JCGS POLICY BRIEF

Under-5 Mortality and Malnutrition in India: Intertwining SDGs 2 and 3

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Executive Summary

India has made great strides in fulfilling various parameters of the UN Sustainable Development Goals. However, the 2021 SDG index indicates stark realities in terms of India's commitments to malnutrition and under-5 Mortality. Despite the availability of agricultural and policy-based resources, India faces shortcomings in its approach to universal nutrition, resulting in the prevalence of one of the highest numbers of under-5 deaths globally. Considering compounded economic, socio-cultural, and political factors, the Policy Brief argues that there is a long way for India to go in terms of aligning its nutritional goals with the global goal of achieving a 12:1000 ratio on neonatal survivability. The Brief envisions various policy and practical solutions as ideal to meet the dietary and other healthcare demands of child-bearers and children in order to bring down neonatal and under-5 mortality significantly.

Keywords: Sustainable Development Goals, Under-5 Mortality, Maternal Care, Southern Countries, Malnutrition, Hunger, Health

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Introduction

The 2021 global Sustainable Development Index (hereby referred to as the SDG Index) has highlighted the significant efforts being made by countries around the world to curb poverty and unemployment, make food, water and energy cleaner and more accessible, collaborate with partner stakeholders to fulfil the 17 UNSDGs, and various other parameters that make the

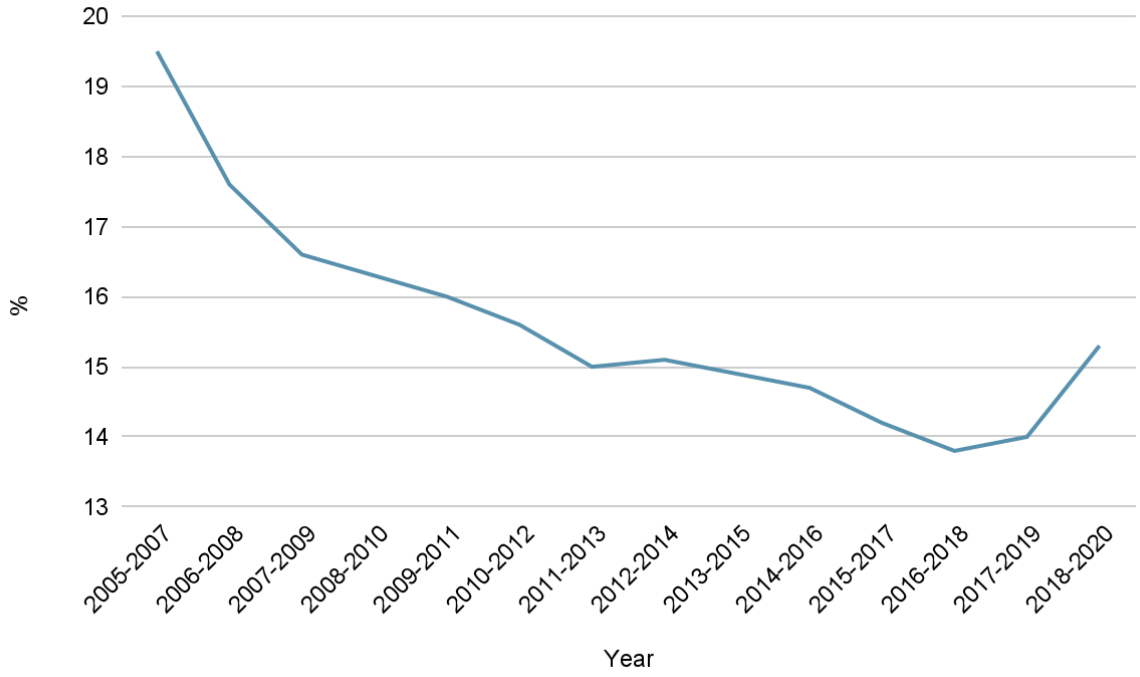
world a better, more sustainable place. However, it has also highlighted the grim realities associated with the unfulfilled parameters, such as those addressing child mortality. In India's case, there remains significant work to be done on the issue of under-5 mortalities, especially considering that a major cause of said mortality is malnutrition. It speaks to India's commitment to the SDGs in general and in specific to SDGs 2 and 3, which focus on Zero Hunger and Good Health and Well-Being, respectively.

