सत्यमेव जयते

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GOVERNMENT OF INDIA
MINISTRY OF HUMAN RESOURCE DEVELOPMENT
DEPARTMENT OF SCHOOL EDUCATION & LITERACY
SHASTRI BHAVAN
NEW DELHI-110 115

D.O. No 12-1/2013-MDM-I(EE-5)

Dated: 06th May, 2013

Dear Sangeeta,

I am writing this letter to convey the findings of the Fourth Joint Review Mission on the Mid Day Meal Scheme that visited Gujarat State from April 22-30, 2013, through a Team comprising of the representatives from Government of India, State Government of Gujarat, representative of Hon'ble Supreme Court Commissioner Office, and Monitoring Institutes for Gujarat. During the visit, the Team covered 34 schools in two districts in Ahmedabad and Sabarkantha and presented its report to the State Government on April 30, 2013.

1. The mission was appreciative of the regularity of the fund flow and the grain flow that ensured the availability of hot cooked meal to children in an un-interrupted manner. It also appreciated the maintenance of records at all levels and the performance of the School Health Programme. The Mission expressed satisfaction over the number of kitchen devices and eating plates available in the schools.

2. The performance of the State on the data entry work of MDM MIS Web Portal was also good. The Mission specially appreciated the innovative schemes such as 'Sukhadi' and 'Tithi bhojan' to strengthen the Mid Day Meal programme in schools of Gujarat.

3. The Mission also observed that the SMC meetings were held regularly. They also held an interaction with some members of SMC in all the schools visited who gave a good feedback on the MDM scheme.

4. The major findings/recommendations of the Review Mission on the basis of field visit in the selected districts are as under :

    i. It has been observed that coverage of children availing MDM against enrolment is below the national level. A large number of children, attending the schools, are not availing MDM. It is, therefore, recommended that the parents should be made aware about the benefits of the programme and entitlement of children. Members of SMC should make deliberate efforts for building the awareness among parents.

मध्याह्न भोजन योजना
Mid Day Meal Scheme

ii. The improvement in coverage is critical as the nutritional profile of 558 children taken from the schools visited revealed that 26.22% boys and 32.18% girls among the primary school children and 27.27% boys and 30.57% girls at the upper primary level had moderate under-nourishment. Protein deficiency signs such as hair de-pigmentation, easy pluckability, flag signs, etc., were also observed wherein 32.80% children had hair de-pigmentation which is indicative of protein deficiency at some point of time in previous years.

iii. The consumption of green leafy vegetables in the diet of children is very low. Therefore, it is recommended kitchen gardens or green squares be introduced using the waste water from kitchen and hand washing of children. This can become an innovative and creative school based activity for the participation of children and teachers to grow drumstick trees and seasonal greens for use in MDM. The nutrition education then can be one of the major activities for children and use of vegetables in MDM can also be ensured.

iv. To have nutritionally balanced recipes for providing 1/3rd nutrients it is desirable to have cereals and pulses along with vegetables and fruits. In this region drumstick plants are in abundance therefore around 15 g leaves / child may be included in most of the recipes for example drumstick leaves washed and chopped can be kneaded in wheat flour to make dhokli.

v. A book of low cost nutritious recipes be developed keeping the profiles of different regions of the state in mind to ensure standardised intake of cereals, pulses and other food groups. To facilitate scaling up of the recipes a ready reckoner for cooking in varying quantities be developed.

vi. Though the menu of MDMS was displayed in most of the schools, the MDMS logo was absent in the schools visited. It is important that all schools are instructed to display MDM logo outside walls of kitchen premises as well on any other prominent place in school so that general public is aware of the MDM scheme being implemented in the school.

vii. In view of the high prevalence of fire wood chulhas as a mode of cooking in the rural areas action may be initiated to provide environment eco-friendly chulas in convergence with the concerned department in the State. A pilot scheme on installation of solar cookers can be launched in cooperation with Government of India and Ministry of New and Renewable Energy and their Autonomous Organizations in the State for manufacturing, installing and maintaining solar cookers. Similarly, the water harvesting system should be promoted in all the schools.

viii. It has been observed that the number of Cook-*cum*-Helpers is inadequate. Also, there are a number of vacant positions/staff for implementing the scheme especially at district and block levels. It is recommended that designated staff strictly for the scheme should be engaged at all levels. These could be in the like MBAs, Nutritionists etc. at the appropriate levels from the MME funds.

ix. Capacity building of all the stakeholders at every level is required for effective implementation of the MDMS. A module for school teachers on roles and responsibilities of teachers under MDM may be included in the training curriculum of the teachers under SSA highlighting the nutritional and health needs of the children.

x. Centralized kitchens in the State are being run in bigger cities like Ahmedabad and Vadodara. It is understandable that adequate land and other sources may not be available in many of the schools there but the option of cluster kitchens – the "hub and spoke model", run by SHGs, should be explored before operationalizing centralized kitchens for the entire city. Wherever, the shift from SHG to centralized kitchen is done, an independent assessment be done to understand the strength of each one.

xi. Though the SMC meetings were held regularly, RTE Act has strengthened Community participation through SMCs. However, the perusal of minutes of the SMCs indicated that apart from taking the approval of the committee for disbursing funds for MDM no quality discussion is held to improve the implementation of the scheme. It is recommended that the implementation of MDM should be made a compulsory agenda during the meeting to ensure the smooth running of the scheme.

xii. Inspection is an important component for smooth implementation of the Scheme at the grass root level. Regular inspection has been made mandatory by the State Government by different District and Block level officials. Effective monitoring mechanism should be developed by the State Govt. to ensure periodic inspection of the scheme by officials at all levels. Inspecting Officers should record their observations on the implementation of the Scheme. The PRIs or SMC member or any government official can write their remarks/comments about their observations of MDM in school.

xiii. As Management Information System integrated with IVRS will become operational very soon. The districts have to speed up the process of data feeding. To handle huge data and updating the data into the web portal regularly, data entry operators have to be engaged on regular basis in every district.

xiv. Engaging the SMC and parents in SHP during check-up would enhance parental care and attention that the children require in this age group. Report cards and feedback to be shared with parents.

xv. Provisions of Social and Community Audits should be made by the government to evaluate the implementation of programme and to identify gaps, with the involvement of PRIs and SMC members. The process should begin with capacity building of the concerned persons for the purpose. The experience of Andhra Pradesh is instructive in this regard.

xvi. State Review Mission: The State Govt. should also constitute Review Mission at the State level on the lines of Review Mission designated by GOI to different States and send them to various districts of the State every six months to review the implementation of the programme.

xvii. It is observed that each of the State/UT is following some best practices in the implementation of MDM. In this connection, it is recommended that the inter-State exposure visits can be conducted for MDM implementing officials for better implementation of the scheme.

I shall appreciate if early action is taken on the observation/findings of the JRM and an ATN sent to us.

With regards

Yours sincerely,

(Amarjit Singh)

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Government of India

Ministry of Human Resource Development

Department of School Education & Literacy

मध्याह्न भोजन योजना
Mid Day Meal Scheme

Report of 5th Joint Review Mission on Mid Day Meal Scheme

Gujarat

(22nd April - 30th April, 2013)

Composition of Review Mission

1. Dr. Neelam Grewal, Dean, College of Home Science, Punjab Agricultural University, Ludhiana- Team Leader
2. Mr. Ashok Sharma, Jt. Commissioner, Mid Day Meal, Govt. of Gujarat – Member
3. Dr. Rita Singh Raghuvanshi, Dean, College of Home Science, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar- Member
4. Smt. Neeta Hardikar, Representative of Office of Supreme Court Commissioner – Member
5. Dr. N.B. Dholakia, Deputy Director, MCH
6. Dr. S.A. Sutaria, State Nodal Officer, School Health
7. Dr. R.C. Patel, M S University (MI) - Member
8. Dr. Tattwamasi Paltasingh, SPIESR (MI) – Member
9. Mr. B.D.Shivani, Deputy Secretary, MHRD, Govt. of India

Mission Co- team members

1. Mr. Tanmoy Ghatak, Sr. Consultant, NSG- Ed.CIL MHRD, GOI
2. Mr. Rajat Gupta, Sr. Consultant, NSG- Ed.CIL MHRD, GOI
3. Dr. Rashmi Limbu, Senior Research Fellow, College of Home Science, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar
4. Dr. Priyanka Singhal, Senior Research Fellow, College of Home Science, Govind Ballabh Pant University of Agriculture and Technology, Pantnagar
5. Ms. Preetinder Kaur, Research Fellow, Punjab Agricultural University, Ludhiana
6. Ms. Karmjeet Kaur, Research Fellow, Punjab Agricultural University, Ludhiana

The Review Mission team was assisted by:

Sr No	Name	Designation	Office
1	Mr. Ashok Sharma	Jt. Commissioner	Commissioner of MDM
2	Mr. Digant Bhrambhatt	Deputy Collector	MDM-Ahmedabad
3	Mr. Ashwin Trivedi	Deputy Collector	MDM-Ahmedabad Municipal Corpotation

4	Mr. J.V.Dave	Assistant Commissioner	Mid Day Meal-GOG
5	Mr. P.S.Prajapati	Deputy Collector	MDM-Bharuch
6	Mr. B.J.patel	Research Officer	Mid Day Meal-GOG
7	Mr. K.P.Patel	Chitnis	Mid Day Meal-GOG
8	Mr. Padaliya	Prant Officer	Prant Office Ahmedabad
9	Mrs. Padhma	Programme Officer	District Panchayat Ahmedabad
10	Mrs. Mamata Sojitra	Mamalatdar	Mamalatadar Officer Draskoi
11	Mr. Joshi	Mamalatdar-Sanand	Mamalatadar Officer Sanand
12	Mrs. Rashmika ben	CDPO	CDPO-Sanand
13	Dr. R.R.Parmar	District RCH Officer	Health Department -District Panchayat-Ahmedabad
14	Dr. Chintan Desai	DMO	Health Department -District Panchayat-Ahmedabad
15	Dr. Tejas Chavada	DUPC	Health Department -District Panchayat-Ahmedabad
16	Dr. Minal	Medical Officer	Health Department -District Panchayat-Ahmedabad
17	Dr. R.L.Patel	Medical Officer	Health Department -District Panchayat-Ahmedabad
18	Dr. Aarti Ninama	Medical Officer	Health Department -District Panchayat-Ahmedabad
19	Dr. Jayshree	Medical Officer	Health Department -District Panchayat-Ahmedabad
20	Dr. Brihesh Shah	Medical Officer	Health Department -District Panchayat-Ahmedabad
21	Dr. Aabit Kureshi	APDOlogist	Health Department -District Panchayat-Ahmedabad
22	Dr.Kaushik Vithalapara	Medical Officer	Health Department -District Panchayat-Ahmedabad
23	Dr. Shilpa Yadav	ADHO	Health Department -District Panchayat-Ahmedabad
24	Dr. Dipti Saravakar	Medical Officer	Health Department -District Panchayat-Ahmedabad

Sr No	Name	Designation	Office
1	Mr. Dhaval Jani	Deputy Collector & DSO	MDM- Sabarkantha
2	Shri Arvind Patel	Mamlatdar	Himatnagar
3	Shri Malek	DPEO	Sabarkantha District Panchayat
4	Mr. P.K. Trivedi	DPEO	Sabarkantha District Panchayat, Himatnagar
5	Dr. M.J Sensi	CDHO	Sabarkantha District Panchayat
6	Dr. G.P. Nayak	Taluka Health Officer	Prantij
7	Shri P.P. Vyas	Deputy Mamlatdar	MDM Collector Office, Sabarkantha
8	Mr.Jasubhai Patel	Deputy Mamlatdar (Supply)	Himatnagar
9	Mr.R.B.Upadhyay	Deputy Mamlatdar	Mid Day Meal-Sabarkantha
10	Shri K.J Dhudha	Deputy Mamlatdar	Mamlardar Office, Himatnagar
11	Shri M.R. Chowdhary	Deputy Mamlatdar	Mamlardar Office, Himatnagar
12	Dr. Manish Fensi	Chief District Health Officer	
13	Dr. Gautam Nayak	Taluka Health Officer	
14	Dr. Ashok J.Viashnav	Taluka Health Officer	
15	Dr. Chandramanikumar	Medical Officer	
16	Dr. Raj Sutariya	Medical Officer	
17	Dr. Mehul Patel	Medical Officer	
18	Mr. Suman Raval	District Care Taker	

CONTENTS

Acknowledgements

The Mission[1] would like to thank the Government of Gujarat for all the support rendered in organising the logistics as well as in providing much required programmatic information that facilitated the Mission meet the terms of reference developed by the Government of India.

The Mission also values the hospitality and support extended by the Department of Education from the Principal Secretary Primary Education to the school teachers in municipal corporation and the Gram Panchayat schools; the state office of the Mid May Meals to the MDM kitchen staff in schools; the Department of Health to the ASHA workers; from the Department of Food and Civil Supplies to the FPC licensees; the SMC members and the Members of Gram Panchayat in villages of Dascroi and Sanand block of Ahmedabad district and Himmatnagar and Bhiloda taluka of Sabarkantha districts and finally, the student and the village community more importantly.

The team has strived to capture the entire range of discussions and observations at various levels with all the officials and key stakeholders earnestly. It sincerely hopes that the recommendations that have emerged through interactions with the officials, experts, implementers and the right holders – children, would be of help to the State Government in strengthening the implementation of the Mid–Day Meal Scheme and ensure the right to nutritional food security of school going children of Gujarat.

The JRM team

April 30, 2013
Ahmedabad

[1] See Annexure 1 for list of Mission Members for the JRM Gujarat from 22-30 April 2013

List of abbreviations:

SSA- Sarva Shiksha Abhiyan
NCLP- National Child Labour Programme
GoI- Government of India
MHRD- Ministry of Human Resource Development
MME- Management, Monitoring and Evaluation
JRM- Joint Review Mission
MDM- Mid Day Meal
PAB- Programme Approval Board
TA- Transportation Assistance
CCH- Cook cum helpers

Note: The performance of the scheme is till December wherever trends are shown except payment to FCI

Executive Summary

The National Programme of Nutritional support to Primary Education (NP-NSPE) The fifth Joint Review Mission on MDM for Gujarat interacted with various stakeholders of the MDM programme during 22-30 April 2013 in urban as well in the rural parts of Ahmedabad and Sabarkantha districts.

This being a one of the flagship programmes of the Government of India addressing hunger among all govt school children serves hot cooked meal that helps children come to the formal education system, concentrate on classroom activities and receive nutritional support and break the social barriers of caste discrimination.

The Mission while interacting with centralised and school based kitchens to review this national programme of MDM in schools observed that although the MDM encouraged poor

children belonging to disadvantaged sections of society attend school more regularly, the goal of full coverage in the State has been a challenge.

INTRODUCTION

The National Programme of Nutritional Support to Primary Education **(NP-NSPE)** popularly known as Mid Day Meal Scheme, is a flagship Scheme of Ministry of Human Resource Development. The programme was launched on 15th August, 1995 in Government, Government aided and Local Body Schools to enhance enrolment, attendance and retention of primary class school children and to mitigate their class room hunger through nutritional support. Since its inception the scheme has undergone many changes in its coverage and content. Provision of ad of dry ration in the initial phase has been replaced by hot cooked meals. Presently, the scheme is being implemented in primary and Upper Primary classes of Government, Government aided, Local body Schools, National Child Labour Project Schools, Madrasas and Maqtabs supported under SSA.

The basic objectives of the Mid-Day-Meal scheme include prevention of malnutrition among children, achieve universalization of Elementary Education by increasing enrolment, retention and attendance of students and there-by reducing dropout rate and improve the nutritional level of children.

Article 21 A provides that Right to Children for free and compulsory education. This has been ensured through the enactment of Right to Education Act, 2009 Act, 2009, which came into force on 1st April 2010. SSA has been designated as the vehicle to realize the provisions of RTE Act, 2009. Chapter 4, Para 21 of RTE Act, 2009 stipulates that preference will be given to disadvantaged groups and weaker sections while nominating the representatives for the School Management Committee. The Act further states that all schools should have all weather building consisting of a kitchen-cum-stores to cook mid day meal in the school by 2012-13. The model rules under RTE Act also provide that School Management Committee will monitor the implementation of the Mid Day Meal in the school. 6

Government of India constituted Review Missions (RM) in 2009 to review the implementation of the scheme as per the defined Terms of Reference (ToR) in various States across the country. The objectives of the Review Mission are as under:-

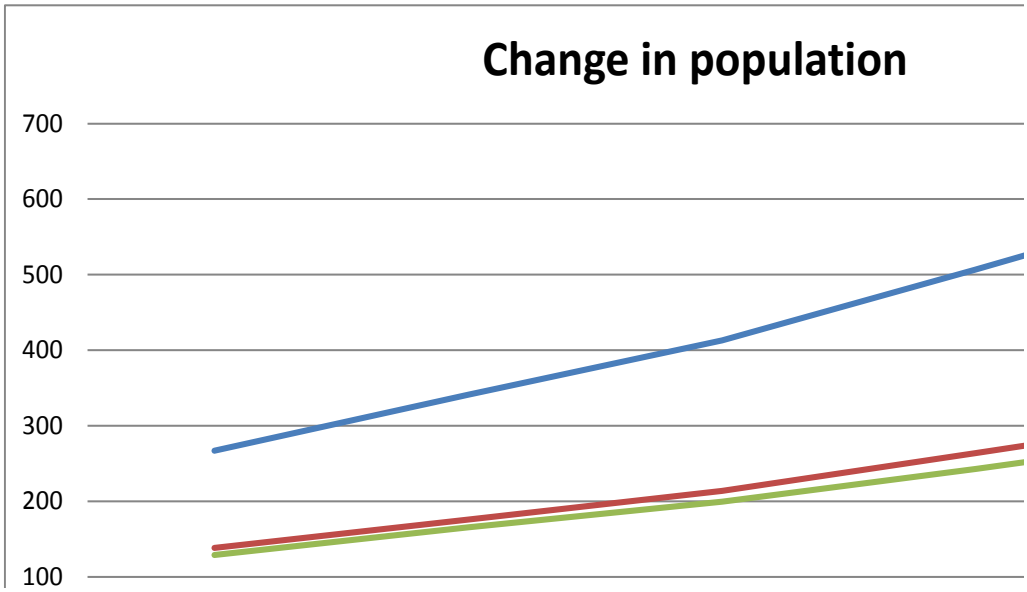
(i) To review the performance of the Scheme in the selected State in the light of the Guidelines of the Mid Day Meal Scheme.

