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SDG Attainments as Bedrock of Viksit Bharat: Interconnects of Target 3.1 as a Test Manifestation

Pramod Kumar Anand*

Abstract: The discussion paper analyses the progress and estimates achievements of Indian States under the SDG Target 3.1 on Maternal Mortality Ratio (MMR) by 2030. It further reveals that interdependence among targets can help transverse much-needed progress under various targets across all the dimensions of the SDGs. In turn, it beacons how the journey to realise the vision of Viksit Bharat @2047 can be accelerated. It is found that on the MMR parameter, India can, by 2047 or even three years before, achieve the level currently set by WHO for the high-income countries. A regression on ln (MMR) also yielded results robust in statistical significance. Further, many determinants of ln (MMR), including deliveries by Skilled Birth Attendants (SBA)- the other indicator under target 3.1, were also found to be highly correlated with it, though not independent in nature. Moreover, as causality between the social and financial parameters runs in both directions, it can be harnessed, thus the attainment of each target in Mission mode, can make India a developed country having a prosperous society by 2047.

Keywords: Inclusion, Interconnects, Maternal Mortality Ratio (MMR), Sustainable Development Goals (SDGs), Viksit Bharat @2047.

1. Introduction

Viksit Bharat@2047 envisions a developed and prosperous India by its centenary year of independence. The resolution is not limited to financial targets aimed at becoming a high per capita economy, but goes beyond to envision wave-fronts of progress toward becoming a flourishing society. A special feature of this journey is that India, long back a prosperous nation, needs to regain its pride of place. In this journey, this discussion paper brings forth that the SDG targets have strong interconnects

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operating in sync as pieces of a vibrant orchestra. And such synergy in unison performing as a melodious symphony is the bedrock to traverse this cherished path. It is also revealed that the causality between financial and other targets runs both ways and can prove to be a guiding mantra to reach prosperity for the society reflected in as a developed India. Target 3.1 on the Maternal Mortality Ratio is analysed at depth to bring out interconnects and estimate scenarios.

2. Choice of SDG target 3.1 on Maternal Mortality Ratio (MMR) as a Test Case

To meaningfully engage with the targets and their underneath indicators, if only one indicator is to be analysed as a test case, it should preferably pass through the following filters:

a. An indicator which was used during the preceding era of MDGs, i.e. 2000-2015, which had a baseline of 1990, to facilitate analysis of past achievements and to benefit from long-term time series data.

b. In the three-tier classification, it should have been in the topmost category i.e. Tier 1, defined by the UN, Department of Economics and Social Affairs, Inter-Agency and Expert Group (IAEG) on Sustainable Development Goal Indicators as, 'Indicator is conceptually clear, has an internationally established methodology and standards are available, and data are regularly produced by countries for at least 50 per cent of countries and of the population in every region where the indicator is relevant'.

c. Inclusion in the IAEG list of global indicators.

d. Inclusion in the MoSPI list covering national indicators.

In light of the above analysis, Maternal Mortality Ratio (MMR), one of the few that meets all the specified criteria, is selected in this Paper as a test indicator and a stepping stone to examine various SDG dimensions, and interconnects across indicators.

Notably, the Maternal Mortality Ratio (MMR) is precisely defined by WHO[1] as the number of maternal deaths[2] in a population per 100,000 live births, and accordingly used in this Paper.[3]

3. Review of Literature

To achieve lower MMR, Souza *et al.* argued at the threshold of the SDG era that social determinants and health systems play a significant role in reducing maternal mortality[4]. They added that such a reduction not only spares of several lives, but indicates significant progress towards development and gender equality in the world, though the progress is still insufficient.

On India's achievements in reducing MMR, Tolani *et al.* argue[5] that most of the decline in Indian MMR is seemingly attributable to improvements in health system indicators. Over the years the Government initiatives that have facilitated progress include the National Health Mission, monetary benefits under Janani Suraksha Yojana, Janani Shishu Suraksha Karyakram (JSSK), Dakshta, Labour Room Quality Improvement Initiative (LaQshya), and Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA). They further argue that an MMR study faces limitations due to the non-availability of relevant data from a single source.

Biraj *et al.* analysing of MMRs across 45 low and middle-income countries argue that the MMR estimates are significantly influenced by total fertility rate, skilled birth attendance rate, GDP per capita, and female and male literacy rates.[6] They further add that MMRs are lower in the countries that have better socio-demographic indices reflecting a higher status of women.

On an analysis of aspirational districts Sharma *et al.*, argue[7] that strengthening of maternal health services remains a key concern for the policymakers across India. They add that efficiencies can be enhanced through better resource management and allocation like in institutional deliveries.

Souza *et.al.* argue the need for more intense social transformations, along with gains from efficiency and better quality of health systems[8].

Vogel *et al.* argue[9] for the need to go beyond the definitional forward cut-off of six weeks after the birth, even though deaths in such an extended period wouldn't count in the computations of MMR. They add the need for awareness, and multilateral advocacy covering each level to achieve SDG 3. Moreover, they underscore the need to amplify the voices of women, representative organisations, patient advocacy, along with higher investments in research, and to share the evidence-based information.

Emphasising the role of social determinants of health Souza *et al.* argue, that these are derived from economic, political, and cultural superdeterminants.[10] They add that these are non-biomedical factors; however, having a life-long influence on health risks and outcomes.

On the issue of education quality Goczek *et al.* use Programme for International Student Assessment (PISA) scores as a proxy for quality, and through a cross-country perspective of economic growth, argue that the quality of education should be considered as a key driver.[11] They point out the endogeneity of the quality of education, because the causality runs in the inverse direction also, as it also affects other economic variables.

4. The 2030 Agenda with SDGs at its Core

This journey towards a Viksit Bharat can be built through the globally resolved 'Transforming our world: the 2030 Agenda for Sustainable Development', 2016-30 adopted in 2015 which at its core has SDGs and is inclusive, sustainable, and aims to leave no one behind.

It encompasses the 17 Sustainable Development Goals (SDGs), and under these the 169 related targets, adopted by the 193 UN members with a consensus. Further, to achieve these Goals, the Inter-Agency Expert Group (IAEG) evolved global indicators, which number 251 as of March 2025 (234 plus repetitions twice or thrice), while simultaneously extending flexibility to each member to evolve its own national indicators.

Accordingly, in India, the Ministry of Statistics and Programme Implementation (MoSPI), in this journey, had placed a list of possible national indicators, in the public domain, taken feedback and evolved national indicators, which in its 2024 Report numbered 290. Notably, under it, the 'SDG 3: Good Health and Well-Being' has as many as 38 national indicators, the highest number for any Goal, of which indicators under target 3.1 are the stepping stone of this Paper towards the vision of Viksit Bharat.

5. Viksit Bharat @2047

5.1 Vision of Viksit Bharat

Indian PM, in his speech on the 77th Independence Day, 15th August, 2023, underscored that the dream of a developed India by 2047, is not just a dream but a resolve of 1.4 billion citizens.

This guided the Interim Union Budget of India for 2024-25, which stressed that the vision of *Viksit Bharat* is rooted in sustainability-envisaging a prosperous nation in harmony with nature, supported by modern infrastructure and equitable opportunities for all people and regions. Within the framework of the *Amrit Kaal* journey, the budget highlighted a strategy that intertwines sustained economic growth with the objectives of inclusive and sustainable development.

