FUNDS ALLOCATION UNDER MID-DAY MEAL PROGRAM: A STATE-LEVEL ANALYSIS

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Abstract

With the twin objective of improving the health of poor children and imparting formal education to these children, the Government of India started the Mid-Day Meal Scheme in the government primary schools. The purpose of the government to a great extent has been an initiative to increase the attendance rate and also promote socialization values. Despite all achievements, many problems have been encountered in the implementation of this scheme. Some major drawbacks have also been identified. This paper attempts to analyse the results and factors that are highly responsible for creating discrepancies in its process of attaining the major objectives and goals and tries to identify the sole factors that are responsible for the allocation of funds in the top five and bottom five major Indian states.

Keywords: Mid-Day Meal, Primary school children, Funds allocation.

JEL Classifications: O1, O100, O120

1. Introduction

Education is a cornerstone of personal development and a crucial driver of economic growth in India. The primary school system serves as the initial step in formal education. However, the Indian education system faces several challenges, especially in rural areas. According to the 2011 census, India had 444 million children under the age of 18, constituting 37% of the total population. Shockingly, 99 million children within this age group dropped out of school due to reasons such as poverty, limited availability, and accessibility issues. The census data also revealed that 70% of Indians live in rural areas, with only 26.7% residing in urban areas. Unfortunately, out of every 100 children in India, only 32 complete their school education, and merely 2% of schools provide education from class 1 to 12.

Education and health are intertwined, as healthy children tend to learn better, are more productive, and create more opportunities. Nutrition is a critical component of health and development, yet many children in India suffer from undernourishment. Approximately 19.8 million children under the age of 6 are undernourished, and 36% of Indian children are underweight.

India, despite being one of the fastest-growing economies globally, faces significant challenges in addressing child malnutrition and education. Many of the country's children come from economically disadvantaged families and are vulnerable to child labour due to poverty and malnutrition.

In response to these challenges, the Government of India initiated the Mid-Day Meal scheme on August 15, 1995. This centrally sponsored scheme, a flagship of the Ministry of Human Resource Development, aims to provide nutritional support to primary education. The program supplies free mid-day meals on school days to children in primary and upper primary classes in government-assisted schools, special training centres, madrasas, and maktabs supported under Sarva Shiksha Abhiyan. The Mid-Day Meal scheme seeks to ensure children's right to

food while emphasizing their right to education, growth, and development. By providing meals to economically disadvantaged children, the government aims to encourage school attendance and address both educational and nutritional concerns. This program is the world's largest school lunch initiative and India's second-largest food security program, serving primary and upper primary school students nationwide.

This paper examines the impact of the Mid-Day Meal scheme, analysing factors contributing to variations in meal provision and school attendance. Additionally, it investigates the factors influencing fund allocation for the program, considering variables such as attendance rates, literacy rates, rural population, GDP rates, and the number of schools and institutions participating in the scheme. It is important to note that this study is based on secondary data and existing literature, without conducting primary research on the matter.

2. Literature Review

The Mid-Day Meal Scheme, a cornerstone of India's efforts to improve education and nutrition, seeks to boost enrolment, attendance, and retention while simultaneously enhancing the nutritional well-being of

school-going children in classes 1 to 8. This program extends its impact to government-aided schools, special training centres, madrassas, and maktabs. It serves as a vital instrument for instilling positive habits in children and educating them about the significance of health, hygiene, and socialization. Furthermore, it acts as an economic support system for economically disadvantaged parents, enlightening them about the value of education (Dreze & Kingdon, 2001).

The decision to send a child to school, like any household investment, can be analysed through a cost-benefit framework. Schooling incurs initial costs, comprising direct educational expenses and the opportunity cost of schooling. The latter.

reflects the foregone benefits a child could contribute to their family if not in school, through labour market income or household chores. While education ultimately alleviates poverty by offering better job prospects and increased wages, the immediate costs of schooling, particularly for families living below the poverty line, can be daunting. Thus, many families may not see the future benefits of education as justifying its immediate cost.

