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Multidimensional Poverty in India: An Assessment of Deprivation Indicators in Backward States

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ABSTRACT

In this article, various indicators such as Education, Infant mortality, Sanitation, Electricity, Assets, Housing, cooking fuel, and drinking water are considered and emphasis is given to backward states like Madhya Pradesh, Rajasthan, Uttar Pradesh, Bihar, and Northeast states. The paper reveals the ill effects of cooking emissions. The cleanest cooking options include LPG, electricity, and solar energy. LPG availability has expanded the PMUY scheme, which has achieved 23 per cent success nationwide.

Keywords: *Multidimensional Poverty Index (MPI); Rural Poverty in India; Deprivation Indicators; Nutritional assessment*

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INTRODUCTION

Poverty is multidimensional in nature. The multiple dimensions of poverty include income poverty, human poverty, vulnerability and insecurity, marginalisation and so on. Though the multiple dimensions of poverty are interrelated, they don't necessarily go hand in hand. As Robert Chambers puts it, there is a ratchet effect in which different effects of poverty mutually interact and often multiply the deprivation levels of income. Enhanced economic growth along with better eradication of poverty and hunger is one of the goals of the Millennium Development Goals. The observations of micro studies of NIRD have been contextually referred at appropriate levels.

The global MPI is a new generation of multi-dimensional measure that supports key priorities in the SDG; high-resolution poverty diagnostics are needed to leave no one behind. The global MPI is disaggregated by children, disability status, subnational, regional and rural/urban areas, linking indices of destitution and severe poverty to highlight the very poorest.

The SDGs call for multidimensional poverty profiles. The SDG is reported nationally and for every disaggregated group, providing evidence for policy design; the 2017 MPI provides a headline estimate of poverty and its composition for 103 countries worldwide. The global MPI intensity of poverty is based on the profile of overlapping deprivation each poor person experiences. It aggregates these into meaningful indices that can inform targeting and resource allocation. and design policies that tackle the interlinked dimensions of poverty. Various dimensions of poverty considered for analysis are education, food and nutrition security, drinking water supply, health and sanitation, housing, electricity, farm and non-farm income and assets. A study of tribes in Attapady in Kerala revealed that they are facing poverty in various dimensions. Despite the implementation of various welfare measures by the Government, they face various socio-economic problems and are unaware of welfare initiatives that make them unable to reap the benefits of Government welfare schemes. [Kurien and John Oommen, 2021].

METHODOLOGY

The data sources used for this paper are based on various censuses conducted by the Government of India and other reports published like human development, UNDP. The analysis in this study is also based on data from various published articles and online databases, including those from the Planning Commission.

Limitations of the study

The outcome of the study cannot be attributed in general to the other parts of the state as data is related to backward states only. Though the national multiple indices use 12 indicators across three dimensions, namely Health, Education and Living standards. The article has not used other indicators like adolescent mortality and bank accounts. There are challenges in collective reliable comprehensive data on various dimensions of poverty, especially at the local level. Niti Aayog's other indicator, maternal health, is also not taken into account.

OBJECTIVES

1. To examine multidimensional poverty with a focus on backward states.
2. Comparison is between 2004-06, 2015-16 and 2019-21 of various indicators to draw implications for policymakers for better implementation of government programmes.

REVIEW OF LITERATURE

The study was conducted in 2020-21 in tribal settings in Agali, Pudur, and Sholayoor G. Ps of the Attapady block in Palakkad district of Kerala. The study revealed that 52 per cent of children aged 12-18 were underweight, and 54 per cent of women in the age group of 18-60 were underweight. 24 per cent of households had a floor made of sand and dung. 13.8 per cent of households used firewood as a cooking fuel; the rest used LPG. Only 4.5 per cent of households had an electricity connection. Enhanced economic thrust along with better implementation of developmental programmes has led to a sharp decline in MDI, nearly halving from 0.117 in 2015-2016 to 0.066 in 2019-2021. As a result, 13.5 crore Indians are estimated to have escaped MDP between 2015-2016 and 2019-2021. [Source: Economic Survey 2024].