Next, on the 78th Independence Day, 15th August, 2024, the Indian PM resolved to make India a prosperous country by achieving the goal of a 'Viksit Bharat'. He emphasised on to march forward, step by step and shoulder to shoulder overcoming challenges of scarcities and struggle for resources.

The concept of a developed India @2047, entails efforts of all backing the trinity of demography, democracy and diversity, which has the potential to fulfil the aspirations of all.

5.2 Strong SDG Interconnects:

It is a fact the all the three dimensions of SDGs. i.e. social, economic and environmental, are strongly interconnected. A salient feature of the choice of indicators needs to be not to overlook the poor and vulnerable people. For instance, under the social dimension, such sections have a higher probability of experiencing, under-five mortality, maternal mortality, access to Skilled Birth Attendant (SBA), or lack of access to immunisation. On the other hand, under the economic dimension an indicator like the low per capita real income is, by definition, nothing but the averaged incomes that happen to be at low level, necessitating the addition of distributive indicators for further analysis. However, some of the distribution capturing indicators, like the Gini Coefficient, capture only inequality *per se* but do not reflect inequity, necessitating the analysis of a pathway like the Inequity Augmented Lorenz Curve as contributed to the literature by Anand and Kumar (2023, RIS DP no. 287). The environmental dimension, obviously has indicators like air pollution that give a macro picture, as every segment of the society is adversely affected by it. However, poor and vulnerable are affected more, making a case for better indicators. Obviously, among the indicators, the ones emanating from individuals and households have a relatively better scope to formulate tailor-made interventions.

6. India's MMR Achievements Since Independence

6.1 MMR Stages

Souza *et al.* argue[12] that although the mortality transition is continuous certain stages can be adopted with cut-offs to show how countries are placed across differing social and health development typologies. A notable aspect is how the cut-offs have been modified over the years, as the higher burden laden Stage 1 now captures a tightened MMR value of above 500, against an earlier Paper[13] of Souza proposing it at above 1,000. The MMR reduction stages can presently be summarised under the obstetric transition framework, as described by them encompassing five stages of diminishing burden:

i. Stage 1 very high maternal mortality (> 500)
ii. Stage 2 high maternal mortality (300 to 499)
iii. Stage 3 intermediate maternal mortality 100 to 299
iv. Stage 4A low (20 to 99) and stage 4B very low maternal mortality (<20) and
v. Stage 5 an improved version of stage 4B under which all avoidable maternal deaths are prevented.

They rightly point out that several stages of transition might co-exist within the same country. India had remained in stage 1 for almost two decades after its independence; it then reached stage 2 during the 1960s and remained in it for almost the next four decades. It next entered the stage 3 in 2003, followed by entering stage 4A in 2019. As estimates in this discussion paper would reveal, India is not likely to enter the Stage 4B by 2030, however, Kerala (the leading State on this indicator), Telangana, Maharashtra, AP and Jharkhand are estimated to enter so in this sequence.

6.2 Nature of the MMR Parameter

The building blocks of the empirical relationship of MMR, recognising its nature use its natural logarithm i.e. ln (MMR) for modelling its declines. As an example, WHO also treats it so in the natural log form in the Chapter 3 on 'Methods' on MMR.[14] Such a parameter by nature shows declines, but at reducing absolute rates, because the first differential of ln (x) being (1/x) indicates the rate of decline to be inversely proportional to its instant value. Therefore, assuming that the MMR decline follows a falling exponential curve; if its value MMR_0 at year zero declines to MMR_1 in year 1, the relationship can be expressed as:

$MMR_1 = e^{-\alpha} * MMR_0$ where $\alpha > 0$, as well $\alpha << 1$, i.e. α is positive but very small compared to unity,

next, on taking (natural) log, one gets

$-\alpha = \ln (MMR_1/MMR_0)$, which on rearranging yields,

or, $-\alpha = \ln [1 - \{(MMR_0 - MMR_1)/(MMR_0)\}]$,

the r.h.s. is akin to ln [1-x] for $x > 0$, which on Taylor Series expansion leads to,

$\ln[1-x] = -(x) - (x^2/2) - (x^3/3) - (x^4/4) \ldots$ for which in the present case of a positive but very small x compared to unity, only the first term can be retained, as others are relatively much smaller and diminishing,

so $-\alpha = -\{(MMR_0 - MMR_1)/(MMR_0)\}$,

or $\alpha = \{(MMR_0 - MMR_1)/(MMR_0)\}$, the r.h.s. is now nothing but the annual rate of reduction (ARR). Thus, one can use α and ARR interchangeably,

Extending it to the general case of 't' years,

$MMR_t = (e^{-\alpha * t}) * MMR_0$ assuming a constant ARR over the period 0 to t years, indicating a series of declining MMR values, in which in absolute terms each decline, becomes smaller.

As an example, if ARR = 0.06 (or six per cent), and MMR_0 is 100, each year its value declines to 0.94 proportion of its value in the preceding year. Thus the proportion of MMR value at year t=10 is $(0.94)^{10}$ or 0.5386, giving an MMR of 53.86. Further, the decline in the 11^{th} year being 6 per cent of 53.86 would be around 3.23, bringing the MMR down to 50.63.

7. SDG versus MDG Stipulations on MMR

7.1 Definition and Intricacies

The Maternal Mortality Ratio (MMR) is defined as the number of maternal deaths during a given time period per 100,000 live births during the same time period. It depicts the risk of maternal deaths relative to the number of live births and essentially captures the risk of death in a single pregnancy or a single live birth.

Maternal deaths are the annual number of female deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy and childbirth or within 42 days of termination (including live childbirth) of pregnancy, irrespective of the duration and site of the pregnancy. Toward it, a live birth is defined to be, irrespective of the duration of the pregnancy, which, after separation from the mother, breathes or shows any other evidence of life such as beating of the heart, pulsation of the umbilical cord, or definite

movement of voluntary muscles. Notably, for the purpose of international reporting of maternal mortality, only the maternal deaths occurring before the end of the 42-day reference period are included in calculating various mortality ratios and rates. However, recording later deaths is encouraged to inform national, regional, and global understanding of these events.

7.2 MMR: A relatively complex indicator to collect data

The maternal deaths (fortunately) being a rare event, statistically require a prohibitively large sample population size to provide robust estimates. Accordingly, to enhance the SRS sample size, the results have been derived by following the practice of pooling the three years data to yield reliable estimates of maternal mortality. The nature of data entailing a three-year period for each Bulletin speaks volumes for a sample survey conducted with patience to arrive at a credible level.

SRS Bulletins stress that to take care of the under-count mainly on account of out-migration; the actual number of maternal deaths for each State is multiplied by a 'Correction Factor'. This correction factor, which is the ratio of total female deaths in a particular age group in SRS, to the counts for the corresponding age group, was applied separately for different reproductive age groups for SRS 2018-20, like in the past.[15]

The stark fact of the MMR data being difficult to collect and credibly present in the SRS Special Bulletin on Maternal Mortality Series, is borne out by the fact that out of the 28 States, separate data cannot be made available for as many as nine States namely Arunachal Pradesh, Goa, Himachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura; and all the eight Union Territories.

