**Scope**
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# Sustainability in Health and Nutrition – A Sub-National Study of India

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**Abstract**: The Sustainable Development Goals (SDGs) were introduced by the United Nations and adopted by India and other member countries in 2015, aiming at a more inclusive, economically empowered, and sustainable world. The 17 SDGs encompass various targets and indicators. SDG 3 or the 'Good Health and Well-Being' goal aims at ensuring healthy lives and promoting well-being for all at all ages.The paper seeks to explore the pivotal challenges and opportunities of SDG 3, and how can these be addressed to ensure long-term positive impacts at the sub-national level systematically. Based on this the primary objective of the present study is to assess the level of sustainability in health and nutrition in the states and union territories of India. Statistical data analysis and comparative evaluation are performed on the findings of the Sustainable Development Goals National Indicator Framework Progress Report 2023 (MoSPI, 2023) in the background of the 39 SDG-3 indicators and 9 targets. The study is quantitative and cross-sectional in nature based on secondary data and the results of the study show that out of 15 key indicators of SDG 3, India is on track or maintaining SDG achievement in five indicators, which are (i) Maternal mortality rate (per 100,000 live births), (ii) Neonatal mortality rate (per 1,000 live births), (iii) Mortality rate under-5 (per 1,000 live births), (iv)New HIV infections (per 1,000 uninfected population), and (v) Births attended by skilled health personnel (%). The SDG index score on Goal 3 for India stands at 74. Gujarat emerges as the best performer among the states (86), and Delhi among the UTs (90) in the SDG-3 scoring of 2020. Achievement of SDG 3 is specifically essential for India, considering the demographic dividend it has at its disposal. India being presented as the voice of the Global South has become a shared platform to deliberate on the concerns, issues and policies that affect the developing countries in multi-faceted ways. India has faced hurdles in the equitable allocation and provision of health services in the past moreover there also exists a divide in rural and urban areas. Thus, it is imperative to introduce policy measures working towards the reduction of headline indicators like maternal mortality rate and alleviating malnutrition levels among children. The COVID-19 pandemic and other geo-political crises have hindered the progress in achieving SDG 3 in the last few years resulting in an exacerbation of health inequalities and a defer in progress towards universal health coverage. Health is considered a key factor in explaining the economic growth of a country. Therefore, dedicated efforts towards healthcare services and activities will contribute to the existing demographic dividend, labour productivity and lower cost of ailments. It is concluded that although India has been working to touch every aspect of SDG 3 and strengthen the health sector in the country yet for India, to achieve the 2030 target of UN SDG 3 – 'Good Health and Well Being', the need of the hour is to accelerate the pace of policy implementation and cover the rural-urban gap in healthcare services.

**Keywords:** Health, Sustainable Development Goals, Nutrition, Mortality Rate, SDG 3
**JEL Code:** I10, I15, I18, Q01

## I. Introduction

In September 2015, the United Nations General Assembly adopted the "Transforming our World: The 2030 Agenda for Sustainable Development" agenda, which includes 17 Sustainable Development Goals (SDGs) and 169 targets. The SDGs, or Global Goals, aim to create a sustainable future for the world and people, promoting prosperity, peace, and partnership. The third SDG aims to ensure healthy lives and promote well-being for all at all ages. The number of deaths among children has been lowered by half during the last 15 years. This demonstrates that practically any sickness may be overcome. Nonetheless, we spend an incredible amount of money and resources treating diseases that are shockingly simple to prevent. The new objective for global good health encourages healthy lifestyles, preventive measures, and contemporary, efficient healthcare for everybody.

The government's health policies strive to provide low-cost, universal health services. The National Health Policy, Ayushman Bharat Yojana, and Pradhan Mantri Bhartiya Janaushadhi Pariyojana have helped achieve great advances in this field. Technology-driven initiatives, such as the Aarogya Setu app, have helped combat COVID-19 by facilitating contact tracing, symptom mapping, and self-assessment. SDG-3 aims to enhance health and well-being for everybody through 13 specific targets. 39 indicators have been identified at the national level to track progress towards targets, with data accessible for each.

With the existing literature on health and well being this paper attempts to present an analytical study of the sustainability in the spheres of health and nutrition thereby adding to the work done till now. Subramanian et al. (2023) assessed the mid-line progress of 33 SDG indicators linked to health and socioeconomic determinants of health in 707 Indian districts. This was done by using 2016 and 2021 National Family Health Survey (NFHS) data on children and adults. Where 33 indicators for 9 of the 17 SDGs were established. The 2030 SDG targets using the Global Indicator Framework, the Government of India, and WHO goals and targets were set. The district means for 2016 and 2021 using precision-weighted multilevel models and calculated Annual Absolute Change (AAC) for each variable was estimated. Using the AAC and targets, India and each district were classed as Achieved-I, II, On-Target, and Off-Target. When a district was Off-Target on an indicator, we selected the post-2030 calendar year it would meet the target. India is Off-Target for 19 of 33 SDGs. Access to Basic Services, Wasting and Overweight Children, Anemia, Child Marriage, Partner Violence, Tobacco Use, and Modern Contraceptive Use are important Off-Target indicators. For these factors, over 75% of districts were Off-Target. A worsening trend between 2016 and 2021 means many districts would never fulfil SDG targets, even after 2030, if no course correction happens. Off-target districts are in Madhya Pradesh, Chhattisgarh, Jharkhand, Bihar, and Odisha. Finally, Aspirational Districts do not appear to meet SDG targets better than other districts on most measures. A mid-line

review of districts' SDG development reveals an urgent need to accelerate four SDG goals: No Poverty (SDG 1), Zero Hunger (SDG 2), Good Health and Well-Being (SDG 3), and Gender Equality. Creating a comprehensive strategy now will assist India meet the SDGs. India's rise as an economic power hinges on attaining some of the health and social determinants of health-related SDGs quickly and fairly.

## II. Review of Literature

Dawes (2022) uses mathematical methods to quantify the extent to which these interlinkage networks indicate the likelihood of greater progress on some SDGs than others, the sensitivity of the networks to new links (or the strengthening or weakening of existing ones), and Agenda 2030's implicit hierarchies. The methods we discuss apply to any directed network, but we interpret them using three interlinkage matrices from expert analysis and literature surveys. These three examples are used to discuss quantitative results that show parallels and contrasts between these networks and mathematical methodologies. The findings indicate that SDGs 12–15 are most in danger globally, as does the Sustainable Development Solutions Network. Perhaps more valuable is that research of interlinkage networks can reveal the structural concerns that contribute to these systemic findings, such as how much the whole-system structure of SDG interlinkages supports particular SDGs over others. Since sensitivity analyses can identify network alterations that would best improve Agenda 2030 outcomes, they can also quantify possible SDG interlinkage network improvements. Since interlinkage networks implicitly describe the overlaps, co-benefits, and trade-offs expected from a set of present or proposed future policy acts, they can influence policymaking.