(ii) To suggest policy measures for effective implementation of the Scheme in the State.

The State of Gujarat was selected for visit of Review Mission and the 5th Review Mission visited Gujarat from 22nd April to 30th April, 2013 to see the implementation of the scheme in the State. Terms of Reference (ToR) of this Review Mission are attached at Annexure-I. The recommendations of the Review Mission are based on the evidences collected and the information gathered during the review of implementation of the Scheme Ahmedabad and Sabarkantha districts.

INTRODUCTION TO THE STATE

Gujarat is situated on the west coast of India and occupies an area of 196,024 sq km and accounts for 6.19% of the total area of the country with a coastline of 1600 km; most of this is in the Kathiyawad region. The state shares borders with Pakistan and Rajasthan in the north east, Madhya Pradesh in the east, and Maharashtra and the Union territories of Diu, Daman, Dadra and Nagar Haveli in the south. The Arabian Sea borders the state both to the west and the south west. After Independence in 1947, all of Gujarat except Saurashtra and Kutchh became part of Bombay State until May 1, 1960, when the Government split Bombay state into the States of Maharashtra and Gujarat. . As per provisional data of census 2011, Gujarat's population is 6.03 crore with 19.17% population growth which is about 5% of the population of India. The Gujarat State at present comprises of 26 districts, sub-divided into 226 talukas, having 18,618 villages and 242 towns .It is also one of the most urbanized states in India, with about 42.6% urban population (in 2001 it was 37.4%) and 57.4% rural population. The eastern tribal belt and the northern dry region remain underdeveloped parts of the state. Gujarat is doing better than the national average for most demographic and health indicators. It has a higher literacy rate, lower total fertility rate (TFR), higher life expectancy at birth for women, and less population per sq km. Gujarat has about 15 % population of Scheduled Tribes and about 8 % of Scheduled Castes.



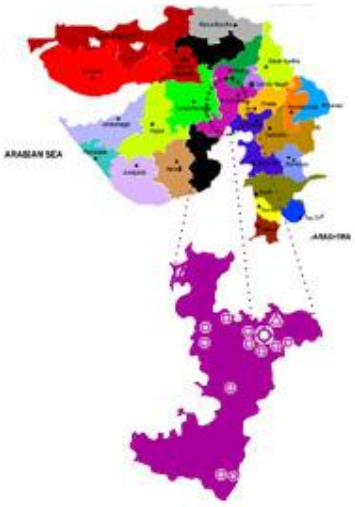
The literacy rate in Gujarat has gone up to 79.31% in 2011 as compared to 69.14% in 2001. Of that, male literacy stands at 87.23% while the female literacy is at 70.73%.

Demographic profile of Gujarat state

S No	Item	Unit	1971	1981	1991	2001	2011
1	2	3	4	5	6	7	8
1	**Population**						
1A	Total	Lacs	266.97	340.86	413.09	506.71	603.83
1A.1	Male	Lacs	138.02	175.53	213.55	263.86	314.82
1A.2	Female	Lacs	128.95	165.33	199.54	242.85	289.01
1A.3	Rural	Lacs	192.01	234.84	270.63	317.41	346.70
1A.4	Urban	Lacs	74.96	106.02	142.46	189.30	257.12
2	**Decadal Population Growth Rate**	%	29.39	27.67	21.19	22.66	19.17
3	**Urbanization**	%	28.08	31.10	34.49	37.36	42.58
4	**Population Density**	No.	136	174	211	258	308
5	**Sex Ratio**						
5A	Total	No.	934	942	934	920	918
5A.1	Rural	No.	951	959	949	945	947
5A.2	Urban	No.	893	905	907	880	880

6	**Literate Population**						
6A	Total	Lacs	96	149	211	303	419.48
6A.1	Rural	Lacs	64	96	130	166	218.97
6A.2	Urban	Lacs	32	53	81	137	200.51
7	**General Literacy Rate**						
7A	Total	%	35.79	43.70	51.15	69.14	79.31
7A.1	Male	%	46.11	54.44	60.99	79.66	87.23
7A.2	Female	%	24.75	32.30	40.62	57.80	70.73
	Rural						
7B	Total	%	28.33	36.20	44.00	52.29	73.00
7B.1	Male	%	38.92	47.85	55.31	62.93	83.10
7B.2	Female	%	17.19	24.06	32.08	41.03	62.41
	Urban						
7C	Total	%	54.90	60.31	64.75	72.27	87.58
7C.1	Male	%	63.96	68.62	71.55	77.68	92.44
7C.2	Female	%	44.78	51.13	57.25	66.13	82.08
8	**IMR**						
8A	Total	Per 1000	63	62	60	60	48
8A.1	Rural	Live	70	69	87	68	55
8A.2	Urban	Births	45	45	42	37	33
9	**MMR (As per SRS)**		1991-01	2001-03	2004-06	2007-09	-
9A	**Per one lakh live Births**		202	172	160	148	-

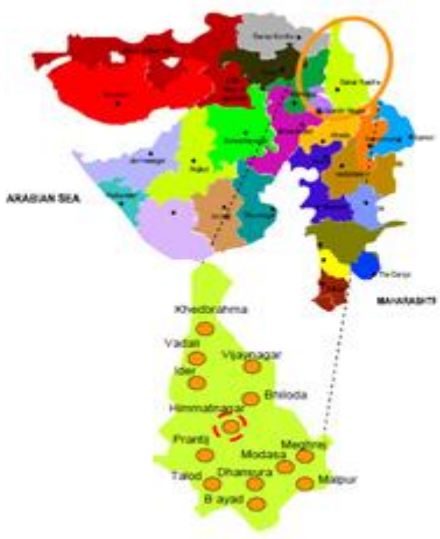
Ahmedabad



In 2011, Ahmadabad had population of 7,208,200 of which male and female were 3,787,050 and 3,421,150 respectively. Average literacy rate of Ahmadabad in 2011 is 86.65, male and female literacy being 92.44 and 80.29 respectively. The sex ratio is 903 female to per 1000 male and the child sex ratio is 859 girls per 1000 boys. About 84% of Ahmedabad lives in urban region and 15.95% population in rural areas. The sex ration in area areas is 932 per 1000 male and the child sex ratio is 888 per 1000 boys. About 72.5% of rural Gujarat is literate.

Ahmedabad District is surrounded by Kheda District in the east, Mehahana in the north, Anand District in the south and Surendranagar in the west. The district has 10 talukas with 517 villages, 1 deserted village, 1 corporation, 1 cantonment area and 7 municipalities. The mission interacted with schools in urban as well as rural areas Sanand and Daskroi talukas of Ahmedabad. Dasroi taluka has 63 villages and Sanand has 70 villages with some areas under municipality. Both talukas have sizable population of dalits as well as migrant labour.

Sabarkantha



The district has 13 blocks with 470 villages having total population of the district as per 2011 census is 24, 27,346.

Out of the total Sabarkantha population for 2011 census, 14.96 percent lives in urban regions of district. The Sex Ratio in urban region of Sabarkantha district is 933 per 1000 men. Similarly the child sex ratio of the district is 853 as per census 2011. Average literacy rate in Sabarkantha district as per census 2011 is 85.24 % of this 91.97% male and 78.10% female are literates.

As per 2011 census, 85.04 % population of Sabarkantha districts lives in rural areas of villages. The total Sabarkantha district population living in rural areas is 2,064,318.The sex ratio is 954 females per 1000 males, while the child sex ratio of Sabarkantha district is 905

girls per 1000 boys. The child population comprises 14.68 % of total rural population of Sabarkantha district. Literacy rate in rural areas of Sabarkantha district is 75.04 % as per census data 2011. Gender wise, male and female literacy stood at 86.63 and 62.99 percent respectively.

The Mission interacted with the schools in Himmatnagar and Bhiloda blocks of the district. Himmatnagar has population of about 2.3 lac spread over in 136 villages. While Bhiloda taluka has over 2.5 lac populations in 160 villages, predominantly tribal. Of the total 72662.86 hctr area about 49% ie 24322 hctr is forest area. Bhiloda block has 260 primary schools and 70 higher secondary schools.

METHODOLOGY

Sample Selection

A multi stage sampling design was used for selecting districts, taluka and ultimately the schools for the review. Details of the sampling design have been given in Figure 1. In the first stage, two districts of Gujarat, namely Ahmedabad and Sabarkantha were selected. Ahmedabad was selected by the Ministry of Human Resource Development while Sabarkantha was selected by the Government of Gujarat.

A total of 22 schools from the three blocks of Ahmedabad district and 12 schools from two blocks of Sabarkantha district were selected for the review. To ensure coverage of maximum number of schools the JRM split itself into two teams. The routes for the visit to schools were chalked out by the team in consultation with the district administration. The schools along the routes were selected on the basis of following considerations:

- Availability of Tribal and minority dominated population
- Schools cooking MDM on the premises and getting from centralised kitchens
- Rural schools to see the implementation in remote areas
- tribal schools to study the implementation in tribal areas
- Minority dominated schools

Apart from the schools, the JRM team also visited the following institutions/organizations:

- Depot of the Food Corporation of India
- A centralised kitchen being run by an NGO

Briefing Sessions

A total of four Briefing Sessions were conducted during the review. Three of these sessions were held as per the schedule, one at the state level and one each at the district level. During these sessions, the JRT briefed the state officials about the modalities and the methodology to be adopted during the review. On the other hand, the state and the district officials sensitized the JRT regarding the framework of implementation of MDM Scheme in the state and the district. One more briefing session was held with a team of senior faculty from M S University of Baroda, Vadodara who highlighted the researches carried out by the Dept of Food and Nutrition on the MDMS in Gujarat. Apart from these meetings, the JRM also held a meeting with the Commissioner of Ahmedabad Municipal Corporation, since a number of schools in the city were being run by the corporation.

Review of Documents

The JRM critically studied and reviewed the documents pertaining to the MDMS that were provided by the State and those available with the schools.

Interaction with the Stakeholders

Interview with stakeholders and record based inquiry methodology was followed to capture the information on the performance of the scheme during the visit. Detailed discussions were held with State, District, and Block and School level functionaries to get information about the modalities being followed for implementation of MDMS in the state.

Assessment of Nutrition Status

One of the tasks assigned to the JRM Team was to assess the nutrition profile of the students availing MDM in the school. For this purpose, 558 students from the sample schools were selected through proportionate random sampling. Their nutrition profile was assessed by taking their anthropometric measurements, studying their BMI and their critical appraisal to see the prevalence of micronutrient deficiencies. The 24 hour recall method was used on the subjects from class 2^{nd} to 8^{th} to assess their total nutrient intake. A copy of the inventory used for the purpose has been furnished in Annexures.

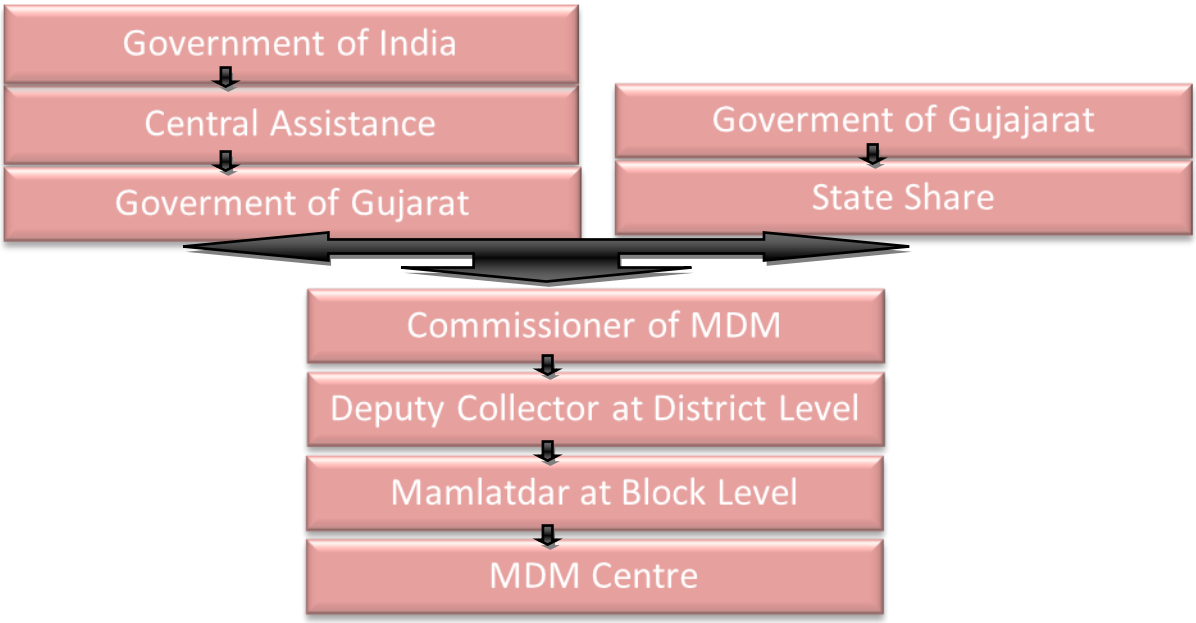
OBSERVATIONS OF THE JOINT REVIEW MISSION

On the basis of the data made available, field observations, interaction with various stakeholders as well as the nutrition assessment of the students, the observations made by the Mission have been discussed herein. To facilitate the discussion, these observations have been categorized into two sections – assessment of MDMS and assessment of nutrition status.

Assessment of MDMS

1. Review the fund flow from the State Government to schools/cooking agency and the time taken in this process

The flow chart to outline the process for the flow of funds (Central or the State funds) from Govt. to the ultimate implementing agencies at the school level is as under:-



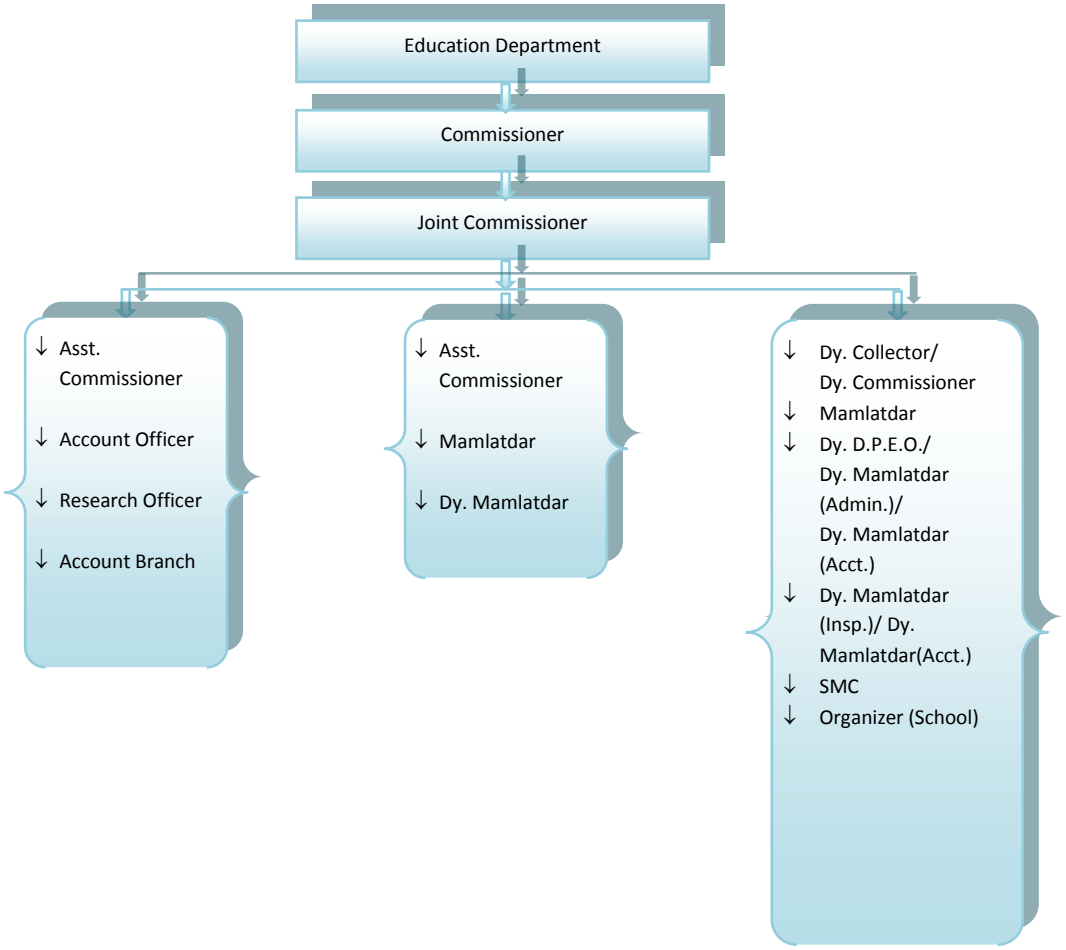
The JRM observed that the funds were available with all the visited schools. It was found that the funds are made available to the schools at the starting of each month. Regularity in fund flow was observed in all the visited schools.

2. Management and monitoring of the scheme from the State to school level

At the State level the programme is administered by the Commissioner (MDM), who is supported by one Joint Commissioner, two Assistant Commissioners.

