization carried little meaning if the quality of population remains poor and unchanged. Rather, population control or stabilization will take a firm root as a voluntary and personal decision when it is fruited by the achievements of a certain threshold in population quality.

Conceptualizing Quality

What contributes the quality of population is a matter of extensive debate since times immemorial. Unlike quantity, quality has different connotations to different people. Agreement of a small set of indicators is therefore unlikely. For many years, the quality of population was equated with the probability of survival. The general belief during the ancient period was that resources determined the size of the population. Abundance of resources, therefore was thought essential to improve the survival probability and population quality. Malthus, on the other hand, argued that the human capacity of procreation was unlimited whereas there was a limit to increase resources (food) availability to meet the needs of ever increasing population. On the basis of these arguments, Malthus argued that ultimately misery and vice would prevail over the world. To avoid this situation, Malthus advocated preventive checks to limit the human capacity of procreation and hence to control population growth. In the Malthusian framework, limiting the human capacity of procreation was an integral component of the framework for improving the quality of population. The wisdom and arguments of Malthus started the great debate on role of population in social and economic development processes. This debate continues even today. This debate revolves two broad line of thinking. One line of thinking asserts improving resources availability to improve the quality if population while the other line advocates controlling population growth as necessary to improve the quality of population. Improving resources availability per capita is synonymous to social and economic development whereas controlling population growth is synonymous to reducing fertility primarily through the use of family planning methods. Thus while the advocates of the development stream coined the slogan 'development is the best contraceptive', the propagandists for the population control argued that contraception is the most effective way of rapid social and economic progress. The debate continues and, till today, there is no conclusive winner.

Although, both the advocates of the development approach and the propagandists of population growth justify their wisdom in the context of improving the population quality, the quality of population per say remains loosely defined. Traditionally, availability of resources per capita has been regarded as the basis for

improving the quality of population. If it is assumed that this traditional wisdom holds good even today, then it can be argued that the quality of population depends upon the efficiency of the social and economic production system. Since, the man is the integral part of any social and economic production system, it is obvious that one important factor in enhancing the efficiency of the social and economic production system is the capability of the man to get engaged in some productive activity. According to Sen, capability is the ability and potential of an individual to do and to be. In other words, capability of an individual implies 'what a person can do with what he or she has.' At the individual level, capability is determined by three factors - individual endowment, individual capacity and social opportunity. The three components are complementary and reinforce each other.

Arguing on a similar manner, the quality of a population can be defined in terms of the capabilities of the population - what a population can do with what it has. Like the capability of an individual, the capability of any population can also be defined in terms of three dimensions - the dimension of productive endowment or stock, the dimension of the productive capacity and the dimension of the opportunity of the involvement of the productive stock in productive activity. Since, population of specific age groups only can be involved in the productive processes, the productive endowment or productive stock of any population may be defined in terms of the number of persons in the working ages. On the other hand, the productive capacity may be defined in terms of the health and educational status of the productive stock while the opportunity of involvement of the productive stock of the population in some productive activity may be defined in terms of the rate of participation of the productive stock of the population in the productive process. In other words, the quality of any population may be analyzed in terms of the size, capacity and opportunity of the productive stock of the population.

The Quality of Population in Madhya Pradesh

a. Productive Endowment. It is well known that the endowment of an individual in terms of involvement in any productive process varies with the age of the individual. When classified by age, the population can be divided into three broad categories - child population, working age population and old age population. As the name implies, it is the working age population that is primarily involved in one or the other type of the productive process to mobilize resources necessary for meeting the needs of the population and hence constitutes the productive stock of the population. Obviously, larger is the working age population, the higher is the productive endowment of the population. Thus the productive endowment index may be calculated as the ratio of the working age population to the non working age population (child population and the old age population). This index gives an idea of the productive stock of the population. Obviously, the prevailing levels of the population endowment index are determined by the past trends and current levels of fertility, mortality and migration.