Rana et al. (2022) geovisualized local area estimates of low birth weight (LBW) and short birth size (SBS) in India. A four-level logistic regression model was used to estimate the variance partitioning coefficient and precision-weighted prevalence of LBW (<2.5 kg) and SBS (mother's self-report) in 640 districts across 36 states and union territories of India from the 2015-2016 National Family Health Survey. For each outcome, the spatial distribution of mean prevalence by district, small area variation (measured by standard deviation), and correlation were calculated. In the valid sample, 17.6% (193,345) had LBW and 12.4% (253,213) had SBS. In LBW (52%) and SBS (78%), tiny areas contributed most to geographic variance. LBW in tiny areas varied widely across India. There was a high association between district-wide per cent and within-district standard deviation in both LBW (r= 0.88) and SBS (r= 0.87), but not necessarily in aspirational districts. The need for exact policy attention to small areas in Indian districts with high LBW and SBS in programme creation and intervention to enhance birthing outcomes was felt.

Rajpal et al. (2021) examined small area variance in child stunting, underweight, and wasting in 36 Indian states/UTs, 640 districts (543 PCs), and villages/blocks. Where the 2015–2016 Indian National Family Health Survey (NFHS-4) wave 4 was used for

analysis. Height and weight data were available for 225,002 children aged 0–59 months. The World Health Organisation child growth reference standards defined stunting as a height-for-age z-score below 2 SD. Similarly, underweight and wasting were defined as weight-forage < -2 SD and weight-for-height < -2 SD from age- and sex-specific medians. Stunting, underweight, and wasting variation were divided using a four-level logistic regression model. Standard deviation (SD) metrics were used to calculate precision-weighted prevalence and within-district/PC variance of child anthropometric deficiencies. Villages/blocks accounted for 56.4% (var: 0.237; SE: 0.008) of stunting variation, states/UTs 25.8%, and districts 17.7%. Villages/blocks accounted for 38.4% (var: 0.224; SE: 0.007) and 50% (var: 0.285; SE: 0.009) of contextual variance in India for underweight and wasting. Multilevel models using PC instead of districts showed similar results. We observed significant associations between stunting prevalence and SD ($r = 0.780$, $p < 0.001$), underweight ($r = 0.860$, $p < 0.001$), and wasting ($r= 0.857$, $p < 0.001$) across all Indian districts. Similar correlations were discovered with PCs. In India, child malnutrition variation is mostly within-district and within-PC. Our findings show that district and PC heterogeneity should be considered when planning and implementing child nutrition policy.

Haldar & Hembram (2020) assessed the feasibility of achieving the sustainable development goals (SDG) for health and well-being in India at the sub-national level using MDG health indicators. The present paper finds wide inter-state variations of health indicators set for MDG in India using different rounds of the National Family Health Survey (NFHS). The national-level performance of the MDG target for health indicators is not disappointing, but our sub-national level performance is not encouraging. They use the power mean method to calculate a health deprivation index (DIH) from a collection of parameters to assess state health over time. Results show that all states are losing health deprivation, but the rate is uneven, thus some major states are performing poorly relative to the national average. Panel data regression shows that state-specific character affects DIH. Income growth and human capital investment like health and education reduce DIH. All regression models show that female literacy greatly reduces DIH. The regression result shows the infrastructure stock index (II) in the predicted direction, but it is not statistically significant, possibly due to the removal of infrastructure quality. Lifestyle diseases and low public spending on health and education are important obstacles to India's health and well-being SDGs.

Hembram & Haldar (2020) examined health convergence utilising beta (β), sigma (σ), and club convergence in 26 Indian states using NFHS (1–4) data. An overall health index (OHI) from chosen health indicators for child, reproductive, and general health was calculated. In terms of OHI, states are improving, with absolute convergence in β and sub-dimensions, but diverging σ in all sub-health dimension indices except the child health index. The club convergence based on kernel density shows stratification, polarisation, and uni-modal distributions of states in terms of OHI. Over time, states

are converging to a steady state at higher OHI values, but five major states—UP, MP, Rajasthan, Bihar, and Assam—have a 'low-level health trap'. Except for Rajasthan, all four major states have low sub-health scores. These five largest states account for 50% of India's population and will generate over 50% of its demographic dividend. To gain from the demographic return, a large investment in human capital is needed. This 'low-level health trap' supports the 'big push' health idea. This analysis can inform sub-state policy.

Roy & Pramanick (2019) discuss India's UN SDG 6 monitoring and implementation concerns. 28 indicators (clustered into 11 dimensions) under two key groupings for biophysical and social development of water and sanitation to acknowledge society and economy's role in sustainability were chosen. India has falling biophysical water resources per capita and is slow to increase SDG 6 societal indicators. Then, India's biophysical consumption through 2050 based on past trends was assessed. It was also assessed how water and sanitation (SDG 6) affect health (SDG 3) and poverty (SDG 1) in India. These show that rising per capita GDP improves sanitation indices, which reduces water and sanitation-related diseases, notably in children and the elderly. Considering India's social and economic development, this cumulative assessment framework prioritises water resource appropriation, sanitation assessment, management response, and policy implementations for national-level inclusive sustainability of the water and sanitation sector.

Swaminathan et al. (2019) Analysed Indian demographic data at the parliamentary constituency level could make district-level estimates-based data-driven policy discourse more accountable. Two geographic information systems methods were used to predict four child malnutrition indicators (stunting, underweight, wasting, and anaemia) for India's 543 parliamentary constituencies using data from the fourth National Family Health Survey 2016. The results show that numerous seats have various child malnutrition burdens that must be addressed simultaneously and prioritised.

