



**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
Mid-Day Meal Scheme
PUNJAB
DISTRICTS: Fatehgarh Sahib and Ludhiana
(20– 28 January, 2014)**

ACKNOWLEDGEMENT

The Joint Review Mission Team for the Fifth Review Mission Punjab 2013-14 would like to thank the Government of Punjab for the support rendered in facilitating the Team to undertake the Review successfully.

The members of the Mission acknowledge and value the support and hospitality extended by Secretary and other staff, Department of Education, Government of Punjab; District Superintendents of Education, Fatehgarh Sahib and Ludhiana, all officials of the Department of Education; the cook-cum-helpers working in the MDM kitchens and SMC members of the villages and most importantly the students and Parents of the school children.

The team has had an earnest effort to include in the report, the wide range of observations and discussions held at various levels with key officials and other stakeholders. We sincerely hope that the recommendations which emerged through this multi-pronged exercise/review would help the Government of Punjab in strengthening the implementation of the Mid Meal Programme (MDM) in the schools and to ensure that every school going child would avail nutritious food as a right in the State of Punjab.

The JRM Team

**27 January 2014
Chandigarh**

FOREWORD

The 5th Joint Review Mission, Jharkhand has been a very comprehensive, satisfying and fruitful experience for the JRM Team. We place on record the appreciation for the dedicated efforts of Government of Punjab in the implementation of the scheme effectively. We appreciate the involvement of Nutrition team in the mission by the Ministry of Human Resource Development Government of India. Health and Nutrition are inter-related and any effort or programme in this direction can improve the nutritional and health status of school going children and it can be successful only when all its stakeholders work with concerted efforts.

The implementation of the mid day meal was keenly evaluated by Joint Review Mission by keeping in mind the terms of reference and key parameters for the effective implementation. The Nutrition team also kept the terms of References of assessment of nutritional status of school going children i.e., includes the presence of nutritional deficiencies signs, nutritional adequacy of diets and adequacy of mid day meal, besides assessing the sensory evaluation of mid day meal preparations being served. Additionally information was also captured with regards to the satisfaction of children and parents with the mid day meal scheme and its significance with respect to child's diet.

The team has summarized recommendations which are feasible and practical with a bigger objective to accrue maximum benefits out of the resources and efforts mobilized for the scheme. The team reiterates that besides nutritional adequacy of mid day meal, should serve as an effective tool for nutrition education to child, teacher and parents. The team has suggested one liner messages with each suggested recipe and a template to be adopted for taking this objective further.

I thank the entire JRM team for their hard work and committed effort in collecting the relevant details interactions in the field and compilation of this report. I am sure the recommendations which emerge out of this report will be taken further to strengthen the mid day meal programme in the state of Punjab.

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Executive Summary

1. Introduction

The Mid- Day Meal (MDM) Scheme is a flagship program of the Government of India. It has the distinction of being the largest school feeding program in the world reaching out to about 10.68 Crore children in 12.12 lakh primary and upper primary schools (Government, Government Aided and Local bodies), Education Guarantee Scheme (EGS)/Alternative Innovative Education (AIE) centres and Madarsa and Maqtabas supported under Sarva Shiksha Abhiyan (SSA) as well as the National Child Labour Project (NCLP) schools. In drought-affected areas MDM is served during summer vacation also.

It is an incontrovertible fact that school meal programmes exert a positive influence on enrolment and attendance in schools. A hungry child is less likely to attend school regularly. Hunger drains them of their will and ability to learn. Chronic hunger can lead to malnutrition. Chronic hunger also delays or stops the physical growth and mental development of children. Poor or insufficient nutrition for a longer time leads to stunting, and susceptible to various infectious diseases like diarrhoea/dysentery and death.

1.1 Background on JRM

A program of the scale and magnitude of Mid Day Meal Scheme 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 program in all its aspects through the Review Missions, which are also to provide suggestions for improvement.

1.1.3 Brief on Previous JRM - Findings, Recommendation

The Fourth Review Mission visited districts Pathankot and Amritsar in Odisha during 3rd to 10th October, 2012. The major findings were:

- i) Almost all the present students opted for MDM and all of them were served MDM during all the working days.
- ii) None of the schools displayed food norms and logo of MDM.
- iii) In spite of the delay in grant for months together, no school discontinued with the MDM. In the absence of grant, the school teachers and the Panchayats contributed for continuation of MDM. Credit line with the local karyana shops also helped the continuation of the scheme.

- iv) The cleanliness in the toilets is of miserable condition in almost all the schools. Even supply of water in the toilets is not proper. In one school there was no separate toilet for girls. They shared the toilet with the teachers.
- v) Monitoring of MDM scheme is almost missing. Rarely any state government official had any monitoring or inspection.
- vi) All the schools use both the Gas and wood for cooking.
- vii) The enhanced price of gas cylinder was a cause of worry for every school.
- viii) In view of the rising prices of cooking, cost and material the existing cooking cost amount is not sufficient. This was expressed by all the schools.
- ix) Almost all the students expressed satisfaction about the quality and quantity of food, perhaps due to the fact that back home they have very little to fall back.
- x) There is a specific problem in the high schools and the senior secondary schools. The students of 6th to 8th class are being served with MDM but when they join 9th class suddenly they find that they are no more entitled to the MDM. The habit formation of three years period is done away with. It was told by the teachers in many such schools that such students continue to stand and stare when their juniors are being served food. There is a need to address this issue.

Recommendations of the Fourth JRM 2012

The major recommendations of the fourth JRM are as under:

i) Setting up of Management Structure at State, Districts, Sub-districts levels:

- a) Setting up of structure as proposed by Review Mission
- b) Filling up of posts on deputation/contractual basis.
- c) Providing mobility facilities to the officers at various levels.
- d) Provision of CUG mobile connection etc to the officials

ii) Financial Management

- a) Rationalization of fund flow by reducing the intermediate levels – District.
- b) Release of funds to NCLP schools by DEEO directly.
- c) Utilization of interest accrued on MDM grant.
- d) Timely availability of funds to the schools,
- e) Release of honorarium to CCH directly through bank account.

iii) Enhancement of Contract Fee to Assistant Block Managers (ABM)

To be made at par with SSA.

iv) Strengthening of monitoring

- a) Use of the Management Information System (MDM MIS) launched by MHRD
- b) Inspections by the officials- Considering that the scheme is not properly monitored at State level, specific goals may be assigned to DEEO, BEEO, District Managers and Assistant Block Managers etc., for making surprise inspections of the schools. At least 25% schools under their jurisdiction may be inspected by these functionaries during each quarter. The copy of their inspection report may be submitted to the Director General, School Education, Govt. of Punjab
- c) Evaluation Study: A research study to understand the current practices in the area of quality and equity is undertaken for developing State Plans which encompass significant milestones and indicators. A reputed institute may be engaged within six months of engaging them to evaluate the scheme and submit the report to Govt. of Punjab and Government of India.
- d) Setting up of State Review Mission to review the Scheme in a district on bi-monthly basis.
- e) Introduction of social audit mechanism of the Scheme.

v) Capacity Building and Training

The Review Mission recommends the following for capacity building of the stakeholders:

- a) Periodic feedback may be obtained from the stakeholders and other concerned officials/teachers who are engaged at the grass root level.
- b) Awareness and sensitization of all the stakeholders and officials is also must.
- c) Periodic orientation of teachers, Assistant Block Managers, Managers, DEEO and BEEOs for proper management and maintenance of accounts and other registers is also very important.
- d) Community mobilization efforts need to undergo a qualitative shift by taking RTE norms into consideration whereby communities are also empowered to monitor the implementation of mid-day-meal scheme. In this context, the SMC training needs to be very different from the usual training for VEC in the past and the training module need to be conceptualized comprehensively. This training of SMC should also reflect specific needs and concerns of mid- day-meal scheme. The Mission recommends that Department of Education and SPD, SSA may include SMC training module for Mid Day Meal scheme also in the training module of SMC. The training guideline for school based cooking should be different from the centralized kitchens. The campaign for ShikshaKaHaq launched by Ministry of HRD on 11th November, 2011 on Education Day, may be utilised as a platform for MDM to generate awareness on entitlements of children and other rights under MDM Scheme.

- e) Training module and material for imparting training to functionaries at various levels and cook-cum-helpers may be organized in consultation with corporate bodies under Corporate Social Responsibility (CSR).

vi) Convergence

- a) Improved hygienic practices through education in terms of hand-washing, safe drinking water etc. This will enhance the health benefits of this scheme.
- b) Regular health check up and supply of IFA tablets, Vitamin A, De-worming tablets and spectacles in convergence with School Health Programme of NRHM.
- c) Construction of dining hall in convergence with MPLAD Scheme.
- d) Construction of kitchen-cum-store in new schools under SSA.
- e) Maintenance of kitchen-cum-store from maintenance grant under SSA.

1.2 Observations of current JRM (Fifth JRM 2013-14)

- Best Practices :
- Storage bins for foodgrains and cooking ingredients.
 - Use of double fortified salt for preparation of MDM.
 - Contribution by community.
 - Availability of water filter in many schools.
 - Dedicated staff for MDM at State, District and Block levels.
- Funds for reimbursement of cost of Unsubsidized LPG cylinders have not been released by the districts to implementing agencies.
- Engagement of lesser number of cook-cum-helpers than the norms in Ludhiana district.
- Disruption in the serving of MDM in many schools in Ludhiana district due to non-availability of foodgrains.
- Medicines with expired dates were kept in First Aid Box in schools.
- No or very little distribution of IFA, Vitamin-A tablets.

1.3 Major Recommendations of the fifth Review Mission

- 1- Improve the system for release of funds. Funds may directly be released to implementing agencies by the State through banking channel.
- 2- Speedy release of funds for use of LPG cylinders.
- 3- Sensitisation and capacity building of officials at District and Block level
- 4- Use of the information available with MDM-MIS for monitoring.
- 5- Engagement of cook-cum-helpers. Payment of honorarium for cook-cum-helpers to centralised kitchen.
- 6- Display of entitlement of children, menu, MDM logo, and emergency contact numbers.
- 7- Conducting Research Study on the areas like capacity building, community involvement etc.

Chapter – 1

1. Joint Review Mission

Article 47 of the Indian Constitution (in the Directive Principles of State Policy) explicitly states that “The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties...”. Article 39 (f) of the Indian Constitution also directs the States to ensure that “children are given opportunities and facilities to develop in a healthy manner and in conditions of freedom and dignity”. Article 21 of the constitution implicitly provides “right to life” to every Indian citizen.

In keeping with these constitutional provisions, the National Programme of Nutritional Support to Primary Education (NP-NSPE) was launched as a Centrally Sponsored Scheme on 15th August 1995, in 2,408 blocks in the country as a dry ration scheme, to enhance enrolment, retention and attendance and simultaneously improve nutritional levels among children. The Scheme was revised in its content and coverage from time to time. The hot cooked mid day meal is being served to the children of elementary classes from 2004. The Scheme saw a significant development during 11th Plan and many studies reported that this Scheme has a positive impact on various educational parameters and has helped a lot in achieving the goals of SSA in universalizing the elementary education in the country. The provision of payment of honorarium to cook-cum-helpers has opened the path for the disadvantage sections of the society to get employment in the Scheme with dignity and pride to prepare the meal and serve to the children.

The Mid Day Meal was extended to cover all children of upper primary classes from 2008-09. The Scheme was further revised in April 2008 to extend the scheme to recognized as well as unrecognized Madarasas / Maqtabs supported under Sarva Shiksha Abhiyan (SSA) as Government aided centres. The scheme was further revised during 2009-10 to enable the States / UTs to provide nutritious and calorific meal to the children of elementary classes. It was further extended to cover children under National Child Labour Projects (NCLP) w.e.f. 1.4.2010.