The study by SBI on Poverty 3 noted that rural poverty fell sharply from nearly 26 per cent in 2011-12 to 7 per cent in 2022-24, and further to less than 5 per cent in 2023-24. It further states that poverty in rural areas reduced to 4.86 per cent from 25.7 per cent in 2011-12. At an aggregate level, it is believed that poverty levelling in India could now be in the range of 4 to 4.5 per cent, with almost minimal existence

of extreme poverty. A number of reasons for the shrinking of the horizontal income gap between rural and urban and the vertical income gap within rural income classes are the enhanced physical infrastructure, which is scripting a new story in rural poverty.

There is a big controversy about the trending income poverty in the 1990s and several alternative estimates of poverty have been presented by scholars Tendulkar, Dreze and others.⁴ Most of the experts are of the opinion that the reduction in the 1990s, according to the Planning Commission, is overestimated. Sustainable Development Goals include no poverty, zero hunger, good health and well-being, Quality education, clean water and sanitation and affordable and clean energy.

The SDGs are built on five pillars: People, Prosperity, Planet, Peace, and Partnership, offering a Comprehensive framework for a new paradigm of education and value system.

Children are forced to think critically and consequently develop problem-solving skills, learning about problems such as poverty, hunger, etc. [source: Times of India, dated 26th Jan 2025, page no 26, growth drivers of the nation]. UNDP has developed the Human Poverty Index 5, which includes three indicators :

1. Longevity deprivation: by this indicator, a person is not expected to survive beyond 40 years.
2. Composite indicators on educational deprivation.
3. Includes four variables, namely

[a] proportion of population BPL.

[b] proportion of population not receiving medical attention at birth.

[c] proportion of population living in Kachha houses

[d] proportion of population not having access to basic amenities, viz safe drinking water, sanitation, and electricity.

Table 1: Human Poverty Index 1991

Name of the States	Value	Rank
MP	48.43	10
Rajasthan.	53.26	14
UP	52.43.	11
Bihar	55.85.	15

Source: Planning Commission [2002]

Table 2: State-wise decline in the IMR

States	Adult literacy rate (+7) a.	Per cent attending between 6-14 years (after V) b.	IMR. c.
MP	64.11	72.23	55.3
Rajasthan	64.11	72.16	59.1
Orissa	63.61	71.24	74.6
UP	57.36	72.2	65.8
Bihar	47.53	53.5	55.1

Table 2 shows that the highest decline in IMR has resulted in Orissa [-26], followed by Madhya Pradesh [-23] between 1991 and 2001. Indicators of HD Min states 2001

- a. Population census 2001
- b. Based on CME 1996
- c. Based on CMIE 1996

NITI Aayog 6 goes beyond income metrics; three dimensions of health, education and standard of living are categorised into 10 indicators due to larger improvement of states.

Despite a reduction in MP, Bihar, Jharkhand, and Uttar Pradesh continue to face challenges across various indicators, including nutrition, sanitation, and education. There is a 4.6-year rise and a 3.8-year increase in the mean year of initiation and the expected year of schooling. There is an increase of 3.8 years in the mean years of schooling in the year 2022- 2023, as per the Economic Survey published in 2024.

The table depicts the percentage of households using different types of fuel for cooking, such as dung, firewood, grass or leaves, coal, and charcoal, across different states. [refer table 3]

The percentage of households using different types of cooking fuel in 2005-2006 was 52.9 per cent; in 2015- 2016, it was reduced to 26.0 per cent, and it was 13.9 per cent in 2019 -2021.

Table 3: State-wise percentage of households using different types of fuel.

States	Percentage of households using different types of fuel
Bihar	30.4
Jharkhand	28.8
Meghalaya	26
MP	21.9
Orissa	19.9

Environmental degradation and depletion encroach upon the livelihood of people, particularly the poor by reducing supply of free goods like firewood. It also has an adverse impact on the impact on the health status of the population depending upon these resources for survival of the population

Ranked fourth in wind power, with tremendous energy potential, India has the capacity to generate vast amounts of renewable energy from this source.