Bora & Saikia (2018) updated district-level disparities in the neonatal mortality rate (NMR) and U5MR with reference to SDG3 on preventable deaths among newborns and children under five. Recent population-based cross-sectional data from the 2015–2016 National Family Health Survey (NFHS) was used. The synthetic cohort probability technique was used to estimate the NMR and U5MR for the ten years before to the survey from the whole birth history of women aged 15–49. NMR and U5MR vary greatly throughout Indian districts. The estimated NMR for India for the period analysed is 2.4 times greater than the SDG3 objective for 2030, and the anticipated U5MR is twice. Although 9% of districts have reached the NMR target in SDG3, nearly half (315 districts) are unlikely to meet the 2030 target even if they achieve the NMR reductions their states achieved between the last two rounds of the National Family Health Survey of India. Fewer than one-third of Indian districts (177) will meet the SDG3 U5MR target by 2030. Most NMR and U5MR high-risk districts are

in poorer north-central and eastern India, while some are in prosperous and advanced states. About 97% of districts in Chhattisgarh and Uttar Pradesh are unlikely to fulfil the SDG3 target for avoidable deaths among newborns and children under five, regardless of gender. Most Indian districts must drastically cut NMR and U5MR to meet the 2030 SDG3 objective on unnecessary deaths.

Guégan (2018) examined SDG 3 "Ensuring a healthy life and promoting well-being for all ages," one of the most interrelated SDGs. Health and well-being are the purpose of this goal and the effect of other goals that help individuals progress in social, economic, and productive sectors. SDG 3 is a multifaceted and universal resource for sustainable development initiatives, especially in the neediest nations, and can preserve well-being and health. However, SDG 3's substantial sectorization makes it risky to meet its goals. Only national and international reflection on human population and animal health surveillance devices, environmental health, appropriate indicators, and specific research funding will balance society's demands and scientific and medical excellence. The agenda goals require trustworthy and relevant quantitative data on health and well-being, which is scarce or non-existent in some locations. Thus, a more integrative worldwide animal and public health and research strategy is needed to acquire new data, especially on emerging infectious illnesses that threaten public and animal health, especially in developing nations.

Lozano et al. (2018) assessed the health-related SDG index for 195 nations and territories from 1990 to 2017, projected indicators to 2030, and analysed global attainment on 41 of 52 indicators. 41 health-related SDG indicators from 1990 to 2017, up four since GBD 2016were tracked. Numerous previously published indicators' measurements werethen imoproved. In 2017, the worldwide median health-related SDG index was 59·4 (IQR 35·4–67·3), ranging from 11·6 (95% uncertainty interval 9·6–14·0) to 84·9 (83·1–86·7). Subnational SDG index values fluctuated greatly, especially in China and India, but were more consistent in Japan and the UK. Indicators differed by SDI quintile and sex, with males having worse NCD mortality, alcohol use, and smoking outcomes than females. Most nations were expected to have a higher health-related SDG index in 2030 than in 2017, but indicator-specific probability differed. Under-5 mortality, neonatal mortality, maternal mortality ratio, and malaria indicators had the most nations with 95% target attainment. Other variables, such as NCD mortality and suicide mortality, had no nations expected to fulfil SDG targets based on 2030 mean values but showed some possibility. The annualised rates of change needed to attain SDG targets for child hunger, several infectious illnesses, and most violent metrics exceeded any country's recent progress. Applying the mean global annualised rate of change to indicators without targets would reduce global smoking and alcohol consumption by 19% and 22%, adolescent birth rates by 47%, and health worker density per 1000 population by more than 85% by 2030.

Rahman et al. (2018) link sub-national food security and nutritional results to governance structure and policy agendas. The sub-national unit of analysis to analyse

the nutrition-food-agriculture nexus in India, as is customary in comparative literature were used. It was found that states with superior agricultural systems and public health and hygiene have higher nutritional results. The academic view of nutrition as multidimensional has been overlooked by policymakers. Addressing low nutritional outcomes in India requires a more detailed analysis of sub-regional variation and shifting sub-national policy paradigms.

Raut & Sahub (2017) calculate civil registration system indicators for 2001-14 in Rajasthan, India. Goal 3's major SDG indicators are targets 3.1 (By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births) and 3.2 (By 2030, end preventable deaths of newborns and children under 5 years old, with all countries aiming to reduce neonatal mortality to at least 12 per 1,000 live births and under-5 mortality to at least 25 per 1,000 live births). Civil registration data is not comparable to SRS figures because it is not classified by residence. However, it has been presented here to indicate and enhance the mechanism for generating credible vital rates at subnational levels utilising civil registration data, which programme managers and policymakers need for planning.

Boerma et al. (2014) summarise 13 national case studies and five technical assessments from a worldwide framework for measuring UHC progress. The case studies demonstrate that UHC monitoring can focus on two discrete health system performance components: healthcare coverage and financial protection, with a focus on equity. These components directly define UHC and measure UHC initiatives and policies. The studies also demonstrate how UHC monitoring may be fully integrated into conventional health sector performance monitoring. Several methodological and practical concerns linked to monitoring vital health service coverage, financial protection, and equity are discussed. Most countries must address data availability and quality issues to track UHC's success.

Deaton & Dreze (2009) examined Indian food intake and nutrition data. It seeks to explain puzzles, including the 25-year fall in average calorie intake. Despite real income gains and no long-term food price growth, real per capita expenditure has declined across the distribution. Calorie needs may have decreased due to lower physical activity or health benefits. If right, this does not mean Indians have no calorie deficits. These inadequacies are reflected in some of the worst anthropometric measures in the world, and their slow improvement is concerning. Recent changes are confusing, and nutrition monitoring is needed urgently.

Therefore, the paper seeks to explore the pivotal challenges and opportunities of SDG 3, and how can these be addressed to ensure long-term positive impacts at the sub-national level systematically. Based on this the primary objective of this study is to assess the level of sustainability in health and nutrition in India.