Realizing the importance of MDM, Right to Education Act 2009 has made and it provides mandatory entitlements to have school buildings including kitchen-cum-stores. The rules under the RTE Act 2009 mandate that School management committee will be responsible for monitoring the implementation of the MDM programme.

The MDM scheme has played a very important role in enhancing the enrolment and reducing the drop out in elementary schools. During the 11th plan the scheme has been stabilized and supply bottlenecks have been removed. 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.

2. Objectives

It is mandatory to evaluate the nutritional status of school children periodically to check its process/input indicators, as well as outcome indicators and also to suggest mid-course corrections, if required in the MDM programme. Therefore, the objective of this part of review is to study the provision and consumption of food and nutrient intakes and current nutritional status of school children. We have also enquired about personal and environmental sanitation, which is also a crucial factor in the prevention and control of undernutrition.

3. Methodology

A cross sectional survey was conducted in government run primary and upper primary schools availing mid day meal in the two districts i.e., Fatehgarh Sahib and Ludhiana in the state of Punjab by adopting multistage random sampling procedure, to study the above said objectives. From Fatehgarh, 6 blocks were selected randomly and 26 schools were covered. While in Ludhiana, 5 blocks were selected and 24 villages were covered (Study design).

3.1 Selection of sample

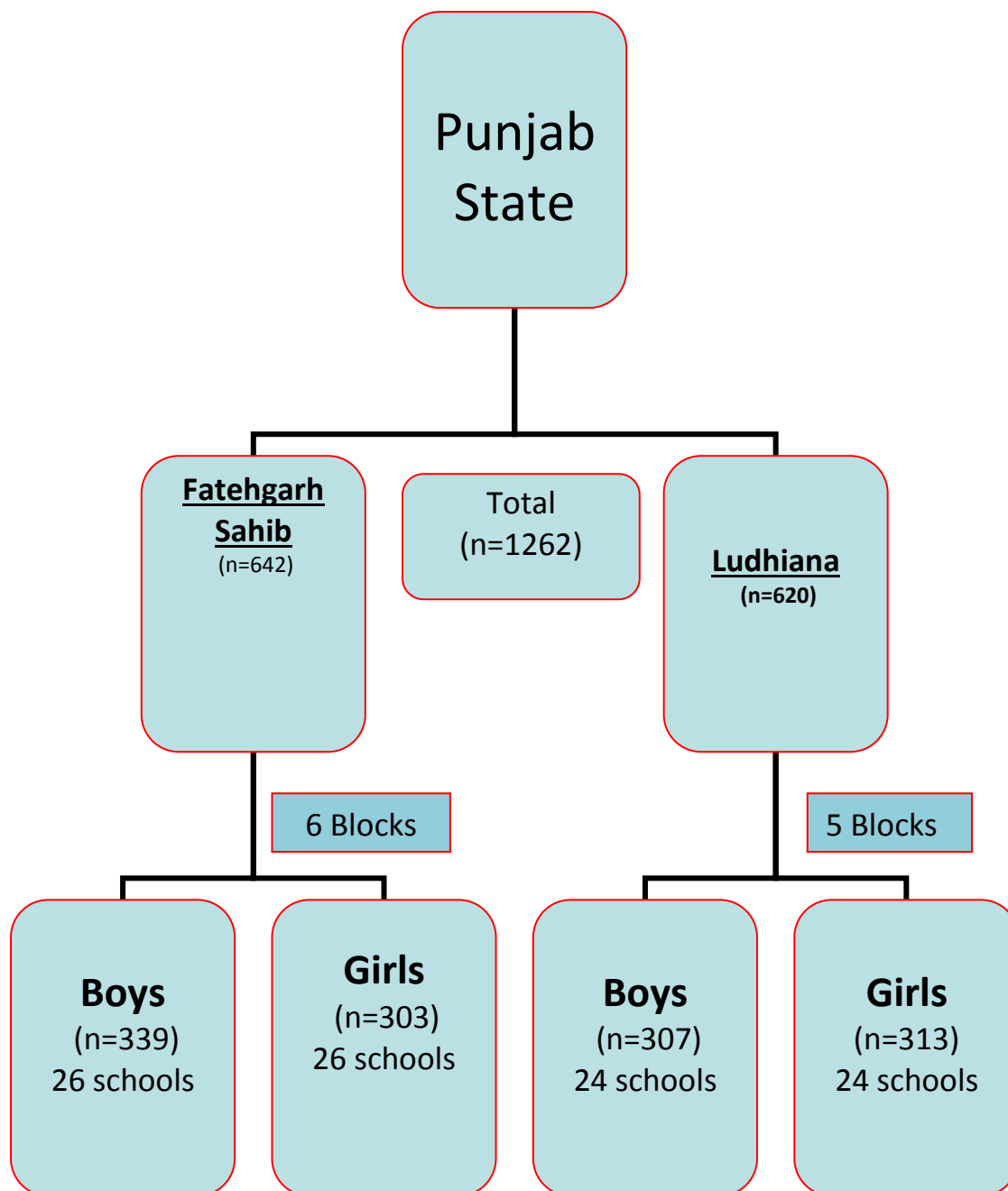
A sample of 1262 children was covered from 50 schools (I-VIII class) in the districts of Fatehgarh Sahib and Ludhiana. A multistage, random sampling design was used for the selection of schools and the children in the selected districts. The methodology used focused on in depth study of the various aspects in the implementation of program. Thus, a restricted sample size (n=1262) was selected across the schools in the 2 districts.

The review involved careful study and analysis of all the documents available with the implementing agency at the state, district, block and school level functionaries. In-depth Interviews with the stakeholders, observations were record based on the methodology.

3.2 Sample size

In view of constraints of time and other resources, it was decided to cover two districts in the state of Punjab and 11 blocks were covered from the two districts to cover at least 1262 school children. Since, the magnitude of undernutrition among school children was also high similar to the preschool children, therefore, the sample covered 1262 children is sufficient to get adequate precision and power of the study.

STUDY DESIGN



50 SCHOOLS IN TWO DISTRICTS

Sampling design for Assessment of Nutritional status of School Children in the two selected districts of Punjab

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 Punjab was selected for visit of Review Mission and the 5th Review Mission visited the Fatehgarh Sahib and Ludhiana districts of the State from 20-28 January 2014 to see the implementation of the JRM team visited the State of Punjab.

2.1 Terms of Reference of the JRM

The Terms of Reference for the Review Mission are as under:

- (i) Review the system of fund flow from State Government to Schools/cooking agency and the time taken in this process.
- (ii) Review the management and monitoring of the scheme from State to School level.
- (iii) Review the 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.
- (iv) Role of Teachers
- (v) Convergence with School Health Program (SHP) for supplementation of micronutrients and health check-ups and supply of spectacles to children suffering from refractive errors.
- (vi) Creation of capital assets through kitchen-cum-store/kitchen devices
- (vii) Appointment of Cook-cum-Helpers for preparation and serving of meal to the children
- (viii) Availability of dedicated staff for MDM at various levels
- (ix) Review the maintenance of records at the level of school/cooking agency.
- (x) Review the availability of infrastructure, its adequacy and source of funding.
- (xi) Review of payment of cost of food grains to FCI by the districts
- (xii) Review the involvement of NGOs/Trust/Centralized kitchens by States/UTs Government in implementation of the Scheme.
- (xiii) Management Information System (MIS) from school to block, district and State Level to collect the information and disseminate it to other stakeholders
- (xiv) Assess the involvement of Community' in implementation of MDM scheme
- (xv) Review of status of MIS integration with IVRS for monitoring of the Scheme
- (xvi) Review of the status of tasting of the meal by at least one teacher.
- (xvii) Review of status of Safe storage and proper supply of ingredients to schools.
- (xviii) Review of the status of Awareness about Mid- Day Meal Scheme.
- (xix) Review of status of convening of Monitoring Committee under the Chairmanship of Member of Parliament
- (xx) Review of the convening of regular review meetings at District level.
- (xxi) Review of the status of testing of food samples by reputed institute.
- (xxii) Review of the status of Emergency Medical Plan

2.3 Terms of Reference for Nutritional Status

1. To assess the anthropometric measurements of a sample of children availing MDM
 - i. Height
 - ii. Weight
 - iii. Mid arm Circumference
2. To Calculate the Body Mass Index (BMI) on the basis of measurement of height and weight.
3. To identify the children who are undernourished and over nourished.
4. To review the quality and quantity of the served MDM.
5. To review the satisfaction of the children parents and community on the served meal under MDM in respect of quality and quantity.
6. To suggest some nutritionally balanced region specific recipes.
7. To assess the ways for better convergence with School Health Program

Composition of JRM – Team Members

- 1. Dr. A. Laxmaiah**, Sr. Deputy Director (Scientist-F), NIN, Hyderabad (Mission Leader)
- 2. Shri V.K. Nayar**, Under Secretary, Ministry of Human Resource Development, Government of India
- 3. Shri Prabhcharan Singh**, General Manager - MDM, Govt. of Punjab
- 4. Dr. J.J. Babu Geddam**, Deputy Director (Scientist-E), NIN, Hyderabad
- 5. Dr. R. S. Ghuman**, Advisor to the Commissioners of Supreme Court
- 6. Dr. Jatinder Grover**, Nodal Officer, Punjab University (Monitoring Institution)
- 7. Shri Bhupendra Kumar**, Consultant (Plan Monitoring), TSG-MDM, Ed.CIL.
- 8. Shri LokendraMahavar**, Consultant (*Capacity Building*), TSG-MDM, Ed.CIL.

Co-Team Members

- 1. Dr. M.S. Radhika**, Sr. Research Officer (Scientist-C), NIN, Hyderabad
- 2. Mr. Ch. Gal Reddy**, Research Officer (Scientist-B) NIN, Hyderabad
- 3. Mr. Sharad Kumar**, Sr. Technical Officer-(TO-B), NIN, Hyderabad
- 4. Ms G. Neeraja**, Research Assistant, NIN, Hyderabad

PART A

IMPLEMENTATION OF MID DAY MEAL SCHEME IN (FATEHGARH SAHIB AND LUDHIANA) PUNJAB

Chapter – 2

2.1 State Profile of Punjab

State Profile

Geographical location : Punjab is located in the northwestern corner of the India on 35 degree latitude and 74 degree longitude covering an area of 50362 sq. kms (2% the country's total geographical area), comprising mostly of plain and fertile soil. It is bounded on the north by the Indian state of Jammu and Kashmir, on the east by Himachal Pradesh and the Union territory of Chandigarh, on the south by Haryana and Rajasthan, and on the west, it shares a long border with Pakistan. The city of Chandigarh is the joint capital of Punjab and Haryana.

Administrative setup: Punjab is divided in 22 Administrative Districts, 72 Tehsils, 141 Development Blocks, 216 Education Blocks and 13540 Villages.