Research Overview

I. Key data analysis

As per the data collated by UNICEF for the year 2019, in India, about 35 out of every 1000 children die before attaining the age of 5 due to various factors, on comparing by population, one finds that China, which has a population similar to India in terms of size, witnesses about eight under-5 deaths per 1000 live births. On comparing the number of under-5 deaths per 1000 live births by region, one can conclude that while countries like Pakistan (67.2/1000) and Afghanistan (60.3/1000) perform worse than India on the indicator, others like the Maldives (7.6/1000), Sri Lanka (7.1/1000), and to some extent, Bangladesh (31/1000), fare much better. Undoubtedly, compared to its regional counterparts, the Indian population size is much larger, and its demographics are much more diverse. However, India also possesses a bigger economy in contrast, which creates a potential for improvement that remains unexploited. A comparative examination of health expenditures, for example, indicates that in 2018, while Maldives and Afghanistan dedicated about 9% of their GDP to the healthcare sector, India dedicated a mere 3.5% (World Bank, 2018).

Similarly, a comparison of hectares of arable land available per person reveals that as of 2018, while merely 0.008, 0.048, and 0.063 hectares of agricultural land is available per person in Maldives, Bangladesh, and Sri Lanka, respectively, the number for India is 0.116, which is much bigger (World Bank, 2018). And yet, three-year averages (2018-2020) on the prevalence of undernourishment caused by unmet dietary requirements indicate that while 9.7% and 6.8% of the populations in Bangladesh and Sri Lanka respectively face such undernourishment, for India, the number is 15.3% (FAO, 2020). The statistics clearly point to systemic shortcomings in India's ability to fulfil the food and healthcare requirements of its populace, despite the availability of economic and natural resources.



Prevalence of undernourishment as a product of three-years-time has decreased in India since 2005, and now stands at 15.3% of the total population | Source: FAOSTAT

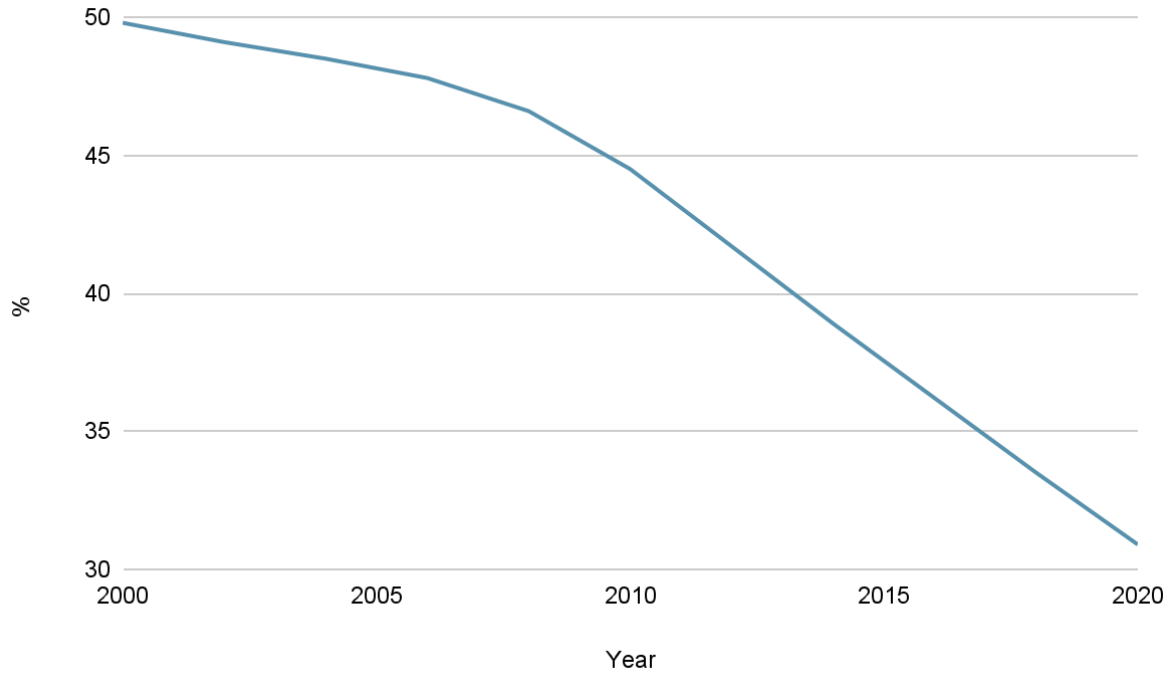
In this light, the research questions the policy brief attempts to address are as follows:

1. What are the unsustainable practices that prevent India's resource and policy wealthiness from bridging the malnutrition gap?
2. How do malnutrition and other contributing factors impact under-5 mortality differently between male and female offspring, as well as across Indian states?
3. How can local and governmental actors like Anganwadi clinics and ASHA workers work effectively to implement current policies in place to prevent under-5 mortality?
4. Can the digitization of the medical space surrounding under-5 mortality and maternal care help cope with post-COVID-19 realities?

II. India's case: unsustainable practices

India and Nigeria together account for one-third of the total Under-5 deaths in the world (WHO, 2019). To broach India's case, a report published by the Indian Ministry of Health and Family Welfare for 2016-17 presented the conclusions that malnutrition is the underlying cause of deaths and diseases among children under 5 years of age and that about 44% of such deaths

take place within the first 7 days of birth (MOHFW, 2017). The former conclusion was supported by another study published in The Lancet in 2020, discussing that 68% of under-5 deaths in India are attributable to both maternal and child malnutrition. Even though the study also indicates that there has been a whopping 49% decline in under-5 deaths in the country over a period of 17 years from 2000-2017, we are still not on track to achieve the 12 deaths per 1000 live births rate envisioned by the UNSDGs. Maternal malnutrition is as important a factor to consider in the case against under-5 deaths as child malnutrition because it is to do with the unmet dietary and nutritional needs of the mother/ pregnant individual both before and after birth, which directly impacts foetal development and post-natal life expectancy of the infant. If the mother/ pregnant individual is a victim of unsustainable dietary habits - including the lack of fruits and vegetables rich in fundamental nutrients like iron, iodine, and calcium in the diet - it can have disastrous consequences for the child, especially in the form of low-weight birth and undernutrition (manifested in the form of deficiencies, wasting and stunting in subsequent stages in life), which has its own complications. For example, birth asphyxia, which is the shortness of breath faced by the infant in the neonatal phase due to the blockage of oxygen and blood flow to the brain, has been found to be directly linked to the phenomena of low birthweight (Medical News Today, 2020). It must be noted that whether a mother is able to meet her dietary requirements in the ante and post-natal stages is dependent on various socio-economic and political factors, ranging from the lack of access to affordable, nutritious food and prevalence of conflict and instability to lack of a female's rights over her own body. The latter is often manifested in the patriarchal apprehensions that the family of the pregnant individual may express towards her wholesome dietary intakes. Especially in the Indian context, there is also an urban-rural differential at play - mothers and children from rural areas are more likely to experience under-5 deaths than those based in urban areas because of the unavailability of relevant healthcare services, nutritional food, and the prevalence of a modern patriarchal thought process.