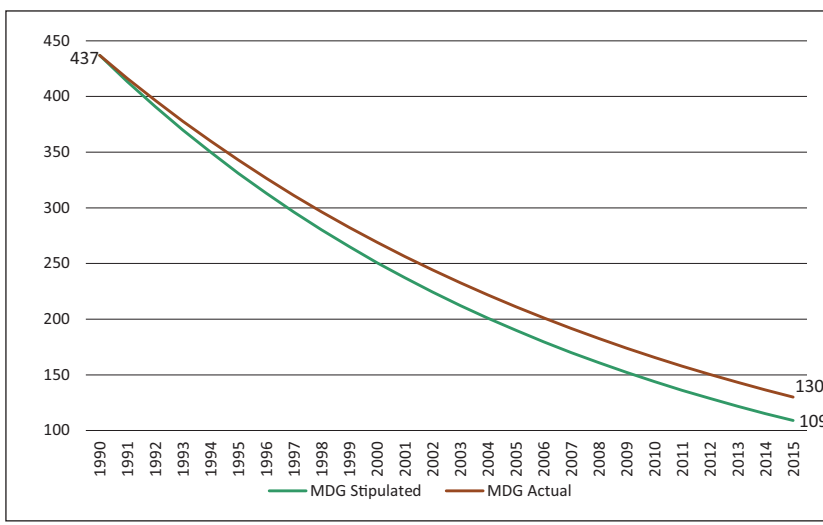
It is a fact that NFHS data, howsoever extensive, does not cover MMR, while on the other hand, SRS Special Bulletins on Maternal Mortality don't cover the child health and other female indicators. On the contrary, like many multi-faceted studies, a single source of data is thus rare to lay hands on unless it is from the census. Otherwise, the data sources like any single compendium more than often end up compiling data originally collected through differing sources.

8. MDG Era and India's Excess Baggage on MMR Reduction

It is notable, to recall the related Goal under MDGs for MMR being, 'Goal 5: Improve maternal health', MDG 5. A Global targets for reducing maternal mortality,' the level stipulated was, 'Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio'. Of course it stipulated an ARR in a fair manner for each country; even though operating on the differing initial MMR values.

A quick background check reveals that as per a MoSPI India Country Report[16] on MDGs for 2000-2015, the Indian MMR in the MDG baseline year selected as a decade back in 1990 was 437. As a result, MoSPI mentions that India's target for 2015, being one-fourth of the 1990 baseline, was to reach down to 109 or less. This necessitated an ARR of 5.40 per cent. Against it India could reach a level of 130, indicating an MDG-era (1990-baseline to 2015) actual lower ARR of 4.73 per cent.

Figure 1: Indian MMR: Excess Baggage of the MDG Era (based on the MoSPI MDG Report)



Source: Author's depiction based on MoSPI Report on MDGs.

The situation on the aforesaid lines for the MDG era is given in the smoothened Figure 1. It shows the excess baggage of 21 points (130-109), which happened to be almost one-fifth (over 19 per cent) of the envisaged MMR level of 109.

9. SDG Era 2016-2030 (with MMR Reduction Link to 2010 to 2030)

9.1 Indicators under the SDG Target 3.1

Moving from the MDG era to the SDG era, the SDG Goal 3 abridged as 'Health' for convenience, reads in full as, 'Good Health and Well Being - Ensure healthy lives and promote well-being for all at all ages.' The MMR related Target 3.1 is, 'By 2030, reduce the global maternal mortality ratio to less than 70 per 1,00,000 live births.' At the national level the indicators 3.1, 3.2 and 3.3 are,

3.1.1: Maternal Mortality Ratio (per 1,00,000 live births)
3.1.2: Percentage of births attended by skilled health personnel (period 5 years)
3.1.3: Percentage of births attended by skilled health personnel (period 1 year).

At first glance indicators 3.1.2 and 3.1.3 may appear identical, but the MoSPI meta data distinctly specifies that the basis of the former is the deliveries over the last five years, whereas of the latter being deliveries during the preceding year; both of course covering women of age 15 to 49 years.[17] The latest values of the three indicators are 97 per 1,00,000 (2018-20); 89.4 per cent (2019-21) and 90.9 per cent (2019-21) respectively.[18]

Notably, the national indicator 3.1.1 is identical[19] to the global indicator 3.1.1, while the national indicators 3.1.2 and 3.1.3, though similar to the global indicator 3.1.2 in nomenclature, drill down to a better periodicity, which is missing in the global indicator. Such periodicity in the national indicators captures how the recent indicator level has improved over its five-year average; which other countries may also like to adopt to collect better evidence for policy corrections.

The World Bank's upper middle-income point estimates for MMR in 2020 were 44 (lower and upper intervals with 80 per cent certainty being 41 and 48, respectively). Estimates in this Paper indicate that MMR in Jharkhand, Gujarat, Tamil Nadu, Karnataka, Bihar, Other States/ UTs, Rajasthan, India in totality, Uttarakhand and West Bengal, would reach the current level of the 'Upper Middle Income' country levels, by 2030. The States of Punjab and Haryana would be just behind.

10. Indian Resilience: MMR Decline Rates Remain High and Non-Diminishing

10.1 India Continues on the Fast MMR Decline Track

In the case of India, if we compute State specific ARRs, we satisfactorily realise that the ARR for Kerala, continues to be higher than that for India, indicative of faster declines even at a higher stage of development. Of course, though the annual rate of reduction for Kerala is faster than that of India; the absolute annual declines, being on a smaller base are smaller.

A quick look at the WHO data further indicates that over the 20-year period 2000-20, the ARR for India in MMR was 6.6 per cent (as a point estimate with an uncertainty Interval of 5.9 to 7.7 having an 80 per cent probability of containing the true value),[20] against an ARR of 2.1 per cent for the World.[21] This reveals an encouraging trend that India's faster declines may likely to continue unabated till 2047.

The WHO estimates for 2020 place India at 103 (as point estimate with an uncertainty Interval of 93 to 110 having an 80 per cent probability of containing the true value).[22] In comparison, national estimates are slightly lower but closely aligned, with an MMR of 97, as reported in the Special Bulletin on Maternal Mortality in India, 2018–20 by the Sample Registration System (SRS), centred on 2019. This indicates that compared to the WHO estimates the SRS estimates were close-by.

WHO points out that the MMR estimates presented in their report may differ from national statistics collected using equally robust methods,[23] owing to three major reasons: firstly, differences in the

denominators used; secondly, differences caused by covariates-based modelling; and thirdly, adjustment for incomplete and misclassified maternal deaths. At the same time, there is globally much scope for cross-learnings as Chaturvedi *et al.* argue[24] how in development cooperation different narratives and norms can be reconciled towards collaborating on achieving the 2030 Agenda.

10.2 SRS Special Bulletins on Maternal Mortality

The analysis in this Paper is based, among other inputs on the various issues of Special Bulletins, on Maternal Mortality in India, under the Sample Registration System (SRS) of the Office of the Registrar General, India, Government of India, which periodically gives the Maternal Mortality Ratio levels. Importantly, the MoSPI data also draws upon the SRS Special Bulletins on Maternal Mortality in India. This ensures that the critical and complex MMR data used in this discussion paper for India and the States is from a single source.

