Social Equity Analysis in Madhya Pradesh, India – A Reality Check

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Abstract. Social equity has been recognized globally as an important contributing factor for inclusive growth and has been the focus of programming by many governments. The present study considers the status of social equity in Madhya Pradesh with special reference to health, education and socioeconomic aspects of social development. The policies along with central/state schemes focusing on sectors such as education, health, nutrition, WASH and tribal development have been reviewed. Attention was given to understand the impact of existing policies/schemes and to determine the gaps in the existing system. The paper is organized as follows. In the first phase, the study analyses the status of health, education, nutrition, and water, sanitation and hygiene (WASH) sectors in Madhya Pradesh. Secondly, the global perspective is given in the local context to understand the various factors influencing the outcome indicators. Thirdly, policy prescription and recommendations are provided to confirm that the strategies and policies will be able to address those bottlenecks. These findings could have significant implications for the policies aiming to reduce social disparity and inequalities in the state.

Key words: Madhya Pradesh (MP), Gross State Domestic Product (GSDP), millennium Development goals (MDG) Sustainable Development Goals (SDG) 2030, Social Equalities, Infant Mortality Rate (IMR)

Introduction

Equity means individuals should have equal opportunities to pursue a life of their choosing and be spared from extreme deprivation in outcomes (World Development Report, 2006). Equity is thus the absence of avoidable or remediable differences among groups of people, whether those groups are defined socially, economically, demographically or geographically (WHO). Greater equity is imperative for poverty reduction: through potential beneficial effects on aggregate long-run development and through greater opportunities for poorer groups within any society.

When one part of society is excluded from the development process, it will lead to widening disparities with its impact felt across society. Excluding parts of society from reaping the fruits of development undermines the nation's continuous efforts across the social, economic and political spectrum. The inequities, prevalent in society, thus undercut its economic growth as well as its poverty reducing potential.

Inequity, also leads to poor health and education outcomes. There exists a positive relationship between economic inequity and poor health. Economic inequity leads to shorter, unhealthier and unhappier lives, and to higher rates of teenage pregnancy, obesity, violence, addiction and imprisonment, and the consequences are felt by all members of society, not just poor people (Wilkinson & Pickett, 2009). Therefore, giving more to those who need it. The need to focus on equity therefore goes far beyond economic benefits.

Equality vs Equity: Equality has to do with giving everyone the exact same resources, whereas equity involves distributing resources based on the needs of the recipients. Our society is continuing to make steps towards equality but being equal and fair is not always straightforward. Sometimes, people may need differing treatment to make their opportunities

the same as another's. This is called equity. Does this mean we need to treat people differently in order to gain equality? If so, how can we do this without undermining equality?

Equity is not the same as equality, nor is it the same as inequality. It is simply providing enough to those who need it, which is proportionate to their own circumstances, in order to ensure that everyone has the same opportunities; for example, providing more support to a disadvantaged student so they can reach their full potential

Situation Analysis – A Reality Check in MP

State of Economy, Health and Development of MP

The Gross State Domestic Product (GSDP) of Madhya Pradesh in 2016-17 is US $ 99.4 billion, which has increased significantly at a growth rate of 15.21 per cent from 2011-12. The Net State Domestic Product (NSDP) increased significantly at a growth rate of 15.16 per cent between 2011-12 and 2016-17 to US $ 88.77 billion. In 2016-17, the state registered a double digit GSDP growth rate of 14 per cent against the national average of 7.1 per cent. Per capita GSDP of the state increased from 3.9 per cent in 2014-15 to 10.6 per cent in 2016-17 at `59,052.

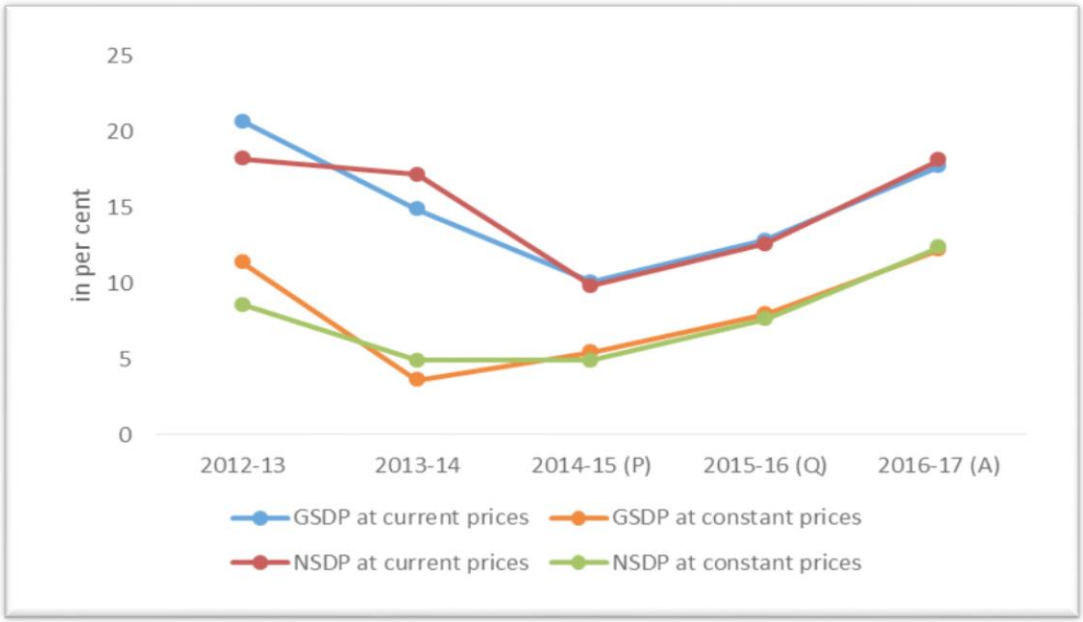

Figure 1. GSDP and NSDP growth rate
Source: Department of Economics and Statistics, Madhya Pradesh

The main contributor to the state's economy is the primary sector- largely agriculture, fishing and forestry. Agriculture and allied activities play an important role in the state's economy with a steady rise in its sectoral share while there has been a decline in the shares of industrial and service sectors.

