



Government of India

Ministry of Human Resource Development

Department of School Education & Literacy



**मध्याह्न भोजन योजना
Mid Day Meal Scheme**

**Report of 10th Joint Review Mission on
Mid-Day Meal Scheme**

**Madhya Pradesh
(2-8th October, 2017)**

Acknowledgment

Our team comprising of experts from the field of nutrition, Consultants of TSG MDM; is grateful to the ministry of HRD, Government of India for constituting this Joint Review Mission and giving us the opportunity to undertake this task in the state of Madhya Pradesh. We thank the Department of Panchayati Raj (Government of Madhya Pradesh) for hosting the Joint Review Mission (JRM) in Madhya Pradesh.

We are thankful to the officials of the Department of Panchayati Raj and Department of Education (Government of Madhya Pradesh) for co-operation during the entire period of JRM.

A special word of thanks to the principals, teachers, particularly the MDM in-charges and the non-teaching staff of various schools visited by the mission for their co-operative interaction and providing the relevant information regarding the status of MDM in their respective schools.

Since nutrition is important component of the current JRM, we thank the school children for the patient co-operation in the entire process of data collection particularly the data on anthropometry.

Despite the various field level constraints, the team's constant, tireless dedication brought out an insight of the present on-going MDM scheme at various schools. Jointly, it tried to cover various aspects relating to MDM which included infrastructure, fund allocation, monitoring, evaluation, Rashtriya Bal Swasthya Karyakram, meal service and delivery as well as anthropometric measurements of the school children which were indicated in the Terms of Reference of the JRM.

We hope that through our observations and data collection, we have been able to capture the entire array of discussions with the officials/stake holders at various levels and that the concerned recommendations put forth by the mission in this report will prove helpful to the Government of Madhya Pradesh in implementing the Mid-Day Meal Scheme in a more systematic and effective manner which will go a long way in promoting health and nutritional status of the children of this state.

JRM TEAM,

Madhya Pradesh: October 2017

MID DAY MEAL SCHEME JOINT REVIEW MISSION

Madhya Pradesh

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CHAPTER 1

Composition and Terms of Reference (TOR)

Nutrition is directly linked to human resource development, productivity and ultimately to the nation's growth. Malnutrition on the other hand is a complex phenomenon. It is both the cause and effect of poverty and ill health: and follows a cyclical, inter-generational pattern. It is inextricably linked with illiteracy, especially female illiteracy, lack of safe drinking water, sanitation, ignorance, lack of awareness and ill health. It creates its own cycle within the large cycle of poverty. Malnutrition adversely affects Universalization of Elementary Education (UEE). Even if a malnourished child does attend school, he/she finds it difficult to concentrate on and participate in the learning activities in school. Unable to cope, the child would very often drop out of school.

Various studies suggests that absence of an adequate breakfast over extended period can affect both behavior and nutritional status; such children exhibit irritability, decreased attentiveness and low concentration span, all of which affect their active learning capacity. Malnutrition is therefore not just an issue for the nutritionist; the planners and economists also need to recognize that the cost of malnutrition is much greater than the investments required to end hunger/malnutrition.

The Mid- Day Meal (MDM) Scheme is a flagship programme of the Government of India. having the distinction of being the largest school feeding programme in the world reaching out to about 9.78 crore children in 11.43 lakh primary and upper primary schools (Government, Government Aided and Local bodies), Education Guarantee Scheme (EGS) / Alternative Innovative Education (AIE) centres and Madarsa and Maqtabs supported under Sarva Shiksha Abhiyan (SSA) as well as National Child Labour Project (NCLP) schools. In drought-affected areas MDM is served during summer vacation also.

A programme of scale and magnitude of Mid Day Meal requires close monitoring and evaluation at all levels. In 2010, the Ministry of Human Resource Development, Govt. of India, decided to review implementation of the programme

in all its aspects through the Review Missions, which are also to provide suggestions for improvement.

1.1 Joint Review Mission – Team Members

1. **Dr. Neelam Grewal**, Dean, Postgraduate Studies Punjab Agricultural University, Ludhiana (Mission Leader).
2. **Dr. Mridula Saxena**, Professor & HOD, Home Science & Hospitality Management PSS, Central Institute of Vocational Education (NCERT) Bhopal
3. **Shri Bhimbhai Patel**, Joint Commissioner, MDM, Madhya Pradesh
4. **Shri Bhupendra Kumar**, Senior Consultant, TSG-MDM, EdCIL
5. **Shri Davendra Kumar**, Consultant TSG-MDM, EdCIL

Ms. Rohini Jain, Ms Amritpal Kaur, Ms Naina Bhatt & Ms Neetu Pal were the research assistants for the Mission.

The Mission comprising of the above mentioned members visited 19 schools and centralized kitchens of Shri Nakoda Samiti in district Dewas and 13 schools in district of Sehore.

1.2 The Terms of Reference for the Review Mission were as under:

- i. Review the fund flow from State to Schools/implementing agencies.
- ii. Review the coverage of the Scheme
- iii. Review the availability of Management Structure at State, District, Block level
- iv. Review the delivery mechanism of food grains from State to Schools
- v. Review the smooth implementation of the Scheme with particular reference to Interruptions.
- vi. Review the Creation of Capital Assets

- vii. Construction of Kitchen-cum-stores
- viii. Procurement/Replacement of Kitchen Devices
- ix. Review the involvement of NGO's/Trust/Centralized kitchens in the Scheme
- x. Review the payment of Cost of Food grains to Food Corporation of India
- xi. Review the convening the meetings of District Level Committee under Chairpersonship of senior most Member of Parliament.(Lok Sabha)
- xii. Review the Management Information System (MIS)
- xiii. Review the implementation of Automated Monitoring System
- xiv. Convergence with Rastriya Bal Swasthya Karyakram for health check-up, supplementation of micronutrients under WIFS & deworming medicine under National deworming day and health checkups and supply of spectacles to children suffering from refractive errors.
- xv. Review the following**
 - a. Operationalization of Mid-Day Meal Rules, 2015
 - b. Dissemination of Food Safety Guidelines up to District, Block and School
 - c. Enrolment of children and Cook-cum-Helpers under Aadhaar
 - d. Payment of Honorarium to Cook-cum-Helpers
 - e. System of Storage food grains and other ingredients
 - f. Role of Teachers in Mid-Day Meal Scheme.
 - g. Tasting of MDM by Teacher, Parents and Community.
 - h. Testing of meals
 - i. Involvement of Community
 - j. Bank Account of Cook-cum-helpers
 - k. Awareness of the Scheme

I. Contingency Plan

Terms of Reference for Nutritional aspects:

- a. To assess the anthropometric measurements of a sample of children availing MDM
- b. Height ii. Weight iii. Mid arm Circumference
- c. To Calculate the Body Mass Index (BMI) on the basis of measurement of height and weight.
- d. To identify the children who are undernourished and over nourished.
- e. To review the quality and quantity of the served MDM.
- f. To review the satisfaction of the children parents and community on the served meal under MDM in respect of quality and quantity.
- g. To suggest some nutritionally balanced region specific recipes.

1.3 Food and Nutrition norms through the years under MDM:

Initially the MDM Scheme envisaged the provision of free of cost 100g of wheat /rice for children studying in classes I-V in all Government, local body and Government aided primary schools. The central government provided wheat /rice to the States/UTs; 3 kg of cereals were to be distributed free of cost to children who had over 80% attendance in the previous month. Most of the states distributed food grains to children but some states who were earlier providing cooked mid day meal or ready to eat food to school children, continued to do so.

In 2001 Hon'ble Supreme Court of India ruled that MDM is a legal entitlement for all children and that the government should provide a hot cooked mid day meal containing 300kcal energy and 12 g of protein/day for 200 days to all children studying in classes I-V in all government, local body and government aided primary schools .

In 2006, Department of Primary Education constituted an Expert Committee to review the content and quantity of ingredients to be provided through the MDM.

The expert committee recommended that MDM should provide hot cooked meal containing 100g of cereals, 20g of pulses.

Table 1: Revision of food norm w.e.f. 1.12.2009

Nutritional content	Norm as per NP-NSPE,2004	Revised norm as per NP- NSPE,2006
Calories	300	450
Protein	8-12 g	120
Micro – nutrients	Not prescribed	Adequate quantities of Micro nutrients like Iron, folic Acid and Vitamin A

Food norms have been revised to ensure balanced and nutritious diet to children of upper primary group by increasing the quantity of pulses from 25 to 30 grams, vegetables from 65 to 75 grams and by decreasing the quantity of oil and fat from 10 grams to 7.5 grams.

1.4 Nutrition Content under MDMS: Presently

- a) 450 kcal and 12g of protein which is derived from 100 g of food grains (rice/wheat), 20g of pulses , 50g of vegetables and 5g of oil for children studying in primary classes and
- b) 700 kcal and 20g of protein, which is derived from 150g of food grains (rice/wheat), 30g of pulses , 75g of vegetables and 7.5g of oil in upper primary classes.

Table 2: Quantity of Ingredients

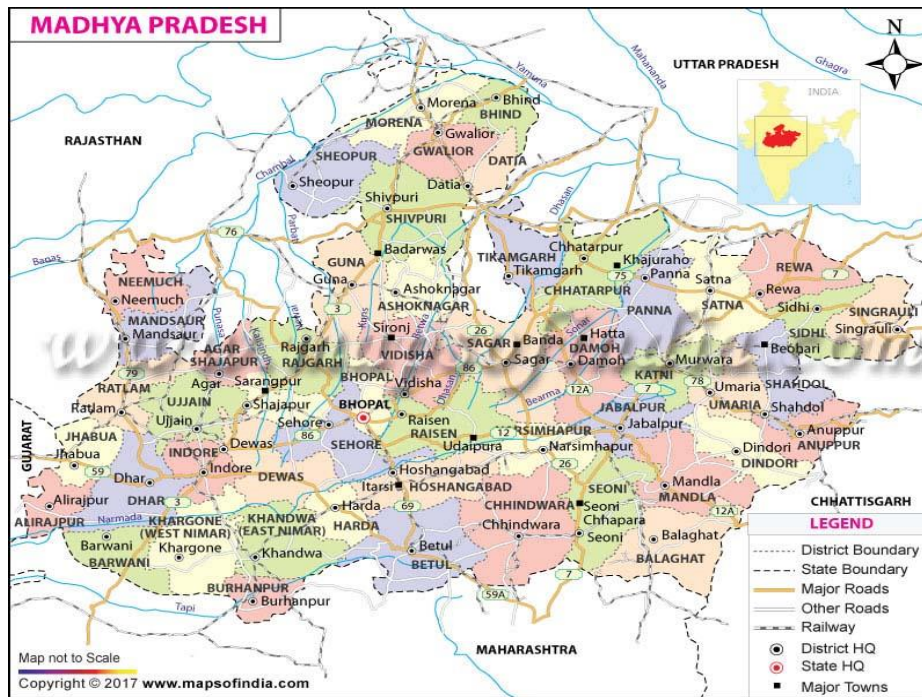
S. No.	Items	Quantity per Child per Day	
		Primary	Upper Primary
1.	Food grains	100 g	150 g
2.	Pulse	20 g	30 g
3.	Vegetables (leafy also)	50 g	75 g
4.	Oil & fat	5 g	7.5 g
5.	Salt & Condiments	As per need	As per need

1.5 Madhya Pradesh: An Introduction

Madhya Pradesh is a state in central India. Its capital is Bhopal and the largest city is Indore with Gwalior, Jabalpur, and Ujjain being the other major cities. Madhya Pradesh is the second-largest state in the country by area. It is the fifth-largest state in India by population. It borders the states of Uttar Pradesh to the northeast, Chhattisgarh to the southeast, Maharashtra to the south, Gujarat to the west, and Rajasthan to the northwest. Its total area is 308,252 km. Before 2000, when Chhattisgarh was a part of Madhya Pradesh, Madhya Pradesh was the largest state in India and the distance between the two furthest points inside the state, Singoli and Konta, was 1500 km.

Madhya Pradesh literally means "Central Province", and is located in the geographic heart of India, between latitude 21.2°N-26.87°N and longitude 74°02'-82°49' E. The state straddles the Narmada River, which runs east and west between the Vindhya and Satpura ranges; these ranges and the Narmada are the traditional boundary between the north and south of India. The highest point in Madhya Pradesh is Dhupgarh, with an elevation of 1,350 m (4,429 ft)

The area covered by the present-day Madhya Pradesh includes the area of the ancient Avanti Mahajanapada, whose capital Ujjain (also known as Avantika) arose as a major city during the second wave of Indian urbanisation in the sixth century BCE. Subsequently, the region was ruled by the major dynasties of India. By the early 18th century, the region was divided into several small kingdoms which were captured by the British and incorporated into Central Provinces and Berar and the Central India Agency. After India's independence, Madhya Pradesh state was created with Nagpur as its capital: this state included the southern parts of the present-day Madhya Pradesh and north eastern portion of today's Maharashtra. In 1956, this state was reorganised and its parts were combined with the states of Madhya Bharat, Vindhya Pradesh and Bhopal to form the new Madhya Pradesh state, the Marathi-speaking Vidarbha region was removed and merged with the then Bombay State. This state was the largest in India by area until 2000, when its south eastern Chhattisgarh region was made a separate state.



Population:

With more than 75 Million people according to 2011, the number of tribal's in Madhya Pradesh was 12,233,000, constituting 20.27% of the aggregate population. Talking about population, in order to check out the population of Madhya Pradesh in 2017, we need to have a look at the population of the past 5 years. They are as per the following:

1. 2012 – 73.34 Million
2. 2013 – 74.7 Million
3. 2014 – 75.9 Million
4. 2015 – 76.4 Million
5. 2016 – 77.9 Million

Taking a look at the population of Madhya Pradesh from the year 2012-16, it has been noticed that there has been an increase of 4.56 Million in the past 5 years. Therefore, it has been seen that every year the population increases by 0.912 Million. Hence, the population of Madhya Pradesh in 2017 is forecasted to be $77.9 \text{ Million} + 0.912 \text{ Million} = 78.812 \text{ Million}$. So, the population of Madhya Pradesh in the year 2017 as per estimated data = 78.812 Million.