The enrolment statistics may have improved, and dropout rates may have decreased, but concerns over the quality of education and the nutritional aspects of the Mid-Day Meal Scheme have emerged. The preparation of food lacks proper care, and teachers are often burdened with various non-teaching duties. A revaluation of the role of teachers in primary schools is imperative to ensure a focus on their core duty – teaching (Kaur, 2016).

The Mid-Day Meal Scheme, which provides one meal a day for 200 days to all enrolled and present school children, is intended to bolster attendance. However, trends derived from secondary data using time series techniques suggest that ensuring attendance on certain days does not guarantee quality education. The scheme may not be the sole factor influencing children's school attendance, as other determinants also play a significant role (Singha & Gupta, 2013).

Data on enrolment, attendance, and retention collected from school records reveal variations between Mid-Day Meal and non-Mid-Day Meal schools. Enrolment rates have increased in Mid-Day Meal schools compared to non-Mid-Day Meal schools, but differences in attendance percentages are more pronounced in urban areas than in rural areas. Retention rates tend to be higher in urban non-Mid-Day Meal schools and non-Mid-Day Meal schools in rural areas (Jacaranda & Simroth, 2011).

Using a panel dataset of nearly 500,000 schools observed from 2002 to 2004, research indicates that the Mid-Day Meal Scheme significantly increased primary school enrolment, primarily driven by early responses from the early primary school level (Singh et al., 2014).

In an evaluation of the Mid-Day Meal Scheme, longitudinal data from Indian states were used to estimate the program's impact. Findings reveal that the scheme acted as a safety net for children, delivering substantial health benefits to families affected by drought (Afridi, 2010).

The examination of the extent to which children benefited from targeted public transfers suggests that the program significantly reduced daily protein

deficiency at a minimal cost, providing a substantial effect on reducing hunger and protein energy malnutrition (Afridi, 2010).

In conclusion, the Mid-Day Meal Scheme serves as a multifaceted initiative, addressing not only educational but also nutritional concerns, aiming to create a better future for India's school-going children

3. Brief History

The history of the Mid-Day Meal Scheme in India dates to 1925, during the pre-independence era when it was introduced for disadvantaged children in the Madras Municipal Corporation in the then Madras presidency (now Tamil Nadu). By the mid-1980s, three states—Gujarat, Kerala, Tamil Nadu—and the Union Territory of Pondicherry had established a universal cooked Mid-Day Meal Program for primary school children using their own resources. By 1990-91, the program had expanded to twelve states. The National Programme of Nutritional Support to Primary Education (NP-NSPE) was officially launched on August 15, 1995, initially in 2,408 blocks across the country. By 1977-78, it covered all blocks nationwide and was further extended in 2002 to include not only children in classes 1 to 5 of government, government-aided, and local body schools but also those in Education Guarantee Scheme (EGS) and Alternative and Innovative Education (AIE) centres. The scheme aimed to universalize primary education by enhancing enrolment, retention, attendance, and the nutrition of primary school students. However, it wasn't fully implemented until a landmark Supreme Court judgment on November 28, 2001, mandated cooked meals for all primary school children, bringing the scheme to the national forefront.

Table 1- School meal Programme in different countries

Country	Year of introduction
UK	1945
USA	1946
Switzerland	1946
Japan	1947
Australia	1950
China	1964
Indonesia	1967
Thailand	1970
Korea	1973
Singapore	1975
India	1995

Source – Parikh and Yasmeen (2004)

Primary school enrolment is primarily driven by early responses from the early primary school level (Singh et al., 2014). In an evaluation of the Mid-Day Meal Scheme, longitudinal data from Indian states were used to estimate the program's impact. Findings reveal that the scheme acted as a safety net for children, delivering substantial health benefits to families affected by drought (Afridi, 2010). The examination of the extent to which children benefited from targeted public transfers suggests that the program significantly reduced daily protein deficiency at a minimal cost, providing a substantial effect on reducing hunger and protein energy malnutrition (Afridi, 2010).