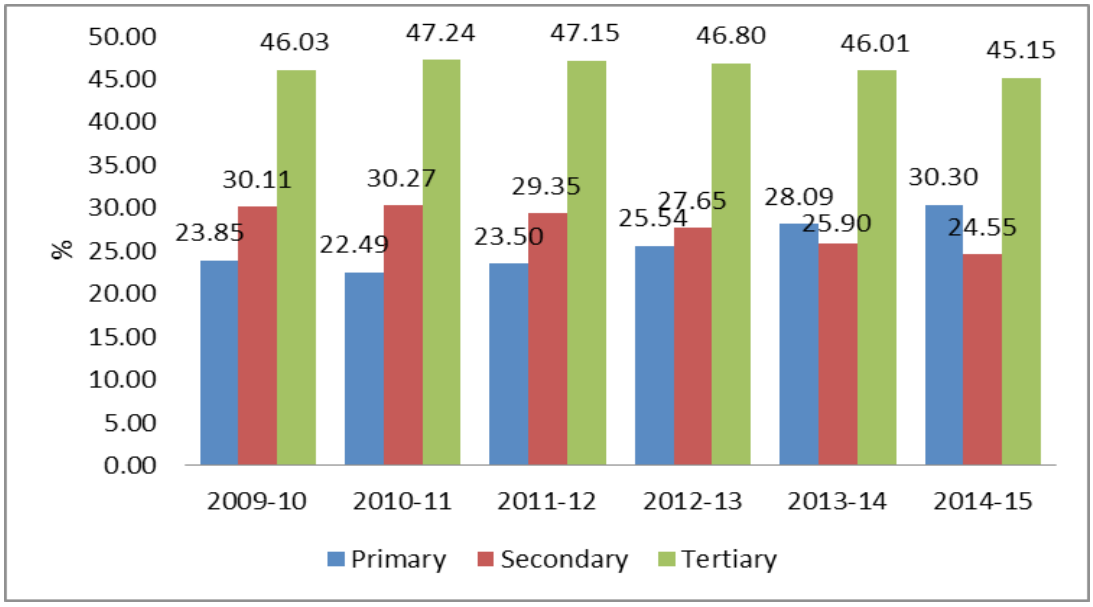

Figure 2. Sector wise shares in GSDP (per cent)
Source: Department of Economics and Statistics, Madhya Pradesh

State of Development

Though Madhya Pradesh has registered a remarkable performance by achieving higher GSDP growth rate, its achievement in terms of human development indicators is among the lowest in India.

Table 1. Madhya Pradesh Development Indicators

Indicators	MP	All India
Literacy Rate (in per cent) (Census 2011)	70.60	74.00
Male Literacy Rate (in per cent) (Census 2011)	80.53	82.14
Female Literacy Rate (in per cent) (Census 2011)	60.02	65.46
Youth Literacy Rate (in per cent) (Census 2011)	83.71	86.14
Infant Mortality Rate (NFHS-4)	51.00	41.00
Maternal Mortality Rate in 2011-13 (SRS Bulletin)	221.00	167.00
Prevalence of Underweight Children under five years of age (in per cent) (NFHS-4)	42.80	35.70
Poverty Head Count Ratio,2009-10 (in per cent) (Planning Commission)	36.70	29.80

Source: Census, 2011; NFHS-4; SRS Bulletin

Madhya Pradesh has shown an improving trend in its health indicators, but it is still one of the lowest performing states in the country. The Infant Mortality Rate (IMR) of the state has been declining since 2006 but it is still one of the highest in India (Government of India, 2015). As per the National Family Health Survey Data (NFHS-4, 2015- 16) the IMR in the state is 51 per 1000 live births, showing improvement from the previous NFHS-3 (70 per 1000 births) in 2005-06. The survey also shows a higher rate of infant mortality and under-five mortality in rural areas when compared with urban areas. The share of underweight children below three years is found to be highest (57.9 per cent) in Madhya Pradesh among the Indian states (NFHS-4). In an attempt to bring out transformational change in the health outcomes across states, NITI Aayog has developed a Health Index to measure states' performances and track incremental changes. The index comprises health outcomes like MMR, U5MR, TFR,

institutional deliveries, immunization coverage etc., governance and information aspects such as data integrity and key inputs or processes including proportion of functional PHCs and vacant healthcare provider positions.

Madhya Pradesh is classified as one of the 'Aspirant' states forming the lowest one-third of the list. In terms of incremental performance, the state was found to be one of the least improved with a single point increase, and maintaining its rank at 17.