India has made strides to reduce its reliance on traditional energy sources and achieve its target of meeting 50 per cent of its total electric power needs from non-fossil fuel sources. [SOURCE: Times of India, dated 26th Jan 2025, growth drivers of the nation.

The choice of fuel depends on multiple factors such as price, accessibility, and supply reliability, which in turn depend on resource availability, the distribution network, subsidies, and government policies.

Gender inequality, education, affordability, social status, accessibility, household choice of cleaner fuels [Choudhary and Desai 2020]. According to 2011 census8 only 11.4 per cent of households have access to clean fuel in the form of LPG, firewood, [62.6 per cent] crop residues[12.3percent] and cow dung cakes[10.9percent]

The SDGs came into effect in 2016, and about 41 per cent of India's population had access to clean cooking fuel and technology, boosting access to clean cooking fuel. The government reduced PMUY in 2016 to provide BPL families with about 80 million LPG connections, and significant air pollution is causing severe respiratory diseases among rural households who primarily engage in cooking food.

Study in MP-39 per cent, UP-50 per cent, and Bihar-28 per cent reported key barriers in terms of aggregate per cent of rural and urban together affordability, e. high initial and refilling costs, nonavailability, delay in application approval, and waiting time to fill, age, gender, family size, social category, and income level significantly determined to access to clean cooking fuel among rural households.

Older people are likely to adopt clean fuel due to their purchasing power and health concerns; the increasing use of solid fuels such as wood, charcoal, and animal dung has harmful effects, including air pollution. Air pollution enters human lungs and the bloodstream, causing health hazards like pneumonia, heart attack, stroke, lung cancer, low birth weight, and stillbirths.

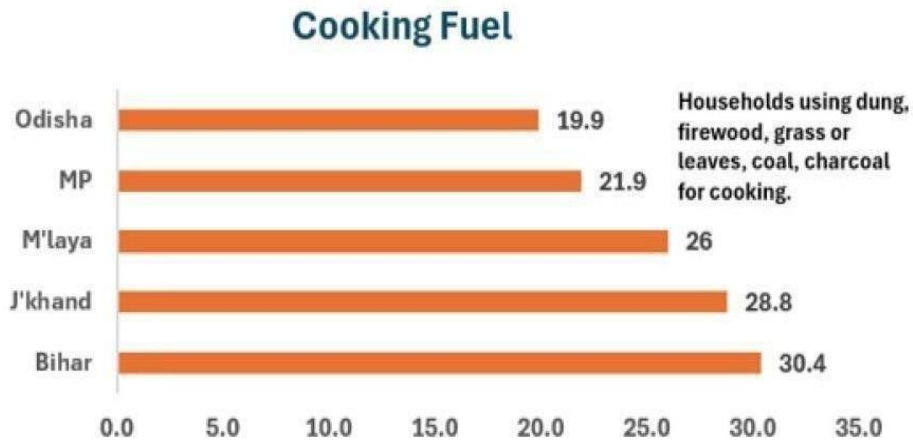


Table 4: Percentage of population deprived of sanitation in India

Year	Per cent of population deprived sanitation in India
2005-06	50.4
2015-16	13.4
2019-21	24.4

Bihar-28 per cent, Jharkhand nearly 22 per cent, M.P, Orissa and Uttar Pradesh had less than 20 per cent of households with any sanitation facility.

Depletion of water resources may increase the drudgery of women and children in collecting fuel and water, or force the poor to migrate to distant places in search of water, thereby reducing their access to education, health, and general welfare. Pollution of water also raises the incidence of morbidity of different kinds

Swachh Bharat Mission was introduced in India in 2014 to improve sanitation, hygiene, and cleanliness in rural areas. The program also motivates communities to adopt sustainable sanitation practices. Lack of proper piped water supply, poor construction of toilet substructures, and misconceptions among people about toilet use pose key challenges to achieving the Indian sanitation mission.

