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# A REVIEW ON MID-DAY MEAL SCHEME

**Dr. Ravikumar P**

*Department of Education*

*Jain (Deemed-to-be University), Ramnagar District, Karnataka - 562112*

*Email Id- ravikumarpkumar@gmail.com*

## **Abstract**

*India has embarked on an ambitious scheme of providing mid-day meals (MDM) in government and government-assisted primary schools with the twin goals of improving health and education for poor children. The financial and organizational responsibilities of this program are immense, and it is therefore seen as an alternative to providing food stamps or the transfer of income to targeted beneficiaries. We demonstrate that in the Indian context, the alternative distribution method is not feasible because it can lead to adverse consumption choices by the heads of the targeted households. We also assess whether or not the meals delivered by the MDM system provide the targeted children with proper nutrition, food protection, and comfort and variety. Laboratory findings indicate that, relative to the daily requirements in general, nutritional delivery through meals is low and, in particular, much lower in nutrients such as protein, fat, iron and iodine in comparison to the amount of food. In addition, tests on food grains procured for the scheme showed that uric acid and aflatoxin were present. By collaborating with private entities and NGOs and by including chikki, sukhdhi, fortified nutrition bar, and fruit on the weekly menu, the delivery of the MDM scheme can be enhanced. This will not only complement food intake, but will provide protection and variety, and can provide more interaction time between students and teachers for research purposes by reducing the delivery time.*

**Keywords:** *Fertilizer Subsidies, Food, Fuel, Food Safety, Golden Rice, Indifference Curves, Mid-Day Meal Scheme, Nutritional Deficiency, Primary School Education.*

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## **I. INTRODUCTION**

When Madras Corporation developed a school lunch program in 1925, the idea of supplementary nutritional support by educational institutions took its root in India. In the post-independence period, in 1984, Gujarat was the first state to begin a school lunch program. It was only in 1995, however, that the National Primary Education Nutrition Support Program (NP-NSPE) was initiated at the national level [1]. Delhi, the then Union Territory, immediately followed suit. The goal of this program was to promote the universalization of primary

education and to influence the nutritional intake of primary school students. The program has since been revamped in 2004 and is popularly referred to as the Mid Day Meal (MDM) scheme[2]. In its Common Minimum Programme, the incumbent government at the centre has emphasized its execution. It envisages providing primary and secondary school children with a cooked, balanced mid-day meal. Importantly, the establishment of an effective system for quality control is stated. The problem of malnutrition, anaemia, vitamin and iodine deficiency is very common among children in India, despite the broad-based efforts of the central government for more than a decade and a half, and a few pioneering efforts earlier[3]. Today, 94 percent of children are mildly, moderately, or seriously underweight in the 6 to 9 age range. Around 67.5% of children under 5 years of age and 69% of teenage girls suffer from anaemia due to a deficiency of iron and folic acid[4]. In fact, on several evaluation parameters[5], the MDM scheme implemented in Delhi in the late 'nineties was found to be lacking. A national analysis by the Planning Commission [2010] also indicates that many assessment criteria are missing in the MDM framework. However, the poor performance is in stark contrast with the actual expenditure under this programme. For instance, in 2003-2004, a sum of Rs. 1400 crore was spent on this scheme, and in 2007-2008, the budget of the central government allocated Rs. 7324 crore to this scheme. In the state of Gujarat, a total of 31,152 schools (86% of the total primary schools in Gujarat) with 3.8 million beneficiaries (47% of the students enrolled) were covered by the scheme in 2005-2006 and the state budget allocated to the scheme was approximately Rs 201 crore in 2005-2006. This allocation amounts to Rs. 2.65 per student in an academic year, assuming 200 school days. In Gujarat, a third of the beneficiaries were from Ahmedabad. Given the complexity of the MDM program, on the one hand, in terms of expenses incurred and the number of beneficiaries, and, on the other, in terms of abysmal health and demographic statistics, it is crucial that an assessment of the scheme should be attempted to determine its effectiveness. The apparent enormity of the administrative and logistical burdens of delivering school meals in the middle of the day raises the question of alternate ways of delivery of nutrition to children. In Section 2, we discuss whether or not targeted food stamp schemes or income transfers, as introduced in developed countries and recently suggested by the Indian Government for fuel and fertilizer, may be more effective than the MDM system, using the indifference curve approach to household welfare. Next, we concentrate on the quality features of the food delivered to the recipients. We need to raise the question if we are to proceed with the MDM scheme: are the beneficiary children being provided with healthy and adequately nutritious food as envisaged in the scheme? To this end, food and food service quality problems found during school visits are recorded in Section 3. In addition, in Section 4, objective laboratory tests of secret features such as nutrition and food protection of a standard meal are provided. In relation to the findings and analysis provided in Sections 3 and 4, detailed suggestions are made in Section 5. Finally, we summarise and make concluding observations in Section 6.