Prevalence of U-5 stunting in India has declined since 2000. However, the current rate is 30.9% (of all children under 5), which is significantly higher than the expected global average of 3% | Source: World Bank

Discussion and Main Findings

I. Key stakeholders and contributing factors

Malnutrition in India indiscriminately affects female offspring the most. In this context, not only is there a gender differential and a correlation between malnutrition and mortality existent at the mother's level, but also at the level of the born child. Except for Tamil Nadu, trends for all states in India dictate that a girl child is more likely to die before the age of 5 than boys (MOHFW, 2017). However, while the data of Under-5 mortality is conclusive, it must be acknowledged that research on its correlation with a nutritional bias between girls and boys after birth is still ongoing and sometimes contradictory. For example, in the extensive work carried out by Amartya Sen, it was found that girls were breastfed for shorter time periods as compared to boys (Nagpal, 2019). In another detailed study entitled "Do Boys Eat Better Than Girls in India?: Longitudinal Evidence from Young Lives," it was argued that there exist significant nutritional deficiencies in the diets given to girls as compared to boys, for various reasons such as the late onset of puberty in boys, which requires a regularly maintained diet for

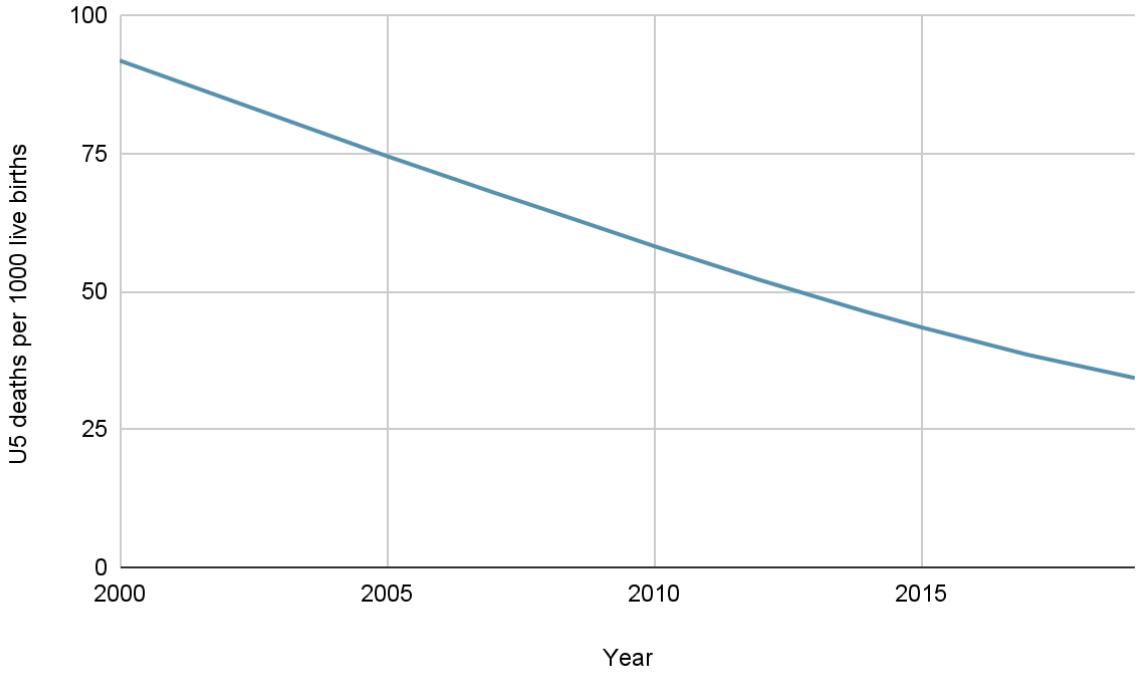
them over a relatively longer period of time than girls, as well as the comparative bias in feeding the boy child better, for his better development (Aurino, 2016). However, the focus of this study has been on children of and above the age of 10, which can only help us trace trends to under-5 mortality but not draw pointed conclusions.