Punjab: District Wise Map



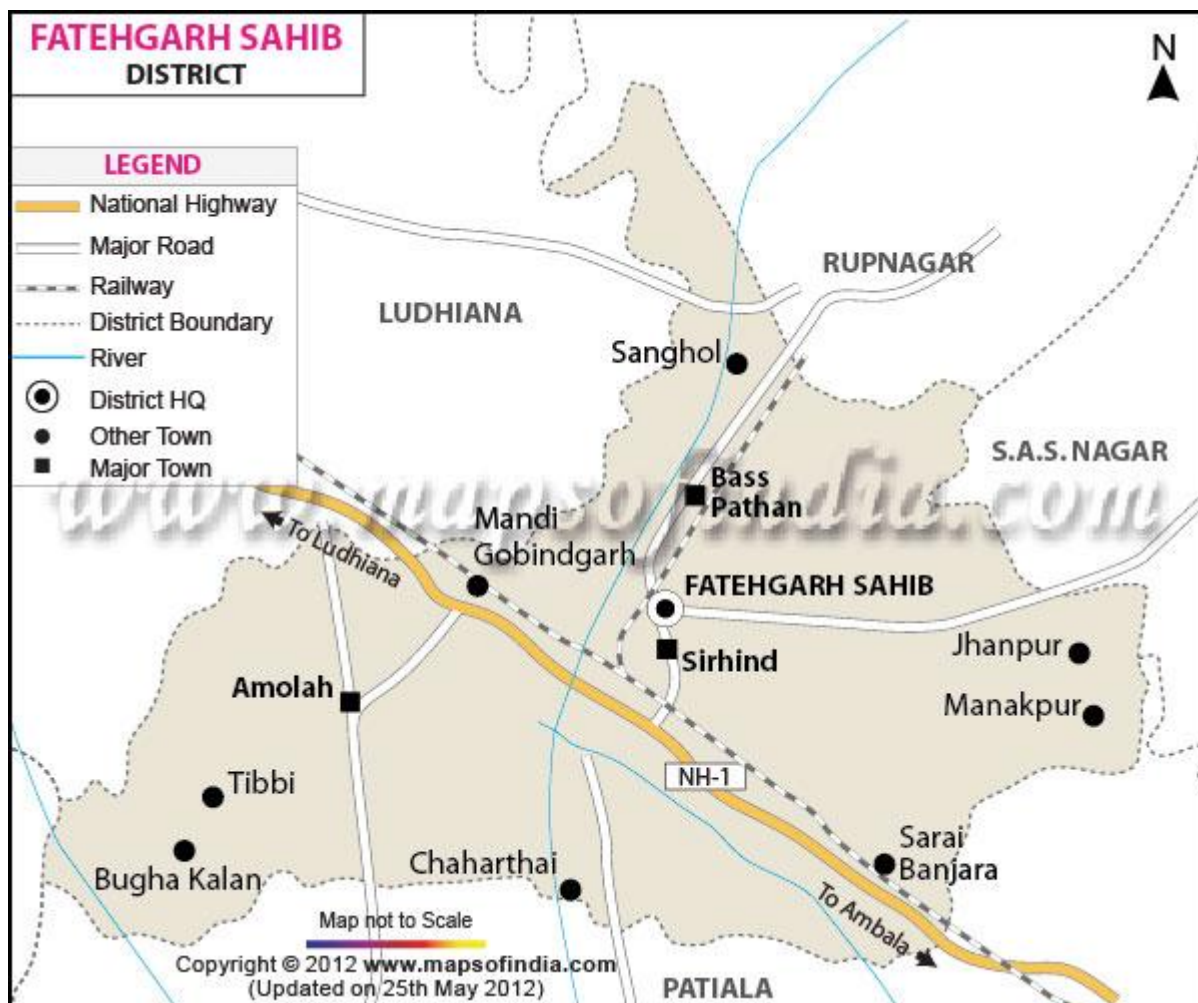
Population (2011 Census)	2.77 crore
Literacy Rate	76.7%
Sex Ratio	893 Females per 1000 Males
Density	719 Persons per sq. km
Area (Sq. Km.)	50,362 sq. km

2.2 District Profile–FatehGarh Sahib

District Profile of Fatehgarh Sahib District

Fatehgarh Sahib district is one of the twenty-two districts in the state of Punjab in North-West Republic of India, with its headquarters in the city of Fatehgarh Sahib. The district came into existence on 13 April 1992, Baisakhi Day, deriving its name 'Fatehgarh Sahib' from Sahibzada Fateh Singh, the youngest son of 10th Guru Gobind Singh, who were bricked alive by the orders of Suba Sirhind, Wazir Khan in 1705, and the place is now the site a famous 'Gurudwara Fatehgarh Sahib'. As of 2011, it is the second least populous district of Punjab (out of 22), after Barnala. District Fatehgarh Sahib is surrounded by districts of Ludhiana and Ropar in the north, Patiala in the south, Ropar and Patiala in the east, Ludhiana and Sangrur in the West. It is situated between 30° - 27' & 30° - 46' north latitudes and 76° - 04' & 76° - 38' east longitudes.

Population of the District (2011 Census)	-	599,814 Million
Area	-	115000 Hectares
Literacy Rate	-	80.3%
Sex Ratio	-	871 Females per 1000 Males
Population Density	-	508 Persons per sq. km

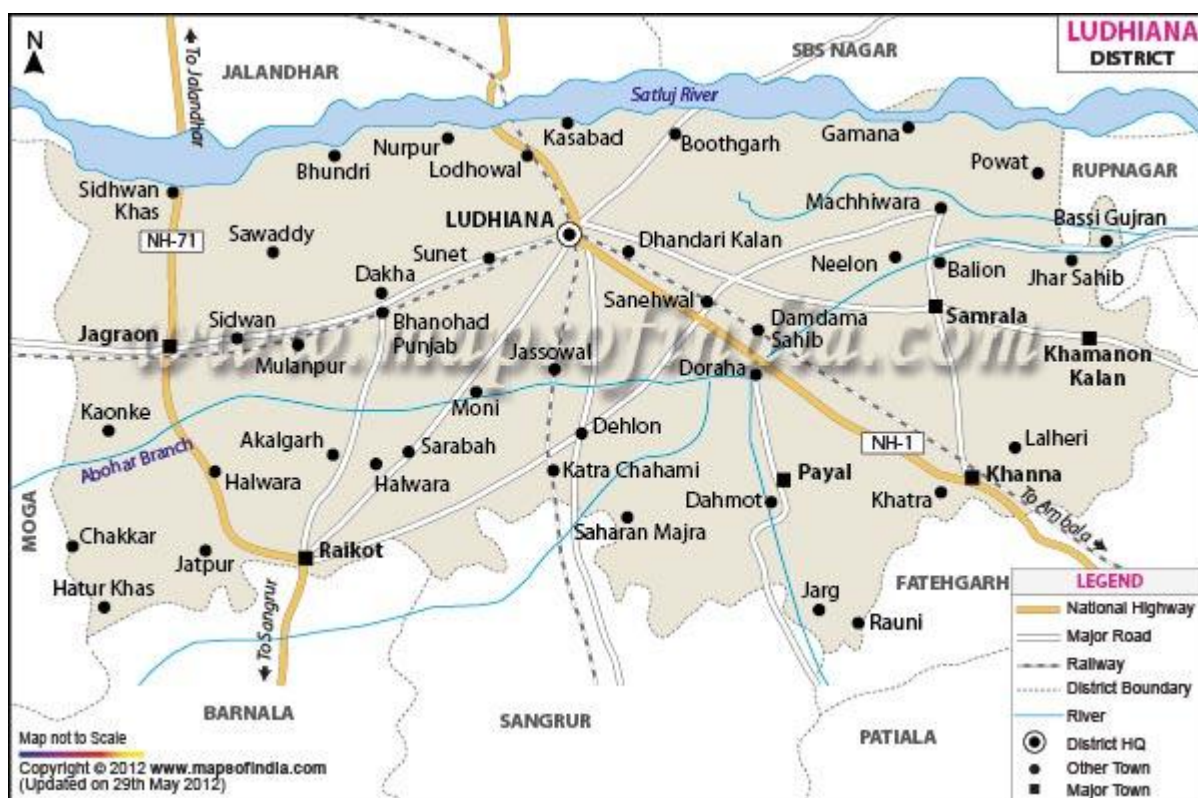


2.3 District Profile – Ludhiana

District Profile of Ludhiana

Ludhiana is the most centrally located district which falls in the Malwa region of the State of Punjab. For Administrative purposes it has been placed in the Patiala Division. It lies between north Latitude 30o-34' and 31o-01' and east longitude 75o-18' and 76o-20'. It is bounded on the north by River Sutlej which separates it from Jalandhar district. The River also forms its northern boundary with Hoshiarpur district. On other sides it shares common boundaries with Rupnagar district in the East, Moga district in the West, and Sangrur & Patiala districts in the South and South east respectively.

Population (2011 Census)	3032831
Literacy Rate	76.5%
Sex Ratio	824 Females per 1000 Males
Density	805 Persons per sq. km
Area (Sq. Km.)	3767sq. km



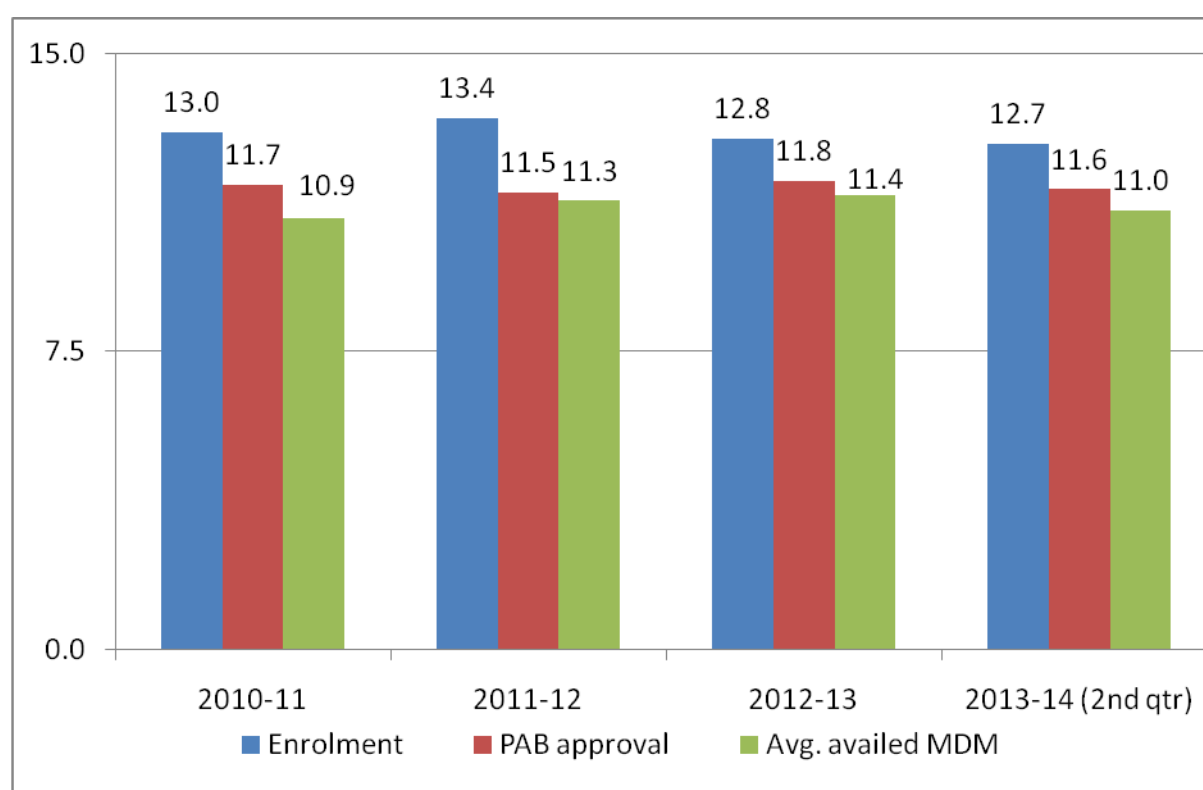
2.4 Review of performance: Physical and financial (2009-10 to 2012-13)

Coverage of children: Primary

A perusal of the figures given in the table below shows a constant decreasing trend of enrolment between 2011-12 to 2013-14. The details regarding enrolment and coverage of children reveal that coverage has gone down from 89% of the enrolled children in 2012-13 to 87% during the first 2 quarters of 2013-14.