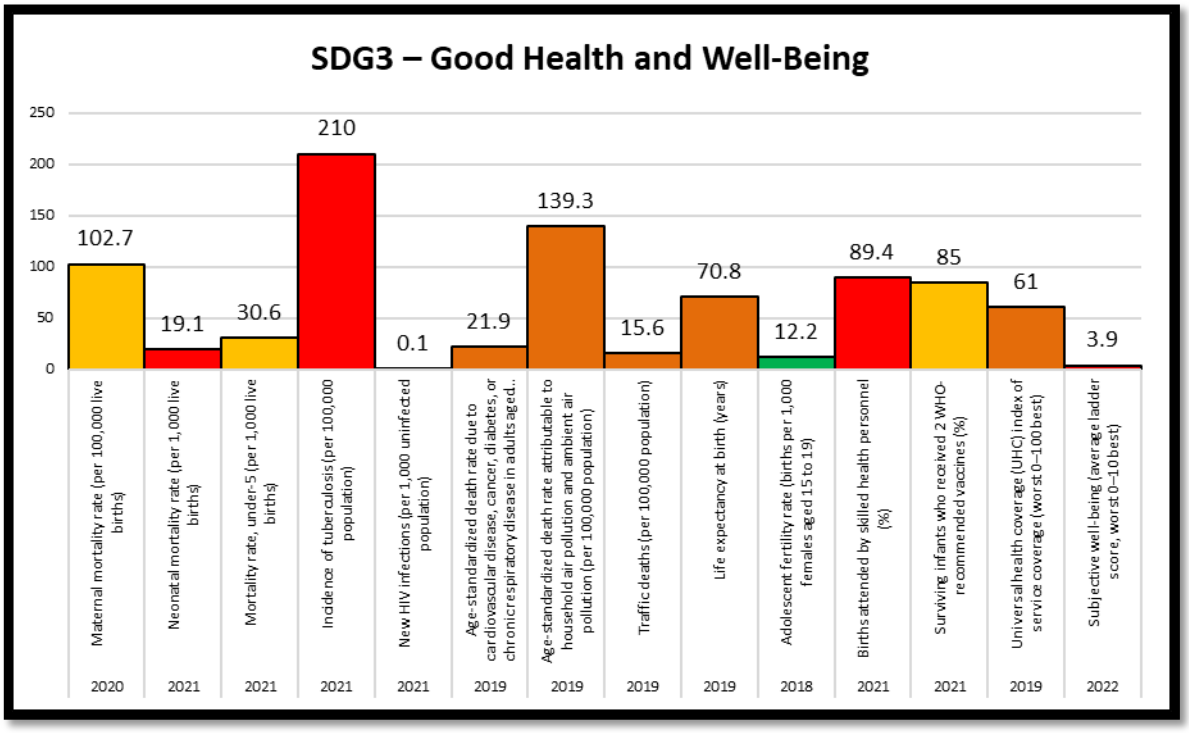
## III. Data Source and Methodology

Statistical data analysis and comparative evaluation are performed on the findings of the Sustainable Development Goals National Indicator Framework Progress Report 2023 (MoSPI, 2023) in the background of the 39 SDG 3 indicators and 9 targets. The study is quantitative and cross-sectional in nature based on secondary data whereby SDG 3 score of 28 states and 9 union territories were analysed and compared. Further the indicators of 9 SDG-3 targets are compared and assessed to get a better understanding of trends in the variations in values of these targets.The simple percentage method has been used to analyse and compare the results of various indicators of the SDG 3.Moreover, the composite index has been used to draw the results.

## IV. Results and Discussions

The results and discussions extracted from the data methodology are discussed in detail below:

**Figure 1: Performance by Indicators**

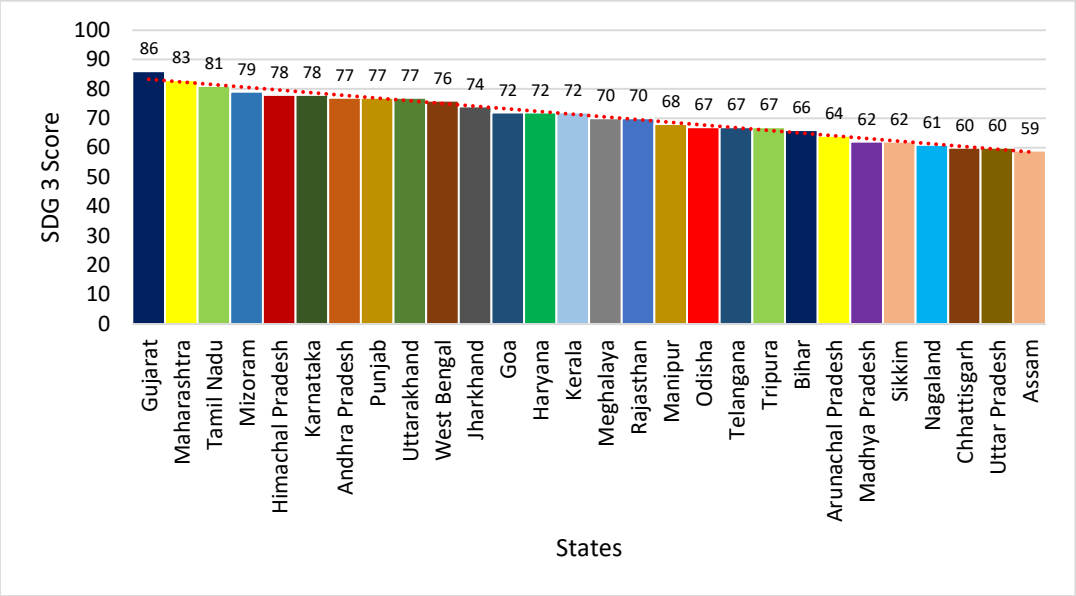



**Source:** Sustainable Development Report (2023)

Fig. 1 depicts the performance of India by the 15 indicators. India has achieved SDG 3 in 2 indicators that are (i) New HIV infections (per 1,000 uninfected population) and (ii) Adolescent fertility rate (births per 1,000 females aged 15 to 19). Out of 15 key indicators of SDG 3, India is on track or maintaining SDG achievement in five indicators, which are (i) Maternal mortality rate (per 100,000 live births), (ii) Neonatal mortality rate (per 1,000 live births), (iii) Mortality rate under-5 (per 1,000 live births), (iv)New HIV infections (per 1,000 uninfected population), and (v) Births attended by skilled health personnel (%). Challenges remain in achieving SDG3 in 3 indicators

namely (i) Maternal mortality rate (per 100,000 live births), (ii) Mortality rate, under-5 (per 1,000 live births), (iii) Surviving infants who received 2 WHO-recommended vaccines (%) as depicted by the colour yellow in fig. 1. Significant challenges are faced in 5 indicators in achieving SDG 3 which are: (i) Age-standardized death rate due to cardiovascular disease, cancer, diabetes, or chronic respiratory disease in adults aged 30–70 years (%), (ii) Age-standardized death rate attributable to household air pollution and ambient air pollution (per 100,000 population), (iii) Traffic deaths (per 100,000 population), (iv)Life expectancy at birth (years), and (v) Universal health coverage (UHC) index of service coverage (worst 0–100 best). As seen from the figure, as many as 4 indicators still have major challenges to deal with as depicted in red.