To comprehend the maternal mortality situation better across the country and map the changes taking place, especially at the sub-national levels, States have been categorised under SRS into three groups. First, 'Empowered Action Group' (EAG) States, requiring higher efforts, comprising Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Odisha, Rajasthan, Uttar Pradesh, Uttarakhand and Assam. Second, 'Southern' States which include Andhra Pradesh, Telangana, Karnataka, Kerala and Tamil Nadu. Third, including Gujarat, Haryana, Maharashtra, Punjab, West Bengal, and also the 'Other' covering the remaining States and all UTs.

This grouping is now done in the sampling, leading to various SRS Bulletins on Maternal Maternity since 2015-17 centred on 2016, prior to which undivided States of Bihar, MP and UP were covered in the respective groups. Notably, Andhra Pradesh was bifurcated later on in 2014, but still, separate MMR values for it and Telangana have been given since 2014-16 centred on 2015, and were accordingly used.

10.3 Methodology Used

It was envisaged for this Paper that the nature of the data being critical, the MMR data be picked up from the sufficiently distant period 2007-09 and 2018-20 MMR Special Bulletins on Mortality centred on 2008 and 2019 respectively, being eleven years apart.

However, as the three States Chhattisgarh, Jharkhand and Uttarakhand had come into being in 2000 by bifurcating Madhya Pradesh, Bihar and Uttar Pradesh, respectively; the MMR levels of these new States were not separately available in the SRS, Special Bulletins on Maternal Mortality, till the 2015-17 Bulletin centred on 2016. Resultantly, the MMR data post-bifurcation for Bihar, Madhya Pradesh and Uttar Pradesh; as well as for Jharkhand, Chhattisgarh and Uttarakhand could be used in this Paper from the 2015-17 Special Bulletin. The separate trajectories across these pairs, are in fact, substantiated by the Special Bulletin on Maternal Mortality 2018-20, centred on 2019, which gives MMR values for Jharkhand as 56 against 118 for Bihar; for Chhattisgarh as 137 against 173 for Madhya Pradesh; and for Uttarakhand as 103 against 167 for Uttar Pradesh. The values for the newly created States were thus strikingly lower being only about 47 per cent, 79 per cent and 62 per cent, respectively, of the remaining States bifurcated from. Andhra Pradesh was bifurcated in 2014, but still separate MMR values for it and Telangana are given since 2014-16 centred on 2015, and accordingly used. In 2019, the MMR level for Telangana was 43, against 45 for AP; in this case too the newly created State of Telangana had a lower (96 per cent) value than AP, though the difference was not as striking.

Notably, the values for the SDG target 3.1 on MMR, used in the latest NITI SDG Index 2023-24, are also as taken from the SRS 2018-20 Special Bulletin on Maternal Mortality centred on 2019.

11. India Opted for a Sub-optimal 2030 MMR Target

11.1 Target Accounted for Country Stages

The Target Stipulated for 2030 was not a precise uniform MMR Level of 70:

- In the case of MMR, the SDG target itself specifies the desired indicator level, as follows:
- '3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births.'
- To begin with, one is surprised as to how the one-size-fits-all target of '70' was resolved in the first place. A second reading of the target reveals that the global target set was 'less than 70', not a precise uniform one of '70'.

11.2 Target 3.1 Estimates

Besides the SDG target 3.1 of reducing MMR to 'less than 70', the following were also laid for assessing progress and setting a trajectory towards ending preventable maternal mortality (EPMM) and achieving SDG target 3.1.

Country targets for 2030 depend on 2010 baseline levels of MMR, to increase equity in maternal mortality, as follows (**emphasis added, in case relevant for India**):

i. For countries with an MMR less than 420 in 2010: **reduce the MMR by at least two-thirds from the 2010 baseline** by 2030.
ii. For countries with an MMR greater than 420 in 2010: the rate of decline should be steeper so that in 2030, no country has an MMR greater than 140.
iii. For **all countries with low baseline MMR in 2010**: **achieve equity** in MMR for **vulnerable populations at the sub-national level**.'

11.3 Stipulations for India on the Preceding Course

This laid the touchstone for adopting national indicator values, firstly inclusivity and secondly at least two-third of the 2010 value. For India, a quick look at the MMR Special Bulletins on Maternal Mortality in India, by SRS, indicate that the closest to 2010 were the Special Bulletin 2007-09 centred on 2008, and the 2010-12 Special Bulletin centred on 2011. These give the MMR values for 2008 as 212, and for 2011 as 178;

which on assuming a constant ARR, on taking the weighted geometric mean, gives the MMR value for 2010 as 188.7 for India. The one-third of 188.7 is 62.9 or 63. Therefore, India should have opted for the MMR 2030 target 3.1 value as 63, and not a relatively comfortable one of 70.

It was already computed by the author in Para 8 that against the 25-year (1990 -2015) level stipulated for the 15-year MDG-era 2000-2015, the required ARR was 5.40 per cent from the baseline 1990 to 2015, against which the lower achievement was an ARR of 4.73 per cent.

Now, there is a word of caution, while the MDG stipulation to reduce to one-fourth is over the period 1990 to 2015; the SDG stipulation to reduce to one-third is over the period 2010 to 2030. So there is an overlap of five years i.e. 2010 to 2015. Incidentally, the ARR stipulated for the MDG era was around 5.40 per cent against which for the SDG era lower than it by a minuscule 0.05 as 5.35 per cent. On splicing the two over the 40-year period 1990 to 2030 one expected a bold indicator level choice of the MMR value for 2030 as 47.93 or 48, from 130 in 2015 as per the MMR Special Bulletin 2014-16, that would have also set off the excess baggage of the MDG-era.

11.4 Target should rather be around an MMR level of 63 or less:

Coming to the SDG-era, the target opted for 2030 is '70', against the desired target of 'less than 70', necessitating to opt for a minimum MMR level of 62.9 or 63, as computed earlier. Thus, the softer ARR opted was 4.043 per cent, against the stipulated one of 4.725 per cent.

The WHO MMR estimate[25] for 2015 for India was 128, which is also very close to the Indian SRS 2014-16 estimated value of 130 (95 per cent CI of 119 to 141) centred around 2015. Remarkably, the WHO country estimates are stated to be computed to ensure comparability across countries, as such these are not necessarily the same as official statistics of the countries, which may be using alternative rigorous methods.[26]

In this Paper the estimates of MoSPI, as published in India's MDG Country report, are being adhered to.

12. Government Initiatives

Next, we cover a broad outlook, including the underlying common objectives of the related Government of India Schemes, which are implemented through States/UTs and public and private institutions.

Saksham Anganwadi and POSHAN 2.0 (Umbrella ICDS - Anganwadi Services, Poshan Abhiyan) Scheme has the revamped objective to develop practices to nurture health, wellness, and immunity among those facing malnutrition. Components under the scheme are now reorganized into three primary verticals, namely Nutrition support for POSHAN and for adolescent girls; Early childhood care and education (3-6 years); and the Anganwadi infrastructure, including modern upgraded saksham anganwadi centres.