Year	Enrolment	PAB approval	Avg. availed MDM	% Availed vs. Enrol.	% Availed vs PAB app.
2010-11	1301895	1170297	1085764	83%	93%
2011-12	1337964	1150000	1128592	84%	98%
2012-13	1284134	1179000	1141622	89%	97%
2013-14 (2 nd qtr)	1271371	1157537	1104867	87%	95%

Fig. 1 Trends of enrolment and Average number of children availing MDM : Primary

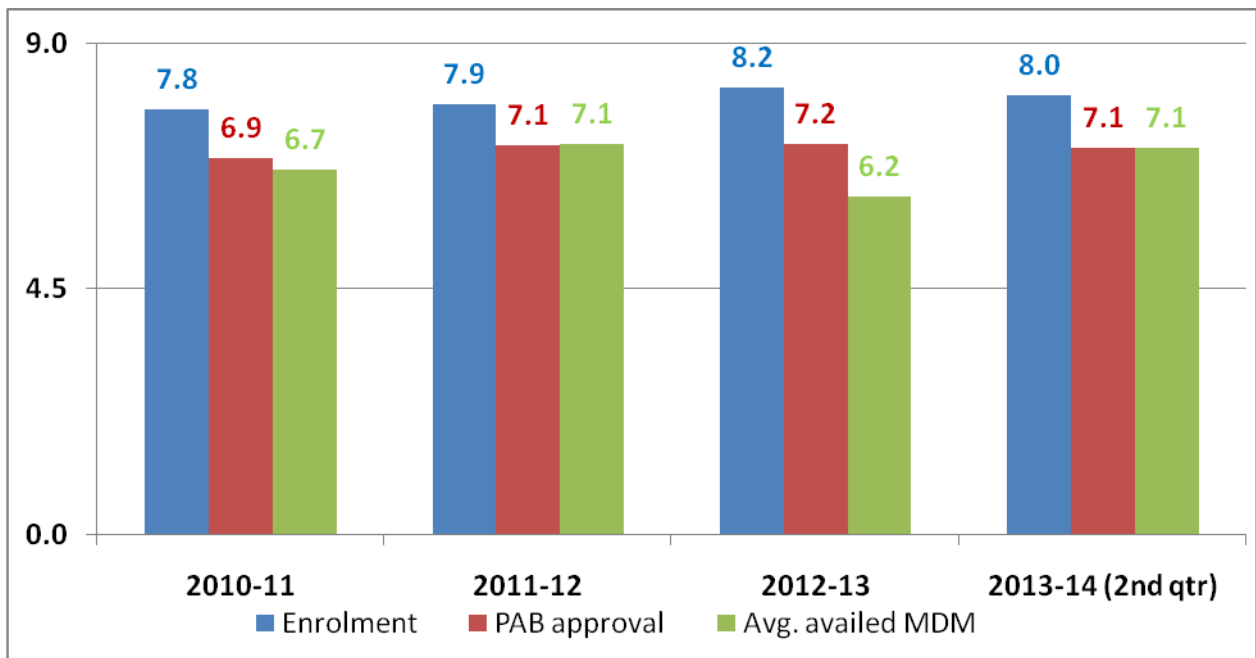


Coverage of children: Upper Primary

In the upper primary section coverage of children has gone upwards. The performance in terms of coverage of children has improved. At the upper primary level coverage has gone down from 86% during 2010-11 to 91% during 2011-12. However during the last quarter of 2012-13 the coverage has gone down to 76%. The coverage has again gone up to 88% during the second quarter of 2013-14.

Year	Enrolment	PAB approval	Avg. availed MDM	% availed vs. Enrol.	% availed vs PAB app.
2010-11	779104	689893	667896	86%	97%
2011-12	788201	713000	714455	91%	100%
2012-13	819131	715000	618490	76%	87%
2013-14 (2 nd qtr)	803866	708762	708042	88%	99%

Fig 2: Trends of enrolment and Average number of children availing MDM: Upper Primary school

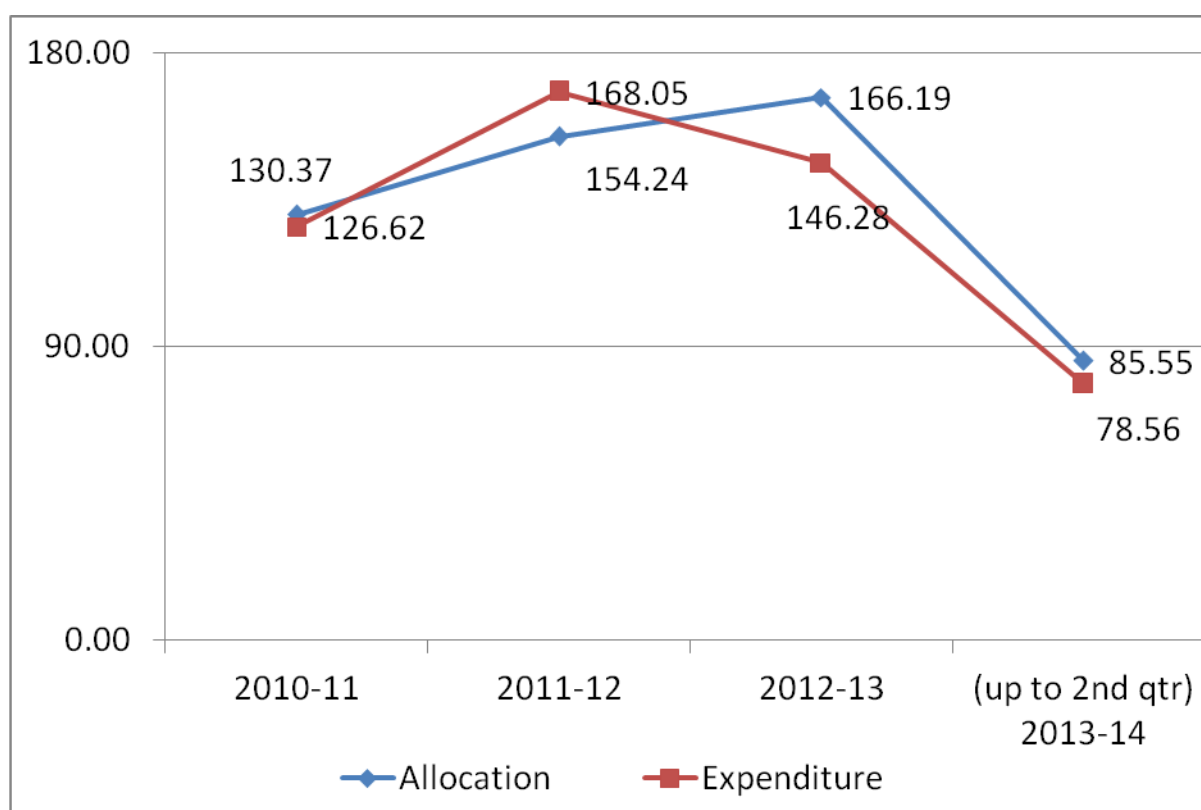


Utilization of Cooking Cost

(Rs in lakh)

Cooking Cost	2010-11	2011-12	2012-13	2013-14 (up to 2 nd qtr)
Allocation	13037.36	15423.61	16619.36	8554.79
Expenditure	12661.51	16805.29	14627.71	7856.37

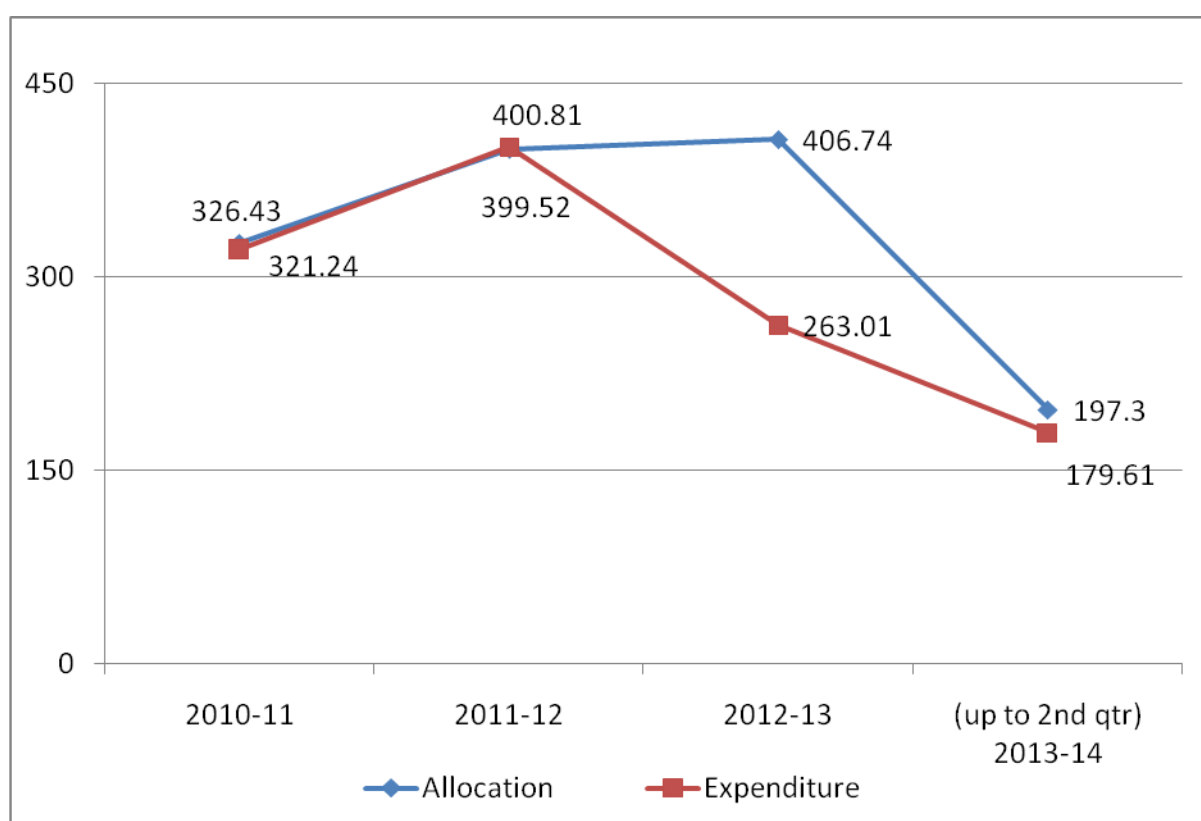
(Rs in crore)



Utilization of Transportation Assistance

(Rs. in lakh)