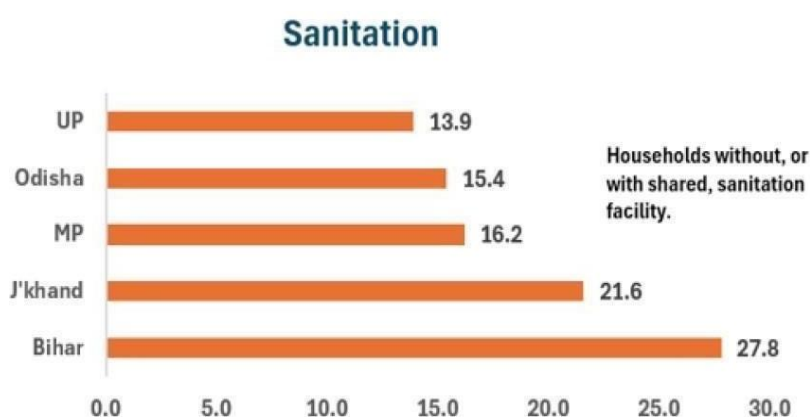
Three ways to promote sanitation include handwashing with soap, proper food handling, and water purification. Adequate sanitation is available when coupled with improved hygiene behaviour. Under the Jal Jeevan Mission, the provision of tap water connections increased to more than 14.99 crore rural households [76.12 per cent].

Data from NSSO's 79th round [2022 -23] show that almost 95 per cent of households in India have access to basic drinking water, tube wells, protected wells, and packaged water. But no one will take a bet that all the water supply is safe.

Tap water coverage, although significantly improved, still lags in rural India. Only 40 per cent of rural households used piped water as their primary source of drinking water in 2023. The figure is 70 per cent for urban households. However, despite this overall improvement in coverage, water quality remains a huge issue until it is sustained; investment in piped water networks will never happen.

A study in Tripura district by Mitra (2021) on the health risks of inadequate sanitation reveals that diseases associated with poor sanitation are particularly correlated with poverty and infancy and account for about 10 per cent of the global burden of disease at any given time. Half of the Indian population has a disease associated with poor sanitation, hygiene and water quality.

The study finds that the health risks associated with inadequate sanitation that push households towards poverty are malaria, measles, respiratory infections, and intestinal worms. These diseases are unceasing and require continuous costs, thus acting as slow poisoning in their economic conditions.



Imposing a high burden on households. The study also identifies certain productive losses, including time lost to school, restricted mobility for women and girls, and revenue loss for tourism.

Appropriate low-cost water sanitation models (23) have been placed in the Rural Technology Park, RTP of NIRD, which was established in 1999 at an area of 65 acres with a focus on 3 areas, which include low-cost low water usage, school sanitation model, Anganwadi sanitation model, waterless urinals, etc.

Housing

The Indian government has responded with ambitious initiatives such as the Smart Cities Mission, AMRUT, and PMUY aimed at providing affordable housing. Housing has its intrinsic value as a goal of human development; it ensures safety and security as well as privacy to human beings. It also ensures better health and higher productivity for a large number of people in rural and urban areas. A house is also a workplace. Housing is a capability that expands opportunities for people. In the last 9 years, 2.63 crore houses have been constructed for people below the poverty line. RTP in NIRD 10 brings together a range of cost-effective construction technologies with varieties of materials, technologies and blends the old and new techniques of construction. These structures are erected utilising the locally available resources and skills of people. The construction cost will be in the range of 25 to 40% less than the cost of conventional construction at that time. The variation cost is dependent on the soil and locally available resources. Over 40 technologies are depicted in RTP. All these structures are eco-friendly and based on the green building concept.