Each Anganwadi offers a bouquet of six services for children and women. Along with children below six years, pregnant and lactating mothers are covered under supplementary nutrition, immunization, health check-ups and referral services. Further women (15-45 years), including adolescent girls, are covered under Nutrition & Health Education. Mothers can also bring or send children (3 to 6 years) to avail services of pre-school education. However, a quick analysis reveals that in the spirit of SDGs to 'leave no one behind', there is scope to enhance coverage, as NFHS 5 (2019-21), indicates that only 66.4 per cent of registered mothers availed of supplementary food, 63.1 per cent received health check-ups, and 59.5 per cent availed of health and nutrition education.[27] This implies that, on average, two out of every five registered mothers did not avail of one or another service. To impart further traction to the scheme, the Union Budget 2025-26 made a provision of Rs. 21,960 crore, for 'Saksham Anganwadi and POSHAN 2.0 (Umbrella ICDS - Anganwadi Services, Poshan Abhiyan, Scheme for Adolescent Girls) programme.

Besides, to promote better maternal and child-care, including nutrition, in convergence with the ICDS, an initiative named Monthly Village Health, Sanitation and Nutrition Day (VHSND) as an outreach activity is also undertaken at the Anganwadi centres.

It is notable that under the Pradhan Mantri Matru Vandana Yojana (PMMVY), the Government of India, in line with the provisions of the Section 4 of the National Food Security Act (NFSA), is promoting health-seeking behavioural changes and also providing some financial support for pregnant and lactating mothers to improve the health and nutrition for mother and child, as well as for part compensation for wage loss. The financial support for the first child is Rs. 5,000, and for the second, if a girl, it is Rs. 6,000 aimed at improving the Sex ratio at birth and for women's empowerment.

The criteria for determining socially and economically disadvantaged sections of society covers the poor and vulnerable as follows:

i. women belonging to scheduled castes and scheduled tribes;
ii. women who are partially (40 per cent) or fully disabled (*Divyang Jan*)
iii. women holder of BPL ration Card
iv. women Beneficiaries under Pradhan Mantri Jan Aarogya Yojana (PMJAY) under Ayushman Bharat.
v. women holding e-shram card
vi. women farmers who are beneficiaries under Kisan Samman Nidhi
vii. women holding MGNREGA job card
viii. women whose net family income is less than Rs. 8 lakh per annum
ix. pregnant and lactating AWWs/ AWHs/ ASHAs
x. any other category as may be prescribed by the Central Government

In order to promote the underlying objective, in the case of the first childbirth, the first installment of Rs. 3,000 financial assistance requires registration of pregnancy and at least one ante-natal visit. The second installment of Rs. 2,000 requires registration of the childbirth and the Child having received the first vaccination cycle of BCG, OPV, DPT and Hepatitis-B or its equivalent/substitute. Moreover, in the unfortunate case of any miscarriage or still-birth, the beneficiary is treated as a fresh beneficiary, in the event of any future pregnancy.

Further, for key ante-natal care, the Pradhan Mantri Surakshit Matritva Abhiyan (PMSMA) aims to provide on a fixed date, i.e. 9th of

every month free, assured, comprehensive and quality antenatal care (ANC); to all pregnant women in their 2nd or 3rd trimesters of pregnancy. Within it to focus on the high-risk pregnancy (HRP) women, tracking is undertaken till a safe delivery is achieved. Towards it quality ANC financial incentivisation for the HRP women and the accompanying ASHA, for three extra visits is also provided.

The Surakshit Matritva Aashwasan (SUMAN) intervention aims to provide assured, dignified, respectful and quality healthcare services for every woman and newborn visiting the public health facility.

With the focus on quality care in labour rooms and maternity operation theaters the scheme of LaQshya (Labour Room Quality Improvement Initiatives) is also being implemented.

To enhance awareness for maternal and child health services, for community mobilisation, and to track high-risk pregnancies, outreach camps are organised in rural areas, especially in tribal and difficult-to-reach locations. Health and wellness centre teams organise these camps on a periodic basis, to reach the marginalised, support their treatment compliance and undertake follow-up of pregnant women and newborns.

Moreover, the Mother and Child Protection (MCP) cards and Safe Motherhood Booklets are also distributed to the pregnant women for making them aware of the issues like diet, necessary rest, danger signs during pregnancy, benefits given under schemes and criticality of institutional deliveries.

Notably, a 2024 PIB press release brings out that, as per the National Health Accounts Estimates, the Out-of-Pocket Expenditure (OOPE), as a percentage of the Total Health Expenditure has also declined from 64.2 per cent in 2013-14 to 39.4 per cent in 2021-22.[28]

The Pradhan Mantri Matru Vandana Yojana (PMMVY) dashboard[29] indicates that as of 19th March 2025, a high number of 4.13 crore beneficiaries were registered under it, of whom 3.59 crore were made payments, totaling Rs. 16,068 crore.

Economic Survey 2023-24 had stressed that the 'Beti Bachao, Beti Padhao' programme and the 'Sukanya Samriddhi Yojana' were instrumental in sensitising collective consciousness towards cherishing, educating, and saving of the girl child.

The Outcome Budget 2025-26, further indicates enrollment of 40 lakh women for the birth of their first child; and another 30 lakh for the birth of second child, a girl, all seeking to improve health behaviour among these pregnant and lactating women.

A look at the foregoing schemes indicates the diversity of stages covered, emphasis on covering poor and vulnerable, and linkages to the desirable behavioural changes. A better awareness level is, however, necessary to enhance the coverage level to avail all these services.

13. MMR Interconnects Across Social and Economic Dimension

The indicators related to MMR have strong interconnects, and causality for many runs both ways, thus endogeneity can't be ruled out for many of these indicators. It is thus relevant to look at covariates of ln (MMR) (Table 1), based on its coefficients of correlation. Literature is surfeited with the fact that the MMR data sample size should be large enough to be credible, therefore keeping in view its special nature the Registrar General of India, while conducting each survey spreads it over a period of three consecutive years; while being able to cover each of the 19 major States separately, has to club the survey for all other States and all UTs. Accordingly, it brings out Special Bulletins on Maternal Mortality that give Maternal Mortality Ratio values.

The very nature of the decline in MMR indicates to make use of its natural log, i.e. ln (MMR) values over the years, for comparison with indicators, some of which vary in a similar functional manner like ln (SDP Per capita real income), and some other of which normal values itself matter like the proportion of female in the age group 15 to 49 years with 10-years of schooling. Accordingly, correlations (Pearson) of ln (MMR) ascertained across various indicators that seem plausible on *a priori* basis, are as listed in Table 1:

Table 1: Covariates of ln (MMR)