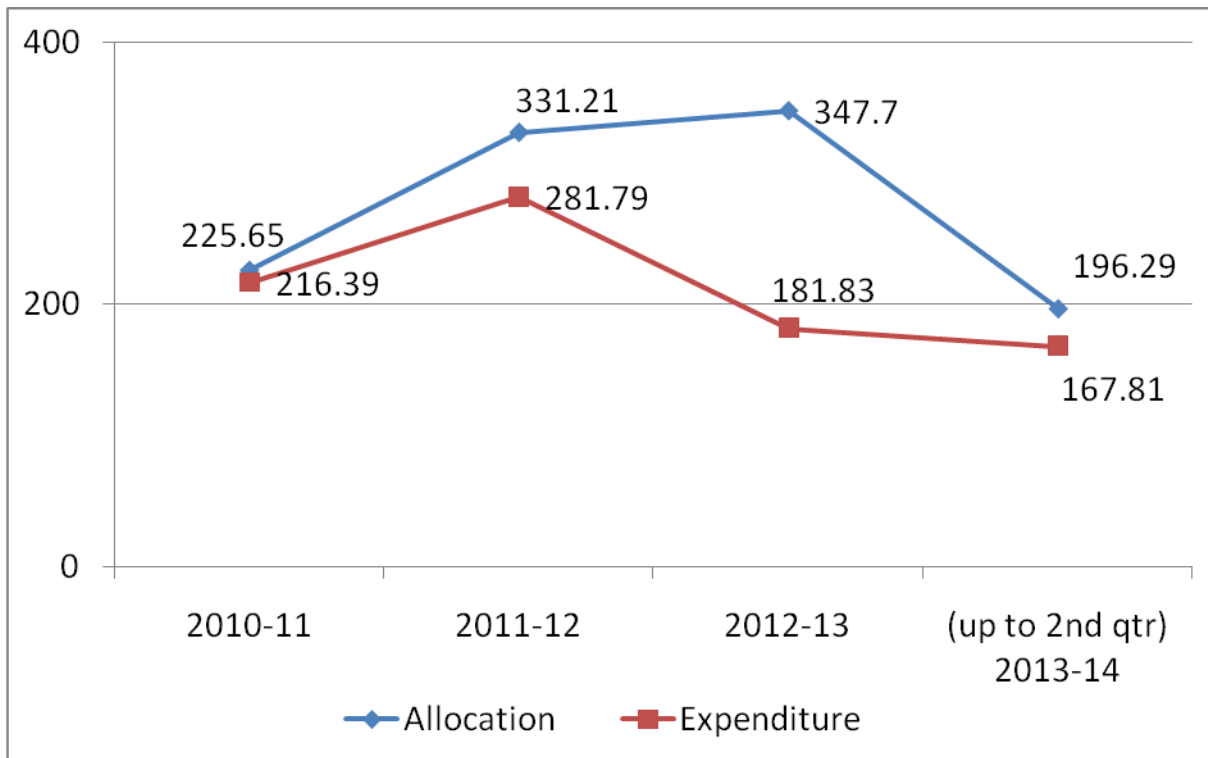
Transportation Asst.	2010-11	2011-12	2012-13	2013-14 (up to 2 nd qtr)
Allocation	326.43	399.52	406.74	197.30
Expenditure	321.24	400.81	263.01	179.61



Utilization of Management Monitoring and Evaluation (MME)

(Rs. in lakh)

MME	2010-11	2011-12	2012-13	2013-14 (up to 2 nd qtr)
Allocation	225.65	331.21	347.70	196.29
Expenditure	216.39	281.79	181.83	167.81

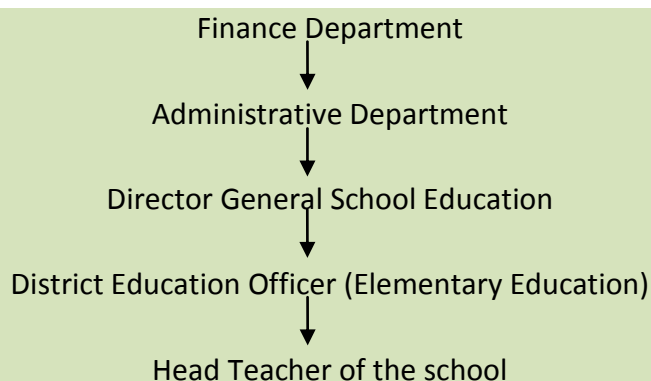


Chapter – 3

Observations on MDM implementation

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

Funds are sanctioned and released at the State level by Finance Department. Director General, School Education, draws the funds from the Treasury and funds are remitted to the District Education Officers (DEOs) through electronic transfer. Funds are released by DEO to the implementing agency at village level i.e. SMC/Head Teacher of the schools.



The JRM team observed that funds were being released to the schools till the month of January, 2014 in most of the visited schools. Adequate amount of funds towards cooking cost were available with most of the schools at the time of visit. However, some of the visited schools stated that they were continuing the scheme on credit basis due to non-availability of funds. Honorarium to cook-cum-helpers has been paid up to the month of December.

Govt. of India has released funds for reimbursement of funds utilised for use of LPG cylinders on account of withdrawal of subsidy. The JRM team also observed that though the funds have been released by the State Govt. to the Districts, the district authorities have not released any funds in this regard so far to the implementing agencies. Teachers in district Ludhiana were not even aware that there is a provision for reimbursement of difference of amount and in fact were complaining to the JRM team that it has become very difficult for

them to use LPG cylinders at such a high cost. This is a matter of serious concern and **JRM recommends that State Govt. should ensure that information should be disseminated to the implementing agency. It also recommends speedy reimbursement of funds on account of use of LPG cylinders.**

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

The Review Mission was briefed that a three-tier system has been defined in compliance with the directions given by Government of India as per MDMS Guidelines to ensure that the scheme is implemented in its true spirit smoothly and effectively. The Chief Secretary is the Chairman of the State Level Steering and Monitoring Committee; Deputy Commissioner is the Chairman of the District Level Steering and Monitoring Committee whereas the Sub Divisional Magistrates are the Chairmen of the Sub Divisional Steering and Monitoring Committees. The State Government has also constituted a "Core Group of Officers" under the chairmanship of Secretary, School Education, to monitor and sort out the problems, if any, in smooth implementation of the scheme.

On field level monitoring was observed to be of satisfactory level in the visited schools in district Fatehgarh Sahib, however the monitoring of schools requires a lot of improvement in district Ludhiana. It was noticed that the instructions were not communicated properly to the field level functionaries. Even the district and block level managers were not aware regarding the norms for engagement of cook-cum-helpers.

The JRM observed that sufficient quantity of food-grains was available with most of the visited schools. The quality of rice was observed to be good. In most of the schools rice and wheat had been kept in storage bins whereas in schools lacking such storage bins, rice had been kept in gunny bags. In many schools the rice had been kept in the kitchen-cum-store sheds but in some schools it had been stored in classrooms thus hampering the classroom hygiene.

It was observed that most of the block and district level functionaries' require training or orientation on MDM management. In the absence of such training, decentralized planning from school level on MDM is not possible. The present formats used for feedback data collection from school point need to be improvised to cover other aspects of the scheme such as quality, equity, community participation, hygiene, sanitation and healthcare

provision. The MDM staff at all levels starting from the State to cluster need regular training and orientation relating to planning, monitoring and management of the MDM scheme. They may be provided with job-charts to help them focus on their own responsibilities and tasks.

3. Regularity in serving of Mid Day Meal

The JRM observed that MDM was served to all the present children in all the schools on the day of visit. However, in some of the visited schools in district Ludhiana, MDM could not be served during the months of May and July due to non-availability of foodgrains. Teachers stated that they had informed the concerned authorities about the non-availability of foodgrains. But nothing was done and as a consequence children remained deprived of MDM for many days.

The crucial part in this context is that the information of non-availability of foodgrains was available with block and district authorities, but no action has been taken. It simply reflects apathy on the part of concerned officials to understand the gravity of the matter.

4. Convergence with School Health Programme (SHP)

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 National Rural Health Mission (NRHM) of the Ministry of Health & Family Welfare. The School Health Programme is the only public sector programme specifically focused on school age children. Successful school health programme ensures better educational outcomes, improved social equity and improved capabilities to handle the adult world.

The School Health Program is envisaged as an important tool for the provision of preventive, promotive and curative health services to the population. The States can, in the spirit of the flexibility of RCH and NRHM, modify the options as per their needs and the available options for service delivery.

Components of School Health Program

- **Screening, health care and referral**

- ❖ Screening of general health, assessment of Anaemia/Nutritional status, visual acuity, hearing problems, dental check up, common skin conditions, heart defects, physical disabilities, learning disorders, behavior problems.
- ❖ Basic medicine kit to be provided to take care of common ailments prevalent among young school going children.
- ❖ Referral Cards for priority services at District / Sub-District hospitals.
- **Immunization**
 - ❖ As per national schedule
 - ❖ Fixed day activity
 - ❖ Coupled with education about the issue
- **Micronutrient (Vitamin A & Iron Folic Acid) management**
 - ❖ Weekly supervised distribution of Iron-Folate tablets coupled with education about the issue
 - ❖ Vitamin-A as per national schedule.
- **De-worming**
 - ❖ As per national guidelines
 - ❖ Biannually supervised schedule
 - ❖ Prior IEC with intimation to families to bring siblings to school on the fixed day
 - ❖ Siblings of students also to be covered
- **Health Promoting Schools**
 - ❖ Counselling services, promotion of mental well-being.
 - ❖ Regular practice of yoga, physical education, health education
 - ❖ Peer leaders as health educators
 - ❖ Adolescent health education
 - ❖ Linkages with the out of school children
 - ❖ Health clubs, Health cabinets, Health jamborees

❖ First Aid room/corners or clinics.

➤ **Monitoring & Evaluation**

A School Health Programme has been started in convergence with Health Department to cover all children in Government, Local body and Govt. Aided Schools / Hostels from Classes I to X from the year 2011-12. The following are the components of the health services covered under this Programme:

- Screening, health care
- Immunization
- Micronutrient management like Vitamin A and Iron Folic Acid
- De-worming

The Mission observed that although health check-ups were done in almost all the visited schools the situation with regard to supplementation of micronutrients, and for supply of spectacles is extremely poor.

- a. Most of the visited schools have Individual School Health Cards of students and the health check-up registers. Wherever present, in majority of the visited schools the individual health cards were not being maintained properly. In the absence of proper records, follow up and monitoring becomes difficult. In some schools ANM has made their visits and distributed some IFA and De-worming Medicines on random basis. No eye checkups have been done neither spectacles have been distributed.
- b. It was noticed in most of the visited schools in district Ludhiana that tablets, ointments kept in the First Aid Box were of expired dates. It is really serious issue which needs to be address immediately. It also reflects upon the poor monitoring in the district.

5. Engagement of Cook-cum-Helpers for preparation and serving of meal to the children

The State Government has engaged 40,243 Cook-cum-helpers in the State against the PAB approval of 49,449. Most of these cook-cum-helpers are women belonging to deprived sections of society and thus the State Government is following the MDM guidelines for empowering the women by providing them opportunities for employment and income generation. The JRM team observed that lesser number of cook-cum-helpers have been

engaged norms in most of the visited schools in Ludhiana district. The district officials seem to be unaware in this regard and there was no plan to engage cook-cum-helpers as per norm. The JRM team felt that the cook cum helpers should be trained in a more rigorous manner on the issues of health, hygiene and food safety aspects and the methods of cooking.

The cook-cum-helpers also informed that they have received honorarium up to the month of December, 2013. The records also reveal that payment in both the districts has been made till December, 2013 @ Rs.1200/- per month per cook-cum-helper at both schools. The State officials inform that honorarium towards cook-cum-helpers has not been provided to the centralised kitchen. The Review Mission observed that centralised kitchens are eligible for honorarium component for cook-cum-helpers on apportionment basis. The non-provision of honorarium to the centralised kitchen working in the centralised kitchen can have its impact on quality of meal served.

6. Availability of dedicated staff for MDM at various levels.

School Education Department has been declared nodal agency for the implementation of the Scheme in the schools, which is headed by the Secretary, School Education, and is looked after by the Director General School Education at the State level. Under his control a separate Mid Day Meal Cell has been constituted at the State Level with a General Manager and four Managers. They are assisted by one Accountant and four Data Entry Operators. At the District Level one District Manager has been posted in each District assisted by one Accountant and one Data Entry Operator. One Assistant Block Manager has been posted in each Block to implement and supervise the Mid Day Meal Scheme at the school level.