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4. Objectives of the Study

This study aims to uncover factors contributing to discrepancies between school meal provision and attendance rates. It also investigates fund

allocation factors in the top and bottom five states in India. The concerns surrounding the government's Mid-Day Meal Scheme underscore its objectives, initially emphasizing high attendance rates but later shifting focus to engage low socio-economic rural families in the program, promoting education over child labour. The primary question here is whether the scheme effectively increases school participation among underprivileged children, thus aiding their education and economic betterment. Additionally, we explore the relevance of fund allocation factors to the Mid-Day Meal context.

5. Data Collection and Methodology

The methodology includes secondary data. For secondary data, Governmental websites (https://data.gov.in/) and recent Governmental reports were relied upon. Data regarding rural population and literacy rates, the 2011 census report relied on. No primary research has been carried out, rather this presentation is based on secondary data as mentioned above and literature about Mid-Day Meal about child nutrition and education.

For the analysis part of the study, different types of variables are taken into consideration for the identification of factors under Mid-Day Meals.

For OLS Regression-

Three equations have been formed:

1. $Y = \alpha + \beta_1 X_1 + E_i$

Where, Y is the Funds centrally sanctioned and X_1 is the literacy rate. The Hypothesis therefore is-

$H_0 = \beta = 0$

$H_1 = \beta \neq 0$

2. $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + E_i$

Where, Y is the Funds centrally sanctioned, X_1 is the literacy rate and X_2 is the rural population The Hypothesis therefore is –

$H_0 = \beta_1 = \beta_2 = 0$

$H_1 = \beta_1 = \beta_2 \neq 0$

Where Y is the Funds centrally sanctioned and X_1 is the literacy rate. The Hypothesis therefore is-

3. $Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + E_i$

Where, Y is the Funds centrally sanctioned, X_1 is the literacy rate, X_2 is the rural population and X_3 is the gross state domestic product.

6. Analysis and Finding

State wise % of schools serving Mid-Day Meal and its attendance rates accordingly

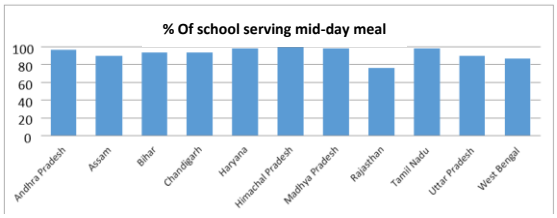

Figure 1

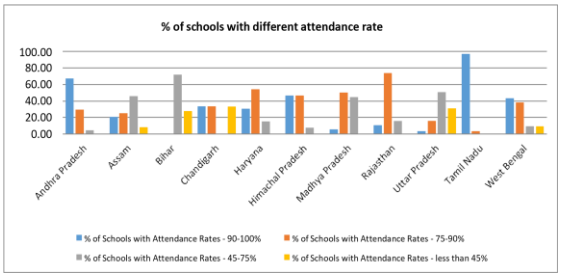

Figure 2

The Government's Mid-Day Meal program in Indian schools aims to enhance attendance. Indian states introduced this food security initiative at different times. Some initially provided dry rations, later transitioning to cooked meals following a Supreme Court intervention in 2011.

The percentage of schools serving Mid-Day Meals varies across states. States

like Tamil Nadu, Andhra Pradesh, Haryana, West Bengal, and Madhya Pradesh have over 90% coverage, while states like Uttar Pradesh, Bihar, and Chandigarh have more than 85% participation. This study focuses on these states due to data viability and attendance rates.