At the District/Municipal level, the Collector/ Municipal Commissioner is in overall charge and is assisted by one Deputy Collector/ Mamlatdar, and a team of three support staff, including deputy Mamlatdar (Administration), Deputy Mamlatdar (Inspection) and Deputy Mamlatdar (Accounts).

At the taluka level the taluka Mamlatdar is in overall charge of the programme, supported by a full-time deputy Mamlatdar (Administration) and Deputy Mamlatdar (Accounts). At school level Organizers, Cooks and Helpers are appointed to cook and distribute the mid-day meal. School Management Committee is expected to supervise the overall working of scheme.

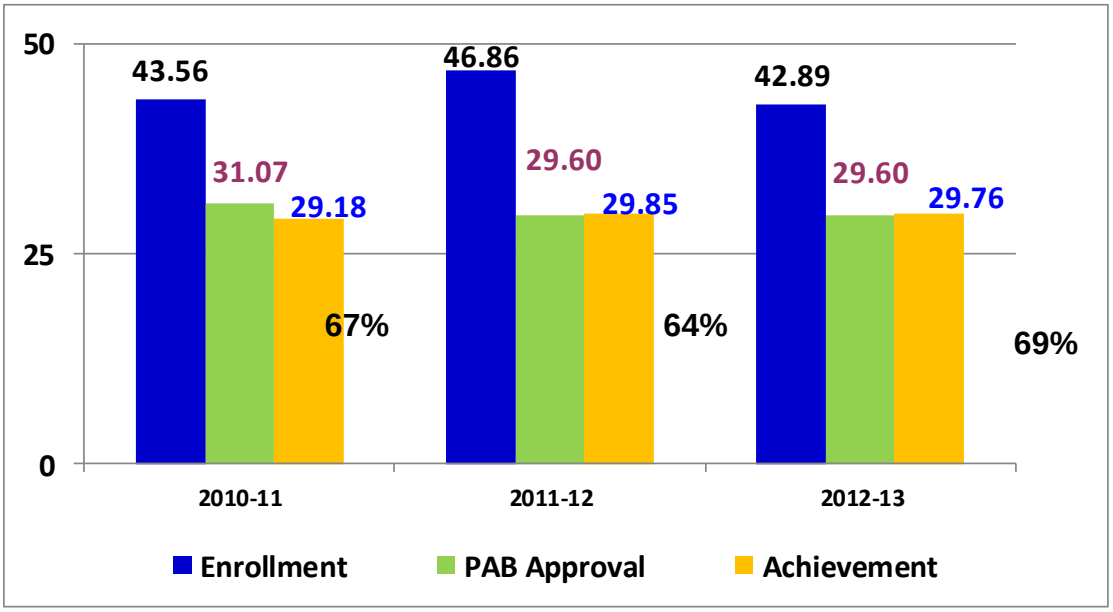


3. Implementation of the scheme with reference to availability of food grains, quality of MDM, regularity in serving MDM as per approved norms and mode of cooking

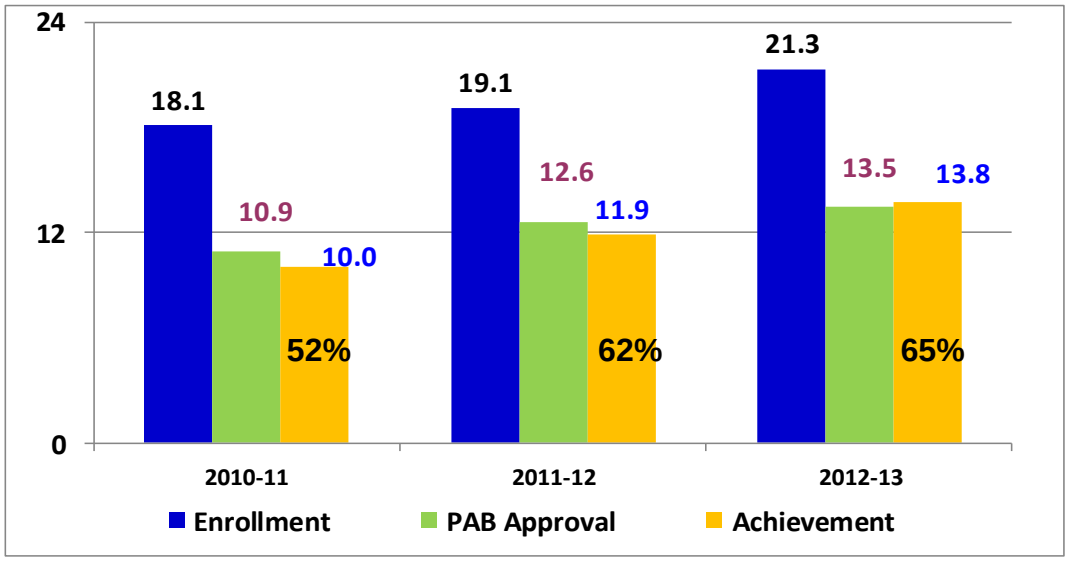
3.1 Performance of State during last three years (up to 3rd quarter

Coverage of children against enrolment (Primary)

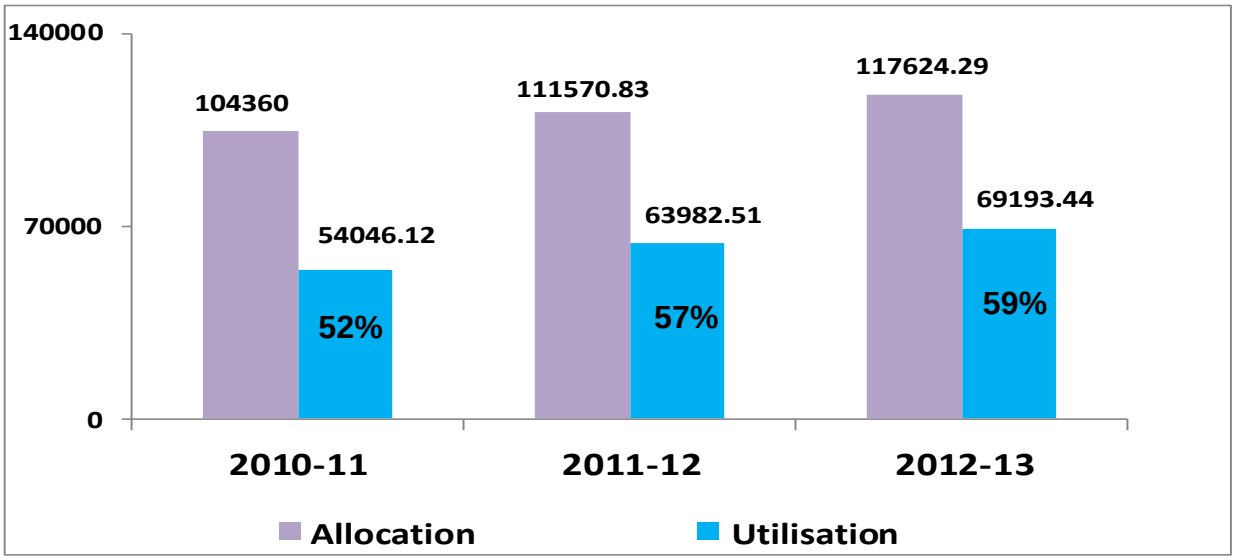
No. of children (in lakhs)



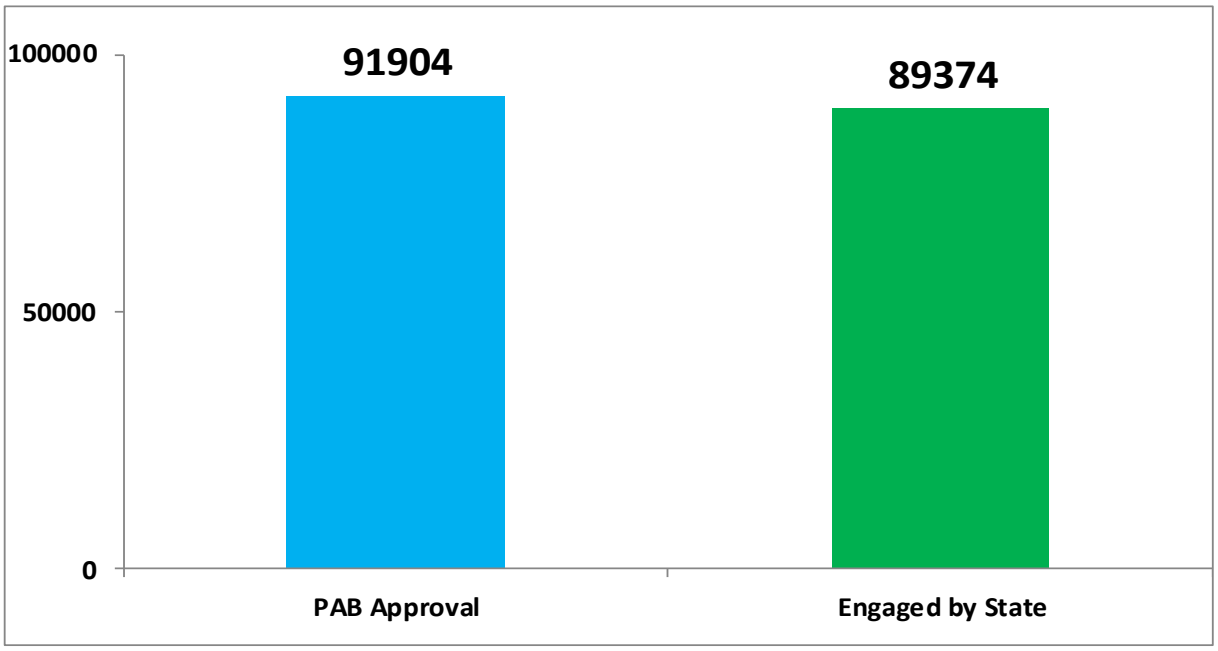
Coverage of Children against enrolment (Upper Primary)



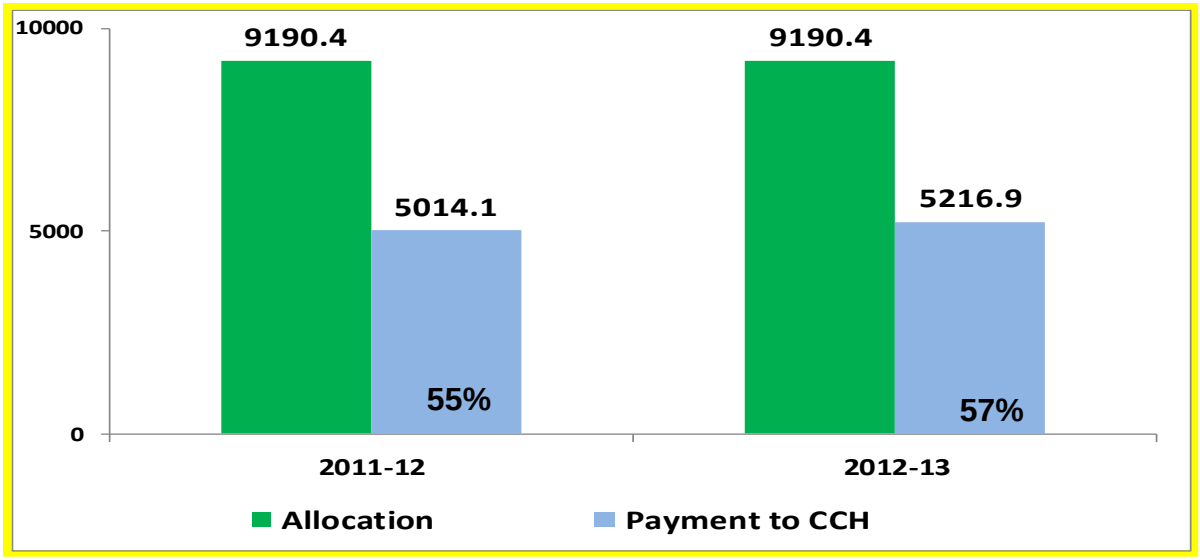
Food grains allocation and utilization



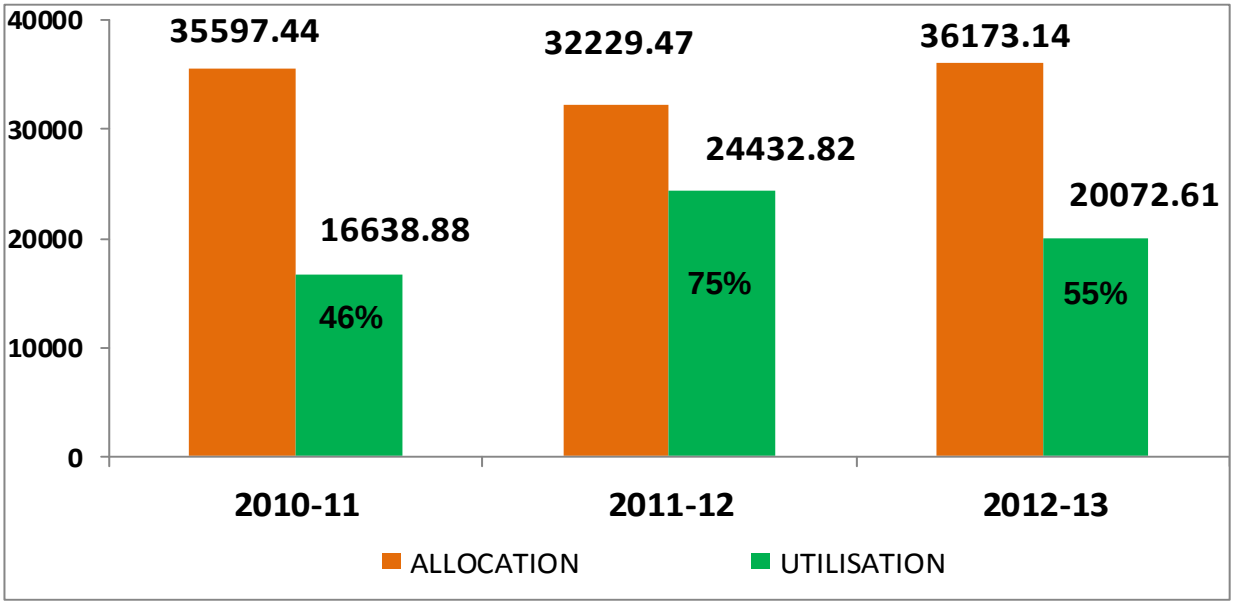
Engagement of cook cum helpers



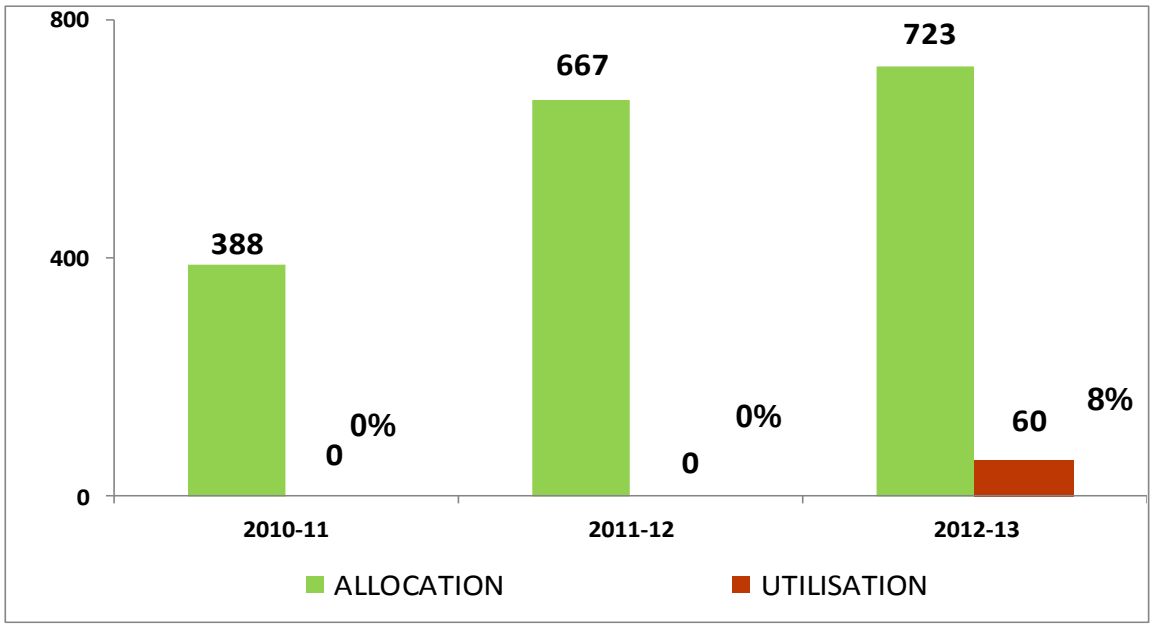
Payment to honorarium to cook cum helpers