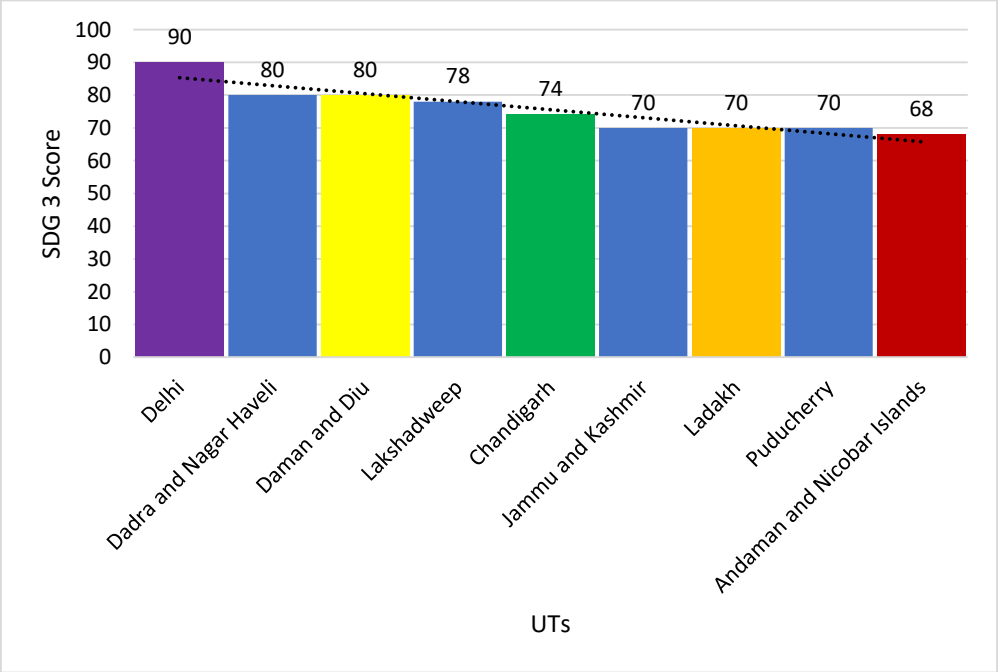
**Figure 2: State-wise SDG3 Score**




**Source:** SDG India Index (NITI Aayog, 2020)

India's overall score in SDG 3 is at 74 in 2020. Gujarat is the state with the highest SDG 3 score at 86 followed by Maharashtra at 83 points. The states with the lowest SDG 3 scores are Chhattisgarh (60), Uttar Pradesh (60) and Assam (59). Fig. 2 depicts this situation. Moreover, as in fig. 3 we assess the conditions of the union territories, we find Delhi with the highest SDG 3 score of 90 followed by Dadra and Nagar Haveli (80), Daman and Diu (80), Lakshadweep (78), Chandigarh (74) Jammu and Kashmir (70), Ladakh (70), Puducherry (70) and Andaman and Nicobar Islands with the lowest SDG3 score of 68 points.

**Figure 3: Union Territory-wise SDG3 Score**




**Source:** SDG India Index (NITI Aayog, 2020)

The pandemic and other continuing crises are impeding progress toward SDG3, worsening existing health disparities and jeopardizing progress towards universal health care. As a result, 68 million children are known to be unvaccinated or under-vaccinated as of 2022, increasing their risk of tuberculosis and malaria. This has been especially difficult in low- and middle-income nations, whose health services were already underfunded before the pandemic. The epidemic has also emphasized the need for more robust global health security measures to prevent and respond to future pandemics. To overcome these setbacks and address long-standing deficiencies in health-care service, health-care systems must be strengthened urgently.

- **Target 3.1:** The maternal mortality ratio decreased from 130 maternal deaths per 100,000 live births in 2014-16 to 97 in 2018-20, still over 15 points higher than the target of 70 maternal deaths by 2030. The remaining indicators (3.1.2, 3.1.3, and 3.1.4) have increased during 2014-16 and 2019-21.
- **Target 3.2:** U5MR reduced 43 in 2015 to 32 in 2020. Neonatalmortality rate fell from 25 deaths per 1,000 live births in 2015 to 20 deaths per 1,000 live births in 2020.
- **Target 3.3:** Progress towards the SDG target of ending communicable diseases by 2030 remains off course eventhough progress varies across different diseases. There has been decline in the epidemic infections in 6 out of 8 indicators during 2015-2022. The percentage of blocks reporting <1 Kala Azar case per 10,000 population out of Year the total endemic blocks has increased by 21.5 points in 2015-2022 while the percentage of districts reporting <1%Microfilaria rate (MF) out of Targeted Endemic districts has reported an increase by 18.8 points during this period.

- **Target 3.4:** Thesecond indicator of target 3.4, suicide mortality rate per 1,00,000 population per year recorded a rise to 11.3. There is no data available for 3.4.1 mortality rate attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease
- **Target 3.5:** The number of persons treated in de-addiction centres was at 1,46,124 in 2016-17 consistently dipping to 93,364 in 2019-20 following a sharp increase reaching 3,39,588 in 2022-23. The Percentage of population (men (15-49 years) & women (15 - 49 years)) who drink alcohol about once a week out of total population (men (15-49 years) & women (15 - 49 years) who drink alcohol increased for both males and females in 2019-21. Percentage of population (15 years and above) who consume alcohol, by sex in 2019-21 for males stood at 18.7 and for females at 1.3.
- **Target 3.6:** The number of people killed/injured in road accidents (per 1,00,000 population) increased to 11.38 deaths and 27.20 injury rates in 2021.
- **Target 3.7:** The percentage of currently married women aged 15-49 years who have their need for family planning satisfied with modern methods declined from 71.9 in 2015-16 to 74.1 in 2019-20. The adolescent birth rate (aged 15–19 years) per 1,000 women in that age group was 11.3 in 2020. There was an increase in the percentage of institutional births (5 years/1 years) from 78.9 in 2015-16 to 88.6 in 2016-17. As a positive change, the percentage of currently married women (15-49 years) who use any modern family planning methods increased to 56.4 in 2019-21. The percentage of women aged 15-19 years who were already mothers or pregnant dropped from 7.9 in 2015-16 to 6.8 in 2019-21.
- **Target 3.8:** Aims to achieve universal health coverage, including financial risk protection, access to quality essential health-care services and access to safe, effective, quality, and affordable essential medicines and vaccines for all. Proportion of population with large household expenditures on health as a share of total household expenditure or income with expenditure > 10% in 2017-18 was 6.67 and with expenditure >25% in 2017-18 was at 2.3. The percentage of people living with HIV currently receiving ART among the detected number of adults and children living with HIV has consistently decreased from 83in 2020-21 to 86 in 2022-23. The prevalence of hypertension among men and women age 15 years and above (in percentage) for 2019-21 was at 24 and 21.3 respectively. The percentage of women aged 30-49 years who have ever undergone a screening test for cervical cancer is at a low of 1.9 in 2019-21.