7. Availability of infrastructure

In most of the schools, the JRM team noticed that LPG cylinders and chulhas were available and were used for cooking food items. However, teachers in most of the schools informed that they have also use fire wood for cooking since the rates of LPG cylinders have increased. The State Government has arranged to provide eating plates for most of the children. These plates had been kept at schools and were used by the children for

consuming MDM. In order to facilitate a smooth process of cleaning the eating plates, multi-tap water outlets had been constructed recently at schools. JRM appreciates that in all the schools visited cooking ingredients i.e. spices, salt etc. were kept very neatly in hygienic condition in plastic jars and small containers.



Most of the schools had water filters which had been used for providing safe drinking water to children. In some schools, the availability of aqua-guard was also noticed. However, the sanitation facilities at the school level are a matter of very serious concern and pose a big challenge for the State Government. The condition and maintenance of toilets requires improvement in many schools. Toilets were damaged and not used in some schools.

8. Review of payment of cost of food grains to FCI by the districts

The Review Mission observed that the District Education Officers at districts are making payment to FCI. Both the districts had made payment of all the FCI bills received up to December, 2013. The Review Mission observed that there is no delay in making the payment to FCI. As per guidelines of the MDM Scheme the FCI has to raise the bills within 10 days after lifting the foodgrains from FCI depot and payment should be made to FCI within 20 days from the receipt of the bills.

9. Review the involvement of NGO's/Trust/Centralized kitchens

MDM is implemented through SMCs in almost 98% schools of the state and these committees are managing the programme. Cook-cum-helpers have been engaged by the SMCs for managing the programme. The NGO Stri Shakti is also working for providing from Centralised kitchens in few schools in district Mohali, Nawashahar, and Sangrur. In the school, where MDM is served through centralised kitchen the cooks and helpers engaged previously have been retained to serve the meal to the children and clean the utensils. However, the honorarium for cook-cum-helpers is not being paid to the centralised kitchen. The Review Mission recommended that the State should calculate the number of cook-cum-helpers as per norms permissible for the schools, catered through centralised kitchen and apportionment method should be used for payment of honorarium working at school level and working at centralised kitchen.

10. Management Information System (MIS)

Mid-Day-Meal Programme implementation is the overall responsibility of committees constituted at school level. Teacher Incharge of Mid-Day-Meal Programme maintains the day to day record of the programme. At the end of the month, every school submits its monthly report of stock register for foodgrains to the Centre Head Teacher which transmits

it to the Block Primary Education Officer. Block Primary Education Officer compiles the reports received from various schools and communicates to the District Education Officer (EE), who in turn compiles the entire district report and sends to the State Mid-Day-Meal Cell.

11. Assess the involvement of Community' in implementation of MDM

For effective and better implementation, scope for community participation has been provided in MDM scheme. Keeping this in view, the state has given responsibility to the School Management Committee (SMC) to manage the MDM scheme at school level. Some of the members of SMCs were trained in previous years in this regard. The state has also encouraged the MTA members of each school to support in effective management of the scheme. The state has specifically instructed that the food be served to children only after it is being tasted by some of these members. However there is no mechanism to record the remarks of those who taste the meal before it is served to children.

The cooking ingredients (pulses, vegetables including leafy ones, salt, condiments, oil & fuel etc), and other commodities are locally purchased at school level. The JRM team had found that this norm had been practiced in all schools. In some schools, the team had observed the participation of SMC members in monitoring the meals prepared and served at school point. The MTA and PTA members were also found to shoulder responsibility in supervision, management or monitoring of the MDM scheme in some schools.

The JRM team recommends for regular sensitization and mobilization of the SMC and MTA members to take responsibility in the management of the scheme. Social audit mechanism was not found to be in practice in any school. The state should take due step to ensure prevalence of this practice to strengthen community participation in the scheme.

12. Review of the status of tasting of the meal by at least one teacher.

The MDM guidelines envisage mandatory tasting of meal by teachers and community members before it is served to children. The Govt. of Punjab has issued instruction for tasting of meal by the head teacher, Cook cum Helper and a member of SMC of the school, before it is served to the children. The JRM team observed that the practice is being followed in all the visited schools and food is being tasted by teachers, cook-cum-helpers

and occasionally by SMC members and mothers. However, the record in this regards is not maintained in any of the visited schools. No register has been maintained for getting the signature/thumb impression of the teachers and SMC members to certify that they have tasted the meal.

13. Review of status of safe storage and proper supply of ingredients to schools

The Review Mission members observed that the State Government has provided bins for safe storage of food grains and other condiments in majority of the visited schools.



14. Review of the status of Awareness about Mid- Day Meal Scheme.

The JRM members interacted with parents and community members at a few places and held group discussions with them. It was observed that although most of them were not aware about the entitlements of the children under MDM, but all of them were aware that MDM is the right of the child.

The Team also observed that information regarding MDM i.e. the entitlements of children, Menu, logo, and emergency contact numbers etc. are not displayed at a prominent place in most of the visited school. The Mission strongly recommends that the information should be displayed at prominent place in every school.



15. Review of status of convening of Monitoring Committee under the Chairmanship of Member of Parliament

The State officials briefed the Review Mission that Vigilance and monitoring committees have been constituted in most of the districts. It was also informed that meetings have been held in most of the district on quarterly basis.

16. Review of the status of testing of food samples by reputed institute.

The JRM was informed by the State officials that testing of food samples has been done in the State through NABL accredited laboratory namely International testing centre, Panchkula.

17. Review of the status of Emergency Medical Plan

The review Mission team could not see any planning in terms of emergency Medical Plan in the visited schools of the selected districts. **However, several helpline telephone numbers were displayed in some of the visited schools in Ludhiana district.**

The JRM team was of the view that a dedicated helpline number for MDMS is required by the State.

PART B

**NUTRITIONAL EVALUATION
OF MID DAY MEAL SCHEME IN
(FATEHGARH SAHIB AND LUDHIANA)
PUNJAB**

CHAPTER -4

1. Introduction

The Mid Day Meal in schools, otherwise known as noon meal program, is aimed at providing one meal out of the three meals for children in the schools and at least the child should get one third of the calories and half of the protein of Recommended Daily Allowance (RDA). The meal should be able to fill the nutrient gap that exists in the diets of children. The extent of energy deficit in the diets of rural school age children as revealed by National Nutrition Monitoring Bureau (NNMB) Surveys (2005-06), is about 500 Kcal per day for primary school children and 750 Kcals for secondary school children. Thus, the school meal, "in principle" should ensure a supply of at least 450 - 700Kcals of energy to every child depending on their age group, who are partaking the meal. In the given context, the following (Table) nutrition norms were fixed in MDM programme:

Name of the foodstuff	Food Norms		Nutrients	Nutrient Norms	
	Primary School children	Secondary School children		Primary School children	Secondary School children
Cereals	100	150	Protein (g)	12	20
Pulses	20	30	Energy (Kcal)	450	700
Vegetables (GLV, Roots & Tubers and other vegetables)	50	75	Fats (g)*	15	20
Nuts and Oils seeds	-	-	Iron (mg)*	8	13
Condiments and spices	-	-	Vitamin A (µg)*	300	300
Egg /week	1 (50g)	1 (50g)	Calcium (mg)*	300	400
Fats & Oils (ml)	5	7.5	Thiamin (mg)*	0.5	0.6
Jaggery (g)	5	5	Riboflavin (mg)*	0.5	07
			Niacin (mg)*	7.5	7.5
			Vitamin C (mg)*	20	20
			Folic Acid (µg)*	60	70

* Half of the daily requirement of the child

The primary school children (1-5 standard) should get at least 450 Kcals of energy and 12g of protein, while secondary school children should get at least 700 Kcal of energy and 20g of protein from the MDM meal and required micronutrients like iron, vitamin A, calcium, thiamine, riboflavin, niacin, folic acid etc., should get half of the daily requirement through locally available fruits and vegetables.

2. Objectives of the study

It is mandatory to evaluate the nutritional status of school children periodically to check its process/input indicators, as well as outcome indicators and also to suggest mid-course corrections, if required in the MDM programme. Therefore, the objective of this part of review is to study the provision and consumption of food and nutrient intakes and current nutritional status of school children. We have also enquired about personal and environmental sanitation, which is also a crucial factor in the prevention and control of undernutrition.

3. Investigations

The following investigations were carried out using pretested and validated questionnaires:

1. Institutional and individual diet surveys
2. Anthropometric measurements
3. Clinical examination for nutritional deficiency signs
4. Current morbidity for previous 15 days
5. Organoleptic/sensory evaluation of students about mid day meal
6. Personal and environmental hygiene
7. Parents perceptions and knowledge about MDM programme
8. Knowledge and practices of functionaries

4. Data collection

Two teams, each team consists 6 persons, one medical officer, one nutritionist and one anthropologist/social scientist in each team, along with other two experts in multi-fields were assisted in the team. The data was collected by using pretested and validated questionnaires designed to capture the information on administrative/educational objectives and pertaining to diet and nutritional status of school children, including their personal and environmental hygiene. Hygiene of the kitchen, cook-cum-helpers of the selected schools were also assessed for hygiene and practices with respect to the MDM programme. Knowledge, perceptions, practices and opinions of 4 parents of the select children from all the schools covered for anthropometry was also The quantity of MDM prepared on the day of the visit was checked keeping in mind the exact amounts of raw ingredients used and the number of children present on that day to find whether the “food norms” as recommended for MDM are adhered to by each of the school. Additionally, institutional weighing and individual diet surveys were also carried out to assess cooked food, whether the serving of meals was as per the recommendations for primary & upper

primary children. The calories and proteins per serving was calculated. Organoleptic experiments were also carried out about their likes and dislikes, if any.

5 Plan of Analysis

The data was scrutinized and consistency checks were carried out and entered into the computers and the data was analyzed using SPSS Window Version 17.0 (US). Means and medians were given for continuous variables like height and weight and univariate and bioivariate analysis was carried out. An appropriate statistical significance tests were also used to differentiate to two groups. A level of 0.05 is used as significance.

6. Salient observations of the study

6.1. Nutritional status of School Children

6.1.1 Food intake of School children through Mid Day Meal: Institutional diet surveys

The average cereal intake of the primary school children was 76g/day as against the stipulated MDM nutrition norms of 100g/day, while among upper primary school children; it was 93g/day as against 150g/day. The consumption of pulses and vegetables among both the group children was more or less adequate (**Table 1**).

Table 1 Average intake of Foodstuffs (g/student/day) by school children through mid day meal: Institutional diet surveys

Food Stuffs	Primary Children		Upper Primary Children	
	MDM Norms (g)	Actual Intake (g)	MDM Norms (g)	Actual Intake (g)
Cereals (Rice)	100	76	150	93.5
Pulses (lentils, soya, Bengal gram)	20	18	30	15.8
Fat & Oils (Mustard Oil)	5	4.1	7.5	4.3
Vegetables	50	7.8	75	19.3

6.1.2 Nutrient intake of School children through Mid Day Meal: Institutional diet surveys

The intake of energy (402 Kcal/student/day) and protein (10.7g/student/day) through mid day meal among primary school children was inadequate according to the MDM nutrition norms (energy: 450 Kcal; protein: 12g) **Table 2**. The energy and protein consumption of upper primary school children was 448Kcal/student/day and 11g/student/day, which is inadequate as per the MDM nutrition norms.