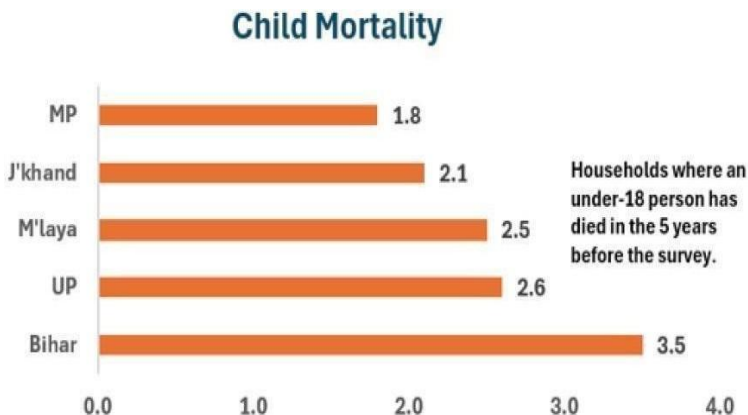


Infant mortality

Reducing child mortality is one of the goals of MDG. Persistent spatial variations in IMR rate could be considered a reflection of deprivation as an outcome. An indicator of chronic poverty, lack of access to inputs, such as food and healthcare, due to low income/assets, is associated with a higher probability of a newborn child dying between birth and one year of age, especially in times of basic education, especially female education. Hence, it has a powerful influence on fertility and mortality. Maternal mortality education results in increasing knowledge about nutrition, hygiene, and health care. Consequent to the implementation of developmental programmes such as AB-PMJAY, AMRIT, ABDM, ESanjeevini, and the opening of Jnanasiddhi Kendras, the survey underscores improvements in key health indicators, including a decline in IMF from 39 per 1000 live births in 2013 to 28 per 1000 live births in 2020.

Despite progress in health care, disparities persist, especially in rural areas. The government has taken proactive measures to improve health care accessibility for all. Initiatives such as the National Health Mission. Ayushman Bharat and PMJAY aim to provide affordable, quality health care to the economically disadvantaged population. Health care facilities should be within the reach of everyone, irrespective of geographical boundaries and socio-economic status.

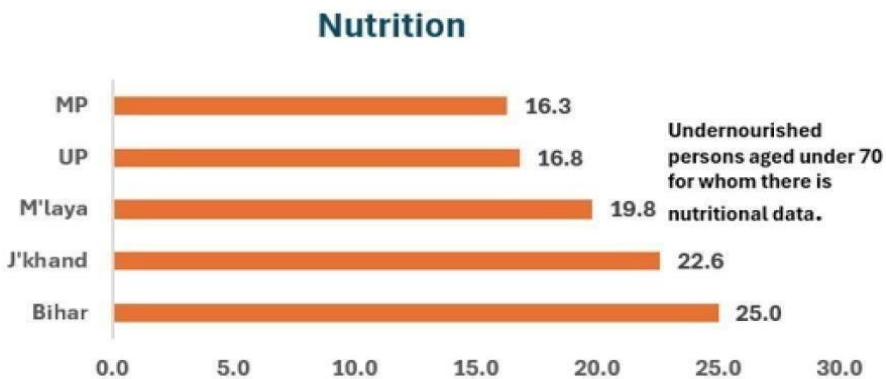
Mobile Medical units that provide preventive and curative care in remote areas, equipped with ventilators and oxygen, should be made available more extensively in rural areas.



Nutrition

Value of nutrition can be created through awareness, access, and affordability. Awareness has to be at all levels: community, providers and professionals. Access must be to food, healthcare, a safe environment and drinking water. Undermining is educational affordability. Apart from government schemes like MDM, PDS, livelihood opportunities are important. In poor families, children weighed much less when compared with those from well-to-do families, reflecting their nutritional status.

A study done in 2019 – 21 (Radhika Rani and Nirya, 2021) in Khammam and Mehaboob Nagar dist. Located in Telangana, the study reveals that the cycle of decentralisation and nutritional transition unfolding in the global south among adolescents is a complex, multi-field process. Differences in time use and energy expenditure among adolescents shed light on the role of social class in defending pathways to health and nutrition. Appropriate policy interventions, each aimed at adolescents' health and nutrition needs, need to be designed and implemented based on social class, gender, and age-related differences in food intake and physical activity demands.