## Table 1: Target 3.1 and 3.2

| | Goal 3:Ensure healthy lives and promote well -being for all at all ages | | |
|---|---|---|---|
| SL | NATIONAL INDICATOR | VALUE OF THE INDICATOR | |
| 1 | **Target 3.1:By 2030, reduce the global maternal mortality ratio to less than 70per 1,00,000 live births** | | |
| | 3.1.1: Maternal Mortality Ratio, (per 1,00,000 live births) Source: Office of the Registrar General & Census Commissioner, India, Ministry of HomeAffairs / Periodicity: Annual | Year | Value |
| | | 2014-16 | 130 |
| | | 2015-17 | 122 |
| | | 2016-18 | 113 |
| | | 2017-19 | 103 |
| | | 2018-20 | 97 |
| | | | |
| 2 | 3.1.2: Percentage of births attended by skilled health personnel (Period 5 years), Source: Ministry of Health and Family Welfare (National Family Health Survey) /Periodicity: 3 Years | Year | Value |
| | | 2015-16 | 81.40 |
| | | 2019-21 | 89.4 |
| | | | |
| 3 | 3.1.3: Percentage of births attended by skilled health personnel (Period 1 year), Source: Ministry of Health and Family Welfare (National Family Health Survey) /Periodicity: 3 Years | Year | Value |
| | | 2015-16 | 84.40 |
| | | 2019-21 | 90.90 |
| | | | |
| 4 | 3.1.4: Percentage of women aged 15-49 years with a live birth, for last birth, who received antenatal care, four times or more (Period 5 years/1 year) Source: Ministry of Health and Family Welfare (National Family Health Survey) / Periodicity: 3 Years | Year | Value (5 years) |
| | | 2015-16 | 51.2 |
| | | 2019-21 | 58.50 |
| | **Target 3.2: By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births** | | |
| 1 | 3.2.1: Under-five mortality rate, (per 1,000 live births) Source: Office of the Registrar General & Census Commissioner, India, Ministry of HomeAffairs / Periodicity: Annual | Year | Value |
| | | 2015 | 43 |
| | | 2016 | 39 |
| | | 2017 | 37 |
| | | 2018 | 36 |
| | | 2019 | 35 |
| | | 2020 | 32 |
| 2 | 3.2.2: Neonatal mortality rate (per 1,000 live births) Source: Office of the Registrar General & Census Commissioner, India, Ministry of HomeAffairs / Periodicity: Annual | Year | Value |
| | | 2015 | 25 |
| | | 2016 | 24 |
| | | 2017 | 23 |
| | | 2018 | 23 |
| | | 2019 | 22 |
| | | 2020 | 20 |

**Source:** Sustainable Development Goals National Indicator Framework Progress Report 2023 (MoSPI, 2023)

## Table 2: Target 3.3

**Target 3.3: By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases**

| SL | NATIONAL INDICATOR | VALUE OF THE INDICATOR | |
|---|---|---|---|
| 1 | 3.3.1: Number of new HIV infections per 1,000 uninfected population<br>Source: Ministry of Health and Family Welfare (National AIDS Control Organisation) /Periodicity: Annual | Year | Value |
| | | 2015 | 0.06 |
| | | 2016 | 0.06 |
| | | 2017 | 0.06 |
| | | 2018 | 0.06 |
| | | 2019 | 0.05 |
| | | 2020 | 0.05 |
| | | 2021 | 0.05 |
| | | 2022 | 0.05 |
| 2 | 3.3.2: Tuberculosis incidence per 1,00,000 population<br>Source: Ministry of Health and Family Welfare (RNTCP Division) / Periodicity: Annual | Year | Value |
| | | 2015 | 225 |
| | | 2016 | 217 |
| | | 2017 | 211 |
| | | 2018 | 206 |
| | | 2019 | 201 |
| | | 2020 | 194 |
| | | 2021 | 197 |
| 3 | 3.3.3: Malaria incidence per 1,000 population<br>Source: Ministry of Health and Family Welfare (NVBDCP Division) / Periodicity: Annual | Year | Value |
| | | 2015 | 0.92 |
| | | 2016 | 0.85 |
| | | 2017 | 0.64 |
| | | 2018 | 0.32 |
| | | 2019 | 0.25 |
| | | 2020 | 0.14 |
| | | 2021 | 0.12 |
| | | 2022 | 0.13 |
| 4 | 3.3.4: Prevalence of Hepatitis 'B' per 1,00,000 population<br>Source: Ministry of Health and Family Welfare / Periodicity: Annual | Year | Value |
| | | 2021 | 8.5 |
| 5 | 3.3.5: Dengue: Case Fatality Ratio<br>Source: Ministry of Health and Family Welfare (NVBDCP Division) / Periodicity: Annual | Year | Value |
| | | 2015 | 0.22 |
| | | 2016 | 0.19 |
| | | 2017 | 0.17 |
| | | 2018 | 0.21 |
| | | 2019 | 0.09 |
| | | 2020 | 0.15 |
| | | 2021 | 0.18 |
| | | 2022 | 0.12 |
| 6 | 3.3.6: Proportion of grade-2 cases amongst new cases of Leprosy, (Per million population)<br>Source: Ministry of Health and Family Welfare / Periodicity: Annual | Year | Value |
| | | 2015-16 | 4.46 |
| | | 2019-20 | 1.96 |
| | | 2021-22 | 1.36 |
| | | 2022-23 | 1.70 |
| 7 | 3.3.7: Percentage of blocks reporting < 1 Kala Azar case per 10,000 population out of the total endemic blocks<br>Source: Ministry of Health and Family Welfare (NVBDCP Division) / Periodicity: Annual | Year | Value |
| | | 2015 | 78.34 |
| | | 2016 | 85.15 |
| | | 2017 | 88.63 |
| | | 2018 | 91.63 |
| | | 2019 | 94.15 |
| | | 2020 | 97.47 |
| | | 2021 | 98.73 |
| | | 2022 | 99.84 |
| 8 | 3.3.8: Percentage of districts reporting < 1% Microfilaria rate (MF) out of Targeted Endemic districts<br>Source: Ministry of Health and Family Welfare (NVBDCP Division) / Periodicity: Annual | Year | Value |
| | | 2015 | 22.66 |
| | | 2016 | 30.47 |
| | | 2017 | 34.77 |
| | | 2018 | 37.11 |
| | | 2019 | 38.13 |
| | | 2020 | 36.03 |
| | | 2021 | 40.24 |
| | | 2022 | 41.46 |