In Madhya Pradesh, the productive endowment or productive stock of the population has shown an increasing during the thirty years between 1971 and 2001

as the result of the decreasing trends in fertility and mortality. In the year 1971, the productive endowment index was 1007 working age people for every 1000 non-working age people. This ratio increased to 1186 at the 2001 population census. The productive endowment index is expected to increase further in the coming years as the result of the decreasing trends in fertility and mortality. It is projected that the productive endowment index in Madhya Pradesh will peak around the year 2031 when there will be around 1890 people in the working ages for every 1000 people in the non-working ages. This means that by the year 2031, there will be almost 2 working age persons for every one non-working age person in the state. Obviously, if all these people are productively utilized, the resources availability to meet the needs of the population will increase considerably leading to substantial improvements in the quality of population.

The productive endowment index varies widely by different sub-groups of the population. According to the information available through the 2001 population census, the lowest productive endowment index has been estimated for the rural Scheduled Tribe Population of the state which is well below the state average. On the other hand, the highest productive endowment index is estimated for the non-Scheduled Castes and non-Scheduled Tribe population in the urban areas. In general, the productive endowment index is lower in rural as compared to urban areas of the state currently as well as in the past. This difference is due to both migration of the working age population from the rural areas to the urban areas and the rural-urban difference in the levels of fertility and mortality. In any case, the size of the population stock that can be productively utilized is substantially smaller in rural Scheduled castes population as compared to the urban non-Scheduled Castes and non-Scheduled Tribe population of the state. One implication of this difference in the productive endowment of the two population subgroups is that the scope of improving resources availability in the rural Scheduled Castes population is limited as compared to the scope of improving the resources available in the urban non-Scheduled Castes and non-Scheduled Tribe population simply because the productive endowment of the rural Scheduled Tribes population is substantially lower than the productive endowment of the urban non-Scheduled Castes and non-Scheduled Tribes population. In fact, the productive endowment is poorest in the Scheduled Tribes population of the state.

b. Productive Capacity. It is well known that the productive capacity of any individual is determined by his or her educational and health status. Arguing in a similar manner, the productive capacity of any population is also determined by the educational and health of its productive stock - the population in the working ages. The productive capacity of a population with the productive stock of relatively poor educational and health status will obviously be lower than the productive capacity of a population with the productive stock of relative better educational and health status.

The educational status of the productive stock of the population of Madhya Pradesh is summarized in tables 2 to 4. The interpretation that can be drawn from these tables is that the educational status of the productive stock of the population

of the state is extremely poor. For the state as a whole, less than one fifth of the productive stock has at least metric level education and this proportion is less than 13 per cent in case of female productive stock. In the rural areas, the situation can simply be termed as precarious and in the Scheduled Tribes and Scheduled Castes populations, deplorable. Even in the non Scheduled Castes and non-Scheduled Tribes population in the urban areas of the state, less than half of the people in the working ages are having at least matric level education and for female, this figure is still remains less than 40 per cent. If the educational status of the working age population of the state and the variations in the educational status across different population sub-groups is any indication, then it is obvious that the productive capacity of the population of the state is, at best, limited and even this limited productive capacity is concentrated in a small sub-group of the population - non Scheduled Castes and non-Scheduled Tribes population in the urban areas of the state. In the other sub-groups of the productive stock, especially among the Scheduled Castes and Scheduled Tribes, the productive capacity remains extremely limited.

In addition to the educational status, the productive capacity of the population also depends upon the health status of its productive stock. Latest information available through the sample registration system suggests that Madhya Pradesh has the dubious distinction of having the highest death rate in the country which clearly indicates that the health status of the population of the state is far from acceptable. Similarly, the expectation of life at birth in Madhya Pradesh has been estimated to be the lowest in the country during the period 1998-2000 (Government of India, 2005). In fact, information available from the sample registration system suggests that during the period 1970-75, the expectation of life at birth in Madhya Pradesh was better than the expectation of life at birth in Uttar Pradesh, Assam and Orissa (Government of India, 1984) but the situation appears to have changed during the period 1998-2002.