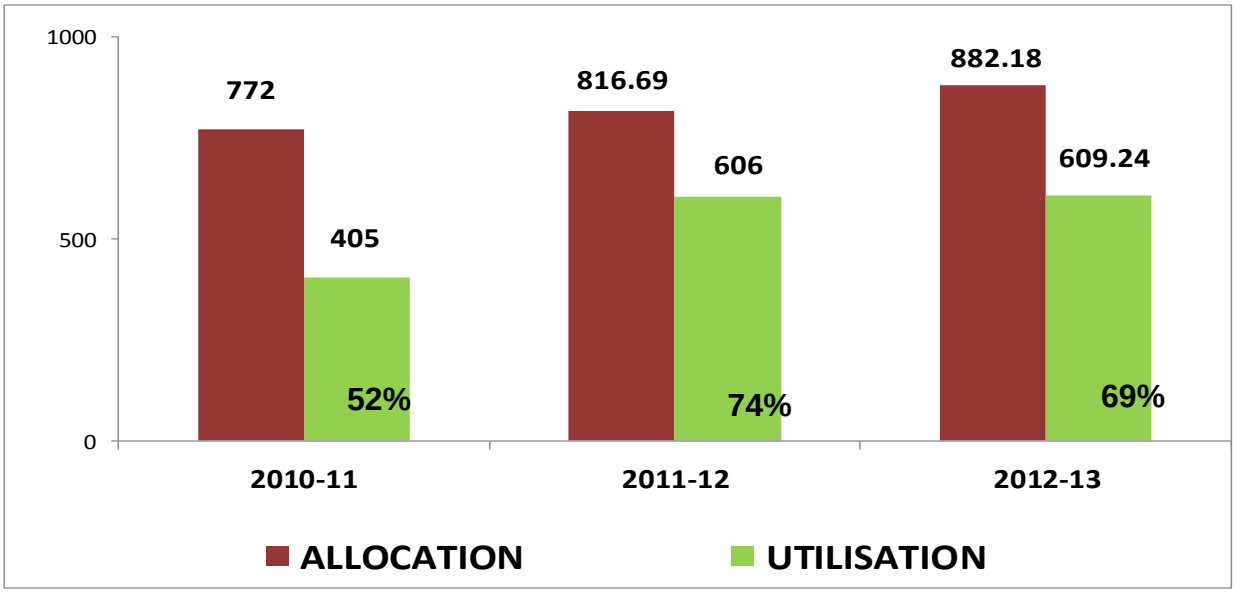
Utilization of Cooking Cost



Utilization of MME



Utilization of Transportation Assistance



3.2 District wise status of implementation of the Scheme: Ahmedabad

Fund flow

Components	Date of fund received by the district from state	Date of fund released by District to block	Gap(No. of days) between funds receiving	Reason for delay if any
Cooking cost	APRIL-12 MAY-12 JUNE-12 JULY-12 AUG-12 SEP-12 OCT-12 NOV-12	APRIL-12 MAY-12 JUNE-12 JULY-12 AUG-12 SEP-12 OCT-12 NOV-12	-NO -NO -NO -NO -NO -NO -NO -NO	-
Kitchen sheds	-	-	-	-
Kitchen Devices	15/12/2010 17/01/2011 03/01/2011	20/07/2011		To purchase Devises Tender Issued but applications did not received as per specification then amount credited in dy.collector's account and then amount issued by DD to all blocks
MME	-	-	-	-
Transportation	-	-	-	-

Foodgrains flow (Wheat/Rice)

Dt- 1/4/2012 To 31/12/2012

Components	Date of Foodgrain released by the State to district	Date of foodgrainsrecev ed by the district to block	Gap(No of days) between foodgrains receiving and releasing	Reason for delay if any
Foodgrains				
1/4/2012 To 30/09/2012	29/3/2012	2/4/2012	3	-
1/10/2012 To 31/12/2012	27/9/2012	29/9/12	1	-

Coverage of children

Dt-1/6/2012 to 31/12/2012

	Target			Achievement	
Stage	Total no of Schools/centre	No of children approved (Registered) (sep-12)	No of working days approved (1/6/12 to 31/12/2012)	No of schools/centers actually served	No of working days
Primary	415	160348	146	415	138
Upper primary	481	81016		481	
Total	896	241364		896	

Foodgrain Utilization

Dt-1/4/2012 To 31/12/2012

Components	Foodgrain Allocation	Foodgrains lifted	Food grains Utilized till 31 dec 2009	Percentage Utilization
Foodgrains (Wheat/Rice)				
Pri. Rice	944.410	922.344	813.300	88.17%
Upp. Pri. Rice	763.953	743.955	646.550	86.94%
Pri. Wheat	964.017	940.162	837.400	89.04%
Upp. Pri Wheat	794.121	774.132	666.300	86.04%

Outlay and expenditure

Components		Funds allocation	Fund received by district	Expenditure as on 31st Dec 2012 against fund received	Percentage Expenditure
Cooking cost	Central Sahre	3,38,81000	3,38,81000	2,90,07000	
	State Share	1,05,21000	1,05,21000	93,17000	
Total		4,44,02000	4,44,02000	3,83,24000	86.31%
Kitchen sheds		-	-	-	-
Kitchen Devices		29.89	29.89	29.89	100.00%
MME		-	-	-	-
Transportation		-	-	-	-

Status of kitchen sheds and kitchen Devices

Componets	Physically allpcation since 2008-09 as on 31st Dec 2012		Physically Progress since 2008-09 as on 31st Dec 2012		Scneme under which kitchen sheds
	Total no of schools/centers	Total allocation	Constructed/Purchase	In progress	MDM
Kitchen Sheds					
2008-09	896	125	125	0	
2009-10	864	213	191	22	
2010-11	864	334	120	54	4 Not satrted
2011-12	864	0	0	0	
2012-13	864	0	0	0	
Kitchen Devices					
2012-13	864	29.89 Lacks	29.89 Lacks	-	-

Sabarkantha

Fund flow

Components	Date of fund received by the district from state	Date of fund release by District to Block	Gap(No of days) between funds receiving and releasing
Cooking cost	13/4/2012	19/4/2012	5
	4/7/2012	5/7/2012	1
	9/10/2012	16/10/2012	7
Kitchen Sheds	0	0	0
Kitchen Devices	30/5/2012	28/6/2012	29
	5/9/2012	14/9/12	8
MME	0	0	0
Transportation	0	0	0

Food grain Flow

Components	Date of foodgrain released by the State to district	Date of foodgrains received by the district from release by District to Block	Gap(No of days) between foodgrains receiving and releasing
Foodgrains			
APRIL to June	29/03/12	20/04/12	23
JULY to Sept.		21/06/12	0
OCTOBER to December	29/09/12	12/10/2012	12
January-13 to March-13		4/1/2013	0

Foodgrains utilization 01-04-12 to 31-12-12 (In Mts.)				
Components	**Foodgrain Allocation**	**Foodgrains lifted**	**Food grains Utilized till 31 Dec 2012**	**Percentage Utilization**
Foodgrains				
WHEAT	2823.111	1900.368	1897.913	98%
RICE	2707.403	1902.320	1901.320	99%

Coverage of Children

	Target			Achievement		
Stage	**Total no of schools/centers**	**No of children approved**	**No of working days approved**	**No of schools/Centers actually served**	**Average no of children availed MDM**	**No of working days**
Primary	**944**	**220042**	**170**	**940**	**153833**	**154**
Upper Primary	**1570**	**94060**	**170**	**1570**	**69680**	**154**

The JRM noted that the flow of funds and food grains in the State and the two districts has been fairly regular. The longest gap in the receipt of food grains and their release has been in April – June 2012 when there was a gap of 23 days. Similarly, a gap of 29 days was observed in the fund flow for kitchen devices.

In order to study the percentage of children covered under the MDMS, the total enrollment, attendance and the coverage figures were taken. The results showed that the total enrollment among the selected schools was 11093 while the average attendance was 9941 and only 7591 children took MDM. The percentage coverage of the enrolled children came to be 68.43 percent and the figure was 76.36 percent of the children who attended the school. The mission also observed that a number of children attending the school did not take meals. The reasons given for this were as follows-

- Children from affluent families in some villages did not take food in the School due to sociocultural constraints.
- Some of the girls especially those studying in the upper primary classes felt too shy to sit in the line and have food.
- Some of the boys would simply go away when MDM was being served. This practice was more prevalent in the schools here the involvement of teachers in the MDMS was less.

3.3 Quality of MDM

Observations regarding quality and quantity of the food served under MDMS are as follows-

- The quality of grains and rice from the initial point of supply is good but by the time it reaches the schools the percentage breakage increases . A breakage of upto 30%has been observed in rice. Similarly, the quality of mung dal was also not satisfactory as itcontained a mixture of two grades of dals of varying sizes apartfrom the higher breakage.
- There is no check on the quality of the salt, spices and other inputs purchased locally.
- The quantity of food cooked was inadequate in three schools, one in district Ahmedabad and two in Sabarkantha. Due to this the size of servings was reduced and allth children attending the school could not be served meals.
- The intake of green and fresh vegetables is very less. There is a need to incorporate these into the menu, especially in the recipes such as khichsi and Pulao that are liked by the children. Presently, a large quantity of potatoes is being used for the purpose.
- The overall quality of food being served in MDM in terms of appearance, texture and taste was satisfactory.

- Quantity of meals received from the centralised kitchen is judged by counting the number of containers. These being opaque, it is difficult to judge the actual quantity of food.

3.4 Regularity in serving MDM

Of the total of 22 schools visited in the Ahmedabad district, 10 schools that fell under the Ahmedabad Municipal Corporation were being provided MDM through centralized kitchens while the food in the rest of the schools, was cooked in the school kitchen. The Mission observed with satisfaction that the fund as well as the grain flow from the state to the implementing agency has been regular. In village Nava Chiboda of the Bhiloda block of Sabarkantha district, oil was not supplied to the kitchen, the teachers contributed oil required for meals of 200 children for seven working days in the school.

3.5 Mode of cooking

During the Briefing Session with the State officials it was informed that the process of providing LPG connections in the schools for MDM has already been initiated by the State. Seventy five percent of the schools visited had the LPG connection. However, cooking in most of the schools is done using firewood.

The use of LPG in MDM is a welcome step for the overall improvement of the MDM programme, it was felt that the following issues need to be addressed-

- The stove provided with the LPG should be of the size suitable for accommodating larger vessels used in MDM cooking.

- The cost of transportation of the LPG refill is presently being paid by the Organizer but some clear guidelines regarding this are required.
- There is need to make estimation with regards to requirement of LPG depending upon the no of children in school this would help make provision for the LPG grant and negotiation with the gas agency for differential rates, transportation and maintenance support.

4 Role of teachers

Role of teachers is very critical in the implementation of MDM at the school level as he/she is the only official who is physically present to monitor the entire process of MDM – procurement of food grains and other material, quality of food, regularity in serving hot cooked meal, issues relating to hygiene and sanitation and so on. The Ministry of HRD guidelines of 2006 for MDM specifically mention that teachers should be involved in ensuring that good quality, wholesome food is served to children, and that the actual serving and eating is undertaken in a spirit of togetherness, under hygienic conditions, and in an orderly manner so that the meal times are maintained without extending them. The teachers are also expected to taste food prepared before it is served to children.

It is often assumed that the MDM is an additional activity for the school teachers and hence it is better to keep that out of that however during the school meetings and interaction with the school teachers the Mission observed two different kinds of scenarios in schools. Following are some of the observations are about the schools that are served meals from centralized kitchens as well as from the school based kitchen.

- The helper appointed for serving food need additional hands as she is unable to meet up with the expected role of organizing the students from all classes during meals time, providing lunch plates, serving food to the children and doing the dishes. In many cases the school teachers provide a helping hand.
- The monitoring system in this case only requires to maintain a delivery card, the teachers do it on fortnightly basis hence have nothing to contribute to improving the everyday problems.
- The teachers have ensured to display the menu of food and daily in charge person to taste food delivered.
- The teachers expressed their inadequacy in improving the quality standards or monitor the quantity as the centralized kitchens are accountable to any the higher authorities at

the block or district level about which the MDM department or the education does not share any information with the concerned teachers either.

- Most often than not the teachers oversee the meal serving activity.
- The mission noticed that in many rural primary schools the Tithi Bhojan was contributed by one or more teachers.

5 Convergence with School Health Programme (SHP) for supplementation of micronutrients and health check-ups and supply of spectacles to children suffering from refractive errors

As per the records shown to the JRM, Students' Health Cards had been made in all the schools details of which have been given in Annexures. However, the mission observed that these cards were not available in many schools visited on the first day. It *was informed that these have been sent to respective PHCs for the purpose of data entry. A few children were seen to have Vitamin A deficiency. The ANM informed that the last health check-up was conducted between last week of December 2012 and March 2013. Observations of the JRM in this regard are as follows-*

- Needy students were being sent to referral hospitals.
- Though IFA and deworming tablets were being distributed regularly but there was lack of monitoring to ensure their intake.
- Spectacles were being distributed to the students suffering from refractive error but again the students were not being monitored for regular use of spectacles.
- For better implementation of the SHP there is a need to create more awareness regarding these among the parents.

6 Creation of capital assets through kitchen cum store/kitchen devices and infrastructure

Status of kitchen cum store and kitchen devices in the State

Components	Physically Allocation since 2006-07 as on 31st Dec 2012		Physically Progress since 2006-07 as on 31st Dec 2012		
	Total no of schools/Centers	Total allocation	Constructed	In Progress	Not Started
Kitchen Sheds	19868	19868	17213	1169	1486

Kitchen Devices	29868	29868	29868	-	-

- The JRM observed that all the visited schools had kitchen cum sheds, the exception being the schools that were catered through the centralized kitchen. The size of the kitchen in a few cases was as per the older norms and these needed to be extended.

- Though majority of these had been built with the funds provided for in the Scheme, a few schools had built kitchen cum Sheds through community participation.
- It was observed that all the schools cooking MDM on the premises had adequate number of cooking utensils.
- Most of the schools had *thalis* for serving meals that had been obtained through community participation. But the size of the *thalies* was small in some of the schools, especially for serving meals to upper primary children.
- In majority of the schools storage bins had also been purchased through community participation.

- Toilet facilities for both, boys as well as girls. There was no running water in the toilets in some of the rural schools.
- Fire extinguishers were available in most of the schools but were kept away from kitchen, usually in the Head teacher's office.
- RO systems had been installed in few schools by private/public sector enterprises under CSR and community participation.

7 Appointment of cook cum helpers for preparation and serving of meals to the children

Categorization of cook cum helpers

Organizers				
Sr No	**Category**	**Male**	**Female**	**Total**
1	SC	2999	1782	4781
2	ST	4036	2081	6117
3	OBC	7432	3604	11036
4	Handicaped	270	165	435
5	Others	3362	1496	4858
Total		18099	9128	27227

Cook				
Sr No	**Category**	**Male**	**Female**	**Total**
1	SC	266	1396	1662
2	ST	1158	6020	7178
3	OBC	2364	13304	15668

4	Handicaped	16	39	55
5	Others	796	4240	5036
Total		4600	24999	29599

Helper				
Sr No	**Category**	**Male**	**Female**	**Total**
1	SC	348	3010	3358
2	ST	889	7271	8160
3	OBC	2565	13609	16174
4	Handicaped	10	26	36
5	Others	815	3901	4716
Total		4627	27817	32444
Grand Total		27326	61944	89270

It was observed that in most of the visited schools, less number of Cook-cum-helpers have been engaged than the required number as per norms related with enrolment of children. The JRM observed that the State employs an organiser Called “sanchalak”, employed at the same salary of Rs.1000/- per month that is given to cooks and helpers. The main responsibility assigned to them is procurement of raw materials and maintenance of records. It is a praiseworthy step because such focussed demarcation of work is reflected in good record keeping. However, some of the observations of the mission in this regard are-

- The women ‘’sanchalaks” helped with the cooking and serving of the MDM whereas the men limited their work only to procurement and record keeping.
- The percentage of men working as “sanchalaks” is more in comparison to women while more women were performing drudgery prone activities of cooking and serving food.
- All the three categories are paid equal honorarium and the payment is being done regularly.

8 Availability of dedicated staff for MDM at various levels

Current Staff position for implementation of MDM

Status of Establishment at State Level-MDM Gujarat

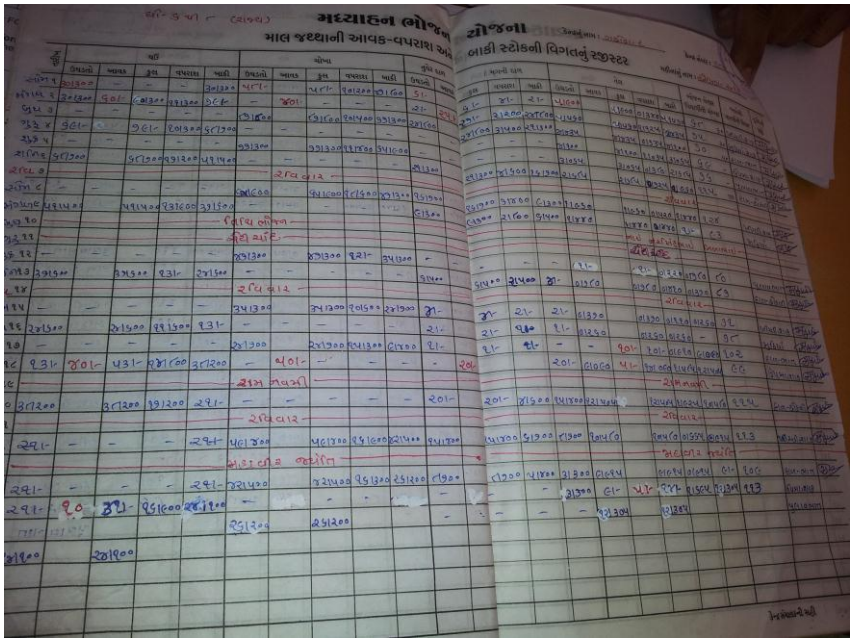
Sr No	Level/Designation	Sanctioned	Filled	Vacant
1	Class-1	4	2	2
2	Class-2	4	4	0
3	Class-3	25	22	3
4	Class-4	5	5	0
Total		38	33	5

Status of Establishment at District /Block Level-MDM Gujarat					
Sr No	Level/Designation	Sanctioned	Filled	Vacant	Total
1	Class-1	28	7	21	28
2	Other Than Class-1	1298	585	713	1298

The aforementioned data from the state showed that a lot of positions are lying vacant, especially at the district and block levels. A similar trend was also observed in the schools visited as 71% of these did not have the prescribed number of Cook cum Helpers. It was observed that to overcome this manpower shortage the students and sometimes even the visiting parents were asked to help with the cooking and serving of the MDM leading to informalization of women's labour and distraction for the students. **Review Mission recommends that the vacant positions may be filled as soon as possible so that the scheme is monitored properly at all levels specially at the grass root level. Furthermore, adequate financial resources for the purpose are available in the MME Fund, the utilization of which in the State is only 8% till December, 2012.**

9 Review the maintenance of records at the level of schools /cooking agency

The members expressed satisfaction at the maintenance of records in the schools visited, especially with respect to stock register, MDM beneficiary register, cash book, etc. Entries made at various levels tallied with each other and the organizers were able to furnish bills for the purchases made.