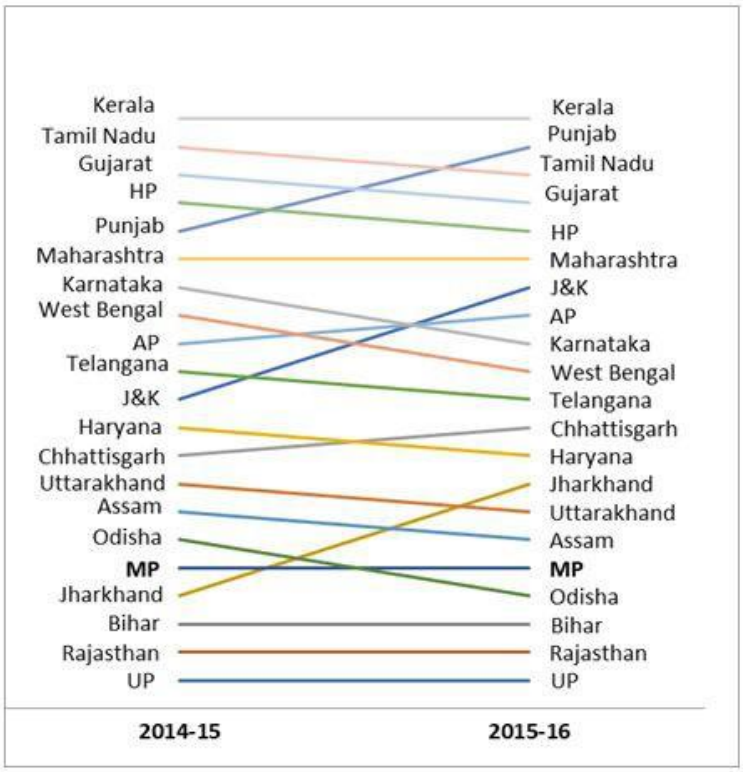

Figure 3. Health Index
Source: Healthy States, Progressive India-2018

In education, the state's performance is below the national average in terms of the outcome indicators. The adult literacy rate (15 years and above) as per the Census 2011 is 64 per cent while the national adult literacy rate is 69 per cent. There is a high disparity between the literacy levels of men and women in the state clearly evident from the difference of 20 points. Mothers' education level is known to improve child nutrition, reduce chances of both maternal and child deaths, and hasten demographic transition to lower birth rates (UNESCO Girls' Education Fact Sheet, 2013).

The state has made significant progress in providing access to drinking water and sanitation facilities to the households, but it still lags behind other states in the country. Based on a survey conducted by the National Sample Survey Office in 2016, open defecation is among the highest in Madhya Pradesh, higher than the national average in both urban and rural areas (Government of India, 2016). This trend is evident even among the richer households in the state (World Bank, 2016).

For the achievement of SDG there is a need to focus on critical sectors such as education, health, water, sanitation and nutrition.

Demography – Rural-Urban Divide

In Madhya Pradesh rural population has a share of 72.37 per cent whereas the urban population accounts for 27.63 per cent. At the all-India level, the number stands at 68.9 per

cent and 31.1 per cent respectively. During 2001-2011, the state registered urban population growth rate of 25.06 per cent. During the same period, rural population registered a decadal growth rate of 18.42 per cent. Among the Empowered Action Group (EAG) states, Madhya Pradesh holds the second position next to Uttar Pradesh (30.23 per cent) in terms of share of urban population to the total population. The eight socioeconomically backward states of Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Uttaranchal and Uttar Pradesh are referred to as the EAG states.

Table 2. Per cent of Urban Population in EAG states

States	Per cent of urban population
Bihar	11.30
Chhattisgarh	23.24
Jharkhand	24.05
Madhya Pradesh	27.63
Orissa	16.69
Rajasthan	24.87
Uttarakhand	22.27
Uttar Pradesh	30.23

Source: Handbook of Statistics on Indian States, RBI

Increasing rate of urbanization has also led to a corresponding increase in the slum population Bhopal, Indore, Gwalior, Jabalpur and Ujjain account for around 39 per cent of the total urban population in the state. Rewa, Dhar and Satna have the highest share of rural population. The three districts account for around 10 per cent of the total rural population in the state.

As per census 2011, 28 percent of the urban population in the state lives in slum areas. It was reported that in the states of Andhra Pradesh, Chhattisgarh, Madhya Pradesh, Orissa and West Bengal more than 1 in 5 urban households lives in a slum. In 2001, there were 339 statutory towns in Madhya Pradesh with 142 slum reported towns in 2001. As per census 2011, number of statutory towns in the state has increased to 364 with 303 slum reported towns. Indore (Municipal Corporation) registers the highest slum population at 590,257. But when it comes to the share of slum population to the total urban population, Jabalpur has the highest share at 35 per cent. Bhopal holds the second position with a share of 25 per cent followed by Gwalior, Indore and Ujjain.

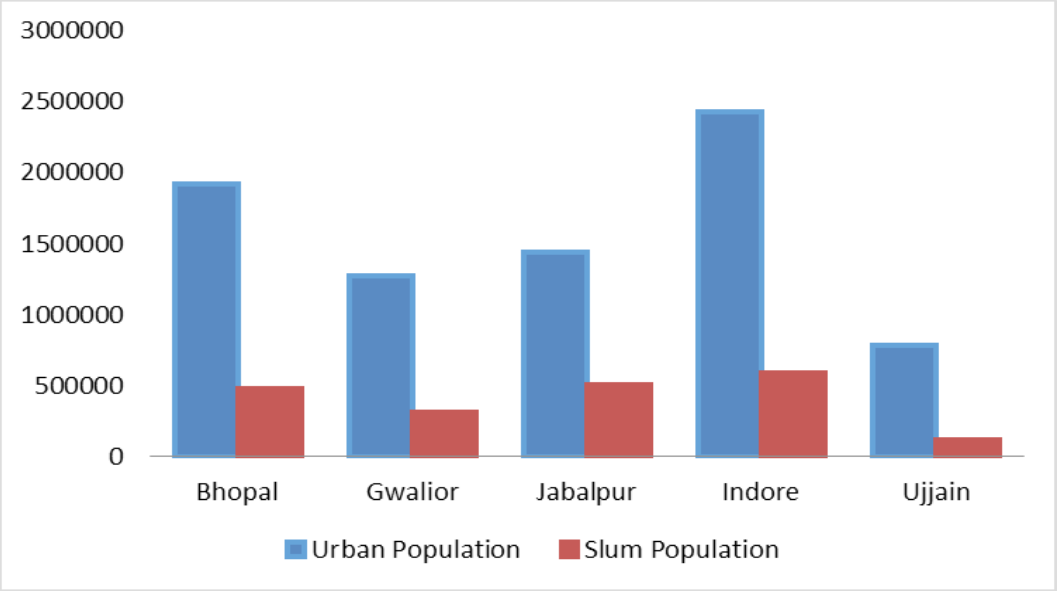

Figure 4. Urban Population vs Slum Population
Source: Census (2011)

The Density of Population

The density of population in Madhya Pradesh has increased from 156 per sq km in 1991 to 236 per sq km in 2011. Among the districts, density of population is found to be higher in the urbanized districts of the state. Density of population is highest in Bhopal with 855 per sq km and Indore is second with 841 per sq km. Over the past decade a rapid increase in the density of population has been witnessed in the urban districts of Bhopal, Indore, Jabalpur and Gwalior. The increasing density of population in the above districts can be attributed to increasing migration to urban districts.