Literacy:

According to the 2011 census, Madhya Pradesh had a literacy rate of 72.60%. According to the 2009–10 figures, the state had 105,592 primary schools, 6,352 high schools and 5,161 higher secondary schools. The state has 208 engineering & architecture colleges, 208 management institutes and 12 medical colleges

1.6 District: Dewas

Dewas District is a district of Madhya Pradesh state in central India. The town of Dewas is the district headquarters. Dewas District roughly corresponds to the territories of the twin princely states of Dewas. The district straddles the Vindhya Range; the northern portion of the district lies on the Malwa plateau, while the southern portion lies in the valley of the Narmada River. The Narmada forms the southern boundary of the district. The district is bounded to the east by Sehore District, to the south by the Harda and Khandwa districts, to the west by the Khargone and Indore districts, and to the north by the Ujjain and Shajapur districts. Dewas District is part of Ujjain Division. Devsaal Rawats of Uttarakhand are said to have their origins in Dewas at the time of legendary king Vikramāditya.



Dewas District is now divided into six tehsils namely Sonkatch, Dewas, Bagli, Kannod, Tonk Khurd and Khategaon. Dewas tehsil is situated on the north-western part of the district, Sonkatch on the north-eastern part, Bagli on the south, Kannod on the south-central part and Khategaon on the South-east. Dewas, the headquarters of Dewas tehsil, which is also the district headquarters, is situated on National Highway No. 3 and is also connected by broad-gauge railway line of western Railway.

POPULATION:

An official Census 2011 detail of Dewas, a district of Madhya Pradesh has been released by Directorate of Census Operations in Madhya Pradesh. Enumeration of key persons was also done by census officials in Dewas District of Madhya Pradesh.

In 2011, Dewas had population of 1,563,715 of which male and female were 805,359 and 758,356 respectively. In 2001 census, Dewas had a population of 1,308,223 of which males were 677,866 and remaining 630,357 were females. Dewas District population constituted 2.15 percent of total Maharashtra population. In 2001 census, this figure for Dewas District was at 2.17 percent of Maharashtra population.

There was change of 19.53 percent in the population compared to population as per 2001. In the previous census of India 2001, Dewas District recorded increase of 26.50 percent to its population compared to 1991.

1.7 District: Sehore

According to the 2011 census Sehore District has a population of 1,311,008, roughly equal to the nation of Mauritius or the US state of New Hampshire.^[3] This gives it a ranking of 373rd in India (out of a total of 640). The district has a population density of 199 inhabitants per square kilometre (520/sq mi). Its population growth rate over the decade 2001-2011 was 21.51%. Sehore has a sex ratio of 918 females for every 1000 males, and a literacy rate of 71.11%.



POPULATION:

Sehore city is governed by Municipal Corporation which comes under Sehore Metropolitan Region. The Sehore city is located in Madhya Pradesh state of India.

As per provisional reports of Census India, population of Sehore in 2011 is 108,909; of which male and female are 56,219 and 52,690 respectively. Although Sehore city has population of 108,909; its urban / metropolitan population is 109,118 of which 56,335 are males and 52,783 are females.

CHAPTER 2

Methodology

The districts have been selected on the basis of performance of the Scheme during the last year. As per the ToR for the Review Mission, one district Seohre was selected by the Govt. of India and the other district Dewas was selected by the State Govt. The multistage stratified random sampling was used for selection of schools in the selected districts. The Review Mission followed a methodology to capture the intricacies involved in the implementation of the programme. From Dewas district blocks were selected purposively so as cover schools getting MDM from NGO Shri Nakoda Samiti or cooked by Self Help Groups. Instead of selecting a large sample, the review mission emphasized for a greater in depth study to see the details in their entirety.

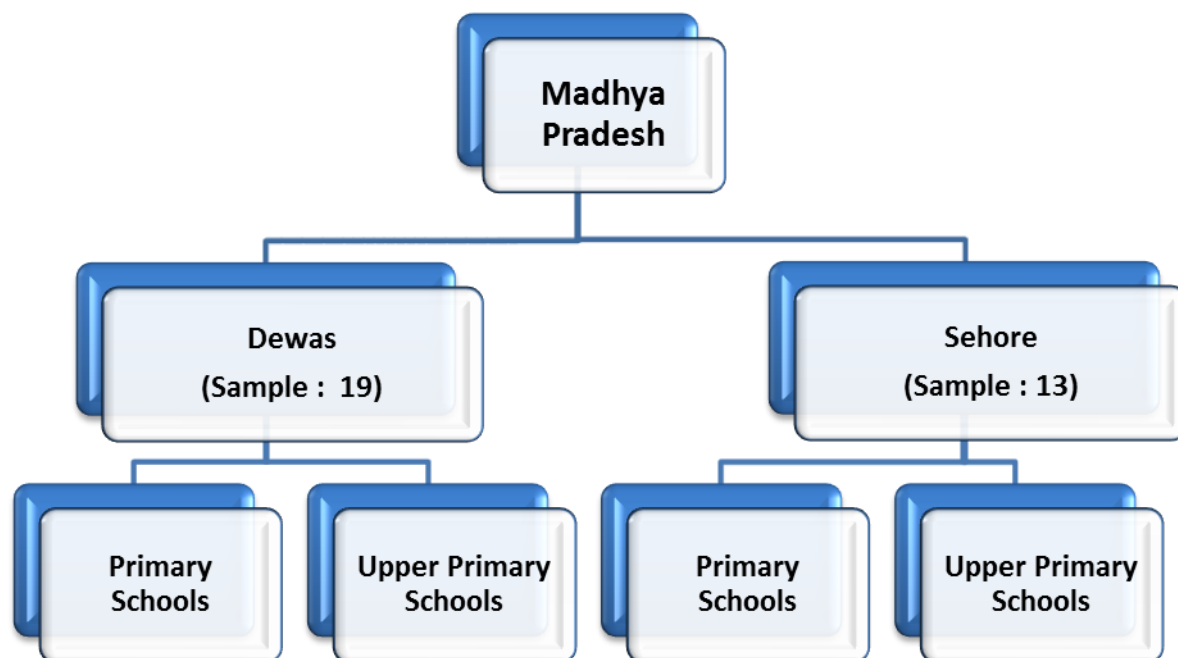
B: NUTRITIONAL ASSESSMENT

A nutritional survey in a total of 32 government run primary and upper primary schools of two the two selected districts, namely Dewas and Seohre was undertaken in which a total of 727 school children were surveyed with an objective to collect information related to the following aspects of children availing Mid Day Meal:

- Food pattern
- Anthropometric profile
- Clinical signs of nutritional deficiencies
- Quality and quantity of MDM

Methodology

Selection of sample A sample of children from primary (I- V class) and upper primary schools (VI-VIII class) from the two districts of Madhya Pradesh were randomly selected. A multi stage stratified random sampling method was used for selection of schools in the selected districts.



Food Pattern: The food pattern of the children was studied by asking them what they have taken in the morning before coming to school, during the school and after the school till they went off to sleep. The 24 hour dietary recall method was employed to know about the diet of the previous day. The information thus obtained was considered to be the general dietary pattern including the food items consumed.T

Anthropometric Profile: The height and weight of selected children was measured using standard methods (Jelliffe, 1966). The Body Mass Index (BMI) was calculated using the following equation given by Garrow (1981):

$$\text{BMI} = \text{Weight} / \text{Height}^2$$

Where, weight is in kilogram and height is in meters.

The height, weight and BMI were analyzed for Z - scores using WHO Global Database on Child Growth and Malnutrition (WHO, 2006).

The children were classified into normal (-2SD to +1SD), undernourished (< -2SD) and overweight (+1SD to +3SD) categories based on their Weight for Age (WAZ) and Height for Age (HAZ). Similarly, based on their BMI Z-scores, the children were classified into following categories :

Normal	: -2SD to +1SD
Moderately undernourished	: -2SD to -3SD
Severely undernourished	: < -3SD

Overweight : +1SD to < +3SD

Obese : \geq +3SD

Clinical Survey: A Clinical survey was undertaken to study the conspicuous signs of protein deficiency, vitamin A deficiency, B complex deficiency and iron deficiency anaemia. Dental health of the students was also studied as a part of the clinical survey. The results of the survey have been presented in a tabular form.

Quality and Quantity of MDM: The quality and quantity of MDM was assessed by visiting schools at the time of serving of MDM. One 'food serving' was measured with the help of a measuring cup. The quantity of food was classified into more than adequate, adequate and inadequate. Quality of MDM served was assessed as poor, average, good and very good.

CHAPTER 3

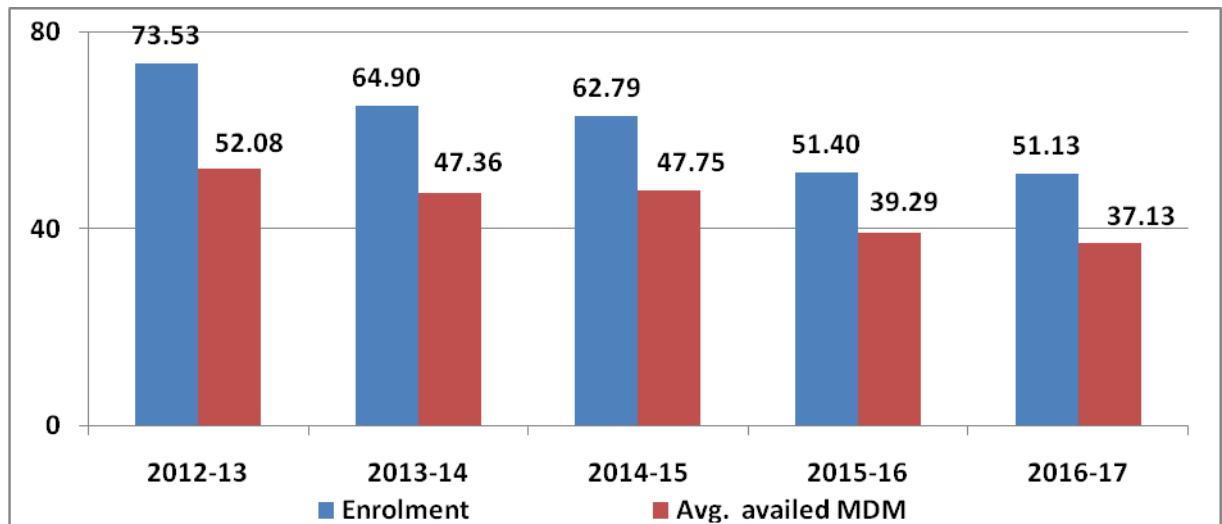
Review of performance: Physical and financial (2012-13 to 2016-17)

3.1 Coverage of children: Primary

A perusal of the figures given in the below table shows a constant decreasing trend of enrolment i.e. enrolment has been reduced by almost 22.4 lakh children in the primary section.

Year	Enrolment	PAB approval	Avg. availed MDM	% availed vs. Enrol.	% availed vs PAB approval
2012-13	7352733	5800000	5208267	71%	90%
2013-14	6490497	5250202	4735767	73%	90%
2014-15	6279376	5000000	4774525	76%	95%
2015-16	5139630	4584835	3928905	76%	86%
2016-17	5113249	3928905	3713140	73%	95%

Graph : Decreasing trends of enrolment and Average number of children availing MDM (in lakh):
Primary



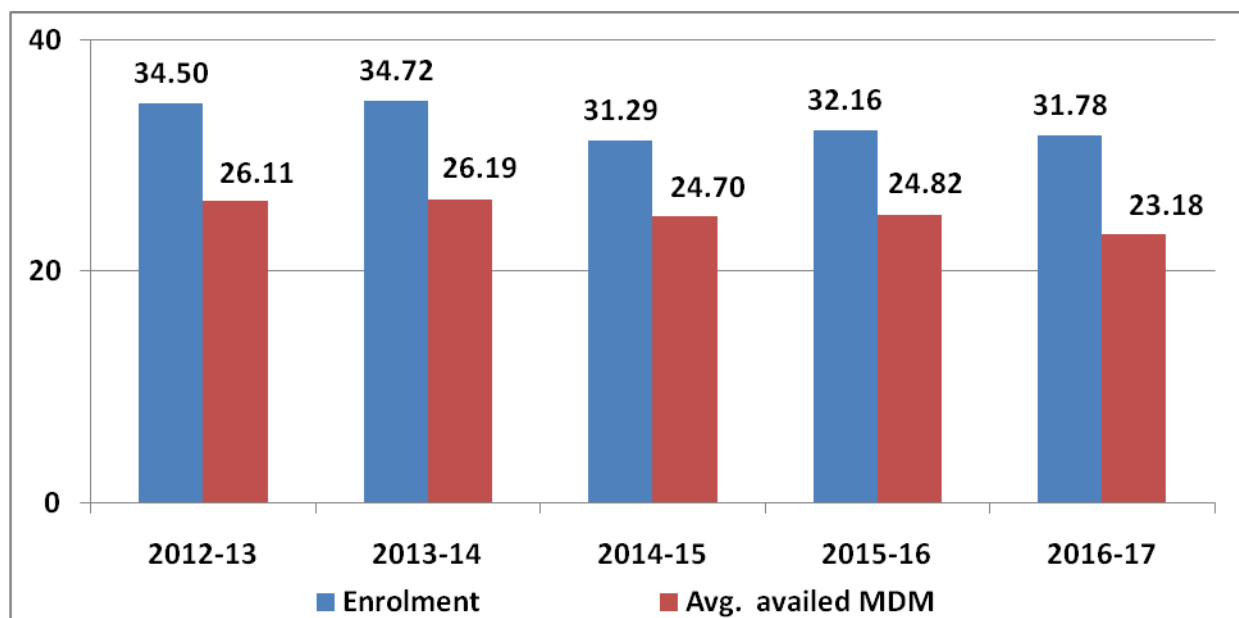
3.2 Coverage of children: Upper Primary

Unlike Primary the decline in enrolment is not as much in upper primary stage, but at the same time the decline in coverage of children under MDMS is quite sharp, as only 73%

of the enrolled children have availed mid day meal on an average basis during 2016-17, whereas the coverage during 2014-15 was 79%.