Variables	Closest SDGs	Coefficient of Correlation
ln (Sexratio total)	SDG 5	(-) 0.35
ln (SDP Per capita real)	SDG 8 and 10	(-) 0.58
Births by Skilled Attendant (%)	SDG 3	(-) 0.53
Poverty Headcount Ratio (%)	SDG 1	(+) 0.53
Literacy:		
School Education Quality Index (SEQI)	SDG 4	(-) 0.44
Female literacy (%)	SDG 4 and 5	(-) 0.37
Total literacy (%)	SDG 4	(-) 0.31
Pre-primary to Middle Transition Rate (%)	SDG 4	(-) 0.40
Men 15 to 49 years with > 10 years of schooling (%)	SDG 4	(-) 0.66
Women 15 to 49 years with > 10 years of schooling (%)	SDG 4 and 5	(-) 0.65
Drinking Water:		
Households with improved drinking water source (%)	SDG 6	(-) 0.15
Anaemia:		
Children 6 to 59 months anaemic (%)	SDG 2	(+) 0.50
Non-pregnant women 15 to 49 years anaemic (%)	SDG 2 and 5	(+) 0.38
Pregnant women 15 to 49 years anaemic (%)	SDG 2 and 5	(+) 0.43
All women 15 to 49 years anaemic (%)	SDG 2 and 5	(+) 0.39
All girls 15 to 19 years anaemic (%)	SDG 2 and 5	(+) 0.39
Economic:		
LFPR (all 15 to 59 years) (%)	SDGs 5 and 8	(-) 0.19
Ratio of female LFPR to male LFPR	SDGs 5 and 8	(-) 0.38
Manufacturing share in GVA (%)	SDG 8	(-) 0.08

Sources: Registrar General of India, SRS 2018-20 for MMR; Economic Survey 2024-25 for Real SDP Per Capita, Poverty Headcount Ratio and Pre-primary to Middle Transition Rate; National Statistical Office for Female literacy and Total literacy; NITI Index 2023-24 for SEQI, LFPR, Ratio of female LFPR to male LFPR and Share of manufacturing in GVA; NFHS 5 for the remaining.

It is found that for the desirable (positive) and undesirable (negative) indicators checked, the variable ln (MMR):

i. is decreasing in the higher level of the positive proximate women health indicator of the proportion of births by Skilled Attendant (SBA), and so its log i.e. ln (SBA), which happens to be another indicator under Target 3.1, the correlation coefficient being a high (absolute value) (-) 0.53. SBA and Anaemia happen to be among the 23 indicators of multi-dimensional poverty as evolved by Anand and Kumar (2023, RIS DP no. 269).[30]

ii. is decreasing in the better level of the positive women empowerment indicator of ln (Sexratio total).

iii. is decreasing in the better level of the positive education level indicators of school education quality index (SEQI), higher levels of female and total literacy rates, pre-primary to middle transition rate, women and men 15 to 49 years of age with 10-years of schooling. On the quality of education, it is relevant to mention Goczek *et al.* argue that role of human capital forms a basis for economic growth.[31] They add that good education reduces poverty, inspires innovation and promotes prosperity.

iv. is increasing in the undesirable higher level of the negative poverty related indicator head count ratio.

v. is decreasing in the positive higher level of the proportion of households getting drinking water from an improved source.

vi. is increasing in the undesirable higher level of the Anaemia, among children, non-pregnant women, pregnant women, all women and girls.

vii. is decreasing in the higher level of positive economic indicators of LFPR, ratio of female LFPR to male LFPR, share of manufacturing in GVA and ln (SDP Per capita real income).

viii. another striking feature found is that the direction of each relationship with ln (MMR) is as expected on *a priori* basis and such relationship spreads across many SDGs of which 1 (no poverty), 2 (zero hunger), 3 (good health and well-being), 4 (quality education), 5 (gender equality), 6 (clean water and

sanitation), 8 (decent work and economic growth) and 10 (reduced inequalities) are explicit as shown in Table 1. Among the variable categories, it is obvious that outcomes are preferred to outputs, which in turn are preferred to inputs. As evident from the Table, the variables found to be related are in the nature of outcomes, except in the case of births by skilled attendants, which happens to be an output variable, of course, none being an input variable.

Next, the OLS results across the States indicate that ln (MMR) depends on ln (SDP Per capita real), and ln (Sexratio total); implying existence of a relationship among the dependent variable MMR, and the two explanatory variables Per capita State Net Domestic Product and the Total Sex ratio (which is not confined to the Sex ratio at birth).

Table 2: OLS Regression on Maternal Mortality Ratio of States

Source	**SS**	**Df**	**MS**	**No. of Observations**		
Model	3.943	2	1.972		Prob > F = .0012	
Residual	2.985	16	0.187		R-squared 0.569	
Total	6.928	18	0.385		Adj R-squared 0.515	
ln (MMR)	coef.	SE	t	P > |t|	95% Confidence Interval	
ln (SDP PC real)	(-) 0.879	0.215	(-) 4.08	0.001	(-) 1.34	(-) 0.42
ln (Sexratio total)	(-) 6.023	2.032	(-) 2.96	0.009	(-) 10.33	(-) 1.72
constant	56.108	14.816	3.79	0.002	24.70	87.52

Source: Author's computations based on SRS, MoSPI and NFHS 5 data.

The dependent and both explanatory variables being in the nature of (natural) logarithms, thus reveal the underlying multiplicative Cobb-Douglas relationship. The first explanatory variable captures the overall financial status of individuals, whereas the Sexratio total captures the status of women in the society, which is a composite outcome of years of gender equity in health, education, employment, assets and so on. The OLS results are as depicted in Table 2, t-stat and p-values for which indicate the robust significance of both the explanatory variables. As

expected on *a priori* basis the ln (MMR) is decreasing in both ln (NSDP Per capita real) and ln (Sexratio total). The constant being the intercept, is 56.108, also robust in significance.

It is relevant to add that in another OLS regression (not tabulated), by switching ln (SDPPer capita real) income as the dependent variable, it was found to be explained by three variables namely, ln (MMR) albeit with a weak t-stat (- 1.86), ln (TFR) with a robust t-stat (-3.92) and School Education Quality Index (SEQI) also with a robust t-stat (2.18); with p-values 0.082, 0.001 and 0.046 respectively; but jointly leading to a high 0.73 value of the adjusted R2 and a desirable Prob. >F =0.0000 (value of the F-stat being 16.98, far exceeding the standard F-Table null hypothesis value of 3.29 or below, for 3 and 15 degrees of freedom at the 5 per cent significance level) endorsing overall joint significance. Even though, the three explanatory variables have signs as expected on *a priori* basis, and are significant(two being robust and one weak), the regression apparently suffered from omitted variable bias, as macro determinants (like investment) were not directly included, notwithstanding the indirect influence (investment in physical and human health capital) through the variables actually used.

Still, it gives a lesson worth learning that social indicators drive back the per capita income indicator, pointing out that the reverse causality exists. Therefore, any public policy aimed at higher per capita incomes should not overlook the social indicators, but rather harness the two-way synergy.

From the perspective of Viksit Bharat @2047, simultaneously capturing all these not-so-independent variables in one OLS regression may be challenging. However, as the causality runs both ways for many variables, one can realise that better health and education indicators are real per capita income enhancing.

14. Viksit Bharat National Strategies

The larger picture on national strategies to achieve developed nation status entails, the need to accelerate progress in the social dimension especially, in health and nutrition, education and skilling; internalising the

fact that the demographic dividend is already partly over in some districts, and the nation can't afford to miss out on what remains. Economic Survey 2024-25 advocates essentiality of a strategic plan encompassing skills and education, leveraging the demographic dividend to attain a Viksit Bharat by 2047.[32]

The economic dimension necessitates investments in technology, research, quality infrastructure, including public goods preferably to the extent possible, non-excludable and non-rivalrous in nature. Moreover, besides investments in human resources, investments are required in evolving, nurturing, and sustaining competitive supply chains, by synergising with private players for quality domestic production as well as exports

In this endeavour, the Budget 2024-25 laid down a pathway of no poverty, quality education and healthcare, skilling and towards 70 per cent of women being in economic activities, and farmers making India the global food basket. The four pillars of this stride, to take everyone along are the youth, the poor, the women and the farmers. Accordingly, the vision encompasses, as a critical element, economic participation for all citizens.