Table 5 gives the information about mortality in the working age population (population in the age group 15-59 years) in Madhya Pradesh for the year 2001. The table suggests that the probability of death in the working ages remains high to very high in Madhya Pradesh. Moreover, there are strong differentials in the probability of death across different population sub-groups and across different sexes. First and foremost, the probability of death during in the age group 15-59 years is substantially higher in females as compared to males for the state as a whole as well as for the Scheduled Tribes population and for the non-Scheduled Castes and non-Scheduled Tribe population but in the Scheduled Castes population, male probability of death is marginally higher than female probability of death. The male-female gap in the probability of death during the period 15-59 years is widest in the non-Scheduled Castes and non-Scheduled Tribes population of the state whereas it is narrowest in case of Scheduled Castes population primarily because of relatively higher probability of death among males in the Scheduled Castes population.

In any case, the educational and health status of the productive stock of the population of Madhya Pradesh (population in the age group 15-59 years) clearly

indicates that the productive capacity of the working age population in Madhya Pradesh is, at best, limited. The issue of special concern is the exceptionally high probability of death of females of working ages. One reason may be the exceptionally high reproductive load among married females of reproductive age group (15-49 years). Other reasons may include a host of social, cultural and economic factors and the availability of appropriate health care services. Obviously, the poor educational and health status of the working age population results in relative poor productive capacity of the population of the state. This poor productive capacity, in turn, results in the poor quality of the population.

c. Productive Opportunity. The size and the capacity of the productive stock of the population contributes to improving the resources availability in any population only when it is given an opportunity to participate in the social and economic production system. If the productive stock does not have the opportunity to participate in the social and economic production system then the size of the productive stock and its productive capacity do not contribute to increasing the resources availability of the population. The proportion of population engaged in some productive activity is therefore an indicator of the opportunity of the involvement of the productive stock of the population in the social and economic production system.

An idea about the proportion of the population engaged in some productive activity can be made from the estimates of the work participation rate available from the 2001 population census. Work, in the population census, is defined as participation in any productive activity. It may be physical or mental in nature and involves not only the actual work but also effective supervision and direction of work. The population census classifies workers into two categories - main workers and marginal workers. A main worker is a person who is engaged in a productive activity for at least 183 days in a year, i.e. for at least six months in a year. All workers who are engaged in some productive activity for less than 183 days in a year are classified as marginal workers. It is obvious that if a person is engaged in some productive activity even for one day in a year then he or she is classified as a marginal worker in the population census. From the view point of the productive opportunity, therefore, the concept of main workers is more relevant than the concept of marginal workers.

Estimates of crude main work participation rate in Madhya Pradesh are presented in table 6 for the year 1981 through 2001 which indicate that the proportion of the population engaged in some productive activity is decreasing over time in the state. A decreasing main work participation rate indicates towards decreasing opportunity for the population of the state to participate in the social and economic production system. By contrast, the all work (main+marginal) participation rate is increasing over time which implies that an increasing proportion of the population of the state is having only a restricted opportunity to participate in some productive activity. The situation appears to be particularly poor in case of females where the main work participation rate is already very low and it is decreasing over time. Obviously, there is little expansion of the opportunity over

time to participate in the social and economic production system for the population of the state and the prevailing levels of the opportunity, measured in terms of the main work participation rate are poor, especially for females.

Estimates of age-specific main work participation rate are not currently available through the 2001 population census. However, even in the absence of such information, it is obvious that social and economic development planning and social and economic development processes in the state have not been able to enhance the opportunity of the productive stock of the population to participate in the social and economic production system. The current opportunity of participation in the productive processes is, in general, restricted and it has a direct impact on the quality of the population in terms of resources mobilization.

Conclusions

When Malthus advocated the need of preventive checks on population 200 years ago, he was concerned primarily about the resources required for meeting the subsistence needs of the population. He argued that unregulated growth of population would always create problems in meeting the subsistence needs of the population in terms of the resources demand and resources availability. But resources mobilization depends upon not only the availability of resources but also the capability of the man itself. If the capability of the man remains poor, even the resources availability may not ensure their mobilization in a manner that fulfils the subsistence needs of the population.

Madhya Pradesh is a state which is known for the abundance of natural resources. But, as the present analysis reveals, the capability of the population of the state remains poor to mobilize the available resources for meeting its needs. The productive stock of the population of the state is increasing over time. However, the productive capacity of the productive stock remains poor. Moreover, the opportunity of participation of the productive stock in the social and economic production processes appear to be shrinking over time. The quality of the population of the state remains poor in the sense that its productive stock is not being effectively productively utilized.