Year	Enrolment	PAB approval	Avg. availed MDM	% availed vs. Enrol.	% availed vs PAB approval
2012-13	3449546	2700000	2611387	76%	97%
2013-14	3471829	2630241	2619067	75%	100%
2014-15	3128779	2662063	2470066	79%	93%
2015-16	3215857	2610034	2482485	77%	95%
2016-17	3178388	2482485	2318261	73%	93%

Graph : Trends of enrolment and Average number of children availing MDM (in lakh) : Upper Primary

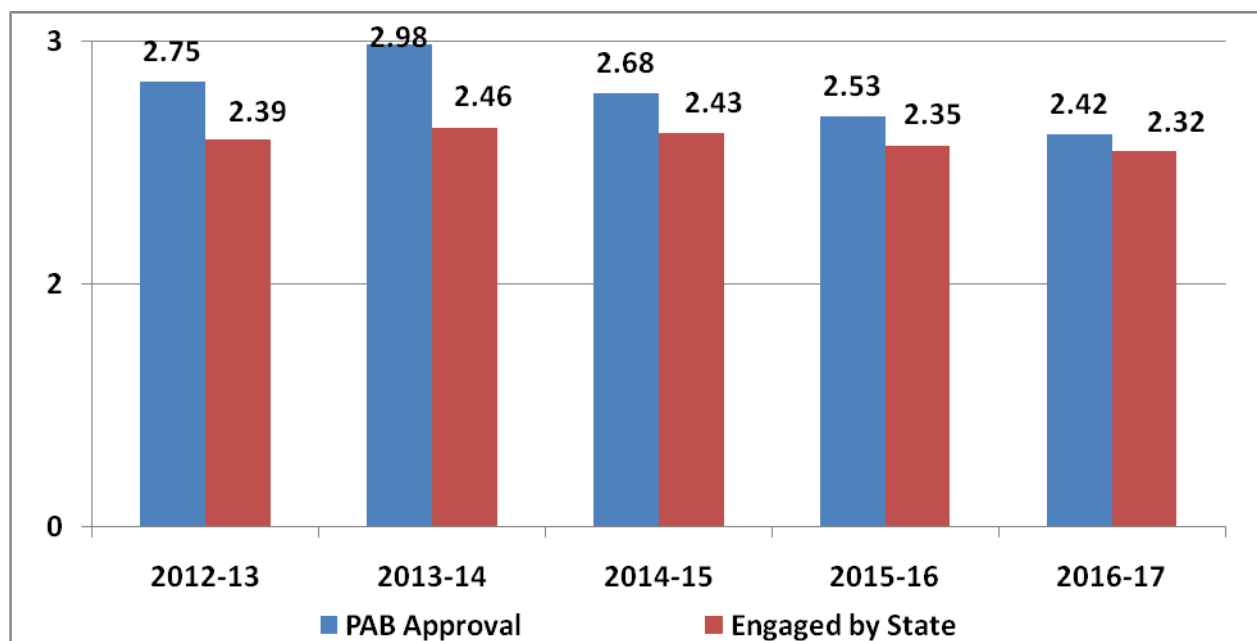


3.2 Engaged of Cook-cum-helper

The State Government has engaged 2,32,183 Cook-cum-helpers against the PAB-MDM approval of 2,42,365

Year	PAB approval	Engaged	% Engaged
2012-13	275131	239387	87%
2013-14	297964	246347	83%
2014-15	267785	243309	91%
2015-16	253495	234873	93%

2016-17	242365	232183	96%
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3.3. Details of Allocation of funds and Expenditure against Central Assistance

(Rs. in Lakh)

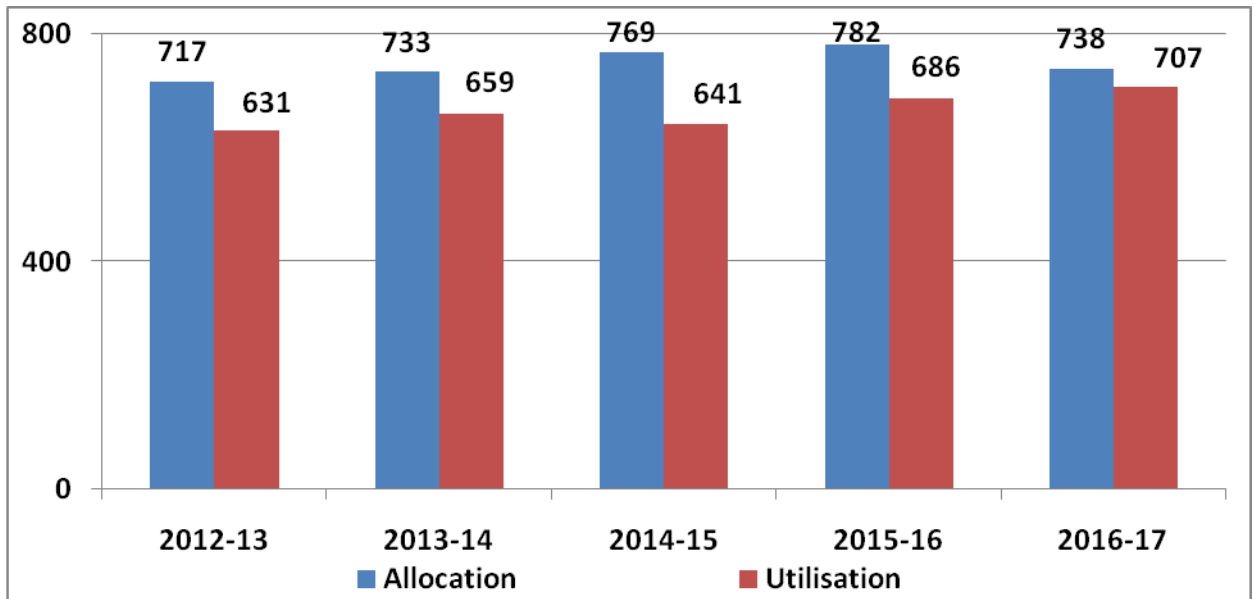
Year	Cooking cost		TA		Hon. to CCH		MME	
	Allocation	Util.	Allocation	Util.	Allocation	Util.	Allocation	Util.
2012-13	71673.21	63118.79	1742.23	1062.40	20634.83	16945.32	1566.35	1424.25
2013-14	73319.84	65893.79	1659.86	1243.57	22347.30	18994.55	1636.75	1231.90
2014-15	76874.20	64090.01	1619.73	1174.21	20083.88	14631.47	1612.27	271.50
2015-16	78189.23	68636.72	1530.69	1212.81	15209.70	16702.12	1321.04	1126.65
2016-17	73810.53	90669.41	1349.47	1339.37	14541.90	11692.41	1151.03	1845.27

3.4 Component wise Details of Allocation and Expenditure of funds against Central Assistance

◆ Utilisation of Cooking Cost

(Rs in lakh)

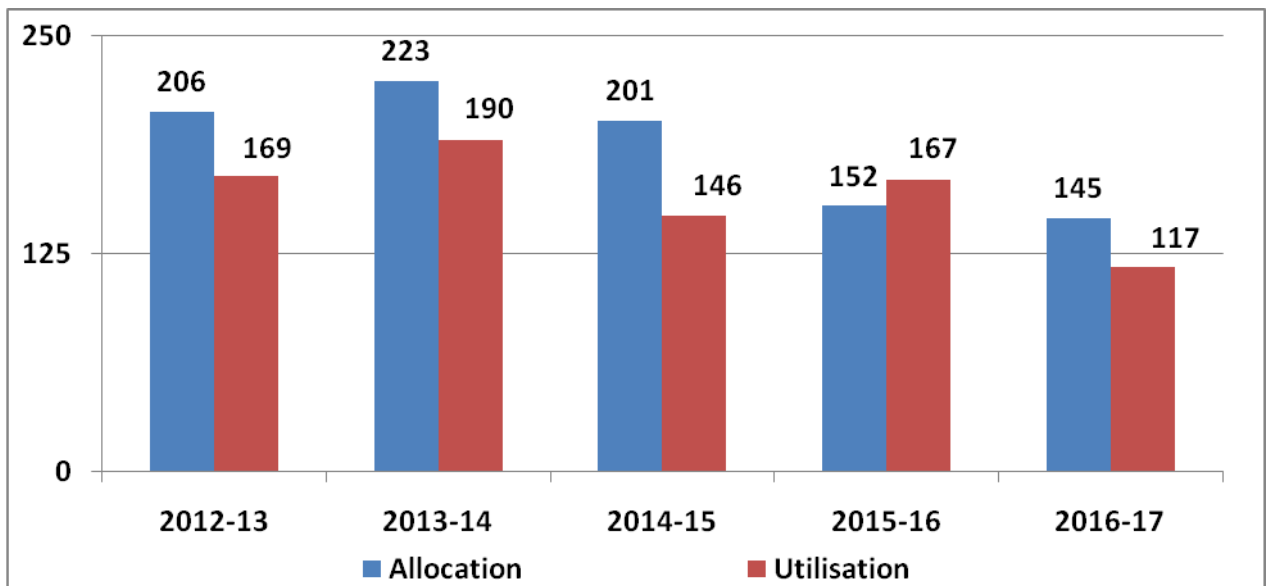
Cooking Cost	2012-13	2013-14	2014-15	2015-16	2016-17
Allocation of Funds	71673.21	73319.84	76874.20	78189.23	73810.53
Expenditure	63118.79	65893.79	64090.01	68636.72	70669.41



◆ **Utilisation of Honorarium to Cook-cum-helpers**

(Rs in lakh)

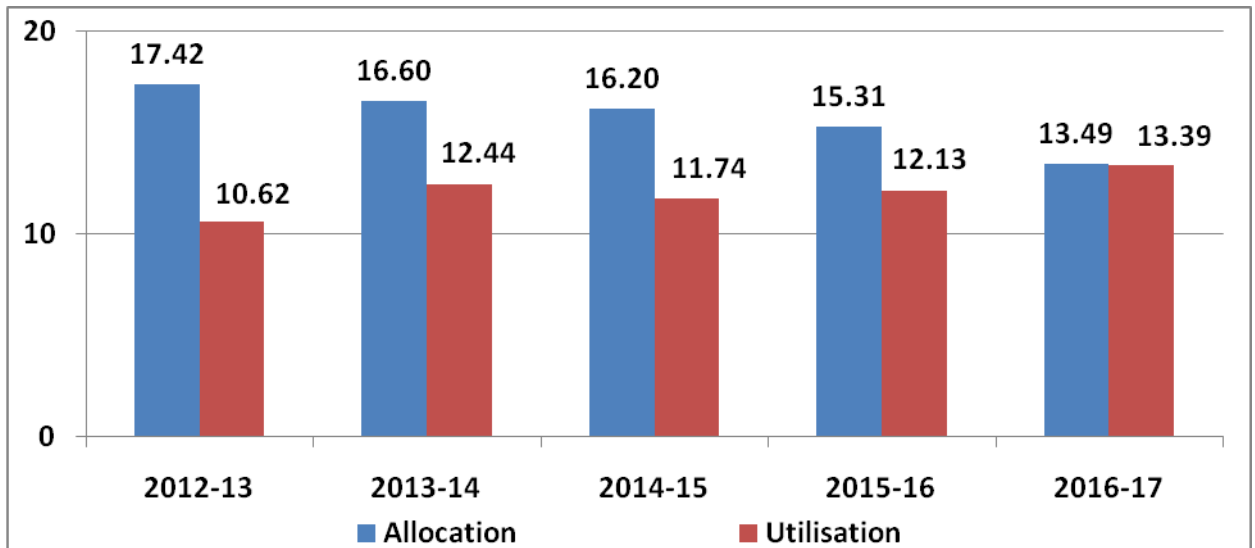
Hon. to CCH	2012-13	2013-14	2014-15	2015-16	2016-17
Allocation of Funds	20634.83	22347.30	20083.88	15209.70	14541.90
Expenditure	16945.32	18994.55	14631.47	16702.12	11692.41



◆ **Utilisation of Transportation Assistance**

(Rs. in lakh)

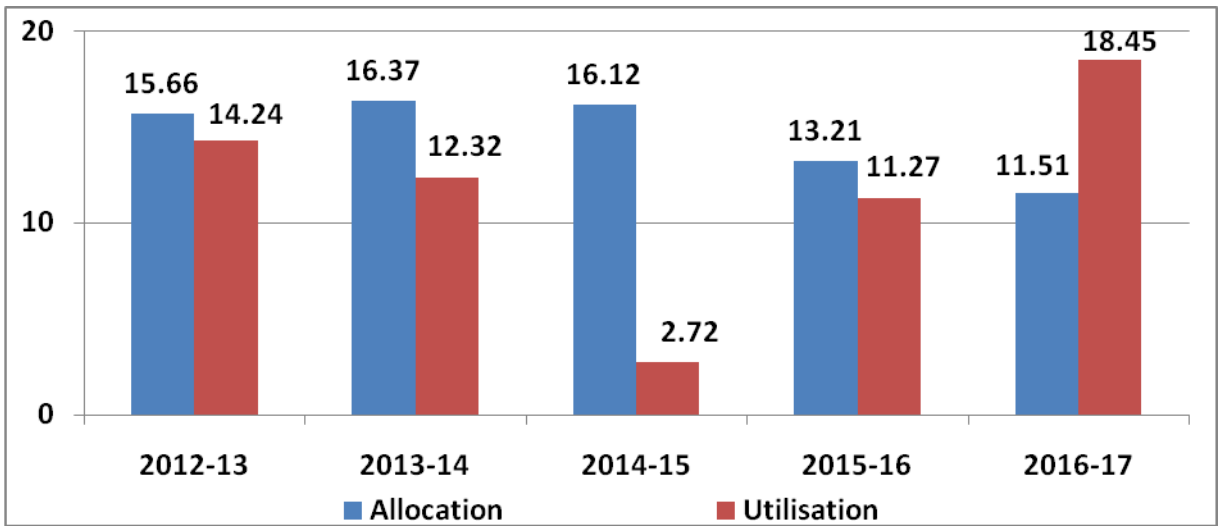
Transportation Asst.	2012-13	2013-14	2014-15	2015-16	2016-17
Allocation of Funds	1742.23	1659.86	1619.73	1530.69	1349.47
Expenditure	1062.40	1243.57	1174.21	1212.81	1339.37