Attention must be drawn to policy resuscitation and continued research work in this regard. The first step should be to make maternal nutrition cheaper, qualitatively better, and free of discrimination for the mother and the child. Foetal assessments and contacts between the pregnant individuals and their doctors should be regular across the gestation period and free of cost for the underprivileged in keeping up with the need to make healthcare accessible to all. Antenatal care is essential to determine risks that may translate into birth defects in the postnatal period, and therefore, providing a regular supply of nutritious food to the pregnant individual is essential to avoid antenatal complications. Nutrition during breastfeeding is equally essential, and so is physical exercise, nutritional supplementation of diet with elements like iron and folic acid, and monitoring of weight gain (UNICEF). Deworming prophylaxis, which is the administering of deworming drugs (like Albendazole) with Vitamin-A to both the child-bearer and the child under 5, is another significant step towards ensuring goodness of immunity and preventing infections. India is home to one of the most robust programs on deworming as part of its "National Deworming Day" operations, and the role played by Anganwadis, or rural healthcare centres for children in India, is immense. Annually, 10 February is the designated day for widespread deworming campaigns across Indian schools, but the overall deworming infrastructure calls for continued funding and skill development for Anganwadi workers.

II. Reworking the policy setup

Translation of policy into action has happened at a rapid pace in the country, which is why we see a significant decline in the Under-5 mortality and malnutrition rates. But India remains one of the world's largest contributors to Under-5 deaths, which means there exist significant policy implementation challenges. For example, dietary deficiency-related diseases like Anaemia are less evidently symptomatic, which creates challenges in dealing with them effectively. In India, Anaemia is prevalent across as many as 50% of pregnant women and children (NHP, 2018). Consequently, the National Iron Plus Initiative for Anaemia control, specifically targeting children aged 6 months to 5 years, was launched by the Health Ministry in 2013. NIPI has

achieved significant strides in administering biweekly doses of Iron and Folic acid among children under 5. Additionally, the role ASHA workers (Accredited Social Health Activists) is part of the government's National Rural Health Mission has been crucial. But owing to the standard-setting approach of the union government, states have been unable to cope with individual challenges in delivering on NIPI, as well as other vital government initiatives like the 'POSHAN Abhiyaan'. This has created problems like the state's inability to procure iron and folic acid supplementation on time, hurdles in storage and transport of supplements, and the significant ignorance towards Anaemia under individual states' healthcare priority lists (Kapil *et al.*, 2019). This calls for state-wise monitoring and implementation programs that can fund and address the individual challenges of Indian states, especially those with a consistently high prevalence of under-5 mortality, such as Uttar Pradesh, Bihar, Odisha, Chhattisgarh, Madhya Pradesh, Assam, and Rajasthan (MOHFW, 2017). Additionally, a switch to cultivation and consumption of millets, which carry high fibrous and protein content, and at the same time, are more sustainable to produce with a long shelf life, can help fulfil two simultaneous goals - an increase in the efficiency of agricultural production, as well as the inclusion of millets in the diets of the pregnant and the under-5.



Under-5 mortality rates have declined constantly in the country (especially since 2000-2019), but still remains significantly higher (34.3) than the global long-term expected average of 2.6 | Source: World Bank/ UNICEF

The most important policy initiative on the issue of child and mother malnutrition in India is the ‘POSHAN Abhiyaan’. Launched in 2018 as the National Nutrition Mission (NNM), the initiative ambitiously aims to eradicate malnutrition from the country and achieve a “Kuposhan-mukt Bharat” (malnutrition-free India) by 2022. The initiative also encompasses other schemes like the ‘Pradhan Mantri Matru Vandana Yojana’ (PMMVY), a maternity benefit programme, ‘Janani Suraksha Yojana’, a safe motherhood scheme, and even the ‘Swachh Bharat Abhiyaan’. The multidimensionality of the NNM also makes it liable to cooperation challenges, but because the nodal agency for most of the above-mentioned schemes is the Health Ministry, coordination between the Centre and the states becomes an implementation-al priority.