Economic Survey 2024-25 emphasises on inclusive growth terming it as central to this vision.[33] The stakeholders involved include NITI Aayog, Central Government Ministries, State/UT Governments, rural/ urban local bodies, think-tanks, CSOs, and academia. These stakeholders are working for the overall achievement of SDGs, especially by overcoming the pandemic-caused setbacks and the deepening effects of climate change; and resultantly need to be strengthened and allocated more resources linked to outcomes.

15. MMR Estimates for 2030

15.1 Two Scenarios

In the computations by the author, two scenarios are analysed. Under Scenario 1, the States/UTs continue with their specific ARR for the MMR decline as ascertained from the SRS Special Bulletins on Mortality, as

explained earlier. It entails to use separate actual ARRs for each of the new States created, as well for each of the remaining States from which these States bifurcated from. This scenario 1, is also called the normal scenario. It is desisted from calling it business as usual scenario, because a lot of efforts are ongoing, as evidenced by India's much faster ARR decline compared to the Global decline.

Under Scenario 2, for the States/UTs having declines faster than that of India their actual specific ARRs were used. For the remaining States/ UTs, it was assumed that they catch up with the ARR decline witnessed by India as a whole from 2008 to 2019. This Scenario 2, is also called the faster scenario.

15.2. Implications of changing State wise population weights

The national MMR is computed from State/ UT MMRs by assigning weights to their population. A critical fact is that even if all States/UTs reduce their MMR levels over a given period, to say, one-third, the national figure would still be slightly off the mark from the one-third target. The underlying reason is that the population weights would not remain fixed, as many States would have significantly different population shares.

15.3. The MMR Decline Rates Required by India

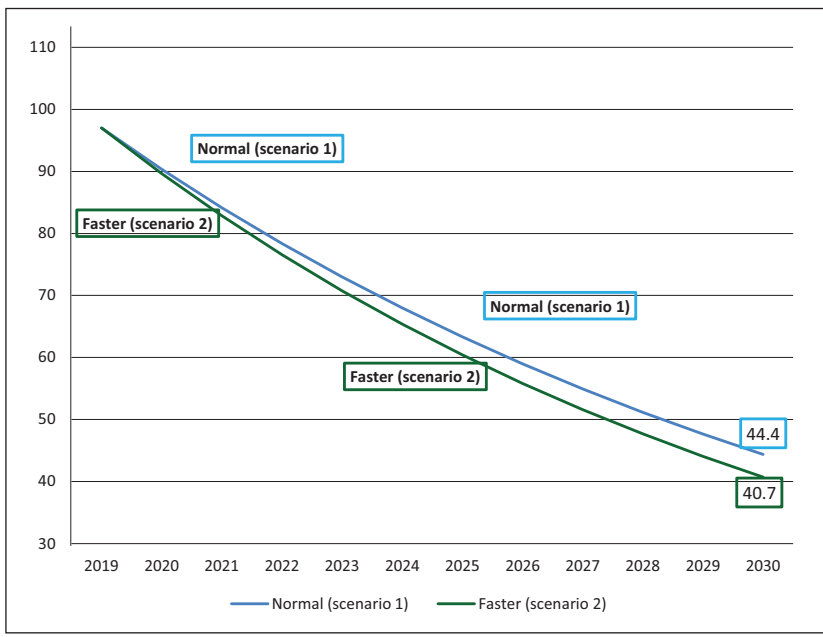
For the period 2019 to 2030 the likely ARR under the Scenario 1 is computed as 6.86 per cent. This would bring down the Indian MMR to a level of 44.4. Under the Scenario 2 the ARR needs to be stepped up to 7.59 per cent to reach down to a better MMR level of 40.7 by 2030.

Changing Population weights would necessitate India to enhance its efforts further. Based on the 2031 estimates for each State and UT, additional reduction equivalent of about 2.66 points of the India level MMR estimates for the indicator level is required under the Scenario 1, so as to actually reach down to 44.4. Under Scenario 2, having already accounted for the changing population weights the likely achievement is 40.7 by 2030.

Importantly, on reaching the MMR mark of below 50, India is projected so by 2029 under the Scenario 1, and even earlier by a year in 2028 under the Scenario 2. Achieving this milestone will require coordinated efforts within a broader framework that includes increased investments in health, human capital formation, skill development, and so on.

Figure 2 gives estimates of India's MMR value under two scenarios: The Scenario 1 (normal pace) and the Scenario 2 (faster pace). Compared to the 2020 stipulated WHO levels of 44 (with an 80 per cent CI of 41 to 48) for high-income countries, India appears well-positioned to join this group before the end of the SDG era provided the stipulations remain unchanged. Specifically, under the Scenario 1, India is projected to enter the 41–48 range by 2029, while under the Scenario 2, this threshold could be reached as early as 2028.

Figure 2: Indian MMR Estimates: Normal (Scenario 1) and Faster (Scenario 2) Pathways (2019-30)



Source: Author's depiction based on SRS data.

The World Bank's high-income group point estimates for MMR values in 2020 were 12 (lower and upper intervals 11 and 14, respectively, between which probability of 80 per cent and 10 per cent each of less than 11 or more than 14). This Paper estimates under the Scenario 1 that in case each State/ UT has the same annual rate of reduction (ARR) as that of the 11-year ARR of India; Kerala would reach this coveted status of 'High Income MMR' i.e. below the level of 14, by 2030.

Taking into account the better ARR values of major States, under the Scenario 2, if such States continue so, and rest catch up with India's ARR as a whole, this Paper also estimates that, besides Kerala, three more States namely Telangana, Maharashtra and AP would also reach the 'High Income MMR' status by 2030, in this sequence.