◆ **Utilisation of Management Monitoring and Evaluation (MME)**

(Rs. in lakh)

MME	2012-13	2013-14	2014-15	2015-16	2016-17
Allocation of Funds	1566.35	1636.75	1612.27	1321.04	1151.03
Expenditure	1424.25	1231.90	271.50	1126.65	1845.27



CHAPTER: 4

Observations from the Field as per the ToR

4.1 Fund flow Mechanism from State Government to Schools/cooking agency and the time taken in this process.

The Government of Madhya Pradesh has linked the release of funds and foodgrains with the web based system of Education Department since July, 2017. Now the funds are released directly to the implementing agencies at school level. The details of release of funds during 2017-18 are given below:

Component	Fund received		Funds released (Rs in lakh)			
	Date	Amount	District		School	
			Date	Amount	Date	Amount
Cost of FG	03/05/2017, 13/07/2017	948.35	--	0.00	--	0.00
Cooking cost	03/05/2017, 13/07/2017	27456.02	--	0.00	29.09.2017 08.08.2017	8005.94
Hon. to CCH	03/05/2017, 13/07/2017	14541.89	--	0.00	29.09.2017 08.08.2017	6156.58
Transportation Asst.	03/05/2017, 13/07/2017	414.22	--	0.00	--	0.00
MME	03/05/2017, 13/07/2017	492.61	30.08.2017	200.00	--	0.00
Kitchen-cum-store	--	0.00	--	0.00	--	0.00
Kitchen Devices	--	0.00	--	0.00	--	0.00

Funds for Cooking Cost, Cook-Cum-Helper, MME, Cost of foodgrain and transportation cost is directly released by e-transfer from the state level also funds are transferred into implementing agencies accounts for cooking cost and into cooks account directly or into SMC's account for cook-cum-helper's honorarium. Cost of foodgrain is also transferred by e-transfer into FCI/NAN account as soon as bills are submitted by them to state authorities. MME fund is also transferred in the same manner and it further transfers it into SMC's

account and a part of it retaining at the district level for miscellaneous administrative and management expenses.

The Review Mission observed that funds were released directly to the accounts of self help groups working at school level. It was informed that at present cooking cost and foodgrains are released at a flat rate of 65% of the enrolment in the schools.

4.2 Management and Monitoring Mechanisms

Appropriate arrangements have been made in all aspects to provide regular mid day meal in schools. In urban areas MDM is mainly implemented by Centralized Kitchen arrangement managed by NGO's and SHG's. In Rural areas mainly Women Self Help Groups (SHGs) are responsible for regular implementation of the programme. The cooked food is provided as per the menu. To ensure that the stipulations regarding hygiene, quantity and quality of cooked food are maintained, appropriate supervisory mechanism have been established at the local level. Cluster Resource Coordinator (CRC) of School Education Department has been entrusted with the responsibility of intensive monitoring of every school under their jurisdiction, at least once in a month.

The District Project Coordinator, ZilaShikshaKendra, PO MDM/TM/QM/CEO-JP/PCO regularly visit schools and submit their report to Chief Executive Officer, Zila Panchayat.

The district level and block level Steering Cum Monitoring Committees also reviews the inspection reports of various authorities and takes necessary corrective measures at their levels.

There is a good system of Monitoring by Community in the State. In all the visited schools a roster was maintained and the mothers, parents, community members on rotation basis taste meal cooked under MDM before it is served to children. They also make observation on pre cooking processes like washing of utensils, cutting and cleaning of vegetables, etc and a register is maintained in each school to record their observations. In addition to this Antyodaya Card Holder/Senior Citizens also monitor and supervise MDM in schools. For this, a panel of 3-5 senior citizens has been constituted in

schools, these card holders are also offered one full meal. Every school keep one sample of cooked food for 24 hrs in a sealed tiffin.

The Joint Review Mission was briefed that schools are being inspected by the State, District and Mandal Level Officers. Although all schools are being visited by Cluster / Block level officials but it seems that the vital parameters were neglected related to MDMS. The officials are looking at only the regularity of serving of the MDM but not at the quality or quantity being given to children and the records.

It is strongly felt that all officers dealing with MDM need orientation and awareness of MDM scheme and implementation urgently.

As per the information provided by the State, out of the total sanctioned post of 214 contractual staff at the district level only 110 are being engaged. Thus, large number of posts are vacant as far as dedicated staff for MDM is concerned.

4.3 Food grains:

In the State Nagrik Apurti Nigam (NAN) is responsible for providing food grain to implementing agencies through PDS shops. After lifting food grains from NAN depot, suitable arrangement have been made at all levels for its safe and secured storage. M.P. State Civil Supplies Corporation Ltd and representatives of District Collectors carry out joint inspections of food grains for monitoring Fair Average Quality (FAQ) of the supply. The supply of FAQ of variety of foodgrain monitoring is also done at the level of lead society, link society and SHGs/SMCs. After inspection District Manager, MP State Civil Supplies Corporation Ltd. submits a monthly report to the State Coordinator, MDM with regard to FAQ Food grains supply.

The mission observed that the quality of rice and wheat supplied to self-help groups was good in general barring two instances. Most of the SHGs and the centralized kitchens reported about less receipt of foodgrains and thus they have to manage it from borrowing it. In 22 visited schools, which are being catered through SHGs, in only 4 schools the foodgrains were kept in schools. In all the remaining schools foodgrains were kept at the SHG's house. There

was no proper record maintained about the availability and utilization of the foodgrains.

4.4 Engagement of Cook cum Helpers:

The State Government has engaged 2,32,183 Cook-cum-helpers for cooking and serving of MDM across the State. The Review Mission observed in the visited schools that adequate number of cook-cum-helpers have been engaged in school based kitchens for preparing and serving of the mid-day-meal to the children.

It has been observed that the teacher incharge of MDM scheme in school based kitchens notes down the no. of children present on that particular day and accordingly CCHs prepare food for the present children where SHGs are serving Mid Day meal. There were instances where the teachers complaint that the cooks do not listen to them and prepare meals on their own without considering the attendance of the particular day. On the other hand the cooks reported that they check the attendance with teachers and prepare meals accordingly.

It was found that the payment of the honorarium to cook-cum-helpers is being made directly to their bank accounts through e-payment. The cooks reported about delay of generally 2-3 months in receiving their honorarium, *however with the new system adopted for release of funds, the payment has become regular.*

The Mission recommends frequent and regular training/orientation of CCHs on related subjects will enhance quality of MDM prepared and served.

4.5 Kitchen-cum-Stores, Kitchen Devices and Eating plates


The non-recurring central assistance of Rs 624.77 crore has been released to the State for construction of 100751 kitchen-cum-stores. The State has constructed 93861 kitchen-cum-stores, construction work is in progress for 4602 kitchen-cum-stores.

In district Dewas construction work has been completed for 1677 kitchen-cum-stores against the total sanctioned 1761. Construction work is under progress for 44 kitchens and yet to start for 40 kitchens. Likewise in district Seohre out of the total sanctioned 1702 kitchen-cum-stores, construction has been completed for 1587, in progress for 86 and yet to start for 29.

The mission noticed that kitchen sheds were in good condition in general in almost all the visited schools. Adequate number of kitchen devices were also available in all the visited schools. Eating plates are also provided to all the children attending the schools. LPG is being used as fuel in all the visited school. *The Mission appreciates the provision of LPG for the schools for preparation of MDM.*

4.6 Convergence with Rashtriya Bal Swasthaya Karyakram

The MDMS guidelines envisage that necessary interventions like regular health checkups, provision for de-worming tablets and supplementation of micronutrients like Vitamin 'A' dosage and IFA tablets are to be provided in convergence with the Rashtriya Bal Swasthaya Karyakram (RBSK) of Ministry of Health & Family Welfare. RBSK is the only public sector programme specifically focused on school age children. Successful implementation of RBSK may ensure better educational outcomes, improved social equity and improved capabilities to handle the adult world. However, Mission Team has found that there is an urgent need to strengthen the convergence with RBSK for the effective implementation of School Health Program in both districts. Essential micronutrients were not provided to children in most of the schools. It was also found that health checks up were done and IFA tablets are provided only in some of the schools. Health card were available in some schools, however, individual health cards are not being maintained properly. Only name of the students are written on it without any mention of health status or any other deficiency or health problem. In the absence of such records, follow up and monitoring becomes difficult.


राष्ट्रीय स्वास्थ्य कार्यक्रम
बाल स्वास्थ्य कार्ड

परिशिष्ट-4
बच्चे का फोटो

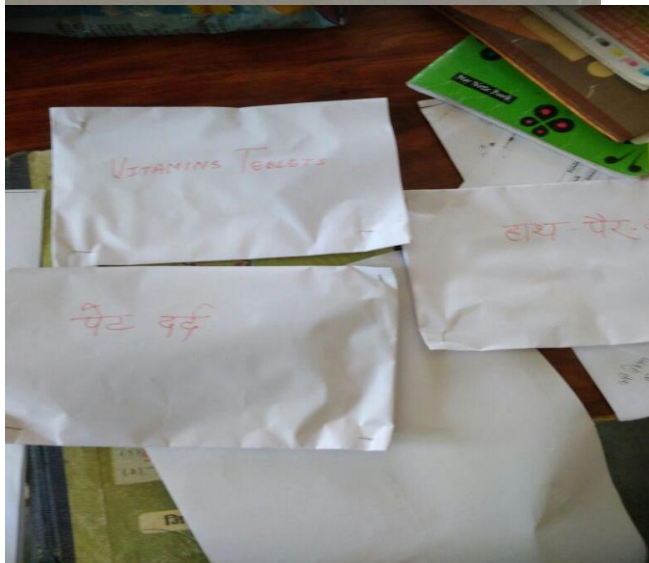
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 माता का नाम: सरोजबाई
 विद्यालय का नाम: सी.पी.एस. चंदायत पंचायत: अलोबापी पी.एच.डी. जिला: देवास
 शैक्षणिक स्तर: पी.एच.डी. पंचायत: अलोबापी पी.एच.डी. जिला: देवास
 शैक्षणिक स्तर: पिछड़ी जाति अनु.जाति अनु.जनजाति अन्य
 आवेदन संख्या / विद्यालय पंजीयन संख्या: 123

स्वास्थ्य जांच	प्रथम बार	द्वितीय बार	स्वास्थ्य जांच	प्रथम बार	द्वितीय बार
लंबाई (से.मी.)	140		वजन (कि.ग्रा.)		
वजन (कि.ग्रा.)	32		पुष्पिका		
हार्मोन (से.मी.से.)	69		लोवर दाढ़िया		
असि			द्वयस शीश		
कान			हृदय शीश		
नाक			शुष्क शीश (मल्लोसंग)		
भ्रू			संज्ञि		
दंत			विकलांगता		
अप्य					

जिनके द्वारा जांचा गया

नाम	प्रथम बार	द्वितीय बार
पंच		
हस्ताक्षर		
प्रधान-पञ्चायक का हस्ताक्षर		
विधिकता की दिशा में		
प्रथम बार		
द्वितीय बार		

10.04.2017



The Joint Review Mission recommends that the BMI of the children should be taken regularly on annual basis and the malnourished children should be identified and necessary corrective action be taken.

The mission further stressed and recommends that urgent action be taken for a greater convergence and effective implementation of the RBSK, so that children could receive vitamin A supplementation as well as IFA as per schedule and their periodic health check ups , necessary referrals and timely corrective measures are requires to be taken to improve nutrition and health status of our school children.

4.7 Review the involvement of NGO's/Trust/Centralized kitchens in the Scheme

As per the information provided by the State NGOs are serving Mid Day Meal in to 371369 children studying in 3712 schools spreading across 18 districts in the State.

NGO's are engaged by district authorities through tender process. The renewal of contract of NGOs is subject to the satisfactory performance of the concerned NGO, there is a committee under the chairmanship of district collector for this purpose.

Normally, distance between the farthest school and centralized kitchen-shed is not more than 25-30 kms. Maximum time for such a distant place is about 1 to 1.5/2 hours.

The Mission visited three centralized kitchen one each in district Dewas (Shri Nakoda jankalyan samiti), district Indore (Manna Trust) and district Bhopal (Surya Charitable society).

The manager of centralised kitchen of Shri Nakoda Jankalyan Samiti in Dewas informed about delay in receiving the foodgrains. He stated that in case of delay in receiving of foodgrains the society has to purchase foodgrains from open market, which is very problematic. The mission observed that quality of rice stored at the centralised kitchen was not of good quality.

The maintenance of records and surroundings of kitchen in terms of hygiene and safety concerns was very good at the centralised kitchen of Manna Trust in Indore. The manager of centralised kitchen of Surya Charitable Society in Bhopal informed about delay in payment of cooking cost and stated that their payment is still pending for the month of April to June, 2017.

The mission noticed that there is no proper monitoring mechanism with regard to centralised kitchens. Although the district teams visits the centralised kitchen but there was no specific tasks to be performed during the visit. Similarly there was no proper mechanism for getting feedback from children in the schools, where MDM is being served through centralised kitchens.

4.8 Meeting of District level committee

The MDM guidelines provides for monitoring structures at various levels for monitoring and supervision of the scheme. The MHRD has constituted a District level committee under the chairpersonship of the senior most Member of Parliament (Lok Sabha) in the district. The committee is supposed to meet atleast once in a quarter. As per the information provided by the district authorities no meeting of this committee has taken place in district Dewas, whereas 3 meetings of the committee have been conducted in district Sehore.

4.9 Enrolment of children and Cook-cum-Helpers under Aadhaar

As per the information provided by the District officials 88% children in district Sehore and 80% children in district Dewas have the Aadhaar card. During field visit the mission noticed in the visited schools that almost 100% children in district Dewas and 91% children in district Sehore have the Aadhaar card. All the cook-cum-helpers working under MDM are also having Aadhaar cards.