Bihar, Uttar Pradesh, and Madhya Pradesh have lower attendance rates due to delayed program implementation. In 2012, 75% of Bihar's schools provided meals, slightly below the national average of 87%. Bihar faces challenges in child marriage rates, gender disparity, and food quality issues.

These factors contribute to a disparity in Bihar's Mid-Day Meal program and attendance rates. The multifaceted responsibilities placed on teachers in government schools, including meal distribution, may impact children's attendance. Addressing these issues is vital for improving school attendance and overall educational outcomes in these states.

The state of Uttar Pradesh in the list is another matter of concern. Uttar Pradesh has a literacy rate of 69.72%, India's eight lowest in the country, according to the census of 2011. More than 85% of the schools in Uttar Pradesh (UP) serves Mid-Day Meal but the attendance rates from these schools serving meals stands as low as 10 %. Studies found that meals are not enough to draw attention of the children to schools. major drawbacks in this state are at 30 students per teacher as prescribed by the Right to Education Act (RTE) – at the primary level, the state should have 840,000 teachers but is short of 21% that is in figures it stands 176,000. About 23% of all elementary teacher posts in government school in Uttar Pradesh are vacant. This state even records for second highest teacher absenteeism (31%) in rural public schools surveyed in the year 2010. This state records for the lowest transition rate from primary to upper primary level in the country (DISE Flash Statistics Reports, 2010). More children are at work in UP than any other state in India (National Commission for Protection of Child Rights). These factors have been identified to cause discrepancy between these two states taken for study under Mid-Day Meal which stands among the highest implementation and serving of food under mid-day meal and at the same time records to have the lowest of attendance rates from the area of serving.

Social status of beneficiary children under the Mid-Day Meal Scheme in India

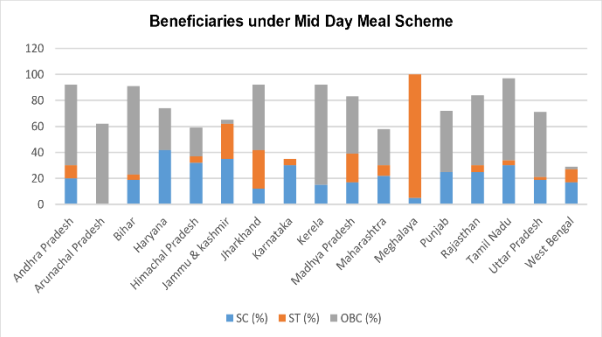

Figure 3

Figure [3] illustrates the distribution of children from various caste groups benefiting from the Indian government's Mid-Day Meal scheme. This program holds significant social value, as it promotes inclusivity and unity among students from diverse backgrounds. Studies reveal that children of all social strata find joy in sharing a common meal, bridging social gaps. The Mid-Day Meal scheme was introduced to address social

inequalities stemming from the hierarchical structure of society.

Enrolment is a pivotal factor in school participation. The implementation of the cooked mid-day meal in 2005 led to increased enrolment of children from Scheduled Castes (SCs) and Scheduled Tribes (STs). Many economically disadvantaged families view the mid-day meal as an incentive to send their children to school. From 2005 to 2009, marginalized children's enrolment increased under the Mid-Day Meal program, while enrolment from the general category declined. Fee-charging private schools providing better quality education attracted children from more privileged sections, contributing to the decline in general category enrolment.

In states like Arunachal Pradesh and Meghalaya, where tribal people comprise the majority, ST children benefit the most from the program. In Haryana and Punjab, the dominant Jat community, primarily from SC backgrounds, forms the majority, leading to significant SC children's participation. Tamil Nadu, Bihar, Kerala, Rajasthan, and Uttar Pradesh report higher nutritional intake among Other Backward Classes (OBC) children. STs, SCs, and OBCs, the most marginalized groups, gain nutritional benefits from the Mid-Day Meal program.

These findings suggest that when a social development program offers advantages that better-off sections don't covet, it can lead to changes that reduce societal inequalities.