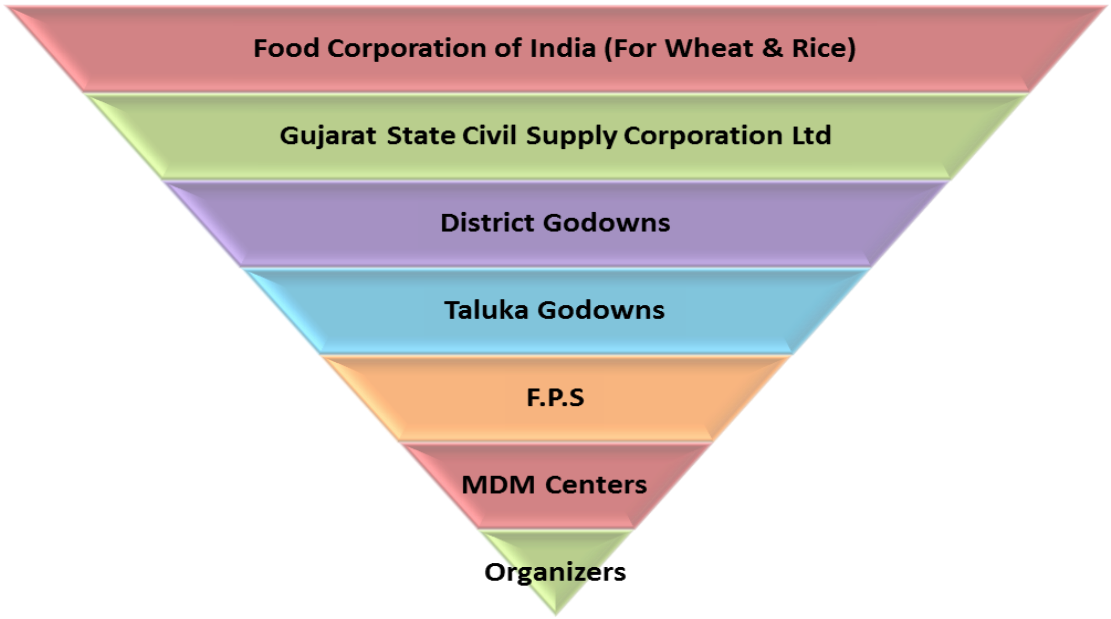


However, the following issues need to be addressed to in order to improve the implementation of the MDMS:

- The discussion regarding MDMS in the SMCs was held only occasionally, that too in a few schools.
- The Visit Book and the Inspection Register related to MDMS had only a few enteries, implying scanty visits by the supervisory staff.

10 Payment of cost of food grain to FCI by the districts

The food grain, pulse and oil in the State from the FCI godowns to the organizers flow is depicted below:



The Gujarat State Civil Supply Corporation has been entrusted the task of procurement and supply of food grains and other food commodities including edible oil, pulses (Dal) for children studying in Std. I to VIII Primary & Upper Primary Schools. Edible oil and pulses are procured through a centralized purchase system.

Based upon the prescribed daily food components and probable number of beneficiaries of students, a yearly advance indent is sent to the GSCSCL for procurement of all food commodities. After procurement, all commodities are supplied up to the level of MDM centre through the Public Distribution System.

The food grain (Wheat/Rice) is lifted & transported by the nodal transport agency, from FCI go-down to the FPS on the basis of authorization by the respective Deputy Collector. From FPS to respective school, the MDM Sanchalak transports/ carries the food grains. The Review Mission observed that the all the visited schools received food grain timely and regularly.

Under the scheme the food grain is allocated to district offices at half yearly as received from G.O.I. on the basis of number of children and number of school days approved by PAB of MDM. For the payment of cost of food grains through district offices, State Govt ensures that adequate funds are available to districts and in monthly review meeting it is checked that if bills are being paid on time or not.

It was observed that out of the total bill of Rs.5641.84 lac incurred to FCI payment of Rs. 5149.02 lakhs (91%) has been made. The figures for districts Ahmedabad and Sabarkantha stand at Rs.233.13 and 570.14 lakhs, respectively.

11 Involvement of NGOs/Trust/Centralised kitchens by states/UTs government in implementation of the scheme

It was in 2004 the GoI decided to implement the scheme of centralized kitchens in urban areas where physical space was a constraint to build kitchen in school premises. A written communication of September 2010 mentions specifically that a centralized kitchen could be set up for a cluster of schools where cooking can take place and the cooked hot meal may be transported under hygienic conditions through reliable transport system to various schools.

Operation of these centralized kitchens may be entrusted to reputed NGOs under the PPP model. It would be advisable to select NGOs with a local presence and with familiarity with the needs and culture of the State.

After visit to the one of the centralized kitchen in Gandhinagar the JRM team asked for copies of agreement from the two NGOs providing MDM in Ahmedabad city. They were provided on the last day of the mission when the JRT was compiling all the reports.

The JRM team studied the arrangement between the NGO in, Gandhinagar and the Commissioner, Ahmedabad Municipal Corporation, (Stamp No. X 094852/Rs. 100.00). This was provided to the Mission members only on the last day of the JRM after persistent reminders. While going through the document the JRM team observed following points

- This agreement was signed on 8th June 2012 as renewal of earlier agreement dated 1st June 2010 for three years signed by both parties with reservations for annual renewal. In absence of the copies of the earlier agreement if any, assessment of performance before renewal (as per the MDM guidelines) the JRM team would not be able to comment on the conditions therein.
- The MDM guidelines 2006 hold the NGO accountable towards providing their Annual Report along with the audited statement of account vis a vis the grants received from the State Government, both in cash and kind, duly certified by an approved Chartered Accountant. However, the NGO didn't share any report with the JRM on the day of visit. There were no displays in the entire premises where meals for 114 schools of Ahmedabad district are prepared for 238286 children (during 16-31 March 2013) using 74510 kg food grains and cash grant of Rs 15,85,596/-for the month of March 2013.
- The JRM team was provided with three different sets of information when asked as to what quantity of food is cooked in one vessel and how many children could be served from that quantity. The response varied from 100 kg (80 kg rice and 20 kg daal) food grains providing 300kg ready food. This was enough for 600 children in one response, 1100 children in another, while one response was that it was adequate for 1700 children by the set standards .Since on the day of the visit, meals were being cooked for a hospital it was not possible to make on the spot verification. However, the entire premises had no display of these standardised norms for public or the staff of the NGO. The hygiene standards in the kitchen are very high, while the surrounding area has scope for further progress.
- There is an absence of monitoring norms for the material procured by the NGO; no mention of total amount of funds towards the agreement is mentioned in the agreement ,

although per child allocation are mentioned , the agreement should convey an amount that would be paid to the NGO towards providing services .

- The agreement has address of the registered office of the NGO in Gandhi Nagar; however there is no mention of location for operations in the agreement. And this agreement has not been duly notarised.
- The agreement expects use of LPG in the centralised kitchen of the NGO, however the JRM team was told that the kitchen runs on boilers consuming about 2200 kg firewood per day (this could be inclusive of other contracts that the NGO may have).
- In a letter to the Commissioner MDM, dated April 29, 2013, the NGO notes that it has involved a reputed multinational audit firm, as auditors for auditing IFRS financial statements and another renowned Indian audit firm, for auditing, financial statements, thereby ensuring rigor, transparency and high degree of accountability. The program is secular, inclusive and non-discriminating as it is provided only in Government schools that already have a secular policy for admission. In absence of the copies of these reports the JRM team would be concerned about how these reports are shared with the stakeholders, the frequency of sharing reports keeping in mind the regional language as a necessary condition – with the school children, their parents, the concerned school teachers and the MDM office at block , district and commissioner's office.
- The quality, quantity, and facility related issues such as safe drinking water, hygiene, availability of quality utensils, timely transportation of hot cooked meal etc. are met however the furthest most school according to the letter to the commissioner MDM is 45kms away and the nearest one is 17 km away from the kitchen.

The Mission has observed that there is a lack of monitoring at every level– by the officials of State, the district and parents/community. The Mission also feels that the SMC of such schools to which the hot cooked meals is being served by NGOs have no role/access to process of monitoring and suggesting any changes at the level of the centralised kitchen.

Being a programme supported by public funds the NGO would be required to comply with the provisions under the Right to Information Act, more specifically the section 4 1 b of the act for proactive disclosure. Unlike many schools the JRM team visited during the mission, it didn't have any display of their menu, staff, quantity supplied for the day and the entire week on the walls of the school or the kitchen. Besides this, the guidelines of the GoI also expect suo moto disclosure of information mentioned below-

- Quantity of food grains received
- Date of receipt
- Quantity of food grains utilised
- Other ingredients purchased and utilised
- Daily menu
- Community members involved in the programme

12 Involvement of Community in implementation of MDM scheme

- The Mission members interacted with community at various levels. In some schools the parents and grandparents had come to school with their children. In the Usmanpura School the grandmother escorted the girl to school as she also wanted to enquire about the scholarship. Savitaben and Jethabhai Bhatia came to school as their son (4th std) had to miss exams due to death in their family. Both the parents were daily wagers and were contented their two sons (6 and 10 years) were eating meals in school.

- In many schools, representatives of the community assisted in some or the other work. To mention a few, mothers who came to take their children back from school such as in village Kolat (Sanand), an ASHA worker and SMC member in village Kalyanpur, Jhinjhudi, mothers in Malivada (Himmatnagar) Nava Chibhoda (Bhiloda) all helped in cleaning the plates in serving food to the children. While these are some of the informal contributions of parents, they often go overlooked and unacknowledged.
- What were reported to the members of the mission and were noteworthy too were the donations to school in form of tree sapling, water filtration/ reverse osmosis plant, plates for MDM kitchen, building material, cash contribution for school upgrading and last but not the least the Tithi Bhojan- meals (full or part) to children in school. The team observed that children looked forward to these meals as they were different from the regular menu! The frequency of these meals are however not very high. The team noticed 1 to 6 meals in last academic year.
- The team noticed that contribution towards asset building or infrastructure building is much higher, this is also in the villages which are in the industrial area such as the villages in Daskroi and Sanand block of Ahmedabad and Himmatnagar block in Sabarkantha as compared to the villages in Bhiloda , Sabarkantha.
- In the rural schools it is the teachers who have been the key donor. The SMCs too have taken keen interest in discussing the school assets rather than the day to day core programmes of MDM or Tithi bhojan.

SMC meeting of Nava Chiboda Primary School, Bhiloda, Sabarkantha

In the SMC meeting of 27 December 2012 the members of SMC discussed absence of edible oil in the MDM kitchen. The head teacher raised it and many other members discussed the cause of delay. They checked with the FPS licensee but he too didn't have stock. The MDM staffs were unable to serve meals for almost a week (21-27 Dec 2013)

The SMC decided to approach "donors" for oil so that they could resume cooking and serve the children as per schedule, but to their dismay no donors came forward said the head teacher. Finally the school teachers collectively took the responsibility and contributed oil for seven days. "Children come Bhatola and Nava Chiboda village , they come from disadvantaged groups , parents are wage workers, so it is not easy to mobilise their contribution, so we teachers decided to give oil, we have 190-200 children in school who eat every day." Said the head teacher.

Meeting with Parents: Village Telav, Sanand

- The village has mixed population of Momin (minority community), Thakore, Bharwad,Rawal ,Chunara (all OBC) Darbar and Vankar (SC). The village also has migrant workers from Vadodara and Banaskantha district in brick kilns and in private dairy farms. The mission members interacted with 8-10 parents representing all the communities. They came to school as every day, to escort their children back home, while a few came looking for their children as the children were not back well past their usual scheduled time.
- Their children were still eating their meals and parents were not discouraging, in fact one or two parents told the child not waste food while she was sitting in the meeting. Many of these parents take turns to bring their children to school and fetch them back as the school is on the national highway. “So our children cannot go back home for meals in the lunch break as is the case in some villages. Sometimes when the child doesn’t like the food in MDM we pack lunch box for them” said Faridaben , her two sons are in grade second. “Sometimes children want to bring the nice “tarkari” made at home, but we can’t give it, others may not like, but we see it everyday in our school kitchen, food is good.” said Aminaben whose children are in grade three, six and eight. When asked if they have tasted the MDM food, they all said no in chorus, “our children would feel embarrassed, all other children would stare for we would be eating food meant for children.”

13 General Observations

- Less coverage of children availing MDM against enrolment.
- Insufficient number of CCH in schools which is not as per norms.
- The MDM logo was missing in all the schools visited by the JRM team.
- Vacant positions of officials especially at District and Block level.
- The weekly MDM menu was not displayed in majority of the schools visited.
- Since the servings are not standardised it is difficult to ensure equal/required amount being served to all the students.
- There is lack of awareness of MDM being a matter of right of the child and the importance of MDM among the parents in general and the community at large.
- Fresh vegetables were not being served to the children on daily basis.

A unique science project of students of Shantipura Primary School

When a young school teacher of Shantipura Primary School observed the anthropometry process by the Mission members during the his school visit he wondered about the linkage of MDM with the entire exercise, but soon came over to show the team a science project that his school prepared in September 2012 for science fair under category – "Community Health and Environment". It seems Shantipura was not the only school which took up this unique science project. This teacher had guided two of his students from grade seven and eight to collect data of 201 school children. The two students with the help of their friends measured height and weight of all children and collected basic profile. Of the total sample 28.36 % children were under weight and approximately 1.99% were found overweight remaining 69.65% were found healthy. They found that equal no of girl and boy students were healthy, however of the total 28.36% underweight children 54.4% boys and 45.6% girls were underweight. Similarly of the total 4 overweight children 3 were girl students. The research team has plotted the underweight and overweight children in the growth chart and shared with the students. The Mission members

appreciate this imitative and suggest that all schools with support of teachers and the MDM staff can all together add another variable of children who eat MDM in school to understand its impact and foster the habit of eating in school.

14. Management Information system

Government of India has already launched MDM MIS portal in collaboration with NIC for the data entry of the major indicators related to MDM. In this connection various trainings and workshops have also been conducted time to time.

Annual Data Entry

District wise annual data entry status is given below:

Annual Data Entry Status: % Completed as on DATE: 29.04.13 TIME: 10:00 a.m.

S. No.	District	Total Schools	Completed	Pending	% Completed
1	AHMADABAD	1321	1313	8	99%
2	SABAR KANTHA	2509	2509	0	100%

The above table signifies that the annual data entry for the year 2012-13 has been completed for both the districts except 8 schools of Ahmedabad.

Monthly Data Entry

Monthly Data Entry Status: % Completed as on DATE: 29.04.13 TIME: 10:03 a.m.									
S. No.	**District**	**April**	**July**	**August**	**Oct**	**Dec**	**Jan**	**Feb**	**Mar**
1	AHMADABAD	99%	99%	99%	98%	97%	69%	68%	40%
2	SABAR KANTHA	100%	100%	100%	100%	100%	99%	90%	80%

The above table depicts the fact that the monthly data entry status in 2 districts has been constantly declining over the span of months from December 2012 onwards especially in the district Ahmedabad. This matter needs continuous follow up to ensure timely data entry.

Best Practices

1. Sukhadi Pilot Project- A Praiseworthy initiative

- Aim: To increase the utilization of food grain and enhance calorie and protein intake by students to enhance the coverage
- Sukhdi will be served once in a week
- "Sukhdi" recipe is approved by the CFTRI & nutrition experts
- It will be prepared using wheat, jaggery and oil
- State government will contribute Rs. 18.70 crores for oil and jaggery
- Nutritional characteristics of each serving of sukhdi:

	Std.1-5(gms)	Std. 6-8(gms)
• Wheat	20	25
• Jaggery	15	20
• Oil	10	12
• Total calories	214	267

2. Tribal Area Sub Plan under MDM

- To increase attendance and retain tribal girls up to at least class VII.
- Implemented in the tribal areas of Bharuch, Valsad, Narmada, Vadodara, Dang, Dahod, Surat, Banaskantha, Sabarkantha, Navsari,Panchmahal and Tapi only.
- Provision for additional food grain to the tribal girl students to be implemented through Mid Day Meal Scheme financed under TASP.
- Additional 60 kgs. of wheat given to the tribal girl students who complete 70% attendance in the primary schools(each session separately)

3. Tithi Bhojan

- It is customary in Gujarat to host public dinner on fsestival days or social occasions like marriage etc.
- It is also very common that in many villages sweets are distributed in people on the occasion of birth of a child or success in exam etc.