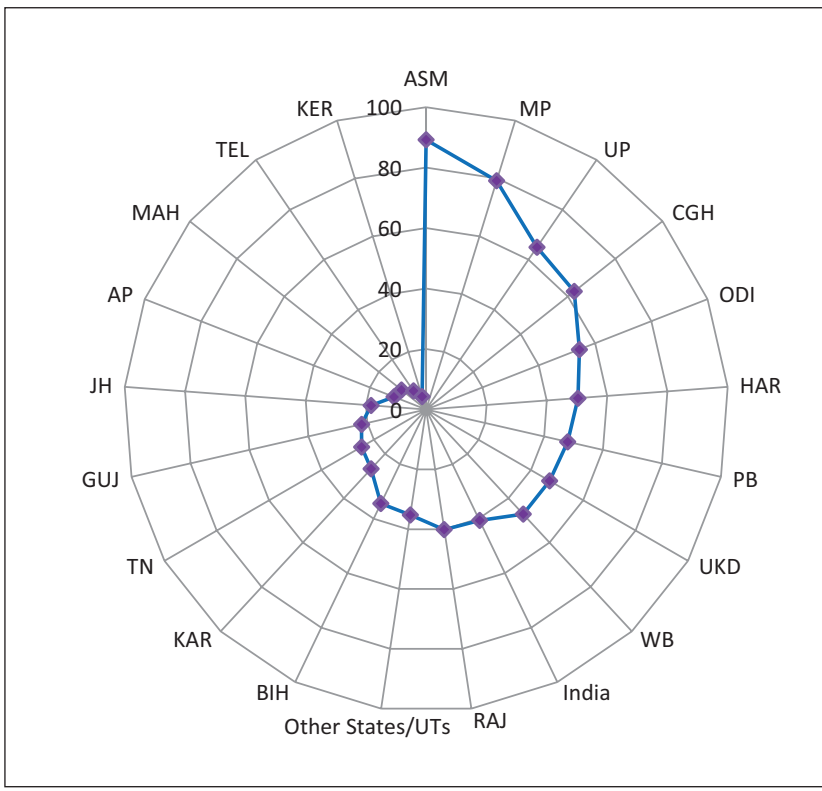
15.4 State Level 2030 MMR Estimates

The State level 2030 MMR estimates based on the faster, i.e. the Scenario Scenario 2, are manifested in Figure 3. While India in totality is likely to reach down to an MMR level of 40.7, nine major States would be behind it, requiring extra efforts to follow suit.

Localisation of SDGs, through application of requisite local actions can help a lot to overcome shortfalls in outcomes. On the four key pillars, first creating institutional ownership, second fostering collaborative competition, third enhancing capacities and fourth embracing a whole-of-society approach.[34] For instance, Assam has the positive distinction of being the first Indian State in the SDG strive, and had launched the **'Assam 2030: Our Dream, Our Commitment' initiative** by inducting SDGs into the policy planning space to actively pursue SDGs, which it did from 1st January 2016, the very first day of the SDG era. Within Assam, the State having the highest MMR, the Upper Assam division, housing most of the tea gardens, has the highest MMR. The other three divisions, namely the Hills & Barak Valley division, Lower Assam Division and North Assam division have relatively lower MMR values.

Poor health care services, poor nutrition, poor awareness and lower literacy are some of the factors leading to the high MMR values in the Upper Assam division.[35] Localisation of solutions and hand-holding of all States/ UTs by the Union Government and provision of additional resources, especially if behind the Indian average is essential. Technically, India's MMR levels are itself a moving average, still it is worth to catch up as much and as fast possible, for the noble cause of averting avoidable deaths.

Figure 3: Estimates of Maternal Mortality Ratio (MMR) of India and Major States for 2030



Source: Author's estimates.

15.5 Estimates for India for 2047 MMR Level

It is further estimated that under the Scenario 2, India is likely to reach in 2044, i.e. three years prior to the envisioned 2047; the decline to the range of 11 to 14 MMR levels, as set by WHO in 2020 for the developed countries. Further, under this scenario, its MMR value is estimated to reach below 11 by 2047. One can have a sigh of relief at the maternal deaths averted in this journey spurred on SDG attainments starting with an MMR level of 130 in 2015.

16. Viksit Bharat @2047 - Way Forward

This Paper primarily analyses the pathway to Viksit Bharat @2047 by evidencing as to how critical role even a single target like the one to reduce MMR can play and steer. It is requisite here to list a set of some critical ingredients for moving forward. As any such set would be highly intertwined, no unique set can be claimed to comprehensively capture all the elements. However, based on the analysis and strong interconnects the following road map is recommended:

i. The journey to make India a developed country should aim at a prosperous society, taking not only each section of the society but every household and individual along with it. To support, the SDG interconnects need to be recognised, analysed, strengthened and harnessed.

ii. These interconnects should be strengthened in unison across the social, economic and environmental dimensions along with SDG 16 on peace, justice and strong institutions, and SDG 17 on partnerships for goals covering finance, technology, capacity building, trade and systemic issues of policy and institutional coherence, multi-stakeholder partnerships, and data, monitoring and accountability.

iii. Coverage of the prospective beneficiaries, in the spirit of no one being left behind, is critical. Rather than registration of only those who come forward avail themselves of a scheme or service, robust linkages based on household surveys, community meetings, and

Aadhaar linkages need to be intensively established and pursued to cover all.

iv. Regarding MMR, the proximate aspects to focus on, should include household and individual level interactions for better awareness, improved hygiene, water and sanitation, especially with the active participation of grassroots-level functionaries, community and civil society volunteers. In the so-called Empowered Action Group States and Assam, higher focus is needed on the distant, tribal, rural areas that continue to lag behind, to reach the average pace of development of India as a whole, and even faster. The nine major States (Figure 3) should undertake drives in mission mode, to attain by 2030, the 2020 stipulated WHO upper middle country MMR range (41 to 48).

v. Enablers need to be promoted to support ICDS, through Anganwadi workers along with ASHAs and ANMs; quality health services for ante-natal visits, the timely arrival of the ambulance, special attention to high risk patients, better medical facilities, like 24x7 obstetric care health centres; and supporting radiological test facilities.

vi. On the education front, the drivers of women empowerment to focus on should include frameworks for higher female and total literacy, higher transition rate from pre-primary to middle, leading to completion of at least 10 years of schooling by women and men. Moreover, the poor and vulnerable on the wrong side of vertical product differentiation offered low quality education, should be facilitated and encouraged to join the mainstream to avail themselves of a better quality of education.

vii. On the economic front the push can come from overall women empowerment reflected in say, a higher Sex ratio towards 1,000; higher ratio of female LFPR to male LFPR, higher LFPR, lower poverty headcount ratio, higher share of manufacturing in the GVA of the economy, and higher per capita real incomes with distributive justice and use of poverty sensitising indices.

Encouragement to have some personal financial savings, and assets like owning home, and a credit-linked second house can help in the financial resilience of households, to face any disasters or adversities.

viii. Awareness and sensitisation need to be built, based on credible data-led-evidence that the journey to make India a Viksit Bharat by 2047, is possible and within reach by marching together to unfold for the society, this vision.

ix. For 2047, as analysed, India is poised to achieve the MMR levels of developed countries by 2044. Still, if in the meantime, lower levels are set by WHO for developed countries, or any period beyond 42 days from childbirth is included, India should rather support and gear up to achieve the additional requisite MMR decline. Moreover, India should India also promote its MMR reduction supporting national indicators 3.1.2 and 3.1.3. Though these look identical, both being on the 'percentage of births attended by skilled health personnel', the latter has an annual periodicity, against only once in five years periodicity of the former. This can also help other countries to have better granular data. India should also share its schemes, including the real-time digital traction imparted by it.

x. MMR picked up as a test case reveals how the attainment of even one target can impart phenomenal traction to the vision of Viksit Bharat @2047, underscoring the criticality of each target. All stakeholders thus need to join hands in this mission toward making Indian society a prosperous one that can lend its hand to any other society in crisis and set pathway for an inclusive, sustainable, prosperous and for sure a better World.

Endnotes

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[2] Maternal death is defined as 'the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. The maternal mortality ratio (MMR) depicts the risk of maternal death relative to the number of live births and essentially captures the risk of death in a single pregnancy or a single live birth.

[3] There is another parameter called Maternal Mortality Rate, though not analysed in this Paper, which captures the ratio of maternal deaths to the number of person-years of exposure to mortality risk. This variable reflects risk of maternal death per pregnancy or per birth, and the total fertility rate (TFR).

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