Funding for the Mid-Day Meal scheme is routed through various channels. The Ministry of Human Resource Development (MHRD) in the Indian government allocates funds to the State Finance Department for the Central Share.

Examining and identifying the factors that play vital role in determining the implementation of the scheme

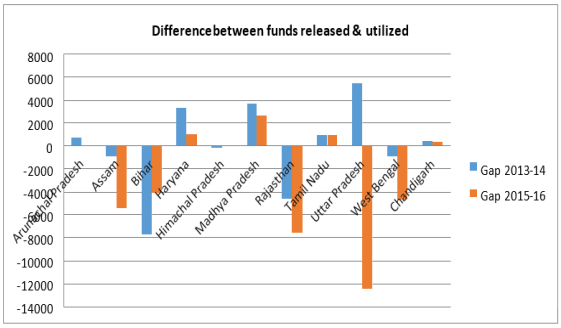

Figure 4

The State Finance Department further disburses these funds to the Education Department, which then channels them to the Directorate of School Education and Literacy. The State Finance Department also releases the state's share of funding for the program, and the Directorate transfers Mid-Day Meal funds electronically.

Figure 4 illustrates the disparities between the released and utilized funds under this food security program. In 2013-14, Uttar Pradesh had the highest surplus, indicating that the funds allocated exceeded the expenditure in the state. Madhya Pradesh, Haryana, Arunachal Pradesh, Tamil Nadu, and Chandigarh also had surpluses. In contrast, Bihar, Rajasthan, and Assam had the highest deficits during the same year.

In 2015-16, Madhya Pradesh had the highest surplus, followed by Tamil Nadu, Haryana, and Chandigarh, while Uttar Pradesh, Rajasthan, and West Bengal faced deficits.

Surprisingly, the government utilized only 67% of the allocated funds for the Mid-Day Meal scheme in the years 2013-16. This resulted in a substantial gap between the budgeted provision

and the actual expenditure, despite the central government's share.

The allocation of funds depends on panchayat heads in rural areas. Although the mandated cost per child for a 20-day school month should have been at least Rs. 7.47, many panchayats officially spent less than this amount in surveyed villages. Some states even experienced surpluses, indicating effective program management but also unutilized budgets.

The funding gap and disparities between released and utilized funds persist due to a lack of dedicated resources in each state for the program's effective implementation. This situation often fluctuates year by year, affecting the scheme's performance and budget execution.

Funds Sanctioned under Mid-Day Meal

The Mid-Day Meal Scheme in India is a shared initiative between the central and state governments. The central government provides free food grains to the states and shares the cost of cooking, infrastructure development, transportation, and payments to cooks and helpers with the state governments. The central government contributes more funding, and each state's participation varies.

This scheme aims to address hunger and promote education, targeting those who might not otherwise send their children to school. Approximately eight million Indian children suffer from severe malnutrition. The Mid-Day Meal program strives to enhance children's nutritional status, increase school enrolment, attendance, and retention, particularly in rural areas where these issues are prevalent.

Increased central government funding for the program in 2013 and 2014 had several positive impacts on the local economy. It boosted demand for food and agricultural goods, benefiting farmers and food producers. The program created employment opportunities, especially in rural areas, and increased income levels. Local suppliers, including farmers and retailers, experienced increased demand for their products, leading to business expansion and regional economic growth. Free school meals eased financial burdens on families, allowing them to spend more on other goods and services, stimulating local businesses.

In 2013, ensuring the quality, safety, and hygiene of the program were paramount concerns for both the central and state governments, as well as NGOs and foreign organizations. There were varying standards for meals in different states and districts, with variations in food quality and nutritional components. Maintaining safety and hygiene standards in food preparation and delivery was crucial.

The release of funds for the program depends on several factors. Given its focus on the rural population and basic education, it's likely influenced by the percentage of the rural population and literacy rates in each state. Other factors, such as the institutions and children covered by each state and the Gross State Domestic Product, may also play a role. This paper examines the influence of two primary factors, rural population, and literacy rates, on government expenditure for the program.