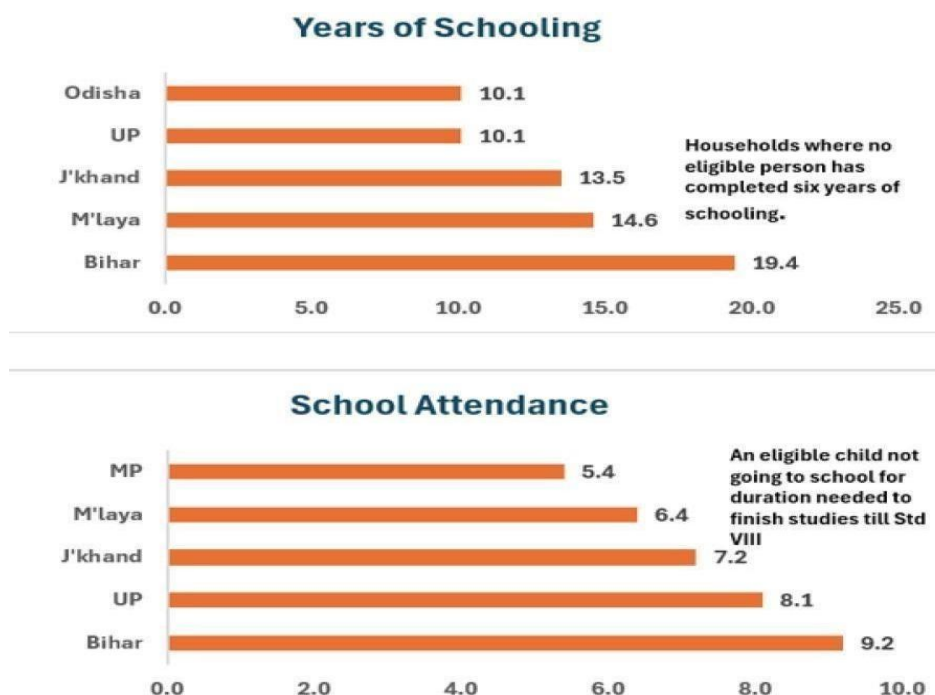


Education

Achieving universal primary education is also a primary goal of MDG 4. Due to the implementation of various developmental programmes such as SSA, CSWN, KGVBPARKH, PMPOSHAN, and Vidyanjali, the quality of life in rural areas has improved in terms of basic amenities, including education.

Women's education is the single most important policy instrument that upholds women's empowerment, which in turn increases agricultural productivity and reduces poverty.

The lowest-performing states in school attendance rate in primary schools are as follows, as per the latest ASER 2024. Bihar-54.9 per cent, Uttar Pradesh- 59.9 per cent, Madhya Pradesh- 62.5 per cent, Rajasthan- 63.2 per cent, and Jharkhand- 65.1 per cent. These states fall well below the national 74.5 per cent attendance rate, indicating challenges in school participation.



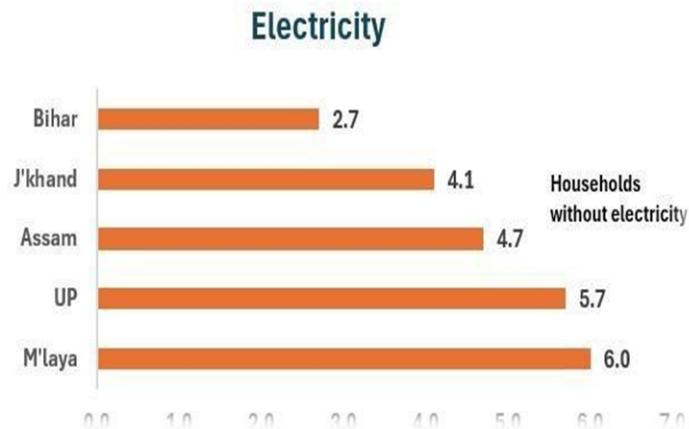
Asset

In Meghalaya, 21.4 per cent of households owned one of a fixed list of assets, including radio, TV, phone, etc. In Bihar and Nagaland, less than 14 per cent owned one asset. Jharkhand and Madhya Pradesh owned less than 11.00 per cent of household assets.