Name of Scheme/ Policy	Launch Year	Goals of the Program	Budget and Cash Allocations	Assistance Delivered So Far

Prime Minister's Overarching Scheme for Holistic Nutrition (POSHAN) Abhiyaan	2018	• To improve nutritional outcomes for children, pregnant and lactating mothers; • To use ICT to enable real-time monitoring of women and child nutrition; & • To carry out a 'Jan Andolan' and bring citizens together for a common health goal.	• Budgetary allocation for POSHAN between Fiscal years 2018-19 and 2020-21: INR 5,31,279.08 lakh. • Funds utilised out of the total allotted budget: INR 2,98,555.92 lakh.	• More than 12.2 Crore women, 6.2 Crore men and over 13 Crore children (male and female) were reached through the various activities undertaken during POSHAN Maah (September of every year since 2018). • The total number of people (adults and children + males and females) to have participated in POSHAN activities (like Maah and Jan Andolan) equal 13,92,51,20,295.

Janani Suraksha Yojana (JSY)	2005	• To conduct safe motherhood intervention; • To reduce maternal and neonatal mortality by ensuring institutional delivery; • To track a mother's health before, during and after delivery; • To integrate ASHA and Anganwadi Workers with local maternal health setup; & • To establish an effective link between the Government of India and poor pregnant women for the latter's well-being.	**RURAL AREAS** • Mother's Package for Low Performing States: INR 1400. • Mother's Package for High Performing States: INR 700. • ASHA worker's Package for Low and High Performing States: INR 600 **URBAN AREAS** • Mother's Package for Low Performing States: INR 1000. • Mother's Package for High Performing States: INR 600. • ASHA worker's Package for Low and High Performing States: INR 400.	• The Yojana has impacted the lives of 1,07,35,203 individuals in the fiscal year 2019-20 alone. This is an increase of approximately 6.5% from the previous fiscal year, 2018-19 (when the number of lives impacted were 1,00,40,857). • Institutional deliveries increased from 38.7% in National Family Health Survey-3 (2005-06) to 78.9% in Survey-4 (2015-16). In the first phase of the fiscal year 2019-20, 14 states/ UTs reported the numbers on institutional deliveries to be 90% and more. • From the budgetary perspective, State Program Implementation Plan (SPIP) Approvals for expenditure on JSY totalled INR 2032.25 crores in the fiscal year 2019-20.

Pradhan Mantri Matri Vandana Yojana (PMMVY)	2010	• To enable lactating women and pregnant mothers to raise children in an efficient manner using a cash incentive sponsored by the government; • To alleviate undernourishment in both the mother and the child by enabling access to a nutritional diet; & • To integrate ASHA and Anganwadi Workers with local maternal health setup.	• A cash incentive of INR 5000 is provided directly to the Bank/ Post Office Account of Lactating and Pregnant women for the first living child of the family. • It is paid in three instalments, and is subject to the fulfilment of specific conditions relating to Maternal and Child Health.	• Data from November 2021 suggests that maternity benefits to the tune of INR 9420.58 crores (including Central and State share) have been dispersed across over 2.17 crores eligible beneficiaries under PMMVY, especially since the inception of the scheme Maternity Benefit Scheme in 2017.

A comparative analysis of some Indian governmental initiatives on the issue of malnourishment and U5MR | Sources: NITI Aayog (POSHAN); National Health Mission India (JSY); Press Information Bureau (PMMVY)

Conclusion: Accounting for COVID-19

The COVID-19 Pandemic has brought systemic shortcomings of national and global healthcare systems to the fore and has pushed the issue of under-5 mortality to the backburner. It has also highlighted the need for universal healthcare, which is also well-digitized in nature and accessible for the poor and the underprivileged. Therefore, the ICT-based monitoring and consultation systems visualized by the NNM carry great hope for a post-COVID-19 healthcare setup. The scaling up of the Integrated Child Development Services (which focuses on providing nutritional services to children aged 0-6 years and their mothers, and which the layman understands as "midday meal" scheme), also visualized under the NNM, can truly take us a step further to eliminating malnutrition by 2022 and fight undernourishment by 2030, despite the setbacks created by the current pandemic. ICDS as a scheme has faced major

barriers in implementation and design over the years, from its inability to bridge the urban-rural divide in nutrition among school students and its ignorance towards micronutrients to the lack of skilled workers, poor supervision, and poor infrastructure across Anganwadis (Mother and Child Nutrition, 2019).