4.10 Tasting of MDM by Teacher, Parents and Community

Instructions have been issued for the meal. They also give their suggestions and record observations on the quality of meal tasting of meals by the parents, community, Antyodaya Card Holders, Headmaster/Nodal teacher in every school food before it is served to students. The Mission found tasting register maintained in all the visited schools. The parents and community members do come to the schools and tastes served. In all the visited schools a roster was maintained and the mothers, parents, community members on rotation basis taste meal cooked under MDM before it is served to children. They also make observation on pre cooking processes like washing of utensils, cutting and cleaning of vegetables, etc and a register is maintained in each school to record their observations. In addition to this Antyodaya Card Holder/Senior Citizens also monitor and supervise MDM in schools. For this, a panel of 3-5 senior citizens has been constituted in schools, these card holders are also offered one full meal. Every school keep one sample of cooked food for 24 hrs in a sealed tiffin.

4.11 Community Participation in MDM:

For effective and better implementation of a social scheme Community participation is an essential tool. In Dewas the MDM is being served by Centralized Kitchen. It is observed that there was no community participation in monitoring of the meals prepared at the centralized kitchen. Although the menu of MDM was displayed in all the visited schools, however the entitlements of the children under MDMS were not displayed at a prominent place in most of the schools. For a programme like MDMS advocacy holds utmost importance and the information and norms of the scheme should be displayed prominently as per the MDM guidelines. It has also been observed that the Head teachers in most of the schools were not aware of the entitlements of the children under MDM. There is a very good mechanism of tasting of meals by community members, however almost all of them are not aware about the entitlements of children under MDM. In such scenario the monitoring of quantity being served may get affected.



CHAPTER: 5

Nutritional and Anthropometric Assessment

SALIENT FINDINGS

i) Food Pattern

The findings regarding meal pattern revealed that majority of the children followed a three meal pattern (Table 1), with the MDM comprising the third meal. Children did not eat anything after going back from the school and instead had an early dinner. On a holiday, the meal pattern was two meals a day, clearly indicating that the MDM was not an additional meal for them but was the third meal. The food pattern also showed that the meals were basically cereal (wheat) based accompanied by pulses and potatoes. The intake of fresh vegetables was very less, especially by the children of Dewas district. Potatoes were the main vegetable taken, followed by ladies finger and ridge gourd while the intake of other seasonal vegetables was very less. Further, the intake of green vegetables was negligible. Similarly, milk was completely absent from their meals except for the small amount given in the schools to children upto primary classes..

Table 1: Daily food pattern of the children

Meal	Food Item
Morning	<i>Chapati with Toovar Dal/potatoes; poha; bread slice and tea</i>
MDM	As per schedule
Dinner	<i>Chapati with dal/vegetables – okra, brinjal, potatoes, ridge gourd; sev/besan sabzi</i>

The food pattern of the children also elicited that the being vegetarian in nature, the major sources of protein and energy among children were wheat, pulses and potatoes. The near absence of fresh vegetables in diet may be a cause of sub-clinical micronutrient deficiencies among these children.

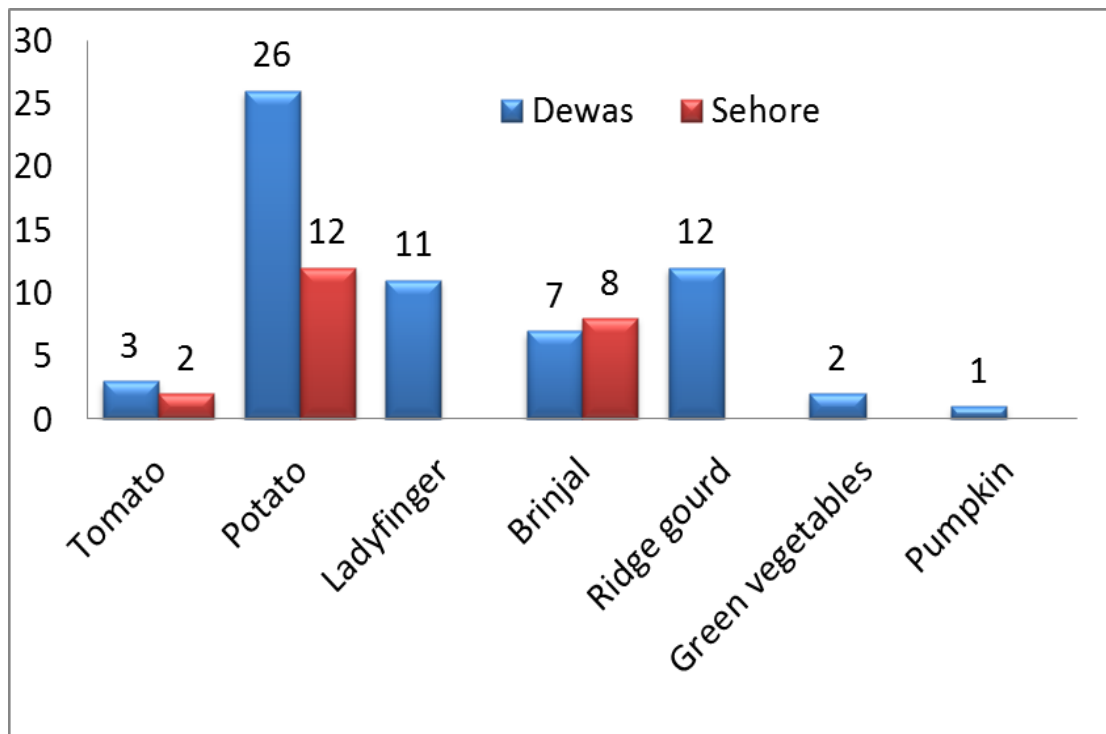


Fig 1 Vegetable consumption by children of Dewas and Sehore districts

II Anthropometric Profile

(i) Weight for Age (WAZ) and Height for Age (HAZ)

Weight for age reflects body mass relative to chronological age, whereas height for age reflects achieved linear growth and its deficits indicate long term cumulative inadequacies of health and nutrition. In district Dewas, the WAZ scores of 84.57% of children were found to be normal, as shown in fig. 3 and 4. Not much gender difference was observed in the WAZ scores of normal children (boys: 85.63% and girls:84.01%), as depicted in table 2 and in (boys:83.83% vs girls:82.13%). In district Sehore, 80.49% of children were normal (85.71% boys and 77.70% girls) and 9.54% were stunted and majority of children i.e. 82.98% were normal.

Table2: Classification of children based on WAZ, HAZ and BMI-Z scores

	Boys		Girls		Total	
	n	Percentage (%)	n	Percentage (%)	N	Percentage (%)
Dewas						
WAZ						
Normal	143	85.63	268	84.01	411	84.57
Underweight	1	0.60	3	0.94	4	0.82
Overweight	23	13.77	48	15.04	71	14.61
HAZ						
Normal	140	83.83	262	82.13	402	82.72
Stunted	3	1.80	10	3.13	13	2.67
Tall	24	14.37	47	14.73	71	14.61
BMI						
Normal	143	85.63	271	84.95	414	85.19
Moderately undernourished	2	1.20	2	0.62	4	0.82
Severely undernourished	-	-	2	0.62	2	0.41
Overweight	19	11.38	41	12.95	60	12.35
obese	3	1.80	3	0.94	6	1.23
Sehore						
WAZ						
Normal	72	85.71	122	77.7	194	80.49
Underweight	-		8	5.09	8	3.31
Overweight	12	14.28	27	17.19	39	16.18
HAZ						
Normal	69	82.14	131	83.43	200	82.98
Stunted	2	2.38	21	13.37	23	9.54
Tall	13	15.47	5	3.18	18	7.46
BMI						
Normal	69	82.14	109	69.42	178	73.85
Moderately undernourished	-	-	1	0.63	1	0.41
Severely undernourished	-	-	-	-	-	-
Overweight	15	17.85	47	29.93	62	25.72

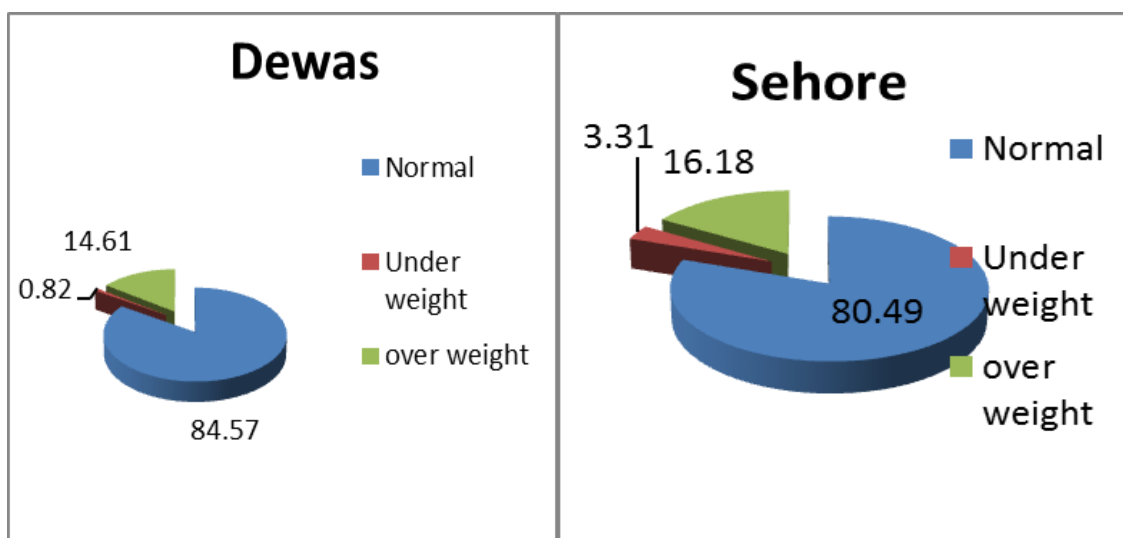


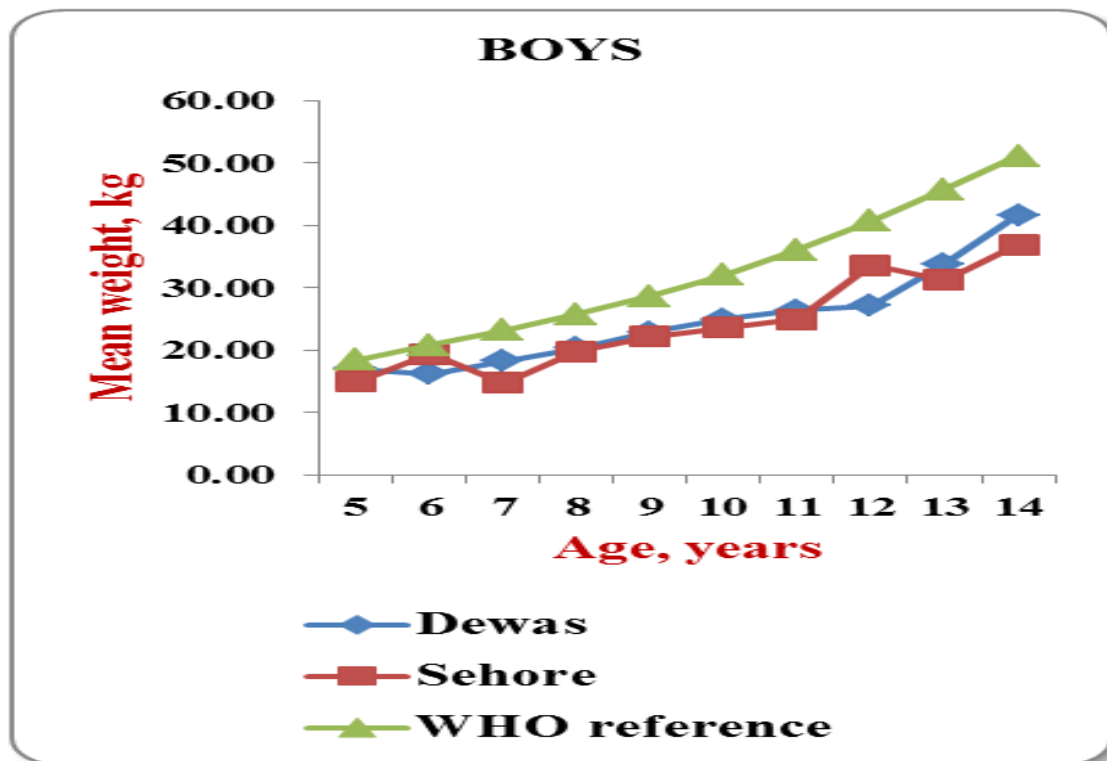
Fig 2 and 3: Classification of children based on weight for age Z scores

Table 3 shows that the mean weight of boys and girls was 73.15 to 91.89 % and 70.72 to 91.66 % of reference standards in district Dewas, the mean weight of 11, 12 and 13 year old boys and 10 and 11 years old girls were less than 75% of the WHO reference standards. The mean height of boys in different age groups in district Sehore ranged between 63.57 to 93.46% of reference standards and the percentage for girls ranged between 68.88 to 89.44% (Table 4). The girls of 6, 10, 13 and 14 years of age had mean weight below 75% of reference standards.