**Source:** Sustainable Development Goals National Indicator Framework Progress Report 2023 (MoSPI, 2023)

## Table 3: Target 3.4, 3.5, and 3.6

| Target 3.4: By 2030, reduce by one third premature mortality from non-communicable diseases through prevention and treatmentand promote mental health and well-being | | | |
|---|---|---|---|
| **SL** | **NATIONAL INDICATOR** | **VALUE OF THE INDICATOR** | |
| 1 | 3.4.2: Suicide mortality rate, (per 1,00,000 population) Source: National Crime Records Bureau, Ministry of Home Affairs / Periodicity: Annual | Year | Value |
| | | 2015 | 10.6 |
| | | 2016 | 10.3 |
| | | 2018 | 10.2 |
| | | 2019 | 10.4 |
| | | 2020 | 11.3 |
| | | | |
| **Target 3.5: Strengthen the prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol** | | | |
| **SL** | **NATIONAL INDICATOR** | **VALUE OF THE INDICATOR** | |
| 1 | 3.5.1: Number of persons treated in de-addiction centres Source: Department of Social Justice & Empowerment, Ministry of Social Justice &Empowerment / Periodicity: Annual | Year | Value |
| | | 2015-16 | 1,46,124 |
| | | 2016-17 | 1,14,759 |
| | | 2017-18 | 1,00,737 |
| | | 2018-19 | 77,479 |
| | | 2019-20 | 93,364 |
| | | 2020-21 | 2,08,415 |
| | | 2021-22 | 2,85,559 |
| | | 2022-23 | 3,39,588 |
| | | | |
| 2 | 3.5.2: Percentage of population (men (15-49 years) & women (15 - 49 years)) who drink alcohol about once a week out of total population (men (15-49 years) & women (15 - 49 years)) who drink alcohol Source: Ministry of Health and Family Welfare (National Family Health Survey) / Periodicity: 3 Years | | |
| | | Year | Value |
| | | 2015-16 | Male: 40.7 Female: 35.0 |
| | | 2019-21 | Male: 43.4 Female: 36.6 |
| | | | |
| 3 | 3.5.3: Percentage of population (15 years and above) who consume alcohol, by sex, Source: Ministry of Health and Family Welfare / Department of Health and FamilyWelfare / Periodicity: 3 Years | 2019-21 | Male: 18.7 Female: 1.3 |
| | **Target 3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents** | | |
| **SL** | | | |
| 1 | **NATIONAL INDICATOR** | **VALUE OF THE INDICATOR** | |
| | 3.6.1: People killed/injured in road accidents (per 1,00,000 population) (similar to 11.2.2) Source: National Crime Records Bureau, Ministry of Home Affairs / Periodicity: Annual | Year | Value |
| | | 2015 | Death: 11.81 Injury Rate: 38.31 |
| | | 2016 | Death: 11.92 Injury Rate: 38.11 |
| | | 2017 | Death: 11.46 Injury Rate: 34.85 |
| | | 2018 | Death: 11.54 Injury Rate: 33.74 |
| | | 2019 | Death: 11.57 Injury Rate: 32.84 |
| | | 2020 | Death: 9.84 Injury Rate: 24.76 |
| | | 2021 | Death: 11.38 Injury Rate: 27.20 |

**Source:** Sustainable Development Goals National Indicator Framework Progress Report 2023 (MoSPI, 2023)

## Table 4: Target 3.7

| **Target 3.7: By 2030, ensure universal access to sexual and reproductive health-care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes** | | | |
|---|---|---|---|
| **SL** | **NATIONAL INDICATOR** | **VALUE OF THE INDICATOR** | |
| 1 | 3.7.1: Percentage of currently married women aged 15-49 years who have their need for family planning satisfied with modern methods Source: Ministry of Health and Family Welfare (National Family Health Survey) /Periodicity: 3 Years | Year | Value |
| | | 2015-16 | 71.9 |
| | | 2019-20 | 74.1 |
| | | | |
| 2 | 3.7.2: Adolescent birth rate (aged 15–19 years) per 1,000 women in that age group Source: Office of the Registrar General & Census Commissioner, India, Ministry ofHomeAffairs / Periodicity: Annual | Year | Value |
| | | 2015 | 11.1 |
| | | 2016 | 10.7 |
| | | 2017 | 13 |
| | | 2018 | 12.2 |
| | | 2019 | 10.6 |
| | | 2020 | 11.3 |
| | | | |
| 3 | 3.7.3: Percentage of Institutional Births (5 years/1 years) Source: Ministry of Health and Family Welfare (National Family Health Survey) /Periodicity: 3 Years | Year | Value (5 Year) |
| | | 2015-16 | 78.9 |
| | | 2016-17 | 88.6 |
| | | | |
| 4 | 3.7.4: Percentage of currently married women (15-49 years) who use any modern family planning methods, (similar to 3.8.1) Source: Ministry of Health and Family Welfare (National Family Health Survey) /Periodicity: 3 Years | Year | Value |
| | | 2015-16 | 47.7 |
| | | 2019-21 | 56.4 |
| | | | |
| 5 | 3.7.5: Percentage of women aged 15-19 years who were already mothers or pregnant Source: Ministry of Health and Family Welfare (National Family Health Survey) /Periodicity: 3 Years | Year | Value |
| | | 2015-16 | 7.9 |
| | | 2019-21 | 6.8 |