- The scheme was introduced in 1984 to cultivate the healthy custom into a PPP scheme with a view to improve
  - Improvement in nutritional level
  - Retention of children in the primary schools
  - Cherish the sense of belonging among the community
  - It is voluntarily served among school children in several forms like,
  - sweet and namkeen with the regular MDM
  - meal or complementary full Tithi bhojan
  - supplementary nutritive item like sprouted beans

- **Tithi bhojan allows……**
  - Supplementation of the nutritional value of MDM food
  - Development of rapport with the local community

- Inculcating the feeling of equity and brotherhood among the children of all communities
- Reduction of the gap between the school administration and the community
- This is also reflected in form of enhancement of the enrolment and regular attendance of the children at the school

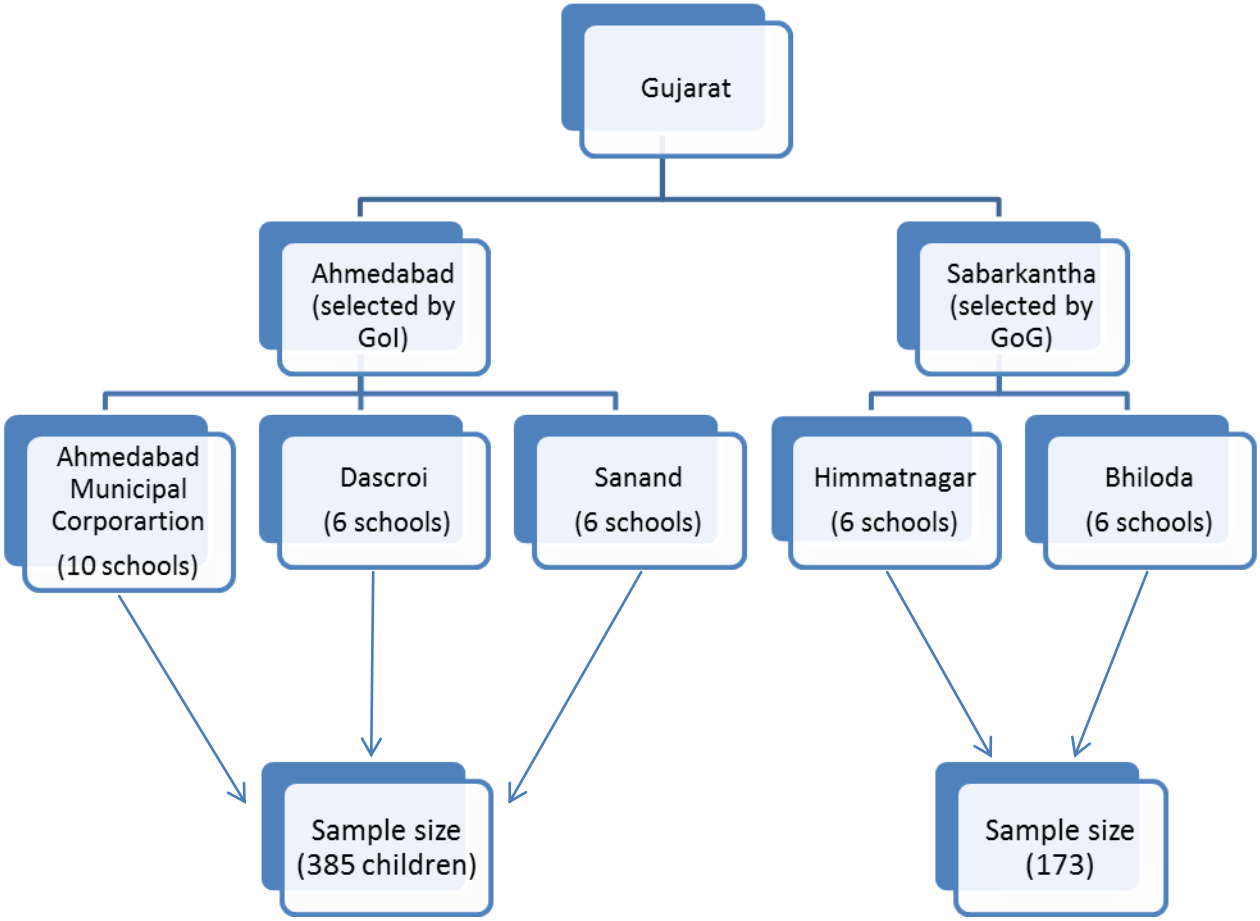
- More than 90 lakh meals have been given as Tithi bhojan during the current year at an estimated cost of Rs. 965 lakh
- More than 575 lakh meals served in last eight years at a cost of Rs. 4385 lakhs
- In addition to complementary food schools have received in kind such as …
  - Cooking ware, utensils, dinner sets or glasses for drinking water
  - Study materials like books, note books, pens etc.

4. Infrastructure developed through community participation

A proactive participation of community in infrastructure development has been observed as some kitchen sheds have been constructed/extended through this. Utensils to serve meals have also been given by the community. Similarly, RO systems have been installed by public/private organisations under CSR.

NUTRITIONAL ASSESSMENT

Sampling design for assessment of nutritional status of school children in schools of Gujarat



Anthropometric assessment

Measurement of anthropometric parameters viz. body weight, height, mid upper arm circumference (MUAC), were recorded for school children as per the following methods**.**

Body weight

Body weight (kg.) indicates the body mass and is a composite of all body constituents like water, minerals, fat, protein, bone etc. For the present study, body weight (kg) was taken by personal weighing machine with the maximum capacity of 120 kg and the minimum division of 0.5 kg. The following precautions were taken to measure body weight (kg.) The school children were instructed to be without shoes. All the school children were in the school uniform. School children were asked not to lean against or hold any support, while the weight (kg.) was being recorded (Gibson, 1990).

Height

Height (cm.) of the school children was taken by anthropometric rod. School children were asked to stand erect on a leveled surface, without shoes, looking straight with heels together and toes apart. The anthropometric rod was placed behind the school children in the centre of the heels perpendicular to the ground. The investigator standing on left side of the school children held firmly the chin of the school children with his/her left hand and the occiput of the school children with his right little finger to maintain the Frankfurt plane horizontal (an imaginary line joining the tragus of the year and infra orbital margin of the eye). The moving head piece of the anthropometric rod was placed in the sagital plane over the head of the subject applying a slight pressure to reduce the thickness of hair. The readings were taken when the anthropometric rod was still in position (Gibson, 1990).

Mid upper arm circumference (MUAC)

MUAC (cm.) indicates the status of muscle development. For the present investigation, MUAC was taken using fiber glass tape with minimum count of 0.1 cm. The mid point between the tip of the acromion of scapula and the tip of the olecranon process of the (fore arm bone) ulna, with the arm flexed at the elbow at right angle; was marked with a marker pen. Arm of subject was hanged freely and the fiber glass tape was gently, but firmly placed embracing the arm without exerting too much pressure on the soft tissues. The reading was taken to the nearest millimeter, with the tape still in position (Gibson, 1990).

Diet survey

The students were asked for their dietary pattern that is they informed about what they have taken in the morning before coming to school during the school and after the school till they sleep. 24 hour dietary recall method was employed for the previous day. The information was further placed as general dietary pattern and food items consumed. Further it was used for nutrient

calculation for the age group of 6 -10 years 10-12 years and 12-18 years. It was analyzed to know how much nutrient was coming through MDM.

Clinical survey

Clinical survey was conducted to observe clear cut visible signs of protein deficiency, vitamin a deficiency B complex deficiency and iron deficiency anaemia. The results are presented in the tabular form.

Nutritional status on sub sample of school children availing MDM

To assess nutritional status of the children the information was collected on dietary pattern of children, anthropometric measurements and clinical examination.

1.1 Food pattern

School children normally follow three meals pattern a day. Their morning begins with first meal as breakfast having tea along with roti and sometimes potato vegetables. Second meal, the lunch is taken at school, whenever it is not taken at school, children eat at home. Generally home lunch comprises of dal roti. In evening the dinner is khichdi, roti, rotla and vegetables or dal bhaat(pulse rice). Milk is added in the 58 % diets of children either in the morning or dinner time. The quantity of milk as self reported by children range between half cup to one glass (100 to 250 ml) the choicest recipe is khichdi (65 % children) followed by roti (50 %) and dal (20%).The vegetables consumed by children on the previous day were potatoes (42%), brinjal (15%), cauliflower (11 %), okra (7%), onion (15%), bitter gourd (1.5%) tomatoes (1.5%), guwar (1.5). three percent children reported that they consumed sapota (chiku) or raw mango on previous day.

1.2 Anthropometric measurements and nutritional status:

Samples from 30 to 35 schools were made to have equal no of boys and girls from all the classes. The total sample size of the studied population was 558 comprising of 263 boys 295 girls. Out of 558, 337 were from primary school and 221 were from upper primary school. All the children were measured for their height, weight and MUAC. The average values are given in Table 1 for weight, height and MUAC. The average weight and height of the children was less than the reference value for that age. The average MUAC of the boys was 18.13 and for girls it was 18.29 cm.

Weight

Height

MUAC

ANTHROPOMETRIC MEASUREMENTS

Table-1 Anthropometric parameters and BMI of school children as per age

Age	(n)%	Height	Weight	BMI	MUAC
5	(10)1.79	110.55±3.72	15.24±2.22	12.48±1.71	15.50±1
6	(37)6.63	110.86±4.69	16.53±3.12	13.37±1.51	15.67±1.56
7	(46)8.24	115.11±4.69	18.30±3.12	13.71±1.51	16.19±1.56
8	(58)10.39	122.01±6.11	20.67±3.61	13.81±1.57	16.81±1.55

9	(60)10.75	127.31±7.08	22.81±3.79	14.00±1.45	17.36±1.67
10	(75)13.44	131.11±7.22	24.64±4.79	14.23±1.67	17.63±1.92
11	(60)10.75	137.29±6.41	28.13±4.42	14.88±1.81	18.64±2.41
12	(76)13.62	140.25±7.36	30.52±6.00	15.45±2.39	19.34±2.61
13	(78)13.97	145.47±7.97	33.22±5.80	15.62±1.98	19.77±2.19
14	(49)8.78	149.70±6.53	37.30±7.20	16.60±2.79	20.93±2.71
15	(6)1.07	154.63±4.29	41.27±1.13	17.30±1.18	20.64±2.41
16	(2)0.35	150.00±2.83	43.40±14.70	19.42±7.27	18.95±1.48
18	(1)0.17	163.00±0.00	44.70±0.00	16.82±0.00	23.00±0.00

Age wise gender wise desegregated anthropometric parameters and BMI is given in Table 2.

Table-2 nutritional status of school children as per age and gender

Age	N		Height (cm)		Weight (kg)		BMI (kg/m^2)		MUAC (cm)	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
5	4	6	110.88±2.46	110.33±4.59	16.48±0.61	14.42±2.58	13.40±0.10	11.86±2.04	15.38±0.63	15.58±1.24
6	18	19	113.06±5.54	109.00±3.03	17.49±4.32	15.70±1.34	13.53±2.00	13.22±1.02	15.78±2.10	15.55±1.03
7	22	24	115.43±6.07	114.22±4.91	18.41±3.57	17.82±3.02	13.72±1.69	13.60±1.67	15.95±1.60	16.20±1.50
8	24	34	122.42±7.07	121.59±5.47	20.92±4.35	20.42±3.06	13.82±1.54	13.79±1.63	16.67±1.65	16.91±1.51
9	33	27	128.30±7.62	126.48±6.08	23.22±3.91	22.45±3.63	14.04±1.42	13.97±1.55	17.28±1.83	17.52±1.45

10	36	39	131.14± 7.57	131.22± 7.04	24.73± 4.76	24.61± 4.93	14.29± 1.79	14.17± 1.61	17.49± 1.90	17.78± 1.97
11	24	36	136.17± 5.10	137.90± 7.17	28.47± 3.89	27.64± 4.50	15.37± 2.12	14.45± 1.35	18.46± 2.84	18.58± 1.88
12	41	35	140.95± 7.93	139.59± 6.82	31.66± 6.49	29.31± 5.34	15.86± 2.50	14.99± 2.25	19.69± 2.85	18.92± 2.32
13	35	43	139.59± 6.82	146.04± 8.14	29.31± 5.34	33.83± 5.43	14.99± 2.25	15.83± 2.16	18.92± 2.32	20.04± 2.50
14	25	24	149.62± 6.17	149.48± 7.01	35.53± 5.14	38.87± 8.67	15.87± 2.13	17.30± 3.28	20.36± 1.92	21.50± 3.35
15	2	4	157.45± 7.14	153.38± 3.50	41.50± 0.71	41.50± 1.29	16.80± 1.81	17.67± 1.12	20.75± 0.35	20.25± 3.28
16	0	2	-	150±2.8 3	-	43.4±1 4.71	-	19.42± 7.27	-	18.95± 1.48
18	1	0	163	-	44.7	-	16.82	-	23	-

Using BMI Z score prevalence of under nutrition among primary and upper primary school children was assessed and is presented in Table 3 and Fig 1. Only 55.86 % primary school children and 51.19 % upper primary school children were observed to be normal (Table 3).

Table-3 Nutritional status of primary and upper primary school children as per gender

BMI (Z scores)		**Primary school**				
Gender	**Normal n (%)**	**Moderate undernutrition n (%)**	**Severe undernutrition n (%)**	**Overweight n (%)**	**Total**	
Male	89 (54.26)	43(26.22)	26(15.85)	6 (3.65)	164	
Female	100(57.47)	56(32.18)	15(8.62)	3(1.72)	174	
BMI	**upper**	**Primary school**				
Male	49(49.49)	27 (27.27)	21(21.21)	2 (2.02)	99	

Female	64(52.89)	37 (30.57)	14 (11.57)	6 (4.95)	121	

Ref: WHO (2007)

Fig. 1Prevelence of undernutrition among primary school children. (Male n= 164, Female n=174)

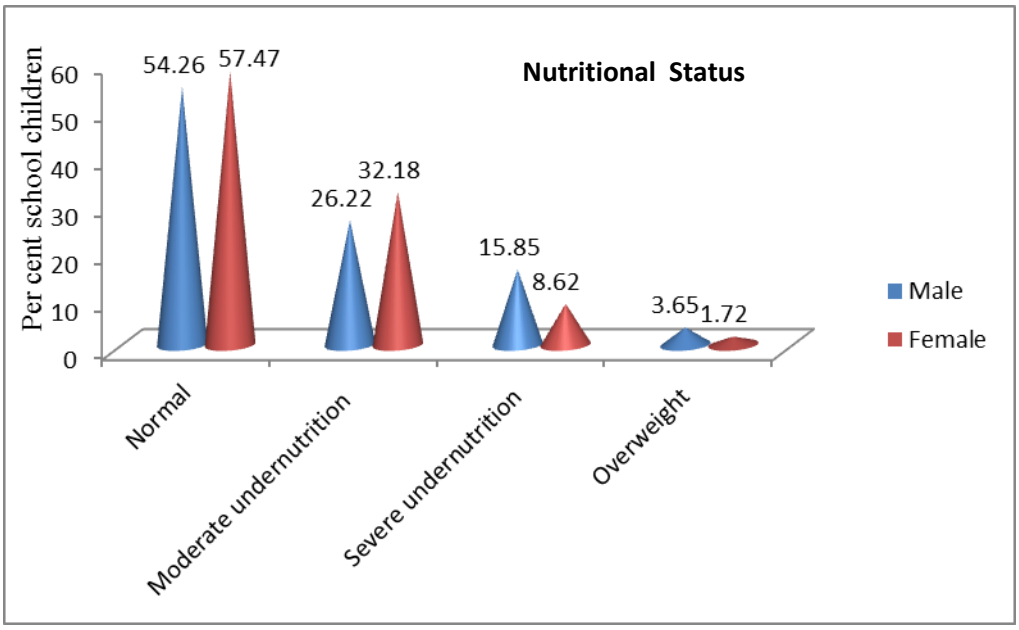
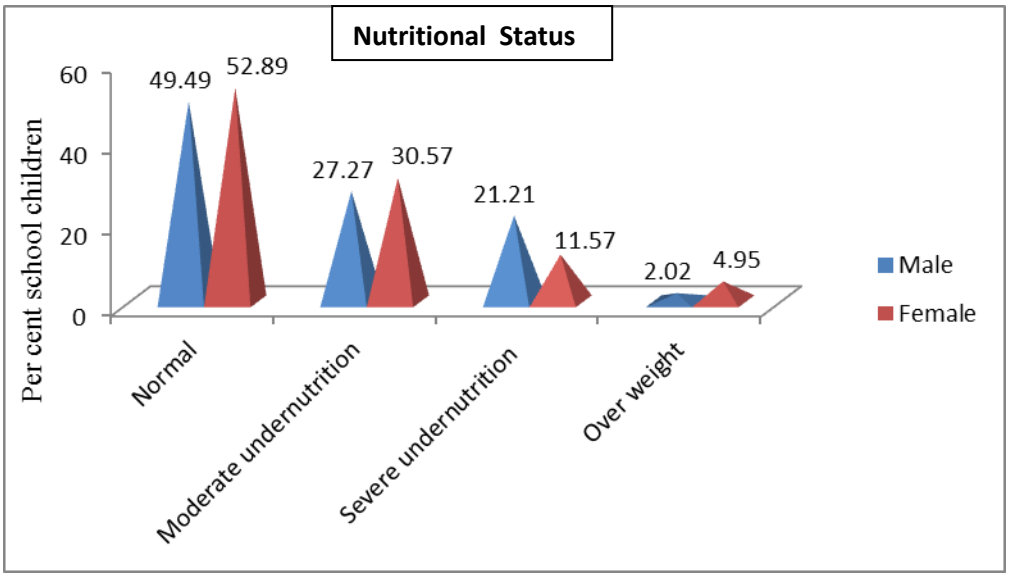