Table3: Average weight of children from two districts of Madhya Pradesh

Age, (years)	DEWAS			SEHORE			Reference Standards, WHO (2006)
	n	Weight (Mean± SD)	% Reference Standards	n	Weight (Mean± SD)	% Reference Standards	
Boys							
5	2	17±2.83	91.89	6	15±1.09	81.08	18.5
6	12	16.17±3.64	77.74	9	19.44±6.04	93.46	20.8
7	8	18.25±3.01	78.66	4	14.75±0.95	63.57	23.2
8	11	20.36±4.84	78.91	7	19.85±2.60	76.93	25.8
9	11	22.91±4.59	79.82	7	22.21±3.93	77.38	28.7
10	25	24.94±5.37	77.69	9	23.61±3.12	73.55	32.1
11	19	26.41±5.89	73.15	12	24.95±3	69.11	36.1
12	26	27.09±4.61	66.56	12	33.66±9.77	82.70	40.7
13	24	33.87±8.52	73.95	8	31.25±6.82	68.23	45.8
14	29	41.68±9.27	81.40	10	36.9±4.12	72.07	51.2

Girls							
5	6	16.50±2.25	91.66	10	16.1±2.02	89.44	18.00
6	18	15.61±2.71	76.89	15	14.98±2.138	73.79	20.30
7	14	17.10±2.49	74.67	9	18.46±3.32	80.61	22.90
8	27	19.44±3.82	75.34	20	20.17±2.96	78.17	25.80
9	32	22.82±5.69	78.41	19	24.47±6.53	84.08	29.10
10	42	24.17±5.02	73.01	22	24.77±4.34	74.83	33.10
11	53	26.45±4.47	70.72	23	29.83±6.77	79.75	37.40
12	57	32.21±7.08	77.05	22	32.01±7.51	76.57	41.80
13	44	35.95±8.66	78.15	15	32.12±5.17	69.82	46.00
14	24	40.58±7.77	81.97	2	34±2.82	68.68	49.50



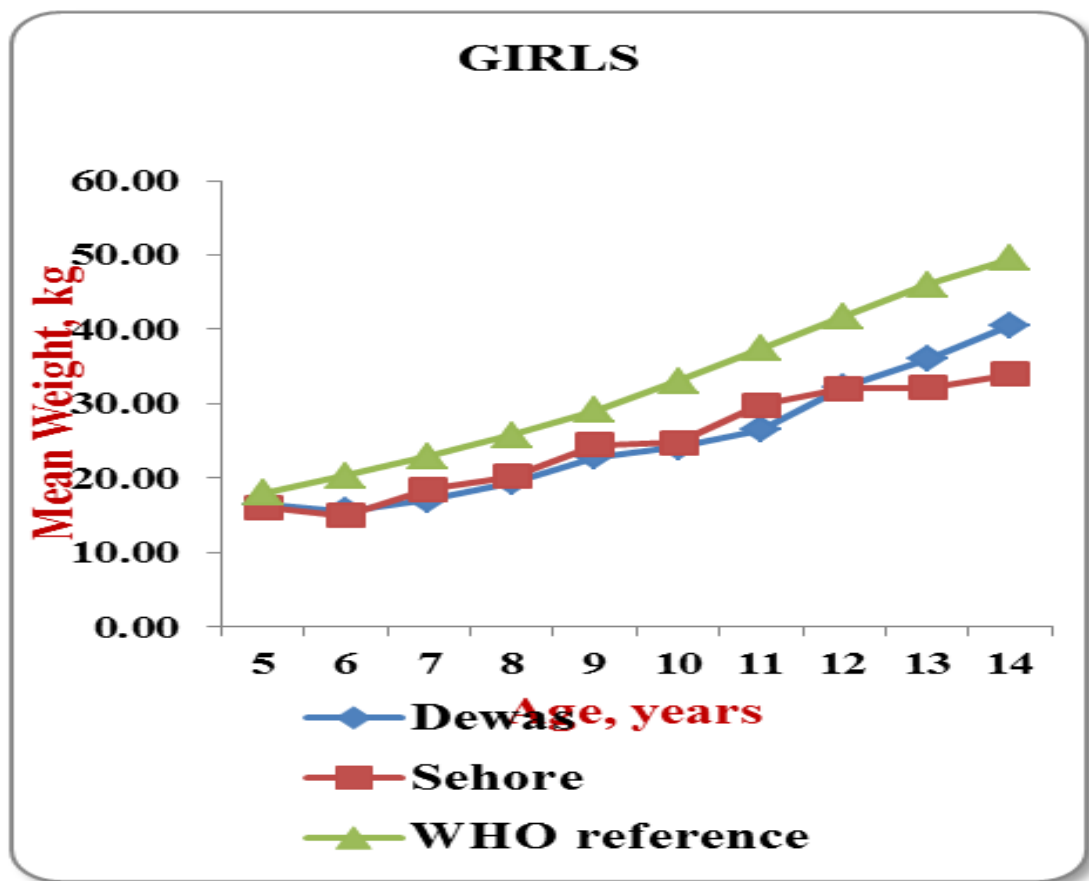


Fig 4 and 5: Mean weight of boys and girls (5-14y) in Dewas and Sehore districts of Madhya Pradesh

Data pertaining to the height of the surveyed children in relation to the WHO reference standards showed that the mean height of boys and girls in district Dewas was between 93.51 to 103.93 % and 93.47 to 101.08% % of reference standards. The mean height of boys in different age groups in district Sehore ranged between 92.13 to 107.16% of reference standards and the percentage for girls ranged between 85.00 to 101.40 (Table 4). The mean heights of all the surveyed districts were normal as per reference standards.

Table 4: Average height of children from two districts of Madhya Pradesh

Age (years)	DEWAS			SEHORE			Reference Standard
	n	Height (Mean± SD)	% Reference	N	Height (Mean± SD)	% Referenc	
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							

			Standards				e Standards	ds, WHO (2006)
Boys								
5	2	113.5±7.78	103.93	6	108.5±4.13	99.35	109.20	
6	12	110.19±9.24	95.23	9	111.17±4.96	96.08	115.70	
7	8	115.75±3.92	94.87	4	110.75±4.03	90.77	122.00	
8	11	123.01±8.29	96.02	7	123.57±5.71	96.46	128.10	
9	11	127.39±5.37	95.28	7	128.5±9.73	96.11	133.70	
10	25	131.81±7.12	94.96	9	127.88±10.27	92.13	138.80	
11	19	136.02±8.55	94.65	12	134.25±7.32	93.42	143.70	
12	26	139.62±8.07	93.51	12	144.5±6.47	96.78	149.30	
13	24	148.79±8.14	95.13	8	147.93±7.56	94.58	156.40	
14	29	158.60±7.42	96.41	10	153.5±7.53	107.16	164.50	
Girls								
5	6	108.16±3.54	101.08	10	16.1±2.02	101.40	107.00	
6	18	110.32±9.28	95.93	15	14.98±2.13	94.66	115.00	
7	14	114.82±5.03	94.26	9	18.46±3.32	96.41	121.80	
8	27	119.74±7.41	93.69	20	20.17±2.96	96.33	127.80	
9	32	126.34±8.22	94.92	19	24.47±6.53	98.92	133.10	
10	42	130.24±7.24	94.02	22	24.77±4.34	96.84	138.20	
11	53	136.02±7.06	94.26	23	29.83±6.77	98.30	144.30	
12	57	143.70±7.34	94.85	22	32.01±7.51	95.54	151.50	
13	44	147.04±7.82	93.47	15	32.12±5.17	93.26	157.30	
14	24	152.38±6.91	95	2	34±2.82	85.0	160.40	

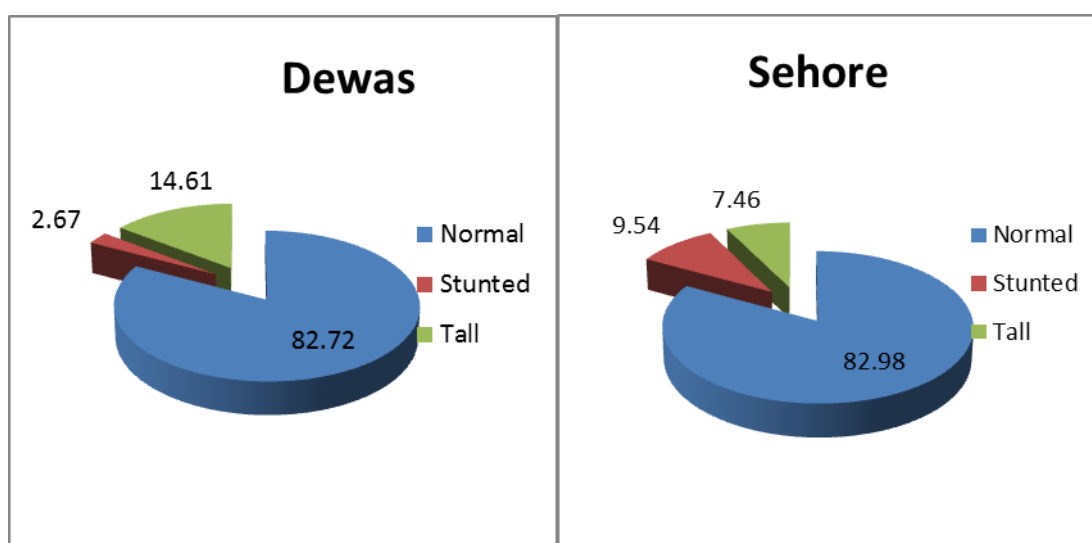


Fig 6 and 7: Classification of children based on height for age Z scores

BMI for Age

The BMI for the age reflects body weight relative to the height of an individual. The WHO has classified low BMI for age as an indicator of under-nutrition which varies from moderate to severe. High BMI for age expresses overweight and obesity. The data show that majority of children i.e. 85.19% and 73.85% were normal in district Dewas and Sehore respectively (Fig 10 and 11). The mean BMI for age was lower than the reference standards in both boys and girls of two districts.

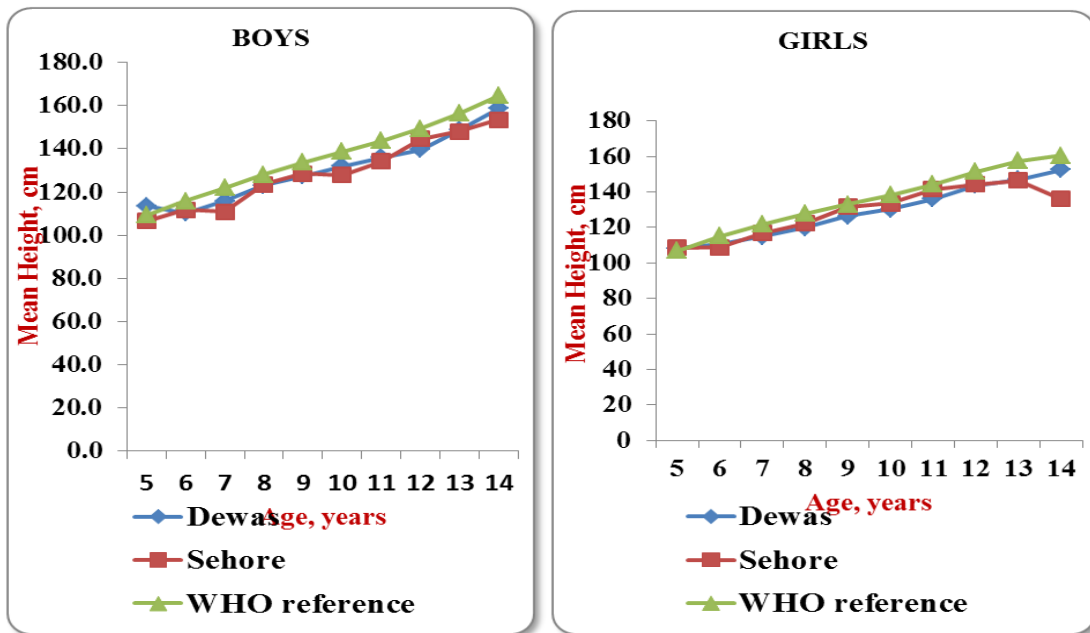


Fig 8 and 9: Mean height of boys and girls (5-14y) in Dewas and Sehore districts of Madhya Pradesh.

Table 5: Average Body Mass Index (BMI) of children from two districts of Madhya Pradesh

Age (years)	n	DEWAS		SEHORE			Reference Standards, WHO (2006)
		BMI (Mean± SD)	% Reference Standards	n	BMI (Mean± SD)	% Reference Standards	
Boys							
5	2	13.13±0.39	100.18	6	13.22±0.60	86.40	15.3
6	12	13.14±0.68	89.33	9	15.77±6.03	102.40	15.4
7	8	13.57±1.73	96.08	4	12.02±0.59	77.05	15.6
8	11	13.29±1.32	90.80	7	12.96±1.10	81.50	15.9
9	11	14.05±2.42	89.56	7	13.38±1.14	82.59	16.2
10	25	14.39±3.22	91.02	9	14.69±3.41	88.49	16.6
11	19	14.10±1.66	89.75	12	13.85±1.40	80.52	17.2
12	26	13.84±1.68	88.00	12	15.96±3.83	89.66	17.8
13	24	15.15±2.82	86.39	8	14.16±1.99	76.12	18.6
14	29	16.44±2.87	82.06	10	15.65±1.30	81.08	19.3
Girls							
5	6	14.07±1.56	88.13	10	13.63±1.12	89.67	15.20
6	18	12.84±1.69	86.69	15	12.59±1.04	82.28	15.30
7	14	12.93±1.41	88.66	9	13.5±1.04	87.09	15.50
8	27	13.48±1.71	87.54	20	13.44±1.46	85.06	15.80
9	32	14.12±2.14	85.78	19	13.87±1.75	86.14	16.10
10	42	14.13±2.07	85.70	22	13.78±1.45	81.53	16.90
11	53	14.27±1.95	90.21	23	14.69±1.71	83.94	17.50
12	57	15.50±2.71	84.72	22	15.19±2.3	83.00	18.30
13	44	16.52±3.43	90.25	15	14.98±2.01	77.61	19.30
14	24	17.36±2.28	82.45	2	19.31±1.46	97.03	19.90

Table 5 shows that the BMI for age ranged between 82.06 to 100.18 % of the reference standards in boys, while the corresponding values for girls were 82.45 to 90.25 %. When compared with the WHO standards, the heights and weights of the selected children from district Dewas seemed to be better. On the other hand the BMI for age in district Sehore ranged between 76.12 to 102.40% of reference standards among the boys and 77.61 to 97.03% among girls. It can also be seen that 85.19 and 73.85% of the children in Dewas and Sehore district respectively were found to be normal while the percentage of overweight children was 12.35 and 25.72% respectively.