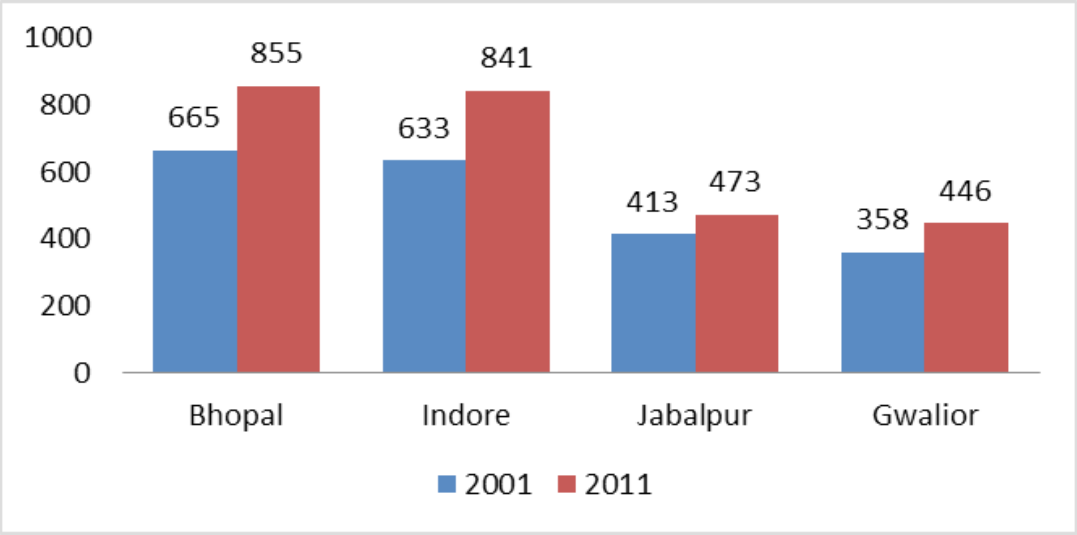

Figure 5. Density of Population (per sq km)
Source: Census (2011)

Madhya Pradesh has a low sex ratio of 931 compared to the national average of 940. The sex ratio of the state has improved from 919 in 2001 to 936 in 2011. Madhya Pradesh is also the state with the highest share of tribal population, accounting for 14.7 per cent of the total ST population in the country.

Table 3. Per cent of ST population and Sex Ratio in districts

Districts	Per cent of ST population	Sex Ratio
Alirajpur	89.00	1011
Jhabua	87.00	990
Barwani	69.40	982
Dindori	64.70	1002
Mandla	57.90	1008
Dhar	55.90	964
Anuppur	47.90	976
Umaria	46.60	950
Shahdol	44.70	974
Betul	42.30	971
Khargone (West Nimar)	39.00	965
Seoni	37.70	982
Chhindwara	36.80	964
Khandwa (East Nimar)	35.00	943
Singrauli	32.60	920
Burhanpur	30.40	951
Ratlam	28.20	971
Harda	28.00	933
Sidhi	27.80	957

It is interesting to note, apart from Balaghat, all the three districts registering sex ratio above 1000 are tribal districts. Similarly districts with more than 25 per cent of tribal population register sex ratio greater than the state average (except Singrauli).

There exists a positive correlation (0.83) between sex ratio and workforce participation rate among females (Figure 2:9). Districts registering high female workforce participation rate also register high sex ratio. Bhind registers the lowest sex ratio in the state at 837 and it also has the lowest workforce participation rate (female) of 8.4 per cent. Similarly, the worst performing districts such as Morena (16.8), Gwalior (14.5), Datia (26) register low workforce participation rate among females. Districts with sex ratio above 1000 register higher work force participation rate for females: Balaghat (47), Alirajpur (48.6), Mandla (49) and Dindori (52.9). When the child sex ratio is taken into account, it can be seen that it declined from 932 in 2001 to 918 in 2011 (Figure 2:10). It should be noted that the decline in child sex ratio is more prominent in rural areas than in urban areas. The decline in child sex ratio is also more prominent among the STs compared to the overall decline in child sex ratio in the state (Figure 2:10). The districts registering highest decline in child sex ratio are Rewa, Sidhi, Sheopur, Singrauli and Annupur. All the above districts have a high share of rural population. The declining child sex ratio reveals the preference for a male child over female.

The state will be able to reap its demographic dividend only by enabling the youth to acquire skills required in the job market. The state government has initiated schemes like 'MP Skill and Quality Improvement Programme' for skill development that would add to the employment generation in the state. The scheme aims to have at least one Skill Development Centre (SDC) in all the 313 blocks of the state. Madhya Pradesh should develop into a globally competitive destination by opening up its economy. This will enable the state to attract more investors and create more opportunities. The state should create a conducive environment to

attract investment- the encouragement of English education is an important step. More linkages to the market will lead to more access, which in turn can have a positive impact across sectors.