Electricity

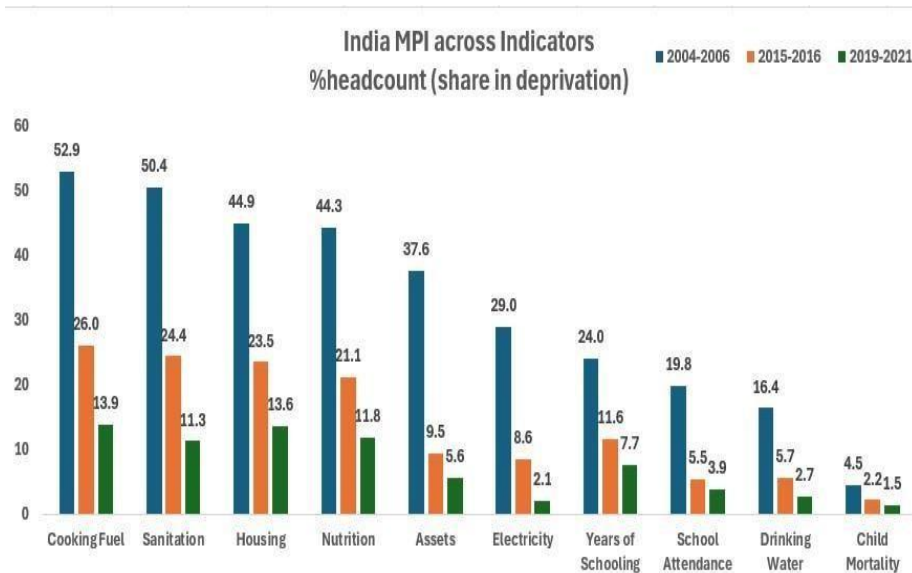
In 2005-06, 44.3 per cent of the population and in 2015-16, 8.60 per cent were deprived of electricity. In Meghalaya, 6 per cent of the population; in U.P., Assam, Jharkhand, and Bihar, less than 6 per cent of households were without electricity.



Training programmes are conducted for representatives of PRI, CBOs and NGOs in this unit in assembling solar lanterns and streetlights and in the installation and management of streetlights/guiding /assisting in the Establishment of solar lanterns in rural areas and also on low-cost water sanitation modes and on low-cost building technologies. Number of households have been electrified. In addition to solar energy development, wind energy has also been established in RTP as part of renewable energy development in Orissa, Bihar, and Chhattisgarh.

A 5KW unit and 3.65 KW of wind power units have also been set up in RTP. Different sanitation models demonstrated in the park can be broadly categorised into unconventional toilet systems, school sanitation models, waterless urinals, eco Sanand bio toilets and community models.

Biogas plant: Investing in biogas plant technology contributes to the reduction of greenhouse gas emissions and supports the government in achieving cleaner energy and sustainable development.



CONCLUSION

India has pulled crores of people out of pervasive poverty in recent decades, but pockets of distress persist where targeted interventions are the best bet for addressing deprivations that go beyond income. Apart from income, nutrition, child mortality, years of schooling, school attendance, cooking fuel, sanitation, drinking water, housing and assets are also important variables to consider in evaluating multi-dimensional poverty. The index of social development constructed by the Council for Social Development reveals that the progress is less in three states, viz Bihar, Madhya Pradesh, and Uttar Pradesh. A lower IMR indicates higher female literacy, better health, stronger communication networks and lower poverty ratios. Current levels of infant mortality and child malnutrition point to the need to invest

more in human development to realise the Sustainable Development Goals [SDGs]. Only 1 per cent of the budget is allocated to preventing air pollution; GDP spent on education and health ranges from 2.7 to 2.9 per cent and 1.9 per cent respectively. The budget allocation for air pollution, education and health needs to be increased from 4.6 to 6.11.

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