<u>Relationship between the major three – Urban population, Literacy rates and Total funds sanctioned</u>

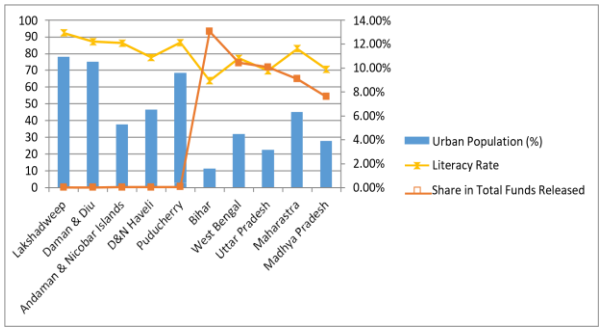

Figure 5

The study considers data from 2014-15 for centrally sponsored funds and 2011 census data for literacy rates and urban population percentages across all states and union territories in India (36 observations). States are classified into the Top Five (Bihar to Madhya Pradesh) and Bottom Five (Lakshadweep to Pondicherry) based on funds allocated in 2014-15.

In the Bottom Five states, funds range from 10 lakhs in Lakshadweep to 59 lakhs in Pondicherry, constituting a mere 0.01% to 0.06% of total funds. These states exhibit high literacy rates (ranging from 77.7% to 92.3%) and substantial urbanization (ranging from 37.7% to 78%).

In the Top Five states, funds allocated are higher, ranging from 79 lakhs in Madhya Pradesh to 1.36 crore in Bihar, comprising a significant share of total funds (ranging from 7.60% to 13.05%). These states have lower literacy rates (ranging from 63.8% to 82.9%) and predominantly rural populations (ranging from 11.3% to 77.7%).

The relationship between funds allocated, literacy rates, and rural populations is evident. Higher funds are directed toward states with lower literacy rates and larger rural populations. This highlights the government's emphasis on aiding less-developed regions in their pursuit of economic growth and improved living standards.

To draw conclusive insights, a regression analysis is necessary to examine the relationship between independent variables (literacy rate, rural population, State Gross Domestic Product) and the dependent variable (funds allocated) and explore the nature of this relationship.

7. Regression Results and Interpretation

Table 1

	Central assistance sanctioned/released 2014-15		
Literacy rates 2011 census	-1980.6**	-149.7	-70.44
	(675.8)	(415.5)	(427.5)
Rural population 2011 census		0.001***	0.001***
		0	0
GSDP 2014- 15			-455.8
			(536.7)
Intercept	184156.2**	18553.6	16006.5
	(53202.2)	(33896.9)	(34172.8)
N	36	36	36
*R*2	0.202	0.775	0.78
adj. R^2	0.178	0.761	0.759
RMSE	33047.2	17814.7	17890.5
Standard errors in parentheses* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$			

The estimated equations are-

1. $\hat{Y}=\alpha + \beta_1 X_1 + E_i$

Where Y is the funds sanctioned and X is the literacy rate.

Y=184156.2-1980.6X1

Here, we try to see the relationship between the literacy rates with the total funds sanctioned. And the results are significant though negative which states that even if literacy rate is significant, 1% increase in literacy rate would lower the funds sanctioned to 1980.6 amount.

2. $\hat{Y}=\alpha+\beta_1 X_1+ \beta_2 X_2 + E_i$

Where Y is the funds sanctioned, X1 is the literacy rate and X2 is the rural population.

Y=18553.6-149.7X1+0.000960X2

In this we have added one variable that is the rural population and have tried to see how it relates to the funds sanctioned. The estimated results show that this variable is significant in this model and indicates how a 1% increase in the rural population would lead to 0.00096 % increase in the share of total funds to be sanctioned. Also, that the standard error is high but the regression has been a good fit of the data because R square is 77%.