The Madhya Pradesh Population Policy 2000 calls for improving the quality of life of the people of the state by striking a balance between population, resources and environment. This balance between population, resources and environment can be achieved only when the quality of population is improved in terms of optimum utilization of its productive stock. This is possible only when the productive capacity of existing stock is improved and opportunities for the involvement of the productive stock in social and economic productive activities are expanded.

Table 1: Population endowment index for Madhya Pradesh: 2001.

Population sub-group	Combined	Rural	Urban
Total	1186	1100	1466
Scheduled Castes	1088	1034	1275
Scheduled Tribes	1020	1005	1276
Non-SC/ST	1269	1164	1515

Table 2: Educational status of population in the age group 15-59 years in Madhya Pradesh: 2001 - Total population.

Population	Educational level	Combined	Rural	Urban
Total	Primary	16.00	16.38	15.08
	Middle	12.49	11.20	15.65
	Matric and above	19.94	10.92	42.04
Scheduled Castes	Primary	2.34	2.30	2.45
	Middle	1.65	1.47	2.09
	Matric and above	12.04	8.11	23.07
Scheduled Tribes	Primary	1.87	2.37	0.63
	Middle	1.06	1.27	0.55
	Matric and above	5.15	3.94	20.81
Non-SC/ST	Primary	11.79	11.70	12.00
	Middle	9.78	8.46	13.01
	Matric and above	25.86	14.48	46.30

Table 3: Educational status of population in the age group 15-59 years in Madhya Pradesh: 2001 - Male population.

Population	Educational level	Combined	Rural	Urban
Total	Primary	19.22	20.81	15.42
	Middle	16.07	15.62	17.15
	Matric and above	26.24	16.79	48.94
Scheduled Castes	Primary	3.06	3.17	2.78
	Middle	2.35	2.26	2.57
	Matric and above	17.88	13.23	30.78
Scheduled Tribes	Primary	2.55	3.30	0.74
	Middle	1.51	1.87	0.66
	Matric and above	7.89	6.38	26.49
Non-SC/ST	Primary	13.62	14.33	11.89
	Middle	12.21	11.50	13.92
	Matric and above	33.05	21.76	53.14

Table 4: Educational status of population in the age group 15-59 years in Madhya Pradesh: 2001 - Female population.

Population	Educational level	Combined	Rural	Urban
Total	Primary	12.44	11.54	14.69
	Middle	8.53	6.37	13.93
	Matric and above	12.98	4.50	34.20
Scheduled Castes	Primary	1.55	1.35	2.06
	Middle	0.87	0.61	1.54
	Matric and above	5.47	2.36	14.28
Scheduled Tribes	Primary	1.11	1.36	0.49
	Middle	0.56	0.62	0.43
	Matric and above	2.34	1.47	14.35
Non-SC/ST	Primary	9.77	8.83	12.13
	Middle	7.09	5.14	11.97
	Matric and above	17.79	6.35	38.53

Table 5: Mortality in working age population in Madhya Pradesh: 2001.

Sex	Population			
	Total	Scheduled Castes	Scheduled Tribes	Non-SC/ST
Probability of death in the age group 15-60 (${}_{45}q_{15}$)				
Male	0.2207	0.2626	0.2355	0.2020
Female	0.2905	0.2616	0.2953	0.2814
F-M	0.0698	-0.001	0.0598	0.0794
Death rate in the age group 15-60 (${}_{45}m_{15} * 1000$)				
Male	5.5120	6.7189	5.9332	4.9933
Female	7.5540	6.6879	7.6980	7.2767
F-M	2.042	-0.031	1.7648	2.2834
Proportion of deaths in the age group 15-60 to total deaths (Per cent)				
Male	18.86	21.88	19.28	17.65
Female	24.06	21.11	23.69	23.81
F-M	5.2	-0.77	4.41	6.16

Table 6: Main work participation rate in Madhya Pradesh: 2001.

Population	1981	1991	2001	Rate of change
Person	38.41	37.67	32.22	-0.806
Male	53.52	51.51	44.85	-0.810
Female	22.34	22.82	18.74	-0.806
M-F	-31.18	-28.69	-26.11	