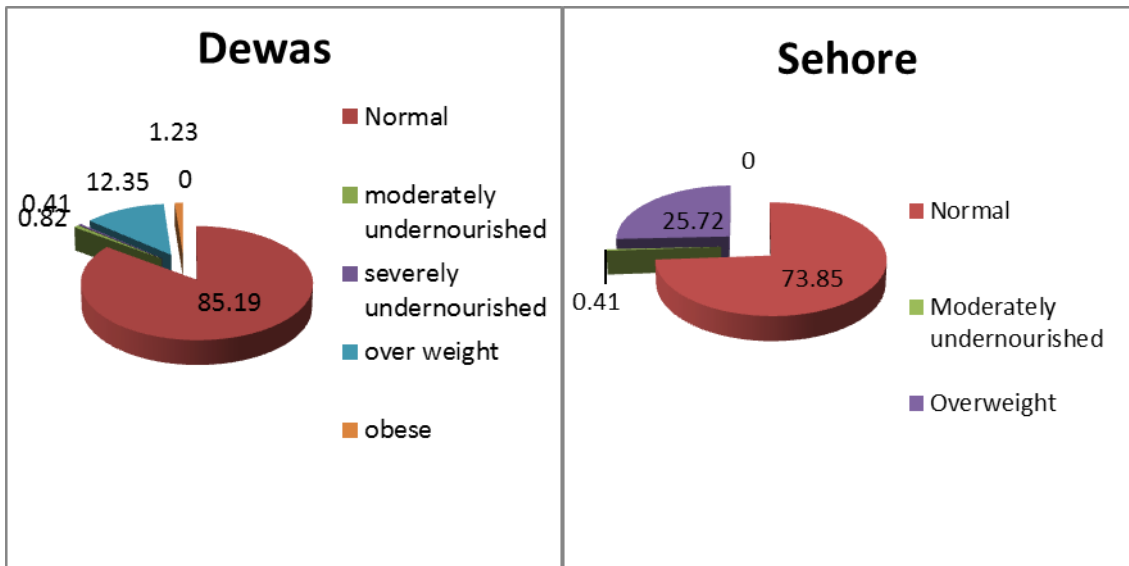


Fig 10 and 11: Classification of children based on BMI for age Z scores

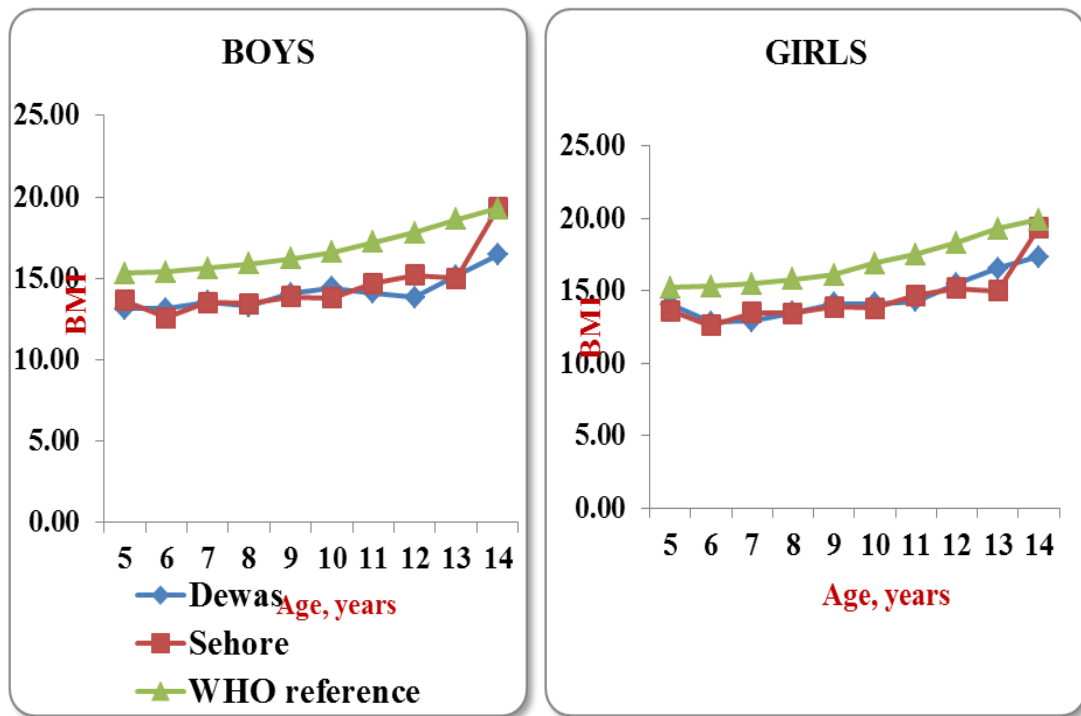


Fig 12 and 13: Mean BMI of boys and girls (5-14y) in Dewas and Sehore districts of Madhya Pradesh

III Clinical Survey

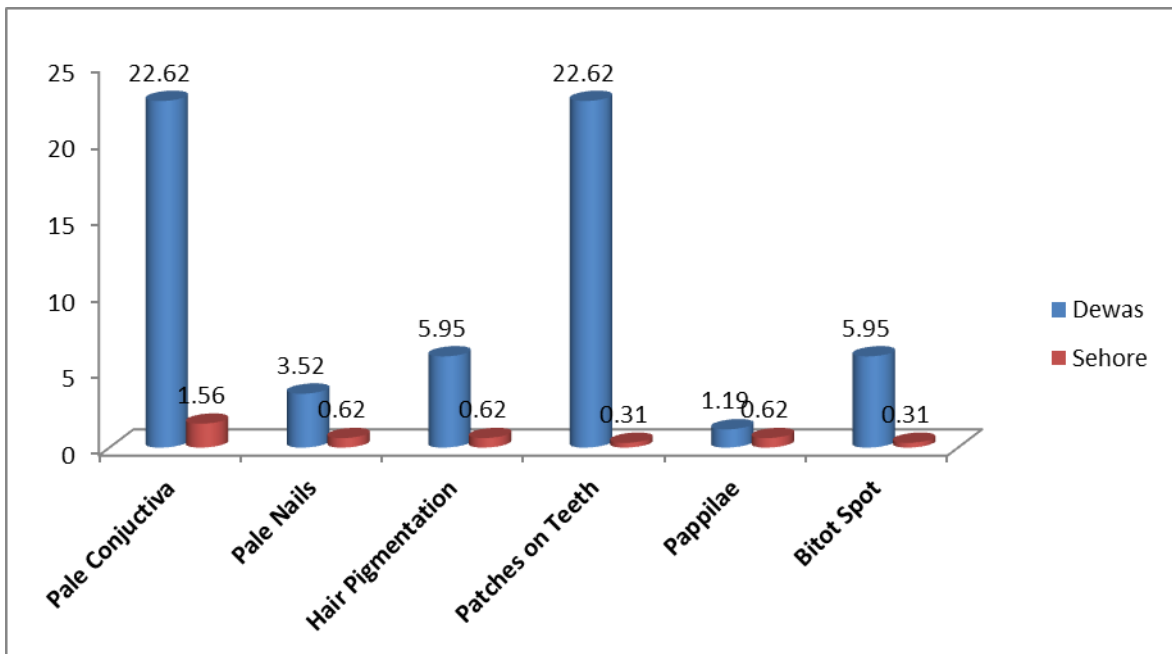


Fig 14: Clinical signs of nutritional deficiencies

A study of the clinical symptoms among the surveyed children showed that the iron deficiency anaemia symptoms were present among them, especially those belonging to district Dewas. Pale conjunctiva and was observed in 1.56% of children from district Sehore. The prevalence of iron deficiency symptoms was comparatively higher in Dewas district where 22.62% of children surveyed had pale conjunctiva. Bitot spot, a symptom of vitamin A deficiency was prevalent among 5.95% of the children belonging to district Dewas. Data also showed that the children of Dewas district also have relatively poor oral health since 22.62% of them had patchy, mottled teeth. A small percentage of the selected children also showed pale nails, hair pigmentation and papillae. Overall more children belonging to district Dewas showed deficiency symptoms in comparison to those coming from district Sehore.

IV Quantity and quality of Mid Day Meal

The prescribed nutrition to be provided by the mid day meal is as follows:

1. 450 kcal and 12g of protein which is derived from 100 g of food grains (rice/wheat), 20g of pulses, 50g of vegetables and 5g of oil for children studying in primary classes and

- 700 kcal and 20g of protein, which is derived from 150g of food grains (rice/wheat), 30g of pulses, 75g of vegetables and 7.5g of oil in upper primary classes.

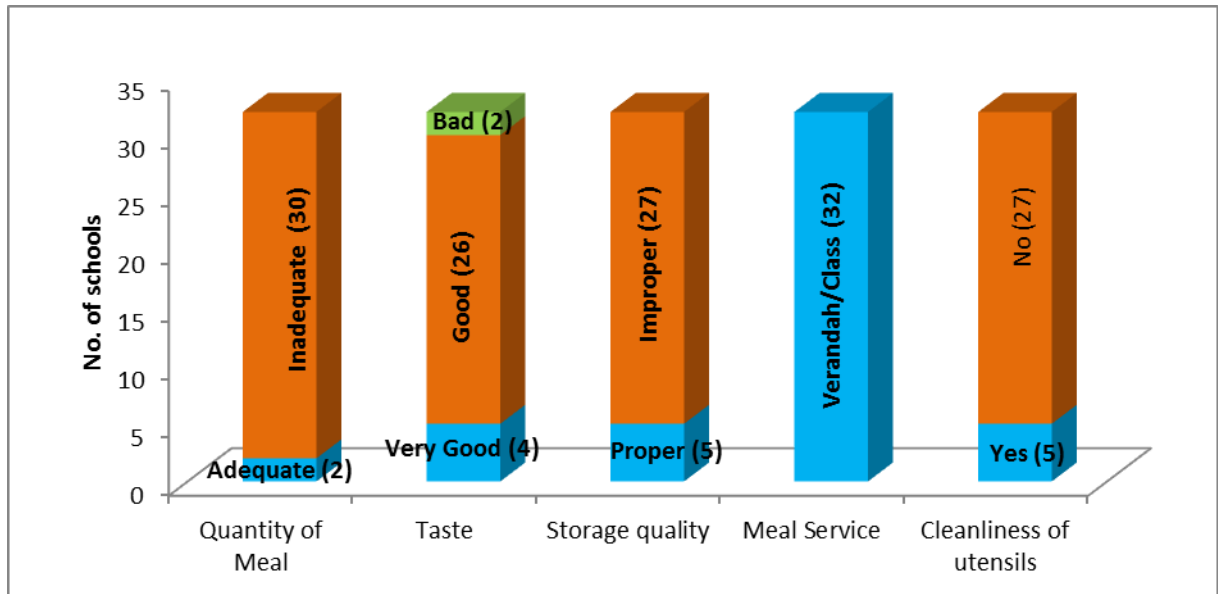


Fig 15: Quantity and quality of Mid Day Meal served to children in selected schools (N=32)

Data pertaining to the quantity and the quality of Mid Day Meal has been furnished in fig.15. Though the MDM guidelines clearly mention that a supervising teacher should taste the prepared meal prior to serving the practice was prevalent only among schools surveyed. Students from only two schools reported the quantity of the meal served to be adequate while the rest said that it was inadequate. The sensory quality of the meals was reported to be very good in 4 schools while in to it was found to be bad due to presence of rice weevil and pebbles (Kankad) in the food. The survey also showed that the storage quality of the ingredients was improper in 27 of the total schools surveyed. In most places these were stored in gunny bags and not in the storage bins. It was seen that the cooks preferred to keep these in gunny bags despite the storage bins being provided to the school. The results also revealed that cleanliness of the utensils was a major area of concern since the students from 27 schools reported that the utensils were not clean. The JRM also made the same observed. In a

centralized kitchen the poories had been wrapped in newspapers. The handlers need to be made aware of impact of such malpractices to stop these.



Poories being wrapped in newspapers

The survey revealed that the quantity served per child was generally not consistent in all the schools, which led to unequal distribution of meals. It was observed that many times cooks and helper did not know how much food is being cooked because the raw ingredients are provided by President of the SHG. Standard weights and measures were not used in any of the schools visited. In some of the schools, the President of the SHG did not even know the entitlements of the students with respect to vegetables and other fresh ingredients. Smaller portions were being served in many schools as the cooked MDM was insufficient for the number of children present. Also, there was inconsistency in serving size and the first served children got more than the rest. In one of the centralised kitchens visited, the quantity of the channa used was very less and a paltry amount of boiled *channa* was added to each container to give the impression that some amount of *channa* have been used in the curry. This led to a decrease in the entitled amount, thereby denying the adequate nutrients being available in the MDM.

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. Only a few of the recipes could provide adequate 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 chana poori could provide energy close to expected amounts while *roti sabzi* and *dal* provided only 168 kcal. Similar was the case with proteins and green vegetables which were grossly inadequate in the existing menu, considering a single serving only.

Suggested Recipes

Saaja

Ingredients

- | | | |
|----|-------------------------|----------------|
| 1. | Jowar/Bajra/Maize Flour | 50g |
| 2. | Ginger | 5g |
| 3. | Garlic | 5g |
| 4. | Green Chillies | to taste |
| 5. | Oil | 10g |
| 6. | Salt | to taste |
| 7. | Coriander leaves | for garnishing |

Procedure

1. Thoroughly wash Ginger, Garlic and Green Chillies and grind together into a fine paste.
2. Heat oil in a kadai, add above paste to it and fry till golden brown.
3. Add the flour and to above masala and mix well.
4. Add water to make a thin Kadhi-like mix. Add salt to taste.
5. Keep stirring continuously till the mixture thickens into a desired consistency.
6. Garnish with washed, thinly cut coriander leaves.

Litti

Ingredients

- | | | |
|----|-------------------------|-----|
| 1. | Wheat Flour – for dough | 50g |
|----|-------------------------|-----|
- (45)

- | | | |
|----|-----------------------|-------------|
| 2. | Chana/Barley Sattu | for filling |
| 3. | Salt, Amchoor, Spices | to taste |
| 4. | Oil | 5g |
| 5. | Coriander Leaves | |

Procedure

1. Add little oil to wheat flour and mix thoroughly. Also add salt to taste.
2. Knead dough, adding little water at a time. The dough should be tight as for puri or Baati.
3. Add salt, amchoor and spices to the sattu and mix well.
4. Make balls out of the dough and make a well in between with your thumb.
5. Put a spoon of sattu mix in this well and seal the dough into a ball.
6. Flatten the dough balls a little bit and roast in chulha-ash till cooked.