Perhaps the solution to these complexities can also be provided by digitization through the ICDS-Common Application System, which aims to use geotagging for real-time data collection. The government has equipped over 6 lakh Anganwadi workers (Factly, 2020) with smartphones to this end and has created an online database of instruction manuals and other guidelines for the successful implementation of the ICDS Scheme. The challenges to this end include technological errors and the fact that the Anganwadi workers themselves are responsible for reporting their successes. So, while the former is being addressed by robust Digital India programmes like the 'Sugamya Bharat Abhiyaan' (Accessible India Scheme), only time will tell how government efforts have remedied the latter on the long road to Sustainable development.

Reference List:

1. Aprajita Verma, "The ICDS – Common Application Software: What are the Promises & Limitations?," Factly, 2020, https://factly.in/the-icds-common-application-software-what-are-the-promises-limitations/.
2. Elisabetta Aurino, "Do Boys Eat Better Than Girls in India?: Longitudinal Evidence from Young Lives," Young Lives, 2016, https://www.younglives-india.org/sites/www.younglives-india.org/files/YL-WP146-Aurino_Do-Boys-Eat-Better-than-Girls.pdf.
3. FAOSTAT, "Suite of Food Security Indicators," Food and Agriculture Organisation of the United Nations, https://www.fao.org/faostat/en/#data/FS/visualize.
4. MOHFW, "Annual Report 2016-17," Ministry of Health and Family Welfare, Government of India, 2017, pp. 37-45.
5. Mother and Child Nutrition, "India's Primary Policy Response: The Integrated Child Development Services (ICDS) Program: Challenges and Way Forward," Mother and

Child Nutrition, 2019, https://motherchildnutrition.org/india/challenges-and-way-forward.html.

6. National Health Mission, "National Deworming Day: Operational Guidelines," Child Health Division Ministry of Health and Family Welfare Government of India, 2015, https://nhm.gov.in/images/pdf/NDD/Guidelines/NDD_Operational_Guidelines.pdf.
7. NHP Admin, "National Iron Plus Initiative for Anemia Control," National Health Portal of India, 2018, https://www.nhp.gov.in/national-iron-plus-initiative-for-anemia-control_pg.
8. Phalasha Nagpal, "A gendered view of India's nutrition strategy," The Hindu Businessline, 2019, https://www.thehindubusinessline.com/opinion/a-gendered-view-of-indias-nutrition-strategy/article29433201.ece.
9. Praveen Kumar and Nalini Singhal, "Mapping neonatal and under-5 mortality in India," The Lancet, 2020, pp. 1591-1593, https://www.thelancet.com/action/showPdf?pii=S0140-6736%2820%2931050-3.
10. SDG Index Dashboards, "Mortality rate, under-5," Sustainable Development Report, https://dashboards.sdgindex.org/explorer/mortality-rate-under-5/chart.
11. SDG Index Dashboards, "Prevalence of undernourishment," Sustainable Development Report, https://dashboards.sdgindex.org/explorer/prevalence-of-undernourishment/chart.
12. Umesh Kapil, Radhika Kapil and Aakriti Gupta, "National Iron Plus Initiative: Current status & future strategy," Indian Journal of Medical Research, 2019, Volume 150, Issue 2, pp. 239-247, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6886130/.
13. UNICEF, "Maternal nutrition: Preventing malnutrition in pregnant and breastfeeding women," United Nations Children's Fund, https://www.unicef.org/nutrition/maternal.
14. Vinayak Agarwal, "Bringing back millets- the super crop of our ancestors," YourStory, 2017, https://yourstory.com/2017/04/millets/amp.
15. WHO News Room, "Children: improving survival and well-being," World Health Organisation, 2020, https://www.who.int/news-room/fact-sheets/detail/children-reducing-mortality.

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