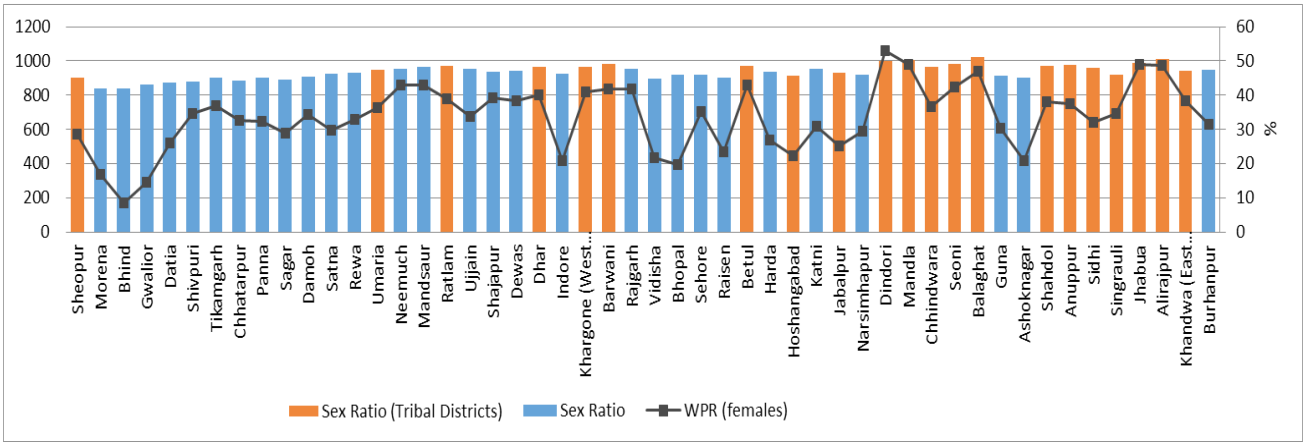

Figure 6. Sex Ratio vs Workforce Participation Rate, females (in per cent) *
Source: Census (2011)

Global Perspective in Local Context

Madhya Pradesh is one among the Indian states that has been performing below the national average in terms of achieving MDG goals. Madhya Pradesh was one among the states with the highest poverty head count ratio and poverty gap ratio, compared to the MDG targets in 2015. There exists visible inequity in terms of different social indicators among the women and children in Madhya Pradesh. High levels of women mortality are seen in terms of key women related survival indicators in Madhya Pradesh. Gender inequity is also a major area of concern in the state that denies women their rights and freedom to choose and avail the required services in the state. India is committed to achieve the Sustainable Development Goals set by the United Nations by 2030. The National Health Policy-2017 was formulated to help realise these goals. MP houses six per cent of the country's population. The performance of human development indicators vary across regions, social denominations, time etc. and across domains such as education, health, nutrition, and social protection etc.

Our analysis shows that the people of Madhya Pradesh live in a very unequal environment. Given the wide range of disparities it is not surprising that inequality is a salient feature of the development status of the state. The omission of equity, which is integral to human development, is a hurdle for realizing Sustainable Development Goals.

Trends and Levels of Inequality

The importance accorded to equity in the 2010 Human Development Report and the human development approach to the post-2015 framework and further SDGs reaffirms the focus on tackling inequality. In Madhya Pradesh, there exist only regional differences in creating an enabling environment for human development as well as gender differences and social group discrimination across districts. The districts are the microcosm of the performance at the state level. To mention a few, in the education front, there are gains in the secondary schooling for young, but the achievement among adults is lower than in other states. While the range of general literacy is 32 per cent, the range of adult literacy in the state is 52.3 per cent. Learning outcomes are among the poorest in the country. In the health area, IMR is the highest in the country despite improvement. Malnutrition in the state is the highest in the country; open defecation is higher than most states. The state is still among the leading contributors of total maternal and child mortality, and morbidity in India. No doubt, various governmental and non-governmental initiatives in the past decade focusing on improving the health status have

brought in significant improvement in the levels of health indices but they have fallen short of targets as planned. There are significant heterogeneities across the 51 districts in the state of Madhya Pradesh in terms of other development indicators too.

The picture becomes pathetic when the situation of tribal and rural population dominated districts is taken into consideration. They lag significantly behind in other categories and other districts. The urban population and those with high per capita income perform much better in terms of education, health, food and nutrition as well as water and sanitation facilities; still they suffer from some peculiar problems as mentioned earlier. Above all, the achievements of the districts are not uniform exacerbating the inequity in the state.

Evaluation of SDGs and Inequity

'Transforming the World: the 2030 Agenda for Sustainable Development' aims to realize 17 goals with 169 associated targets by 2030. The present report does not consider all the goals stated in the document; the major goals considered are evaluated below in the context of MP, recognizing the wide inequity that is substantiated in the previous chapters.

SDG 1: End Poverty in all its forms - Everywhere

This goal envisages a world free of poverty, hunger, disease and want where all life can thrive. In Madhya Pradesh the population below poverty line has reduced significantly from 48.59 per cent in 2004- 05 to 31.98 per cent in 2011-12. The same trend is observable both in rural and urban. There is however considerable heterogeneity in the level of poverty among the districts. The range of the distribution is very high (72.85), which indicates that poverty as an indicator has high variation among districts and we are not closer to the realization of SDG agenda by 2030. In more than 50 per cent of the districts, poverty ranges from 30 to 50 per cent with a great intensity in tribal districts. This suggests that the state's poverty elevation programs need to be revisited and that the state must also devise more efficient ways of program implementation that suit the tribal districts demographics.

SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

This goal was not specifically examined in the report. The aspect of nutrition was taken care of and its details present a bleak situation. The Madhya Pradesh government has made significant progress in improving food and nutrition security; stunting among children less than 5 years, the percentage of underweight children has declined but these cannot be considered satisfactory results. To improve child nutrition in the state, the MP government should pay more attention to breastfeeding program and antenatal care, both of which are linked to better health outcomes for children. Out of 25 districts where the breastfeeding rates were below MP state average, 16 districts had a higher proportion of severely wasted children below 5 years than the state average. Districts like Bhind, Gwalior, Hoshangabad and Morena, where only about a third of women gave only breast milk to the child below 6 months of age had the highest proportion of children less than five years who were severely wasted. Further, a positive relationship between institutional births and child nutrition and health is found. The government must also focus on quality care for pregnant women. By improving mothers' micronutrient intake, MP could improve the mother's and the child's health. A realist and rigorous approach is needed to realize the SDG goal as is evident from the index for nutrition.