Fig.2 Prevalence of undernutrition among upper primary school children

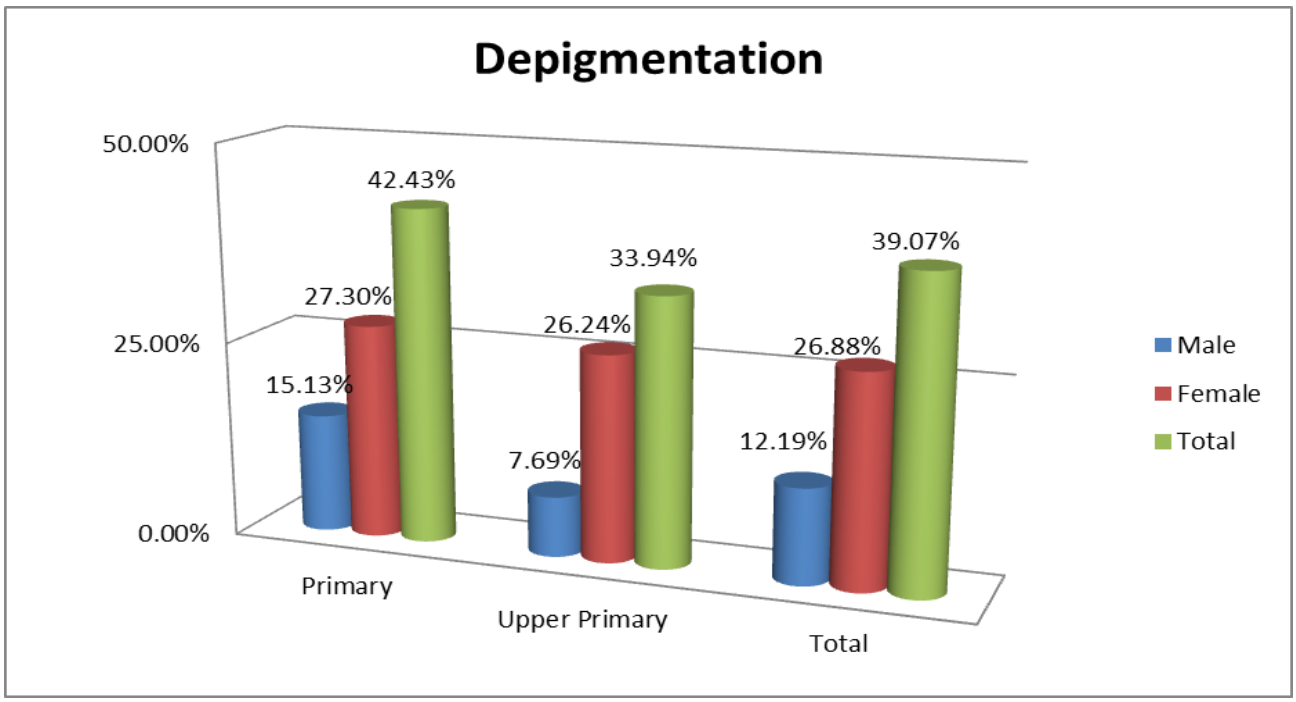


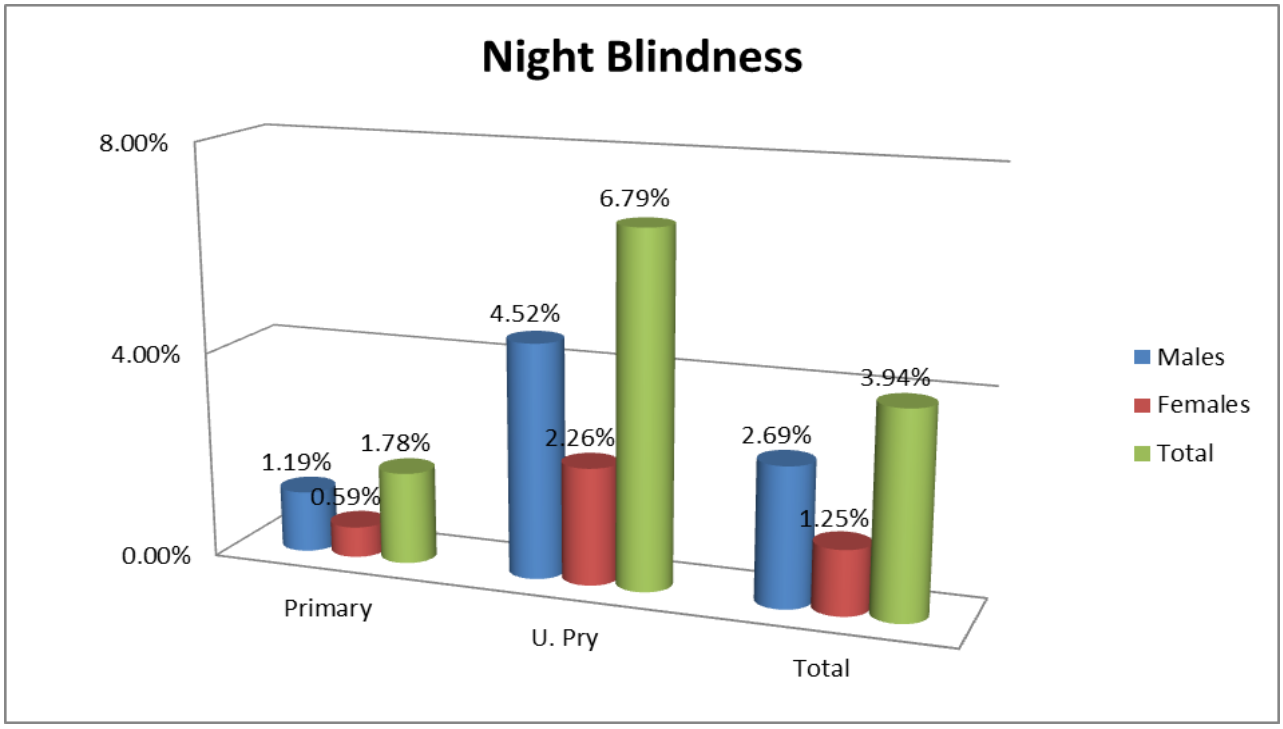
The large size of undernourishment calls for attention of parents, community and health officials. There is gradual increase in height and more pronounced is after the age of ten years. The change in weight was observed to be more at the age of fourteen years onwards. The percentage of overweight children was less than three percent. Severe under nutrition was prevalent among 15.85 % primary school boys and 8.62 % in primary school girls. In upper primary school, severe under nutrition was present in 21.21 and 11.57 % in boys and girls respectively. It is evident that during the adolescent years the severity of under nutrition increases.

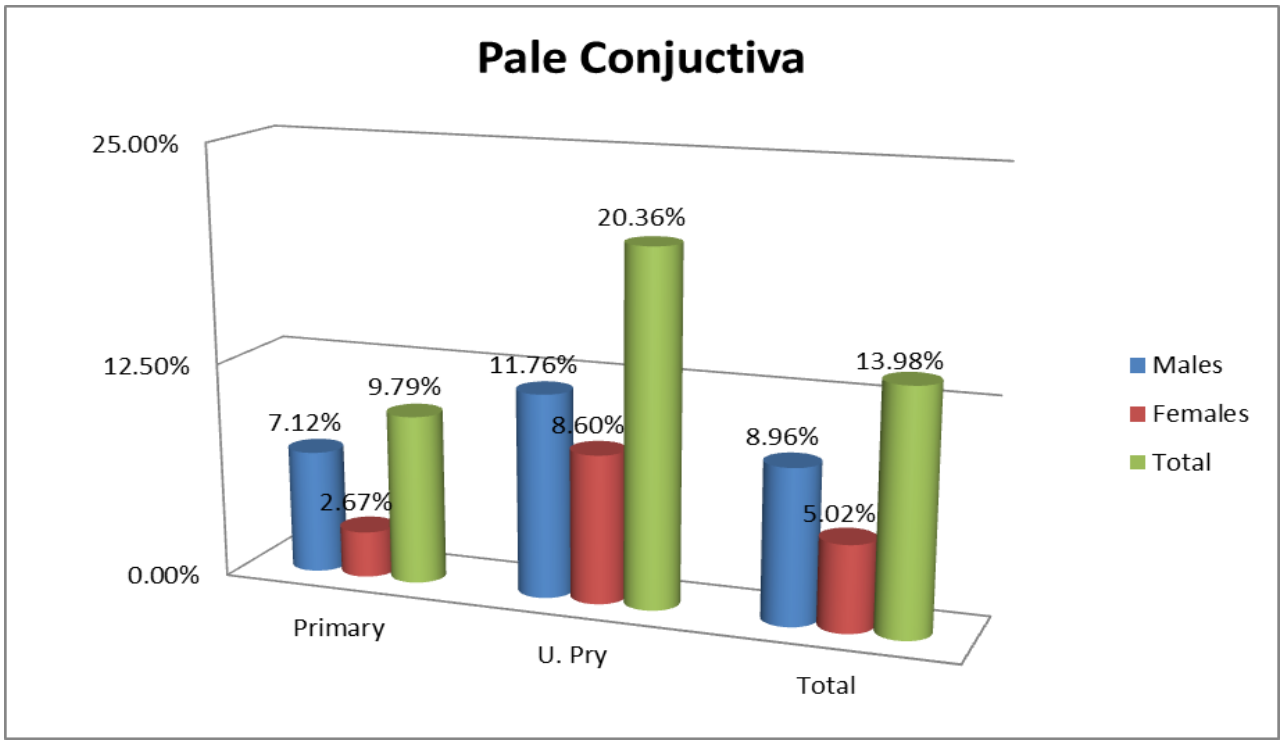
Nutritional status as per clinical symptoms

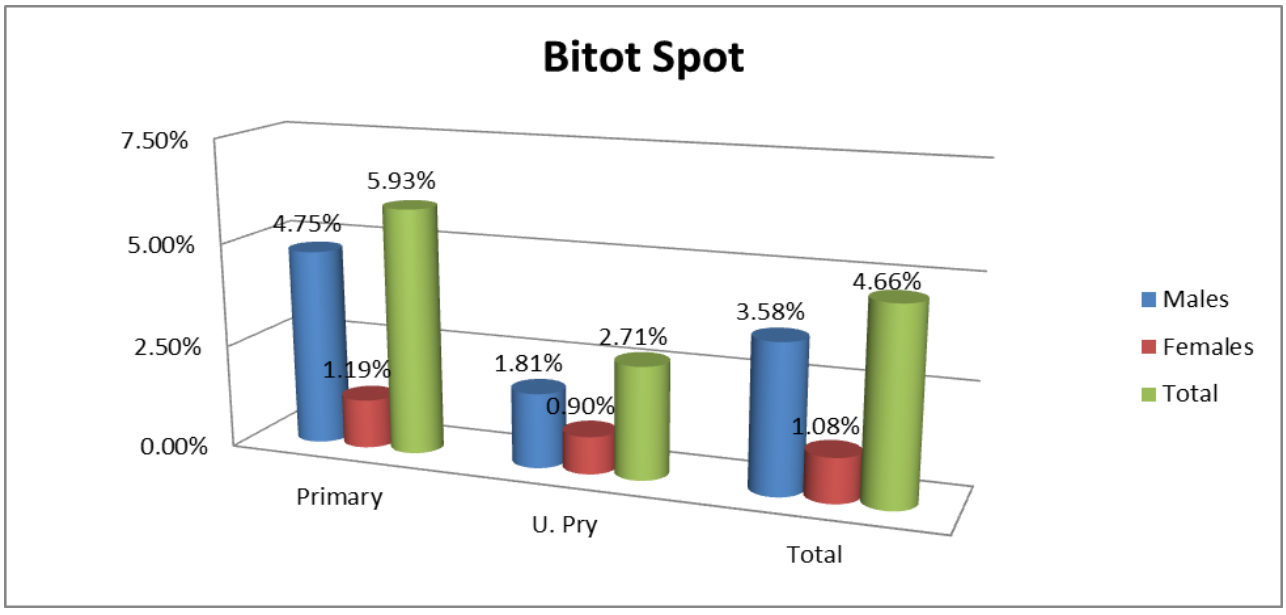
All the children were clinically examined by the JRM team members and physicians of PHC of Gujarat.

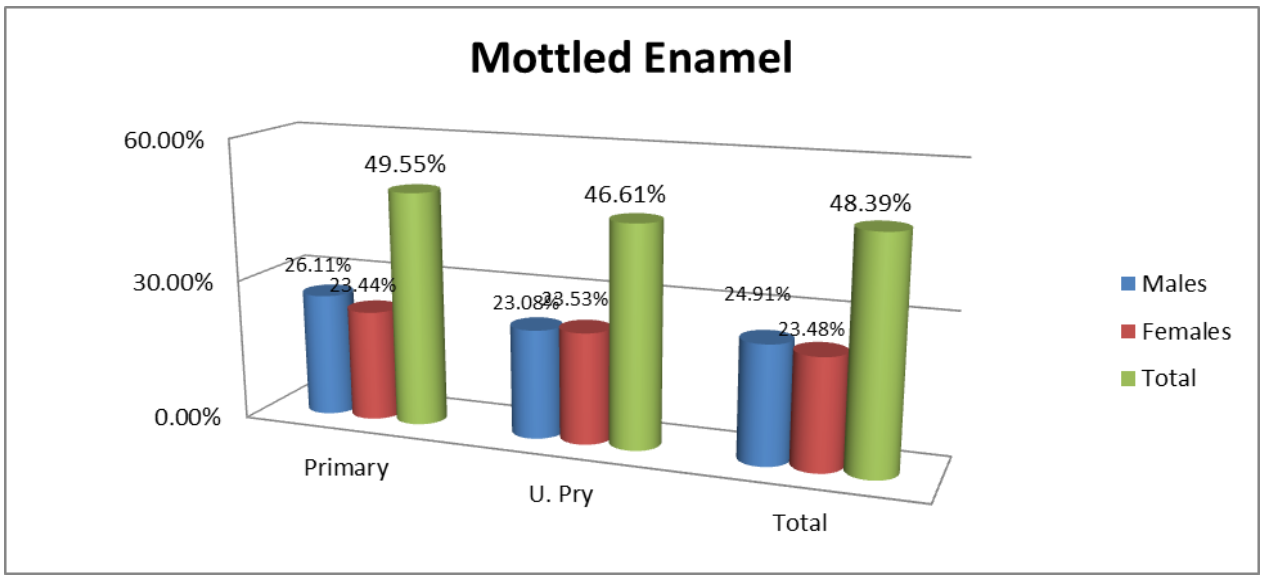
Clinical signs and symptoms as per school and gender are presented in figure.

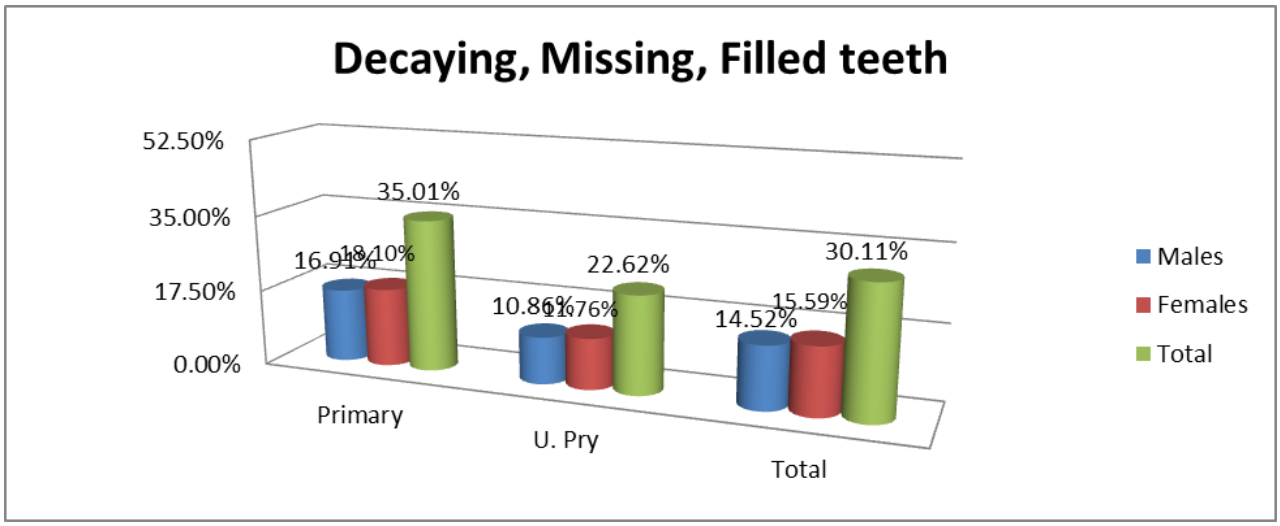

Depigmentation
50.00%
25.00%
0.00%
42.43%
27.30%
15.13%
33.94%
26.24%
7.69%
39.07%
26.88%
12.19%
Primary
Upper Primary
Total
Male
Female
Total

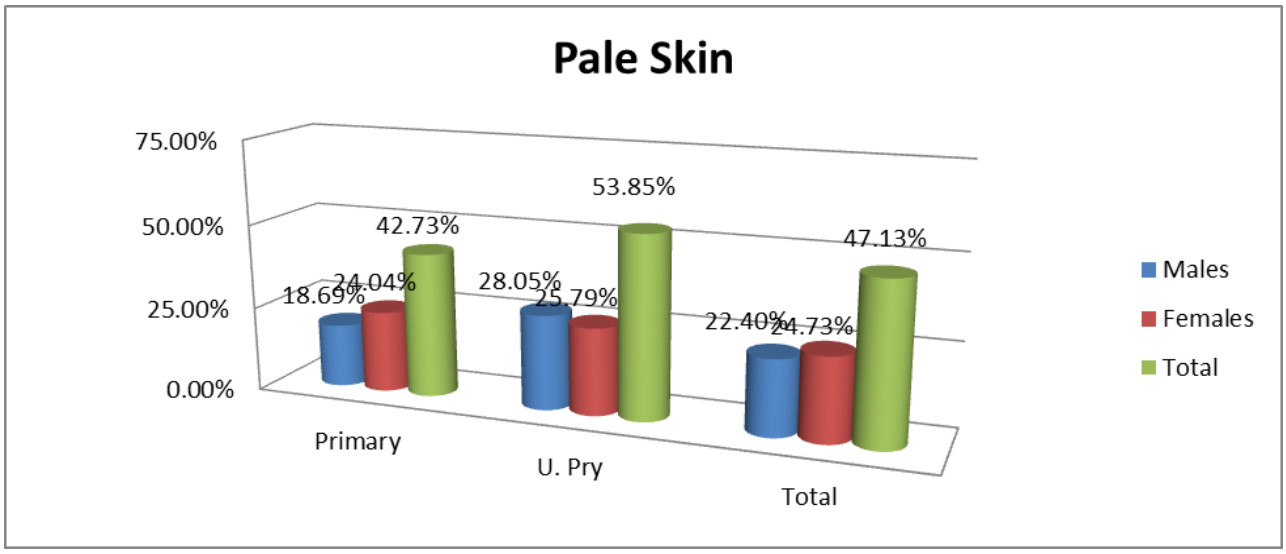

Night Blindness
8.00%
4.00%
0.00%
6.79%
4.52%
2.26%
1.19%
1.78%
0.59%
3.94%
2.69%
1.25%
Primary
U. Pry
Total
Males
Females
Total