**Source:** Sustainable Development Goals National Indicator Framework Progress Report 2023 (MoSPI, 2023)

## Table 5: Target 3.8 and3.9

| Target 3.8: Achieve universal health coverage, including financial risk protection, access to quality essential health-care services andaccess to safe, effective, quality and affordable essential medicines and vaccines for all | | | |
|---|---|---|---|
| **SL** | **NATIONAL INDICATOR** | **VALUE OF THE INDICATOR** | |
| 1 | 3.8.1: Percentage of currently married women (15-49 years) who use any modern family planning methods, (similar to 3.7.4) Source: Ministry of Health and Family Welfare (National Family Health Survey) /Periodicity: 3 Years | Year | Value |
| | | 2015-16 | 47.7 |
| | | 2019-20 | 56.4 |
| | | | |
| 2 | 3.8.2: Proportion of population with large household expenditures on health as a share of total household expenditure or income Source: SDRD, Ministry of Statistics and Programme Implementation / Periodicity: 5 years | Expenditure on Health (2017-18) | Value |
| | | > 10% | 6.67 |
| | | > 25% | 2.3 |
| | | | |
| 3 | 3.8.3: Percentage of people living with HIV currently receiving ART among the detected number of adults and children living with HIV Source: Ministry of Health and Family Welfare (National AIDS Control Organisation) /Periodicity: Annual | Year | Value |
| | | 2015-16 | 62 |
| | | 2017-18 | 70 |
| | | 2018-19 | 82 |
| | | 2019-20 | 84 |
| | | 2020-21 | 83 |
| | | 2021-22 | 84 |
| | | 2022-23 | 86 |
| | | | |
| 4 | 3.8.4: Prevalence of hypertension among men and women age 15 years and above (in percentage) Source: Ministry of Health and Family Welfare (National Family Health Survey) /Periodicity: 3 Years | Year | Value |
| | | 2019-21 | Male: 24.0 Female:21.3 |
| | | | |
| 5 | 3.8.5: Percentage of population in age group 15-49 who reported sought treatment out of total population in that age group having diabetes Source: Ministry of Health and Family Welfare (National Family Health Survey) / Periodicity: 3 Years | Year | Value |
| | | 2015-16 | Male: 72.50 Female:81.30 |
| | | 2019-21 | Male: 71.50 Female: 80.70 |
| | | | |
| 6 | 3.8.6: Percentage of women aged 30- 49 yeas who have ever undergone a screening test for cervical cancer Source: Ministry of Health and Family Welfare (National Family Health Survey) /Periodicity: 3 Years | Year | Value |
| | | 2019-21 | 1.9 |
| | | | |
| 7 | 3.8.7: Percentage of TB cases successfully treated (cured plus treatment completed) among TB cases notified to the national health authorities during a specified period Source: Ministry of Health and Family Welfare, RNTCP Division (Revised NationalTuberculosis Control Programme, NIKSHAY) / Periodicity: 2 Years | Year | Value |
| | | 2015 | 87 |
| | | 2016 | 78 |
| | | 2017 | 79 |
| | | 2018 | 81 |
| | | 2019 | 81 |
| | | 2020 | 82 |
| | | 2021 | 83 |
| | | 2022 | 86 |
| | | | |
| **Target 3.9: By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soilpollution and contamination** | | | |
| **SL** | **NATIONAL INDICATOR** | **VALUE OF THE INDICATOR** | |
| 1 | 3.9.2: Proportion of men and women reporting Asthma in the age group 15-49 years Source: Ministry of Health and Family Welfare (National Family Health Survey) /Periodicity: 3 years | Year | Value |
| | | 2015-16 | Male: 1.20 Female: 1.90 |
| | | 2019-21 | Male: 1.20 Female: 1.60 |
| | | | |
| 2 | 3.9.3: Mortality rate attributed to unintentional poisoning, (per 1,00,000 population) Source: National Crime Records Bureau, Ministry of Home Affairs / Periodicity: Annual | Year | Value |
| | | 2015 | 2.08 |
| | | 2016 | 1.81 |
| | | 2017 | 1.59 |
| | | 2018 | 1.64 |
| | | 2019 | 1.58 |
| | | 2020 | 1.64 |
| | | 2021 | 1.72 |

**Source:** Sustainable Development Goals National Indicator Framework Progress Report 2023 (MoSPI, 2023)

- The percentage of population in age group 15-49 who reported sought treatment out of total population in that age group having diabetes decreased for males to 71.50 and for females to 80.70 in 2019-21. The percentage of women aged 30- 49 yeas who have ever undergone a screening test for (cured plus treatment completed) among TB cases notified to the national health authorities during a specified period has been increasing since 2016 and stands at 86 in 2022.
- 
- **Target 3.9:** Lastly the ninth target of SDG 3 aspires to by 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination. The proportion of men and women reporting asthma in the age group 15-49 years for males is constant at 1.20 in 2015-16 and 2019-20 whereas for females, it has fallen from 1.90 to 1.60 in value. The mortality rate attributed to unintentional poisoning, (per 1,00,000 population) has been fluctuating between 2015 and 2021 ranging between 2.08 to 1.72 in value.

The SDG 3 comprises the above discussed 9 targets and 4 additional targets namely Target 3.a: Strengthen the implementation of the World Health Organization Framework Convention on Tobacco Control in all countries, as appropriate, Target 3.b: Support the research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration on the agreement and public health, which affirms the right of developing countries to use to the full the provisions in the agreement on trade-Related aspects of Intellectual property Rights regarding flexibilities to protect public health and, in particular, provide access to medicines for all, Target 3.c: Substantially increase health financing and the recruitment, development, training and retention of the health workforce in developing countries, especially in least developed countries and small island developing states and Target 3.d: Strengthen the capacity of all countries, in particular developing countries, for early warning, risk reduction and management of national and global health risks. Therefore, making it a total of 13 targets. This study analysed the nine primary targets to draw results.

## V. Conclusion and Recommendations

Achievement of SDG 3 is specifically essential for India, considering the demographic dividend it has at its disposal. India being presented as the voice of the Global South has become a shared platform to deliberate on the concerns, issues and policies that affect the developing countries in multi-faceted ways. India has faced hurdles in the equitable allocation and provision of health services in the past moreover there also exists a divide in rural and urban areas. Thus, it is imperative to introduce policy measures working towards the reduction of headline indicators like maternal

mortality rate and alleviating malnutrition levels among children. The COVID-19 pandemic and other geo-political crises have hindered the progress in achieving SDG 3 in the last few years resulting in an exacerbation of health inequalities and a defer in progress towards universal health coverage.

Health is considered a key factor in explaining the economic growth of a country. Therefore, dedicated efforts towards healthcare services and activities will contribute to the existing demographic dividend, labour productivity and lower cost of ailments. It is concluded that although India has been working to touch every aspect of SDG 3 and strengthen the health sector in the country yet for India, to achieve the 2030 target of UN SDG 3 – 'Good Health and Well Being', the need of the hour is to accelerate the pace of policy implementation and cover the rural-urban gap in healthcare services.

Even though notable strides have been made towards improving health outcomes by India yet there remains a lot of scope of imorovement in order to achieve SDG 3 by 2023. Based on the analysis, Gujarat and Maharashtra have been performing better than the other states which establishes them as role models for the remaining states. Delhi emerged as the UT with the highest SDG3 scoring.The analysis of more than 33 indicators presented the upward and downward trends in different target indicators. It is recommended that health statistical forces like National Family Health Surveys (NFHS) should align their surveys and studies extensively with the global and National Indicator Framework drawn out for SDGs. This would enable a direct correlation between SDGs and India's progress paving way for econoic development.

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