Table 2 Average intake of Nutrients (per day/student) through MDM meal among the school students - Institutional diet survey- Punjab

Particulars	Proteins (g)	Energy (K cal)	Fat (g)	Calcium (mg)	Iron (mg)	Vitamin A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vitamin C (mg)	Free folic Acid (µg)
Institutional Level											
Primary	10.7	402	6	62.3	2.8	15.4	0.2	0.10	2.64	2.9	31.5
Upper primary	11.0	448	6	75.7	2.3	10.7	0.2	0.1	1.8	23.2	9.9

6.1.3 Food intake of School children through Mid Day Meal: Institutional diet surveys

The actual intake of cereals among the primary school children was 84g/student/day as against the stipulated MDM nutrition norms of 100g/day, while among upper primary school children; it was 90g/student/day as against 150g/day. The consumption of pulses and vegetables among both the group children was adequate (**Table 3**).

Table 3 Average intake of Food stuffs (g/student/day) among school children -Individual estimations-Punjab

Food Stuffs	Primary Children		Upper Primary Children	
	MDM Norms (g)	Actual Intake (g)	MDM Norms (g)	Actual Intake (g)
Cereals (Rice)	100	84	150	99
Pulses (lentils, soya, Bengal gram)	20	18	30	23
Fat & Oils (Mustard Oil)	5	4.6	7.5	8
Vegetables (Cabbage, potatoes, Cauliflower, pumpkin, Onion & Tomato)	50	8	75	44
Condiments & Spices (RCP, Turmeric, Coriander, Garlic, Ginger, Masala)	-	2	-	5

6.1.4 Nutrient intake of School children through Mid Day Meal: Institutional diet surveys

The actual intake of energy (461 Kcal/student/day) and protein (11.9/student/day) through mid day meal among primary school children was adequate according to the MDM nutrition norms (energy: 450 Kcal; protein: 12g), while a low intake was observed in case of upper primary school children (cereals: 99g/student/day; pulses: 23g/student/day) as against 150g cereals and 20g of pulses (**Table 4**).

Table 4 Average intake of Nutrients (per day/student) through MDM meal among the school students-Individual consumption estimation

Type of School	Protein (g)	Energy (K cal)	Fat (g)	Calcium (mg)	Iron (mg)	Vitamin A (µg)	Thiamin (mg)	Ribomgflavin (mg)	Niacin (mg)	Vitamin C (mg)	Freefolic Acid (µg)
Individual Level											
Primary	11.9	461	5.8	72.4	2.8	17.8	0.2	0.1	1.5	2.2	7.5
Secondary	12.8	501	7.1	68.3	2.8	12.7	0.2	0.14	2.1	18.7	12.8

Mid Day Meal Nutrition Norms as per the Min. of HRD

The prescribed nutrition to be provided by the Mid Day Meal is as follows:

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, while 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.

7. Organoleptic characters of MDM meal

The quality of MDM was also assessed by Sensory Evaluation. The parameters included appearance of meal, colour, odour, texture, taste and overall palatability of recipes prepared as a part of MDM. The evaluation was carried out on the school site by MDM team using 5-point Hedonic rating test.

Four batches of students were served MDM meal (rice, subji, dal) in 4 separate schools and in each school about 10 students were covered. Each student was served rice, roti, subji and

dal separately and with help of structured schedule Organoleptic evaluation was carried out with respect to. The majority of the students (85-92%) stated that the meal appearance, colour, odour, texture, taste and overall palatability were either good or very good. Only 10-15% stated that the meal is satisfactory in terms of its appearance, colour, odour, taste, texture and overall palatability (**Table 5**).

Table 5: Level of satisfaction of school children (class 6th to 8th) about the food stuffs served in MDM

Menu	Level of Satisfaction	Food stuffs served (N=40)		
		Roti/Rice	Sabji	Dal
Appearance	Good	91.7	86.8	86.8
	Satisfactory	8.3	13.2	13.2
Colour	Good	91.7	86.8	86.8
	Satisfactory	8.3	13.2	13.2
Odour/Aroma	Good	91.7	86.8	86.8
	Satisfactory	8.3	13.2	13.2
Texture	Good	91.7	86.8	86.8
	Satisfactory	8.3	13.2	13.2
Taste	Good \good	91.7	86.8	86.8
	Satisfactory	8.3	13.2	13.2
Overall Palatability	Good	91.7	86.8	86.8
	Satisfactory	8.3	13.2	13.2

8. Anthropometry

Reference Standards: The Height for Age (HAZ) and Body Mass Index (BMI) values were compared with the international classification as given by the World Health Organization for children aged five to nineteen years (WHO, 2007).

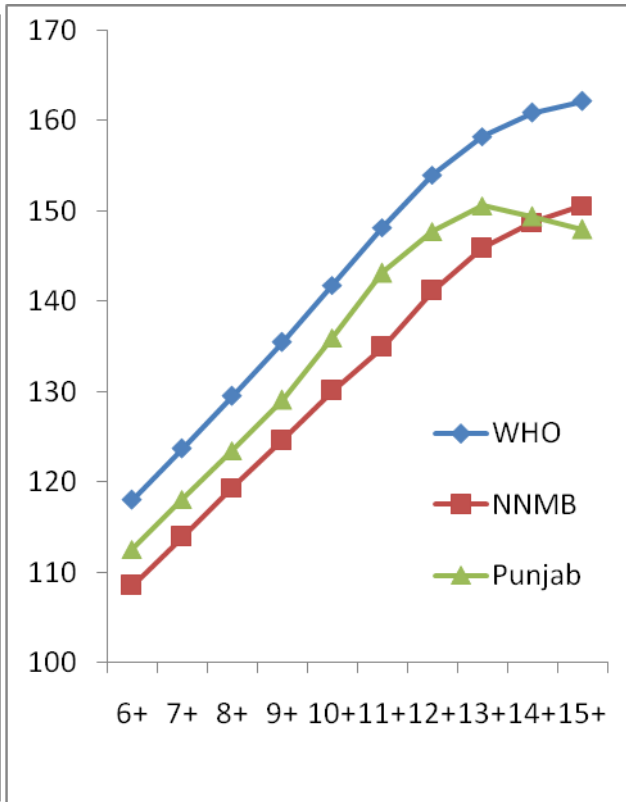
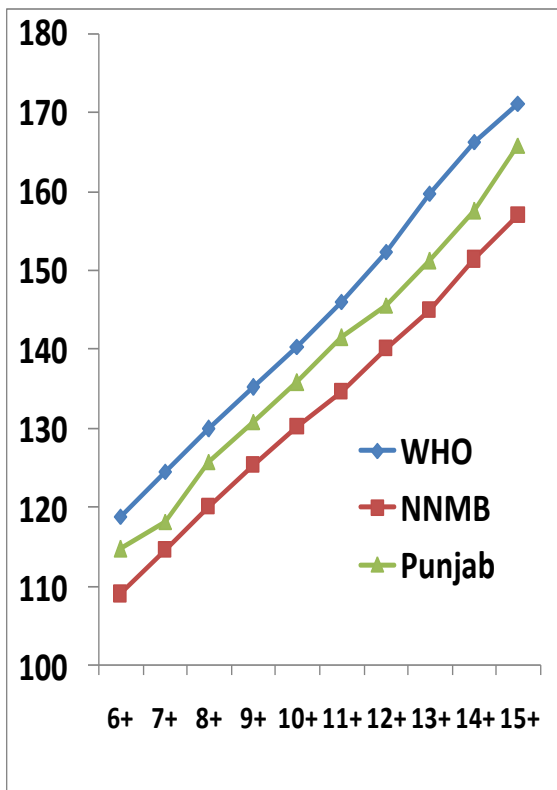
Classification of Children according to WHO SD classification 2007

Height for Age (HAZ)	
Normal	-2SD to +1SD
Stunted	< -2SD
Tall	+1SD to +3SD
Body Mass Index (BMI)	
Normal	-2SD to +1SD
Moderately Undernourished	-2SD to -3SD
Severely Undernourished	< -3SD
Overweight	+1SD to < +3SD
Obese	≥ + 3SD

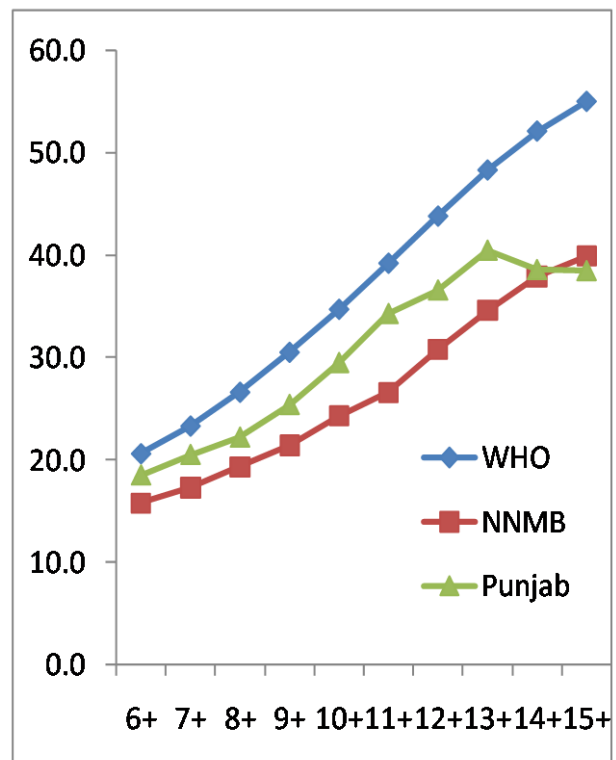
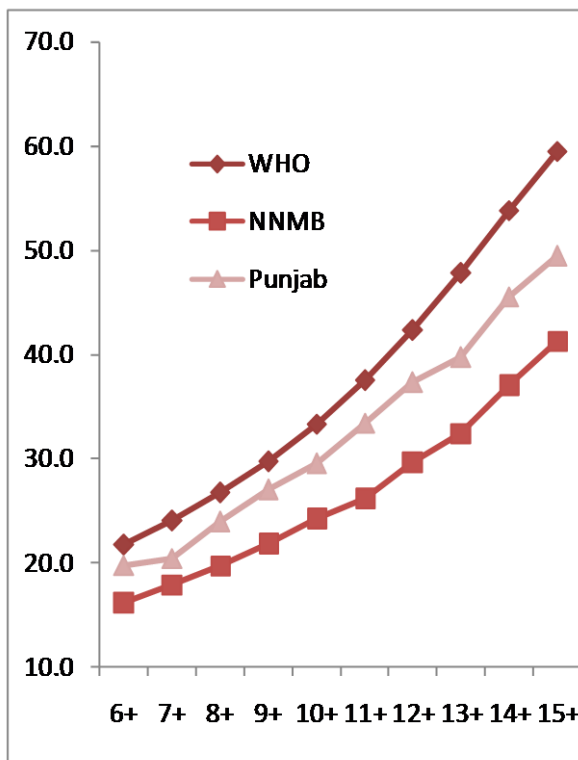
The mean anthropometric measurements such as weight, height, mid upper arm circumference (MUAC) and body mass index (BMI) has increased with increase of age from 5 to 15 years of the school children, except BMI in 15 years children. All the mean anthropometric parameters of these children were less, when compared to the WHO standards (Table 6). However, the mean measurements of Children of Punjab were higher when compared to their rural counter parts in India (NNMB survey 2012-12) (Figure 1).