SDG 3: Ensure Healthy Lives and Promote well- being for all at all Ages

Mortality rates are not favorable for many districts .The infant mortality rate is higher in rural areas than in urban, and child mortality is more than twice as high in rural areas. Infant, child and under five mortality rates are also higher for ST, SC and OBC than other social groups. Children whose mothers belong to these groups also have the lowest vaccination coverage. One hurdle that needs to be looked into is the population covered by health institutions. There exist inter-district disparities in the population coverage. The population

covered by SCs range from 10,255 in Rewa district and 8698 in Umaria district to just 4136 in Mandla and 4627 in Dindori districts respectively. The population covered by PHCs range from 95,591 in Bhopal district and 70,814 in Chhatarpur district to just 13,538 in Mandla and 16,739 in Vidisha districts respectively. The population covered by CHCs range from 229,374 in Rewa district and 228,605 in Indore district to just 47,924 in Narasimhapur and 91,592 in Guna districts respectively. The schemes like Pradhan Mantri Surakshit Matratva Yojna, Janani Suraksha Yojna, ASHA and Anganwadi workers could also not reduce MMR or other mortality rates. Considering the present scenario and the tempo under which the machinery works there is little hope for ensuring achievement of the goal by 2030.

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Two things are pertinent in this SDG: inclusive and quality education. The need to ensure education with equity and equality is the central theme in the state. Quality is a distant dream for many districts and vulnerable categories like women, ST and SC. The gross enrolment among SC and ST shows high disparities across different districts in the state. Despite the significant interventions for improving learning outcomes in Madhya Pradesh like Pratibha Vikas Programme, activity-based learning approach etc., it must be noted that the literacy rates are among the lowest in the country, and there are only three districts above 80 per cent in the state. Moreover, there are wide regional variations in terms of male-female differential in literacy rate as well as wide rural-urban differentials.

It is difficult to state that Madhya Pradesh is moving in the right direction. Inclusiveness needs to be taken care of in the coming years. A major hurdle is the inadequate infrastructure facilities in the state. For instance, Ministry of Human Resources and Development (MHRD) ranked Madhya Pradesh third among states having the poorest record of electricity provision in 28 per cent of primary, middle, high and higher secondary schools (2014-15)10. The focus should be on how to remove inequities among districts and vulnerable categories.

SDG 5: Achieve Gender Equality and Empower all Women and Girls

Gender development, equity and empowerment present a dissatisfactory picture for almost all districts. Absolute and relative development has to be realized for the attainment of the SDG. The problem starts with sex ratio and extends to all education and health parameters. Rural and urban differences are evident from all types of data with regard to women.

SDG 6: Ensure Availability and Sustainable Management of Water and Sanitation for all

The Madhya Pradesh government gives great emphasis to water and sanitation concerns. However, there are significant rural-urban variations in the source of drinking water in the state. Though the proportion of rural households depending upon hand pumps/tube wells as the primary and dominant source of drinking water has risen sharply, dependence on the ground water stock in the state is high. Groundwater status in half the districts of the rural parts of the state have been classified as ‘semi-critical’, ‘critical’ and ‘over-exploited’, as per studies (Das, 2012). The problem is worse in tribal districts. There is every possibility that open defecation may be tackled within a decade but the availability of safe drinking water and hygiene to all will be a hurdle for the agencies involved in it. They have to be promoted with constant efforts for the realization of this SDG by 2030.

Recommendations

Recent decades have seen the rising tides of inequity in society. Tackling this inequity is thus an urgent requirement, especially in light of international mandates viz. Sustainable Development Goals.

As previously discussed, the philosophy of equity broadly encompasses various aspects of personal liberty. Primarily, it refers to the equal access to opportunities that people must

enjoy irrespective of their cultural and socioeconomic backgrounds. Freedom of choice is yet another facet that is critical in maintaining equity. The very existence of inequities can often be traced back to distortions in the market due to the limited freedom of choice. These choices are often limited due to governmental policies, or lack thereof, creating high entry level barriers for market players.

The equity analysis conducted sheds light on the heavily interconnected nature of the sectors discussed – Health, Nutrition, Education, Water and Sanitation. The district-wise analysis shows common factors that have strong effects in improving outcomes in these areas. It has been revealed that districts with higher rates of urbanisation, such as Bhopal, Indore, Gwalior, etc. have performed better in both health and education outcomes. The increased levels of urbanisation in certain districts have led to an increase in the per capita income.

The increased earnings and disposable income with the people have a ripple effect across all the sectors and lead to overall upliftment. The strong influence of per capita income on most indicators, at the district level, is evidence of the same.

The policies and strategies intended to uplift the marginalised communities are mostly proposed and developed at the state level. However, the only way to assure maximum efficiency and effectiveness in achieving their objectives is through involvement of district and Local Self Governments (LSG). Thus, capacity building of the District Planning Committees (DPCs) along with LSGs is critical for success.

One of the main hurdles in assessment of the ground realities is the acute lack of authentic data. The storing of reliable data would help in various processes - from early identification of problem areas to formulating better strategies to address them. Real time analysis could be undertaken with immediate remedial action. Robust data management systems could thus prove useful in eliminating the information asymmetry in all the critical sectors.

Madhya Pradesh faces this data challenge to a greater extent, both quantitatively and qualitatively. The present study and data analysis could have done more justice if data were available on many aspects at the disaggregated level. This shortcoming must be addressed so that future research on any aspect is smooth and rigorous.