### Case Study

Given the apparent enormity of the administrative and logistical burdens of delivering school mid-day meals, two alternatives to the MDM system - the program for food stamps and targeted transfers of income - may be considered. For instance, in the US, a food stamp program is in place to support the poor. A four-member household with a gross annual income of \$26,000 or less or a net annual income of \$20,000 or less is eligible for food stamps of approximately \$500 per month. In India, several organizations, including the Federation of Indian Chamber of Commerce and Industry (FICCI), have promoted the use of food stamps. This programme has performed fairly well in the US. FICCI suggests connecting different government social sector programs to food stamps and also calls for mandatory enrollment in schools for minor dependents. Similarly, while not linked to the distribution of food, the center's incumbent government would like to provide farmers with fuel and fertiliser subsidies as direct income transfers, instead of continuing with subsidized rates. It is hoped that the government would be able to allocate such subsidies to the targeted farmers with the introduction of Aadhar, the unique identification number for each person.

### Nutrition

Table 1 shows some of the recommended nutritional daily allowances (RDA) from the Indian Council of Medical Research (ICMR) as stated in Swaminathan. While the Supreme Court ruling and the NP-NSPE [GOI, 2004] required the scheme to provide a minimum of 300 calories and 8 to 12 grams of protein per day per child for a minimum of 200 days, the scheme is required to provide a minimum of 700 calories, 20 mg of protein and a healthy and nutritious diet as of 1 April 2008, in compliance with the new NP-NSPE requirements published by the MHRD[6]. Table 1 also displays the proportional amounts of micronutrients one can hope to get supplied based on the 700 calorie diet. However, it should be remembered that NP-NSPE-2008 does not recommend any minimum cardinal numbers for micronutrient intake. It just notes that there should be a "balanced and nutritious diet". The minimum protein intake of 20 gms per day is the only cardinal number which is required. Also the earlier NP-NSPE-2006 recommendations, summarized in the Planning Commission's assessment report [7], only specified that "adequate quantities of iron, folic acid, vitamin-A, etc." should be given. Therefore, the primary goal appears to be to take care of hunger and provide children with encouragement to come to school.

Table 1: Nutritious values of the Mid-day meal

	ICMR RDA		Meal Equivalents
	Age 7-9	Age 10-12	
(1)	(2)	(3)	(4)
Protein (gms/day)	41	54	20 (NP-NSPE, 2008)
Fat (gms/day)	15	15	5.46/5.15 (700 cal. equivalent)
Calcium (mg/day)	400	600	146.6/206 (700 cal. equivalent)
Iron (mg/day)	25	28*	9.1/9.6 (700 cal. equivalent)
Folic Acid (mg/day)	100	100	36.5/34.3 (700 cal. equivalent)
Iodine (ug/day)	120*	150	43.7/51.5 (700 cal. equivalent)
Total Calories	1925	2050	700 (NP-NSPE, 2008)

## II. CONCLUSION

In India, the idea of introducing mid-day meals is almost a century old. In the post-independence period, with early beginnings in the Madras presidency and followed by its implementation in Gujarat and Delhi, the scheme is now being introduced in most states. In reality, the central government's 2007-2008 budget allocated around Rs. 7324 crore to this initiative. The scheme is therefore critical both in terms of its ability to dramatically improve the health of the younger generation of the country and in terms of the enormity of the expenditure of taxpayer money. It is also, in reality, an effective tool for motivating children to attend school. It is therefore imperative that a thorough assessment of the effectiveness of the programme be carried out. With this goal, we considered the possible impact of the scheme and its alternatives on the consumption of food by children, as well as the quality of the food provided under MDM. It would also be an interesting proposal to test the effect on school attendance and enrolment of the MDM system. However, collecting data on attendance, enrollment, and drop-out rates of the pre and post MDM scheme would be ideal. In addition, because the allocation of food supply would be related to attendance, one would have to be circumspect about the issue of moral hazard of inflated attendance reporting. For a statistically valid exercise, one should collect and sift through data on the above parameters from a much wider collection of schools to prevent anecdotal experiences from visits to a few schools. To tackle the above problems, we suggest some modifications. One choice is to hire private companies who will be required to meet such food preparation hygiene requirements. Food inspectors can be deployed to verify the consistency of cooked meals regularly. In addition, meals could be supplemented on some days by giving chikki, sukhdhi, an occasional nutrition bar, and/or fruits such as banana. This will give the kids diversity and guaranteed nutrition. Public-Private collaborations through food giants such as ITC can be considered for the distribution of nutrition bars. Partial replacement of the distribution of loose grains by packaged goods may also boost supply chain transparency. For mid-day meals, opportunities to use nutritionally fortified GM food grains such as Golden Rice could be considered in the near future.

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