3. $\hat{Y} = \alpha+\beta_1 X_1+ \beta_2 X_2+ \beta_3 X_3+E_i$

Where Y is the funds sanctioned, X1 is the literacy rate, X2 is the rural population and X3 is the Gross State Domestic Product.

In this model, we have added one more variable that is the Gross State Domestic Product and the estimated equation is – Y=16006.5-70.44X1+0.0009X2-455.8X3

This model gives a result that even after considering the GSDP data, the rural population stands significant among others in relation to the Funds sanctioned while the two others are not significant and has a negative link.

Although the entire model relates to a positive end where the rural population is significant and here the R square is 78%. The OLS Regression Results in estimating the relationship between funds sanctioned and literacy rates, urban population and GSDP indicates that the funds sanctioned in the entire 36 regions of the country is based on the rural population factor because neither literacy rates nor GSDP is significant at 5% level though it is significant at the 7% level. Overall, the model is a good fit of the data because R square is 78% and adjusted R square is 75% but one thing must be noted that this model is not exactly reliable because we have data only for one particular year and a panel regression would have been more appropriate.

8. Conclusion

Overall, the findings of this study provide important insights into how the food security scheme Mid-Day Meal can achieve its objectives. The findings suggest that with improved work in its places of dispersions, Mid-Day Meal scheme will be able to design better nutritional standing nationwide. Though the scheme has shown increased number of enrolments and attendance but the area of retention has shown slow progress. Proper care has not been taken while preparing food and the role of teachers in involved has shown huge negligence. The study also found out that there are certainly other factors responsible for enrolment and drop out of children from school and these areas must be checked and worked upon. It has restored policies to bring in the social equality but it has to do the same with the parents and other individuals concerned.

The recommended solution for this program to achieve its goals and

objectives without any differences, the role of the government sector in the program must be changed. Non-governmental organizations should actively be involved by the government to look, assist, and report about transfer of funds and utilization of the same and the government can monitor and regulate these organizations. The evaluation of a student should be done on the basis of his/her performance. And hence, redefining the role of teachers in these government run schools is the need of the hour.

9. Policy Prescriptions

In India, a notable government initiative is the Mid-Day Meal (MDM) Programme. Here are some policy prescriptions and suggestions to increase the Mid-Day Meal program's efficacy:

i. Regular Monitoring and assessment: To guarantee the program's efficacy and efficiency, put in place a strong monitoring and assessment mechanism. Conduct routine checks of the kitchens, the quality of the food, and the methods used to prepare meals. Create systems for collecting input from students, parents, and faculty.

ii. Nutritional Recommendations: Create and revise dietary recommendations to guarantee that meals satisfy children's dietary needs, with an emphasis on balanced nutrition. Make sure the menu offers a wide selection of items that are both readily available locally and appropriate for the host culture.

iii. Food safety and hygiene standards should be tightened in MDM kitchens to reduce the risk of foodborne infections. Make sure that kitchen personnel and cooks receive frequent training in food safety procedures.

iv. Community Involvement: Encourage parents, PTA (Parent-Teacher Association) members, and community volunteers to get involved in the Programme. Encourage openness in the preparation and distribution of meals to foster community trust.

v. Infrastructure and Facilities: Ensure that schools have sufficient water supply and sanitation facilities, and invest in upgrading kitchen infrastructure and facilities to improve food processing and storage.

vi. Food Procurement and Supply Chain: Simplify the procurement procedure to cut down on holdups and guarantee the prompt delivery of food supplies. Create a network of regional vendors to find fresh and in-season ingredients.

vii. Transparency and Accountability: Create structures for open financial management and responsibility inside the Programme. Regularly release reports on Programme performance, detailing costs and impact evaluations.

viii. Research and Innovation: Make an investment in research and innovation to find best practices and cutting-edge methods to increase the program's impact.

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