While the world is galloping towards the fourth industrial revolution, the state is still struggling with broadband connectivity to households. Leveraging the immense potential of information and communication technology (ICT) would significantly improve the performance of the districts. It can be used to empower gram panchayats, health centres and even schools for better service delivery. The study highly recommends the use of geographic information systems (GIS) designed to capture and analyze different geographical data. The data so generated could be used to provide valuable real time insights and help formulate plans of action. This system could be implemented across all sectors, as discussed subsequently.

A holistic appraisal of the situation in Madhya Pradesh points to a few main factors that are holding the state back - infrastructural deficiencies and poor governance. There is a great scope for implementing evidence based, data driven approaches and better outcomes through better supervision, close monitoring and good management practices. Even after addressing these concerns, the state needs high levels of community participation and a sense of ownership in the local activities. Local commitment can only be strengthened through community ownership. Significant impact could be made through community engagement especially for educational and health outcomes. Schools and other common open spaces could be converted into ‘Activity Centres’ as a venue for different types of non- academic activities. The possibilities for using this open space, with a focus on community engagement, are endless - awareness drives, medical camps, after-school classes in English, computers, new farming practices and so on. These centres would also be equipped with electronic kiosks to access information without restrictions.

The paper also suggests some concrete recommendations to alleviate the inequities. Focus group discussions, meetings with heads of important departments and interviews with selected experts helped to arrive at some key recommendations. It is presented under various heads as follows:

Health and Nutrition

- The analysis revealed the large infrastructural gaps in the existing healthcare system of the state. There is an immediate need to improve the condition of local healthcare centres and hospitals. It was stated in a focus group discussion that most of the CHCs are not working efficiently and transport to these centres is in dilapidated condition. The CHCs could be provided with ambulatory services to address accessibility concerns.
- It is also recommended that local healthcare centres be provided with mobile phones and other communication tools to be better connected and serve the needs of the locals. They must however be provided with sufficient training to effectively use these tools.
- Selective primary care is an inadequate response to the rapidly changing epidemiology, ageing population and altering lifestyle. It requires more investment in public health infrastructure. PHCs/SHCs must be provided the necessary equipment, such as dialysis units, for effective service delivery.
- Accessibility to hospitals, particularly for referral cases, is another concern raised during the focus group discussion. Standards must be set in place for different levels (PHC, SHC, CHC and District) in terms of hospitals. It also requires strengthening of existing healthcare centres by provisioning more beds, equipment, staff etc.
- The demand side constraints, with respect to health sector, are well known; however, the study revealed that supply side is equally dire. As discussed in previous chapters, there exists a significant shortage of qualified medical professionals. Staffing problems further debilitate the already strained medical infrastructure in the state. Responsible bodies must be cognizant of the same and recruit adequate staff.
- The study observed that doctors were reluctant to move to rural areas of the state. The government is responsible for providing the necessary infrastructural facilities to support the public healthcare systems, especially in remote areas. This includes the availability of good quality schools and addressing safety and security concerns.
- The number of medical colleges in the state is insufficient to produce enough professionals to cater to the medical needs of such a diverse and vast populace. Efforts should be taken to increase the number of MBBS seats. In addition to setting up more Government medical colleges, MP must encourage private players to establish institutions in medical education like other states. Giving autonomy and ensuring quality medical education along with reforms of regulatory institutions (like MCI) would help to overcome challenges other states have faced. The involvement of community and non-profit organizations in the health sector will be helpful in attaining better health indicators.
- Discussions with experts revealed that the network of ASHA and ANM workers are sufficiently large. However, the scope of their work has increased because of the introduction of various new schemes. One ANM/ASHA worker often takes care of 7 to 8 villages. Due to the expansive topography of the state, they experience difficulties in reaching remote areas. The transport systems of the state need to be built up to facilitate their activities. They could also be provided with convenient modes of transport such as bicycles, two- wheelers, etc.
- In order to address connectivity issues, mobile clinics with basic equipment and drugs, and manned by a skeletal medical staff could be deployed in regular intervals. This would address the healthcare needs of those living in remote areas.

- The study revealed a unique relationship between literacy rates and nutritional levels. It was found that prevalence of anemia in women was more influenced by male literacy than female literacy. In such male dominated societies it is thus crucial that maternal and child health interventions, along with strategies for nutritional improvements, be tailored to both sexes to maximize benefits
- Madhya Pradesh is a state with low insurance penetration. Only 17.7 per cent households have any member covered by a health insurance scheme. Access to insurance must be provided through publicly funded and privately administered health insurance schemes.

Education

- Bottom-up and top-down participatory and community management interventions, which operate through decentralization reforms, knowledge diffusion, and increased community participation in the management of education systems is required.
- The existence of separate entities (Education and Tribal Development Board) to oversee school management creates administrative and qualitative challenges in the education sector. This was observed in the analysis as well as the focus group discussions (FGDs). The two boards must be vertically integrated to enhance their productivity and functioning.
- Integration of the various departments that run schools is also essential for creating common cadres for government teachers and rectifying the existing anomalies.
- It was also observed that the teachers were involved in management of all activities in the school, over and above classroom activities. The management/ government should provide supporting staff to take responsibility for the non-teaching activities.
- FGDs also pointed out problems in the teacher's recruitment process. The study recommends that the entire process be streamlined from appointments to salary disbursement.
- Literature suggests that there are strong linkages between pre-school education and life outcomes. Discussions with the relevant stakeholders revealed that there is sufficient unused infrastructure (classrooms) which can be utilized to provide pre-school education to the children.
- The work hours can be fixed to local standards to reduce absenteeism. Flexible school timings could be implemented based on local demands and circumstances.
- It is evident from our study that infrastructure facilities like access to water and electricity, segregated toilets and boundary walls strongly influence enrolment rates. It is critical that management/government take cognizance of these requirements in the schools with the objective of increased enrolment and retention of students.
- The state has managed to achieve positive results in ensuring greater enrolment (primary); however, the poor quality of education provided to the students is a serious concern. The downward trend in the learning outcomes (ASER 2016) highlights the need for better teaching standards. There is a need for more investment in teachers' training as well as R&D for content generation, teaching aides and other relevant tools and materials.
- Another concern raised during discussion with experts was the lack of teachers in rural areas. Due to the remote nature of these areas, inadequate infrastructural facilities and general lack of support systems, teachers are reluctant to stay there. The study recommends strengthening the infrastructural capabilities of the rural schools so as to retain teachers in these remote areas.
- The income generation capacity is poor due to the inadequately skilled workforce. The scheme that imparts skill formation at school level has to be strengthened with innovative programmes so that students who get such training will be absorbed in the job market