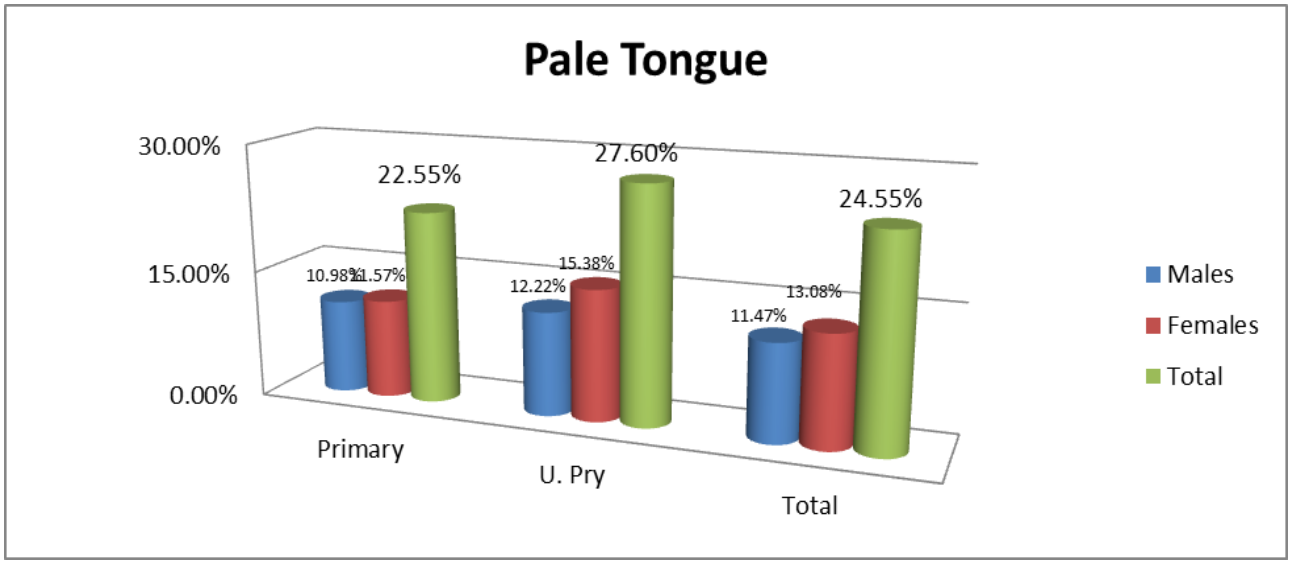

Pale Conjuctiva
25.00%
12.50%
0.00%
7.12%
2.67%
9.79%
11.76%
8.60%
20.36%
8.96%
5.02%
13.98%
Primary
U. Pry
Total
Males
Females
Total

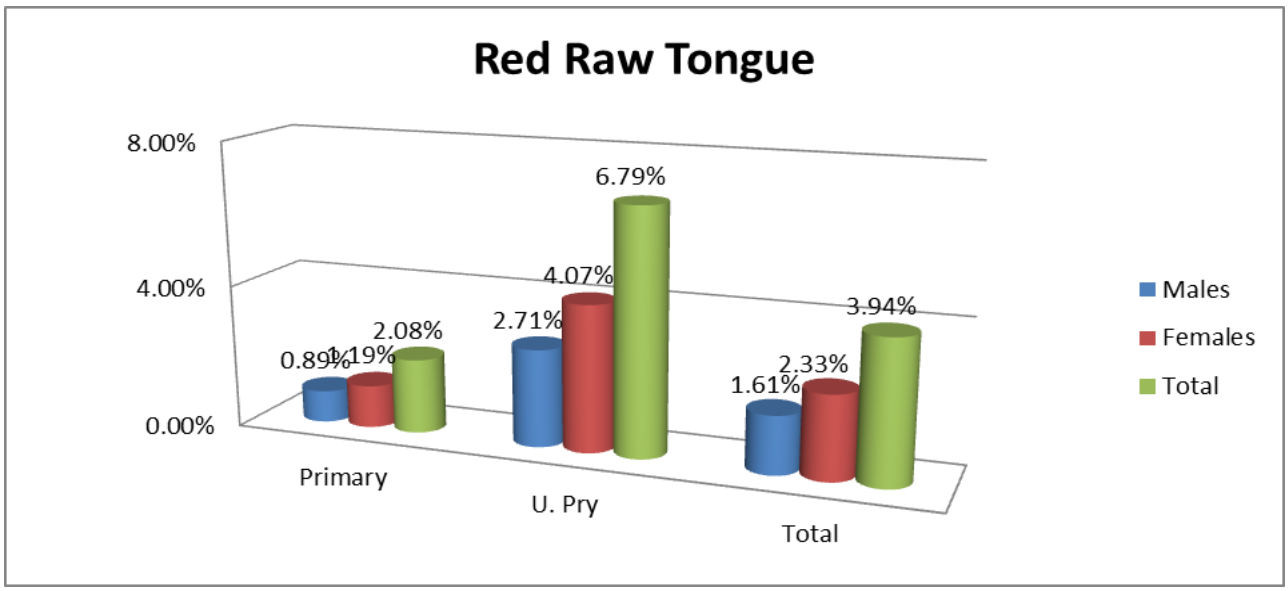

Bitot Spot
7.50%
5.00%
2.50%
0.00%
4.75%
1.19%
5.93%
1.81%
0.90%
2.71%
3.58%
1.08%
4.66%
Primary
U. Pry
Total
Males
Females
Total


Mottled Enamel
60.00%
30.00%
0.00%
49.55%
46.61%
48.39%
26.11%
23.44%
23.08%
23.53%
24.91%
23.48%
Primary
U. Pry
Total
Males
Females
Total


Decaying, Missing, Filled teeth
52.50%
35.00%
17.50%
0.00%
35.01%
22.62%
30.11%
18.10%
15.59%
14.52%
Primary
U. Pry
Total
Males
Females
Total


Pale Skin
75.00%
50.00%
25.00%
0.00%
18.69%
24.04%
42.73%
28.05%
25.79%
53.85%
22.40%
24.73%
47.13%
Primary
U. Pry
Total
Males
Females
Total


Pale Tongue
30.00%
15.00%
0.00%
10.98%
11.57%
22.55%
12.22%
15.38%
27.60%
11.47%
13.08%
24.55%
Primary
U. Pry
Total
Males
Females
Total



For protein deficiency signs of hair depigmentation, easy pluck ability, flag sign and moon face were examined. It was observed that 39.07% children had hair depigmentation indicative of protein deficiency at some point of time in previous years. This can be easily correlated with the total amount of protein per day they were consuming during the previous day.

Vitamin A deficiency was checked through the clinical examination of eyes and response of children for difficulty in seeing in evening time. Common observations were pale conjuctiva, night blindness and bitot spot (13.98,3.94, 4.66% respectively).

The health card which is being followed at the schools does not have the symptoms to be examined by health workers.. As per National School Health Programme, Vitamin A capsules are to be given to needy children, however this practice has been taken care of by the health department. Diet survey of previous day of these school children has indicated very low consumption of milk generally between 100-250 ml per day by less than 50% children in Ahmedabad City and around 25% 0f children of rural areas.

Consumption of green leafy vegetables as reported by children was less than 3%. The vegetables consumed by children were potatoes, onion, brinjal, bitter gourd and beans. In Ahmedabad City less than 3% children have reported to consume fruits. In Sabarkatha consumption of fruits per day of mango, melon, grapes and sapota was around 25%. On and off children were consuming raw mango. This indicates that actual consumption of beta carotene was very less and needs specific attention to take care of the situation. School/ Community kitchen gardens may provide some solution to this problem.

To assess aneamia clinical signs including pale conjunctiva(13.98%), pale tongue(24.55%) and pale skin (47.13%) were observed. It may be due to not cleaning the tongue surface regularly. It is to be noted that appearance of clinical signs comes much later after actual deficiency begins. Therefore these results are only indicative, anaemia would be

manifold if haemoglobin of children is measured. The diet has got less amount of green leafy vegetables and iron rich foods. Therefore the problem of anaemia is rampant.

The wheat flour available at Akshay Patra Kitchen was very fine and it appeared closed to refined wheat flour. The school based kitchens have received food grains from FCI which was being ground at local flour mills. The flour was sieved out and husk was removed to great extent. It would be desirable not to have refined wheat flour.

Very few children (3.94%) were observed with Vitamin B Complex deficiency being noted in the form of Magenta tongue, red raw tongue and none with pellagerous dermatitis. Clear signs were not there because actual amount of energy was less than RDA. Vegetable consumption was there however it needs to be increase in their family diet.

The last 10 per cent of the children having lowest academic performance should be checked specially for medical examination particularly for learning eye check-up, anaemia and iodine deficiency disorder.

II Quality and quantity of Mid Day Meal

Quantity of MDM serving

The quantity served per child was generally not consistent in all the schools, which leads to unequal distribution of meals. It was observed that many times cooks and helper do not know how much food is being cooked because the raw ingredients are provided by Sanyojak probably in accordance with number of children present in school on that day. In some schools smaller portions were being served as the cooked MDM was insufficient for the number of children present. It indicated that Sayonjak knows that how many children generally not eat food.

Consistency in serving size was not observed. The first served children got more than the other in primary and upper primary school children.

Quantity for first served

Quantity for later served

The curry made with Bengal gram was very thin having very less amount of Bengal gram thereby reducing the pulse content.

It was also observed that some children leave the serving and throw it in dustbin. The reason for leaving may be due to not liking the taste or on the day of visit it was served more.

One serving of dal dhokli as measured for primary school children was approximately 300 cc, rice 300 cc, dal 200 cc and vegetable 200 cc.

Table-4 Nutritive values of MDM Recipes/ serving eaten by children on the days of visit

Meal	Ingredients	Energy	Protein	Fat	Carotene	Thiamine	Riboflavin	Niacin	Vit B12	Folacin	Vit C	Iron	Calcium	Vit A
Pulao	Rice Onion Potato	433	7.3	8	6.6	0.1	0.1	2.3	0	10.3	3.3	1	16	163.7

	Fat													
Dal chawal+ Baigan	Rice Dal Potato Brinjal Onion Fat	566	10	16	64	0.2	0.2	4	0	38	17	1	34	192
Chana sabzi + Roti	Wheat Flour Bengal Gram Onion Fat	208	6	8	37	0.1	0	1	0	38	0	2	46	119
Khichdi	Rice Dal Fat	361	6	8	5	0	0	2	0	13	0	1	12	3

Table-5 Recommended Dietary Allowances for children (ICMR 2010)

	Age	Weight	Energy (Kcal)	Protein (gm)
	7-9	25.1	1690	29.5
Boys	10-12	34.3	2190	39.9
Girls	10-12	35	2010	40.4
Boys	13-15	47.6	2750	54.3
Girls	13-15	46.6	2330	51.9
Boys	16-17	55.4	3020	61.5
Girls	16-17	52.1	2440	55.5

While Mid Day Meal should be catering to one third of the needs of energy and proteins, on comparison with recommended dietary allowances for Indians (2010) it was observed that the recipes could not meet the expected amounts of energy and proteins. The recipes, namely dal dhokli, roti with Bengal gram, pulao, dal bhaat + brinjal potato and khichdi could provide few of the calories and proteins, as well as micro nutrient such as iron, vitamin C and B vitamins. Mid day meal is expected to provide around 646 kcal while it was observed that only dal bhaat and brinjal potato(566 kcal) could

provide energy close to expected amounts while dal dhokli provided only 168 kcal. Similar was the case with proteins where dal rice and brinjal potato provided around 10 g protein / serving against an expected amount of 34.5 grams, considering a single serving only.

Suggestions for nutritionally balanced meal

To have nutritionally balanced recipe for providing 1/3rd nutrients it is desirable to have cereals and pulses along with vegetables and fruits. In this region drumstick plants are in abundance therefore around 15 g leaves / child may be included in most of the recipes for example drumstick leaves washed and chopped can be needed in wheat flour to make *dhokli*. One piece of sapota or mango approximately 100-150 g may be distributed along with rice.

Pulao is made with potatoes in MDM programme. 20 g of whole Bengal gram for primary and 30 g upper primary be soaked and cooked with *Pulao* to give balance of protein and energy.

The other detailed recipes can be work out, tested and analyzed for organoleptic acceptance by children and parents. One team from (Home Science College) may be entrusted with the work.

Recipes like *lapsi* are not liked by children therefore a substitute for this should be thought of.

There would be several underutilized locally available food items with high nutritive value for micronutrients may be available, these should be identified and popularized during nutrition week and health week of the school.

Recommended dietary allowances for Indians have been modified by ICMR in 2010, therefore, the MDM allowances for protein energy and other micronutrients be modified.

For assessment of anaemia, on sub sample, haemoglobin estimation may be done in place of two different clinical parameters.

There can be more synergy between education department and nutrition professionals at central level.

For clinical examination by nutritionist with health department was commendable, however it should be replicated in other programmes

As per discussion with children, mid day meal helps them in keeping away from hunger and generally children like the meal served in school.

RECOMMENDATIONS

The Review Mission would like to make following recommendations keeping in mind the TOR for the review –

1. It has been observed that coverage of children availing MDM against enrolment is below the national level. It has also been observed that a major chunk of children attending the schools are not availing MDM. It is therefore recommended that the parents should be made aware about the benefits of the programme and entitlement of children. Members of SMC should made deliberate efforts for building the awareness among parents.
2. It is important that all schools are instructed to display MDM logo outside walls of kitchen premises as well on any other prominent place in school so that general public is aware of the MDM scheme being implemented in the school.
3. Kitchen gardens or green squares can be introduced using the waste water from kitchen and hand washing of children. This can become innovative and creative school based activity for the participation of children and teachers to grow drumstick trees and seasonal greens for use in MDM. The nutrition education then can be one of the major activities for children and use of vegetables in MDM can also be ensured.
4. While the SHP has been a successful initiative of the state, increased co-ordination between the PHC, School, the concerned teacher, student and her / his parents by creating and sharing appropriate database could lead to better maintenance of the database for synchronized health check-up and treatment in subsequent years.
5. Engaging the SMC and parents in SHP during check-up would enhance parental care and attention that the children require in this age group. Report cards and feedback to be shared with parents.
6. Capacity building of all the stakeholders at every level is required for effective implementation of the MDMS. A module for school teachers on roles and responsibilities of teachers under MDM may be included in the training curriculum of the teachers under SSA highlighting their nutritional and health needs of the children.
7. In view of the high prevalence of fire wood chulhas as a mode of cooking in the rural areas action may be initiated to provide environment eco-friendly chulhas in convergence with the concerned department in the State. A pilot scheme on installation of solar cookers can be launched in cooperation with Government of India and Ministry of New and Renewable Energy and their Autonomous Organization in the State for manufacturing, installing and

maintaining solar cookers. Similarly, the water harvesting system should be promoted in all the schools.

8. RTE Act has strengthened Community participation through SMCs. However the perusal of minutes of the SMCs indicated that apart from taking the approval of the committee for disbursing funds for MDM no quality discussion is held to improve the implementation of the scheme. It is recommended that the implementation of MDM should be made a compulsory agenda during the meeting to ensure the smooth running of the scheme.
9. Inspection is an important component for smooth implementation of the Scheme at the grass root level. Regular inspection has been made mandatory by the State Government by different District and Block level officials. Effective monitoring mechanism should be developed by the State Govt. to ensure periodic inspection of the scheme by officials at all levels. Inspecting Officers should record their observations on the implementation of the Scheme. The PRIs or SMC member or any government official can write their remarks/comments about their observations of MDM in school.
10. Provisions of Social and Community Audits should be made by the government to evaluate the implementation of programme and to identify gaps, with the involvement of PRIs and S.M.C members. The process should begin with capacity building of the concerned persons for the purpose.
11. It has been observed that still there are a lot of vacant positions/staff for implementing the scheme especially at district and block levels. It is recommended that designated staff strictly for the scheme should be engaged at all levels. These could be in the like MBAs, Nutritionists etc. at the appropriate levels from the MME funds.
12. State Review Mission: The State Govt. should also constitute Review Mission at the State level on the lines of Review Mission designated by GOI to different States and send them to various districts of the State every six months to review the implementation of the programme.
13. As Management Information System integrated with IVRS will become operational very soon. The districts have to speed up the process of data feeding. To handle huge data and updating the data into the web portal regularly, data entry operators have to be engaged on regular basis in every district.
14. It is observed that each of the State/UT is following some best practices in the implementation of MDM. In this connection, it is recommended that the inter-State exposure visits can be conducted for MDM implementing officials for better implementation of the scheme.

15. The option of cluster kitchens – the “hub and spoke model” run by SHGs should be explored before operationalizing centralized kitchens for the entire city and wherever the shift from SHG to centralised kitchen is done an independent assessment be done to understand the strength of each one.
16. A book of low cost nutritious recipes be developed keeping the profiles of different regions of the state in mind to ensure standardised intake of cereals, pulses and other food groups. To facilitate scaling up of the recipes a ready reckoner for cooking in varying quantities be developed.

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