Mix Vegetable Poha

Ingredients

- | | | |
|-----|-------------------------|----------|
| 1. | Poha | 50g |
| 2. | Onion | 10g |
| 3. | Carrots | 05g |
| 4. | Cabbage | 05g |
| 5. | Capsicum | 10g |
| 6. | Potato | 20g |
| 7. | Peanuts | 20g |
| 8. | Green Chillies | to taste |
| 9. | Lemon | half |
| 10. | Salt, turmeric powder | to taste |
| 11. | Curry leaves, Rai seeds | |
| 12. | Oil | 10g |

Procedure

1. Wash Poha in a Sieve with drinking water. Let it stand for sometime.
2. Cut onion, cabbage, capsicum and carrots into juliens.
3. Peel and dice potatoes.
4. Heat oil in a kadai.
5. Add Rai seeds and curry leaves and let them splutter.
6. Add diced potatoes and let cook for sometime.
7. When potatoes are half-cooked, add peanuts and the other vegetables and sauté till tender.
8. Add soaked poha and mix well.
9. Add salt and green chillies to taste.
10. Let it cook for a few minutes, turning over from time to time.
11. Sprinkle lemon juice and mix well.

Rajgira Laddoo

Ingredients

- | | |
|------------------|-----|
| 1. Rajgira seeds | 25g |
| 2. Sugar/Jaggery | 20g |
| 3. Ghee | 05g |

Procedure

1. Roast rajgira seeds so they pop.
2. Sieve them so as to separate the popped seeds from non popped seeds.
3. Add Ghee in a kadai and heat .
4. Add sugar or jaggery as desired to the ghee and let it melt on slow fire, stirring continuously.
5. A few teaspoons of water may be added to sugar /jaggery syrup so as to make a thick syrup.
6. Remove syrup from fire and add to the rajgira seeds.
7. Mix well quickly and shape into round balls when still warm.

Missi Roti

Ingredients

1. Wheat flour 25g
2. Besan/ Barley flour 15g
3. Finely chopped onion and green chillies.
4. Salt to taste.

Procedure

1. Take one portion wheat flour and half portion besan or barley flour.
2. Add finely chopped onions and green chillies to taste.
3. Adding a little water at a time, knead into a dough.
4. Roll out chapattis or paranthas and cook on a tawa.

Lapsi (Salted/ Sweet)

Ingredients

1. Bajra flour 50g
2. Salt and spices to taste
or
sugar/ jaggery to taste
3. ghee 5g

Procedure

1. Put ghee in a pan to heat. Add bajra flour and stir for a few minutes.
2. Add water to make a liquid mixture.

3. Add salt and spices for salty lapsi and sugar or jaggery for sweet lapsi.
4. Keep stirring on low heat till a thick khadhi like consistency is reached.

Vegetable Maize Puri

Ingredients

- | | | |
|----|-----------------|----------|
| 1. | Maize flour | 50g |
| 2. | Mix vegetables | 20g |
| 3. | Salt and spices | to taste |
| 4. | Oil for frying | |

Procedure

1. Add finely chopped mix vegetables, salt and spices to maize flour.
2. Knead into a tight dough using little water at a time.
3. Roll out into small puris and deep fry in oil.

Mix Vegetable Baati with Mix Dal

Ingredients

For Baati

- | | | |
|----|---|-----|
| 1. | Wheat flour | 40g |
| 2. | Besan | 10g |
| 3. | Finely chopped mix seasonal vegetables. | |
| 4. | Oil for seasoning | 10g |

For dal

- | | | |
|----|--------------------------|-----|
| 1. | Toovar, Moong, Chana dal | 30g |
| 2. | Onion | 5g |
| 3. | Ginger | 5g |

- | | | |
|----|--------|-----|
| 4. | Garlic | 5g |
| 5. | Tomato | 10g |
| 6. | Oil | 5g |

Procedure

1. Mix all ingredients together and make a dough.
2. Make small balls of dough. Flatten them a bit.
3. Roast in hot ash.
4. Steam all daals together with salt and haldi till tender.
5. Heat oil in a pan and add finely chopped onion, ginger and garlic
6. Fry till golden brown
7. Add finely chopped tomatoes and sauté till tender. Add to the cooked daal mixture.

Mix Veg Khichadi

Ingredients

- | | | |
|----|---------------------|----------|
| 1. | Rice | 30g |
| 2. | Moong dal | 10g |
| 3. | Seasonal vegetables | 20g |
| 4. | Salt | to taste |
| 5. | Onion | 10g |
| 6. | Ginger | 5g |
| 7. | Garlic | 5g |
| 8. | Oil | 5g |

Procedure

1. Wash Rice and dals thoroughly.
2. Chop seasonal vegetables.
3. Heat oil in a pan or pressure cooker.
4. Add finely chopped onion, ginger and garlic and fry till golden brown.
5. Add washed rice and dals along with vegetables and salt.
6. Add water, cover and let cook till done.

CHAPTER: 6

Recommendations and Suggestions

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

1. **The meals may be made nutrient dense and nutritionally balanced by using channa/soybean more frequently.**
2. Vegetables and pulses should be added daily in the mid day meal as prescribed under MDM guidelines. **Inclusion of higher amounts of non tuber vegetables, especially the green leafy ones, is recommended.**
3. Recipes for quantity food production of each dish should be standardized. Such standardized recipes should be provided to each NGO.
4. The portion size of each dish to be served to primary and upper primary students should be standardized and this information should be communicated to all school authorities.
5. The School Management Committee may be authorized to decide the menu according to the availability of local ingredients and the liking of the school children.
6. There is a need to develop SOPs and educate all the stakeholders regarding entitlements, proper weighing, record keeping and monitoring process.
7. **Capacity building:** Capacity building of all the stakeholders at every level is required for effective implementation of the MDMS. Cook –cum- Helpers need to be trained in proper weighing and cooking procedures. A six monthly health check up should be made mandatory for the cook-cum-helpers.


8. **Monitoring:** Regular Peer Monitoring may be undertaken by the concerned stakeholders, The organizational structure needs to be revisited and strengthened for diligent implementation of the scheme.
9. Setting up of State Review Mission to review the Scheme in a district on bi-monthly basis.
10. Inspection is an important component for smooth implementation of the Scheme at the grass root level. 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.
11. Kitchen garden may be developed in the schools where land is available.
12. A disconnect between the school authorities and the SHGs engaged in preparing the MDM has been observed that has adversely affected the constant monitoring of the scheme. A mechanism may be developed to improve co-ordination between SHGs and schools for effective implementation of the scheme.
13. The convergence with the Rashtriya Bal Swasthaya Karyakram (RBSK) needs to be improved. Coverage of children under RBSK is almost negligible.
14. The community participation in MDM was negligible and needs to be improved for successful implementation of the scheme.
15. The logo of the MDM scheme was not displayed in majority of the schools visited. Even where it had been painted, the recommended colours had not been used. It is important that the Logo and entitlements under MDM may be displayed at a prominent place alongside menu.


On the whole, the Mid Day Meal Scheme has made strident improvements in the physiological, social and mental well-being of our school children; and it is expected to continue doing so for our future generations with greater efficiency and much better impact.


Davander Kumar
7/10/17


Bhupendra Kumar


Bhim Bhai Patel
7/10/17


Dr. Mridula Saxena
07.10.17


Dr Neelam Grewal
07/10/17

Some Photographs from the field visit





मिडियाँट ऑर्जन की वकम अन्तर्गत वैकल्पिक मसू आनुसार प्रदास किये जाने वाले आनु से विविधता के लिङ आलाहिद विकल्प

सम्य रह स्वस्थ रह

क. सप्ताहका दिन **मसू का विकल्प**

1. रोटी के साथ तुंडा की दाल और कालुजी चने व पुआवर की सब्जी
2. रोटी के साथ टुंडा और बिरु बनी व उपरु टुणावर की सब्जी
3. रोटी के साथ चने की दाल व तिण्डा सब्जी
4. रोटी के साथ पुलाव (सफुजीवाला) व च पकोडे वाली
5. रोटी के साथ मसूर की दाल और हरे या सखे भरत / तिंडी चने की सब्जी
6. रोटी के साथ तिण्डा दाल व हरी सब्जी

अपेक्षित प्रदास दिने जाले वाले आनु के सख लखत / पिपल / कुरमी भी प्रदास से जले

आनु से मसू-म. गाईनालकपुलकन "आनु" मसू का विकल्प

समासुका नाम **135546**

किशुन सेल सुतरुवा समुह पंचास

1. अरुणा- नौमती देवनागी नरुणा

मो. नं. 750 9839440

2. लखिल- नौमती सागर नरुणा

3. लखीपुंजा नामक

4. आनु से लखी नरुणा

मसू का विकल्प सेलना





ANNEXURE I

School wise details of Attendance and Avg. children availed MDM during last ten days

District Dewas

S No	Name of the school	Enrollment	Last 10 days attendance										Avg	% to Enroll
			Day 1	2	3	4	5	6	7	8	9	10		
1	UPS Newari	156	83	64	56	87	70	95	35	95	99	120	80	52%
2	UPS Shivpur Mundla	18	9	11	9	14	15	12	12	12	12	9	12	64%
3	UPS Nandhara Khedi	61	41	35	20	32	34	32	27	29	23	34	31	50%
4	UPS Khanpeer Pipaliya	53	37	24	37	36	47	37	30	32	45	39	36	69%
5	UPS Maharani Chimnabai	232	90	64	120	119	121	80	95	115	157	145	111	48%
6	UPS Chidawat	40	25	22	26	31	22	33	31	33	35	33	29	73%
7	PS Siya	190	119	119	123	126	133	106	125	121	117	118	121	64%
8	UPS Morukhedi	42	38	34	34	35	38	37	31	35	38	38	36	85%
9	UPS Rajauda	91	35	47	61	48	59	47	51	66	62	63	54	59%
10	PS Rajauda	24	19	16	15	15	12	14	15	13	15	16	15	63%
11	PS Lohar Pipaliya	36	33	23	23	31	24	26	23	29	28	32	27	76%
12	UPS Lohar Pipaliya	48	25	30	29	31	29	27	28	34	38	41	31	65%
13	PS Sanjay Nagar	52	28	32	16	27	21	30	39	24	44	37	30	57%
14	UPS Bijana	82	52	45	33	31	29	50	41	45	48	48	42	51%
15	UPS Jamgod	121	65	65	70	66	69	68	59	48	77	89	68	56%

Annexure-II**School wise details of Attendance and Avg. children availed MDM during last ten days****District Sehore**

S No	Name of the school	Enrollment	Last 10 days attendance										Avg	% to Enroll
			Day 1	2	3	4	5	6	7	8	9	10		
1	UPS Gudbhela	99	41	30	30	13	16	28	50	35	22	34	30	30%
2	PS Gudbhela	95	48	46	48	38	34	50	33	23	32	52	40	43%
3	PS Mogragam	70	50	46	43	42	48	55	58	50	60	62	51	73%
4	UPS Mogragam	119	57	57	50	32	97	100	100	98	100	98	79	66%
5	UPS Pachama	158	66	83	87	59	78	64	81	94	27	86	73	46%
6	UPS Lasudiya	66	45	50	50	48	45	50	48	50	45	48	48	73%
7	PS Seohre	20	8	14	10	9	8	10	10	10	8	9	10	48%
8	UPS Seohre	33	17	20	26	18	22	24	20	22	28	26	22	68%
9	UPS Burkhedi	84	23	20	18	22	22	36	43	49	63	52	35	41%
10	UPS Kolash Khurd	37	29	26	18	27	26	30	25	28	29	33	27	73%
11	UPS Dhawla	23	11	10	15	7	14	15	13	18	16	15	13	58%

Annexure-III**School wise details of Infrastructure facilities
District Dewas**

S No.	Name of the school	Display Menu	MDM Logo	Availability of Pucca Kitchen	Fuel used	Availability of KD	Fire Extinguisher	Availability of eating plates	No. of CCH engaged	Availability of Health card	Emergency plan	Tasting of meals
1	UPS Newari	Yes	No	Yes	LPG	Yes	No	Yes	3	No	No	Yes
2	UPS Shivpur Mundla	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
3	UPS Nandhara Khedi	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
4	UPS Khanpeer Pipaliya	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
5	UPS Maharani Chimnabai	Yes	No	Central ised Kitchen		Yes	No	Yes	2	No	No	Yes
6	UPS Chidawat	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
7	PS Siya	Yes	No	Yes	LPG	Yes	No	Yes	3	No	No	Yes
8	UPS Morukhedi	Yes	Yes	Yes	LPG	Yes	No	Yes	2	No	No	Yes
9	UPS Rajauda	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
10	PS Rajauda	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
11	PS Lohar Pipaliya	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
12	UPS Lohar Pipaliya	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
13	PS Sanjay Nagar	Yes	No	Central ised Kitchen	LPG	Yes	No	Yes	1	No	No	Yes
14	UPS Bijana	Yes	No	Yes	LPG	Yes	No	Yes	1	No	No	Yes
15	UPS Jamgod	Yes	No	Yes	LPG	Yes	No	Yes	3	No	No	Yes

**School wise details of Infrastructure facilities
District Seohre**

S No.	Name of the school	Display Menu	MDM Logo	Availability of Pucca Kitchen	Fuel used	Availability of KD	Fire Extinguisher	Availability of eating plates	No. of CCH engaged	Availability of Health card	Emergency plan	Tasting of meals
1	UPS Gudbhela	No	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
2	PS Gudbhela	No	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
3	PS Mogragam	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
4	UPS Mogragam	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
5	UPS Pachama	No	No	Yes	LPG	Yes	No	Yes	3	No	No	Yes
6	UPS Lasudiya	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
7	PS Seohre	Yes	Yes	Yes	LPG	Yes	No	Yes	1	No	No	Yes
8	UPS Seohre	Yes	Yes	Yes	LPG	Yes	No	Yes	2	No	No	Yes
9	UPS Burkhedi	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
10	UPS Kolash Khurd	Yes	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes
11	UPS Dhawla	No	No	Yes	LPG	Yes	No	Yes	2	No	No	Yes