easily.

- The IT mission needs to be strengthened so as to impart the relevant skill set to the workforce. Further exploration could also be done on the feasibility of smart schools equipped with ICT. It can also be leveraged to provide knowledge sharing platforms online for both teachers and students with unique multimedia teaching aides.
- The study also recommends exploring options such as mobile libraries to encourage knowledge sharing and reading habits, especially in inaccessible rural areas. The mobile libraries could be modelled to cater to diverse age groups and interests - from books on modern agriculture techniques to adolescent and children's books.
- Geographic information system (GIS) can be deployed to identify demand-supply gaps. GIS is a system designed to capture, store, manipulate, analyze, manage and present geographical data. The spatial data collected can be utilized to find density of schools, excess or lack of schools in every locality. Rational decisions can be taken, based on real evidence, to merge schools and redeploy excess teachers based on requirements.
- It is well established that the quality of education is better at private schools than public. The better performance is attributable to the higher levels of accountability in the former, especially towards students and parents. School vouchers are a system by which government schools could be held accountable and more responsive to the needs of students and parents. The study recommends the use of vouchers on an experimental basis with direct cash transfers to the schools.

Water and Sanitation

- The crucial element in improving water and sanitation conditions in Madhya Pradesh is empowerment of LSGs and DPCs. Strengthening and focused capacity building at this level is critical as it was observed that the role of local bodies is not well recognized. In water and sanitation sectors local bodies can perform well. WASH strategies must be formulated at the district level based on local circumstances and implemented through local governments. Their activities could include:
  - Maintenance of traditional drinking water sources and environmental hygiene;
  - Preservation of ponds and other water tanks;
  - Maintenance of waterways and canals under the control of Village Panchayats;
  - Collection and disposal of solid waste regulation of liquid waste disposal.
- GIS technology can also be used to collect critical spatial data to formulate plans and also help in implementation. It can prove useful in identification of beneficiaries rather than using social and geographical context.
- Innovative business models have also been proposed world-over to address the water crisis. One such model is the loyalty programmes that can be attached to the individuals' telecom services. Every individual's top-up will accumulate loyalty points, collected in a common drop fund that can be used to provide local water and sanitation facilities to the respective localities. These funds would be owned and managed by the community thus ensuring high levels of ownership
- Few more policy measures: the government should focus on dissemination of micro irrigation, high-value crops, market institutions and extension and information service institutions. Efficient water management through micro-irrigation systems, reducing wide fluctuations in agricultural productivity and prices, checking distress sales and rising cultivation cost, increasing agricultural exports and dissemination of modern technologies and agricultural innovations are some of the important sectors that need immediate attention of the government.

Looking Ahead towards Equity

Having identified the backward districts and vulnerable categories, it is very clear that Madhya Pradesh has to adopt several measures on a war- footing for the realization of SDGs by 2030. At the outset it is proposed that measures should be taken on the basis of the gravity of the problems faced by the districts. For convenience, the districts are classified into three categories on the basis of the intensity of their problems. Table 4 throws light on this aspect.

Broad based growth and development should be the first strategy of the state. Increase in the work participation rate, removal of absolute poverty and deprivation, gender justice etc. should be the components of broad-based growth and development strategy. A multipronged strategy covering health, education, nutrition, WASH, and social protection aspects should be accommodated to uplift the districts belonging to category one i.e., the districts with a high severity of problems. The theme and sector-based strategies should be devised, especially in those districts with grave problems in particular sectors (category 2). Targeted strategies must be used to address the poor performance of certain indicators (category 3) - households with any usual member covered by a health scheme or health insurance, women age 20-24 years married before 18 years, mothers who had full antenatal care etc.

Table 4. Categories of Districts and strategy for inclusive and faster social development

	Districts			Strategy
Category 1	• Alirajpur • Shajapur • Barwani • Jhabua • Khargone • Dhar • Dindori • Burhanpur	Singrauli Panna Mandsaur Chhatarpur Rajgarh Morena Shivpuri	Shahdol Umaria Sidhi Mandla Tikamgarh Ratlam Vidisha	Multipronged strategy covering health, education, nutrition, WASH and social protection
Category 2	• Bhind • Satna • Rewa • Sehore • Neemuch • Sheopur	Anuppur Ujjain Damoh Datia Katni Ashoknagar	Khandwa Harda Sagar Guna Dewas	Theme and sector based strategy
Category 3	• Jabalpur • Balaghat • Indore • Bhopal • Hoshangabad	Gwalior Narsimhapur Chhindwara Betul Raisen	Seoni	Indicator based strategy

How far the state has addressed the nexus between technological change and innovation is the real consideration. The critical role played by local authorities must not be overlooked. Presently, no effective role is played by local bodies in promoting the development of the region concerned. Regional development strategies have to be devised incorporating the role of local bodies. Policy level interventions are to be made effective so as to make the local bodies dynamic in their area of operation. Decentralized governance should be given prominence for the effective removal of inequity.

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