Table 6: Mean Anthropometric measurements of school children in Fategaharh Sahib and Ludhiana districts of Punjab by age and gender

N	Boys				Age (yrs)	N	Girls			
	Weight (Kg)	Height (Cm)	BMI (Kg/m ²)	MUAC (cm)			Weight (Kg)	Height (Cm)	BMI (Kg/m ²)	MUAC (cm)
45	17.5	108.9	14.7	15.2	5	40	17.4	107.7	14.9	15.4
55	19.7	114.8	14.8	16.2	6	59	18.5	112.6	14.5	15.7
67	20.4	118.3	14.5	15.9	7	65	20.5	118.1	14.7	16.1
83	23.9	125.8	15.0	16.8	8	75	22.2	123.5	14.5	16.6
55	27.0	130.9	15.6	17.9	9	71	25.4	129.1	15.2	17.3
90	29.5	135.8	15.9	18.4	10	61	29.5	136.0	15.9	18.4
81	33.4	141.5	16.5	19.5	11	79	34.3	143.2	16.6	19.4
59	37.3	145.6	17.5	20.3	12	77	36.6	147.8	16.7	19.6
65	39.7	151.2	17.3	20.7	13	59	40.5	150.6	17.7	20.4
33	45.5	157.5	18.1	22.0	14	22	38.6	149.4	17.3	20.4
14	49.4	165.9	17.9	22.3	15	8	38.5	148.0	17.4	20.6
647	29.4	133.6	16.0	18.3	5-15	616	28.4	132.2	15.8	17.9



Distance charts for Heights for Boys and Girls



Distance charts for Weights for Boys and Girls

8.1 Prevalence of stunting

Overall, the prevalence of stunting (<-2SD, height for age) among school children was about 12.9%. The proportion was higher in the district of Ludhiana (19.2%) when compared to Fatehgarh (6.8%). The prevalence of stunting among girls was higher as compared to boys in both the districts (**Table 7 & Fig. 2**).

Table 7: Distribution (%) of school children according to Height for age (Stunting) by Districts and Gender: SD Classification*

District	Gender	N	Stunting (Height for age)			P value
			Severe (<-3 SD)	Moderate (-3 SD to -2 SD)	Normal (> -2 SD)	
Fatehgarh Sahib	Boys	339	0.3	5.0	94.7	NS
	Girls	303	1.7	6.9	91.4	
	Pooled	642	0.9	5.9	93.1	
Ludhiana	Boys	307	2.0	15.0	83.1	NS
	Girls	313	3.2	18.2	78.6	
	Pooled	620	2.6	16.6	80.8	
Grand Pooled		1262	1.7	11.2	87.1	

* WHO Standards

Fig. 2 Prevalence (%) of stunting among School children in the two Districts of Punjab: WHO standards

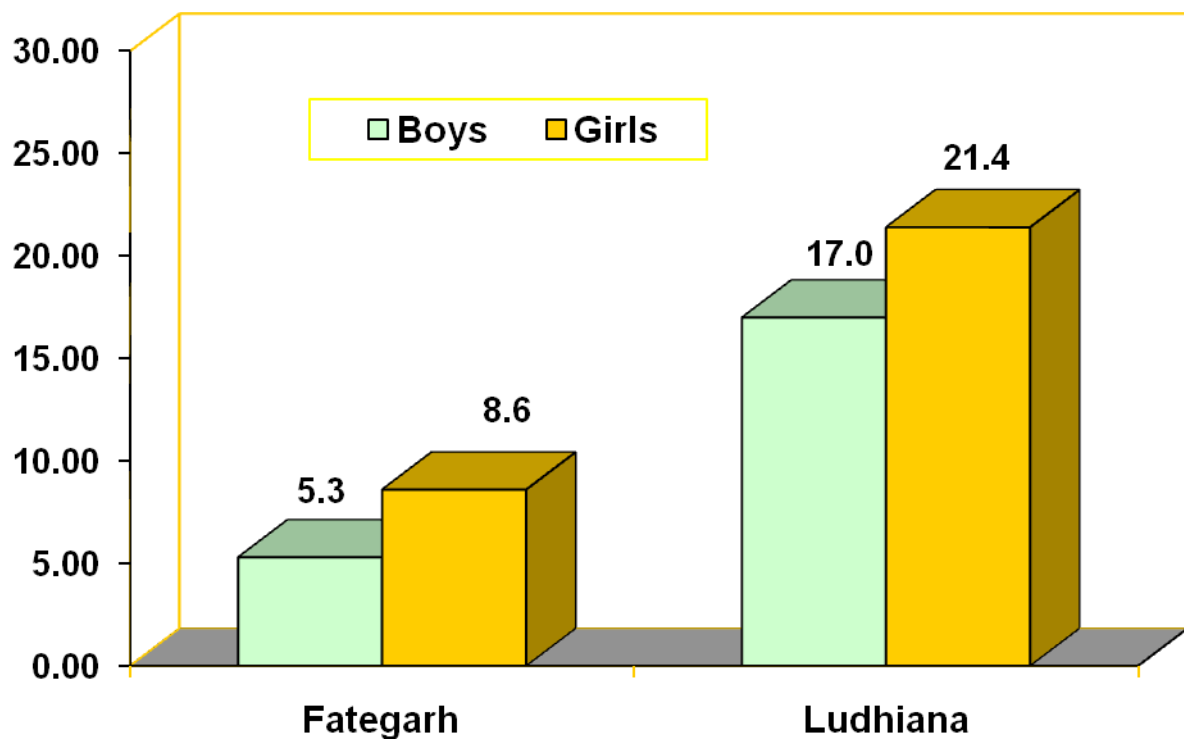


Table 8: Distribution (%) of school children according to BMI Grades by Districts and Gender: SD Classification*

District	Gender	N	Thinness (BMI-Z Scores)			Overweight /Obesity	P value
			Severe (< -3 SD)	Moderate (-3 SD to -2 SD)	Normal (> -2 SD)		
Fategharh Sahib	Boys	339	2.9	10.0	77.6	9.4	NS
	Girls	303	2.6	7.6	82.2	7.7	
	Pooled	642	2.8	8.9	79.8	8.6	
Ludhiana	Boys	307	1.6	8.1	85.3	4.9	NS
	Girls	313	1.3	8.6	88.3	1.9	
	Pooled	620	1.5	8.4	86.8	3.4	
Districts Pooled	Boys	646	2.3	9.1	81.3	7.3	NS
	Girls	616	1.9	8.1	85.2	4.7	
Grand Pooled		1262	2.1	8.6	83.2	6.0	

* WHO Standards

Fig. 3 Prevalence (%) of thinness among school children in the District of Fatehgarh Sahib: WHO standards

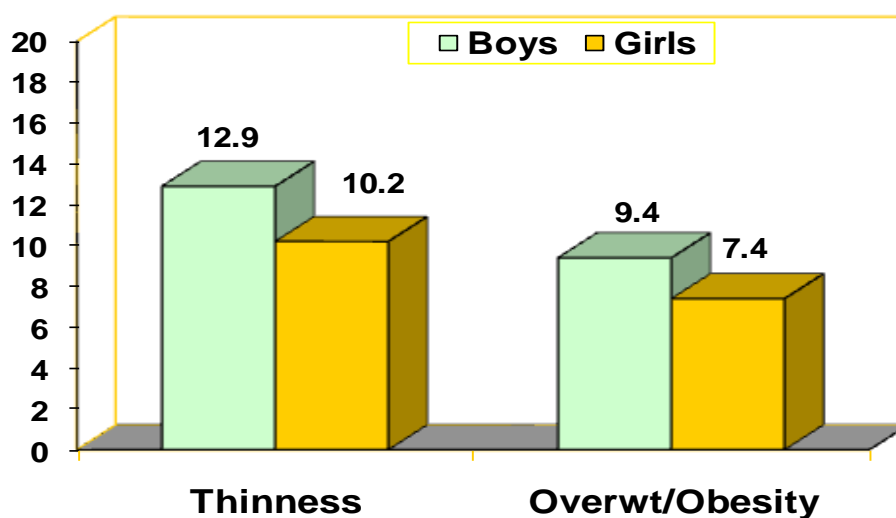
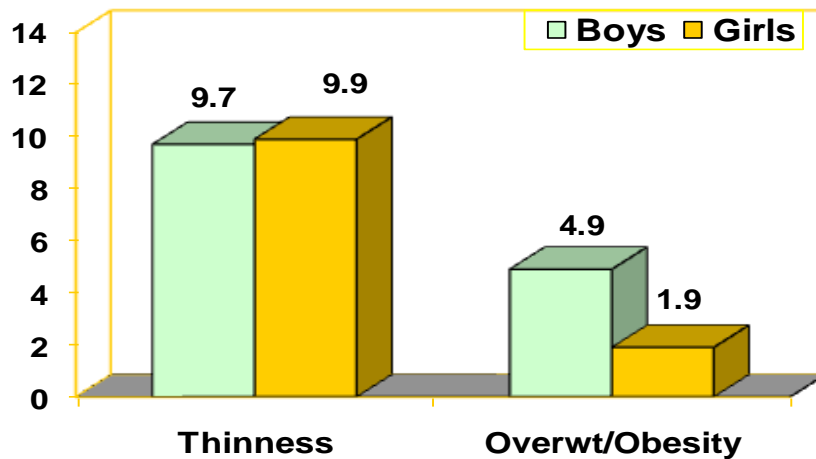


Fig. 4 Prevalence (%) of thinness among school children in the District of Ludhiana: WHO standards



8.2 Prevalence of overweight and obesity

Overall, the prevalence of overweight and obesity (> +1SD and above, BMI-Z scores) among school children was only 6%. No gender differences were observed between boys and girls. The prevalence of overweight and obesity among boys was 8.6% in Fatehgarh Sahib, while it was 3.4% among girls in the district of Ludhiana. The prevalence of thinness was higher among boys compared to girls (Table 8 & Fig 3 & 4). The prevalence of overweight and obesity in the districts among the school children was high, when compared with the Indian rural counterparts.

8.3 Clinical Examination: Nutritional deficiency signs

The prevalence of dental caries was about 15%, which was higher in Ludhiana (16.1%) compared to Fatehgarh Sahib (14.2%). The prevalence of conjunctival xerosis and Bitot spots was 1.3% and 0.2% respectively and angular stomatitis was about 0.7%, while prevalence of goitre was less than 1% among children (Table 9).

Table 9: Prevalence (%) of Nutritional deficiency signs among school children

Nutritional deficiency signs	Fategharh Sahib	Ludhiana	Pooled
Conjunctival Xerosis	1.1	1.5	1.3
Bitot spots	0	0.5	0.2
Angular Stomatitis	0.9	0.5	0.7
Phrynoderma	0.6	0	0.3
Dental Caries	14.2	16.1	15.1
Dental Flurosis	2.0	0.3	1.2
Goitre I (palpable)	0.5	0.2	0.3

Table 10: Prevalence (%) of Current Morbidity among school children in the districts of Fategharh saheb and Ludhiana of Punjab

Morbidity	Fategharh Sahib	Ludhiana	Pooled
Any morbidity	6.1	1.8	4.0
Fever	1.4	0.8	1.6
ARI	4.5	1.0	2.8
Diarrhoea	0.2	0	0.1

8.4 Prevalence of Current Morbidity

The prevalence of any morbidity among school children were about 4%, which is marginally higher in the district of Fategharh Sahib (6.1%) compared to Ludhiana (1.8%). Among all the current morbidities, the prevalence of acute respiratory infections (4.5%), followed by fever was (1.6%), and diarrhea and dysentery (0.1%) (**Table 10**).

8.5 Knowledge and practices of students about MDM and hygiene practices

Almost all the students (100%) stated that the served quantity of mid day meal was sufficient to meet their hunger and about 92% of students aware of weekly menu of MDM and three fourth of them were satisfied with the present menu. More than half of the students stated that they are washing hands before taking the meal (48.6%), after defecation (59.5%). However, all the students said that they are washing their glasses and plates before taking the meal. Only one fifth of the students were bathing daily and about 81% were wearing washed clothes daily (**Table 11**).

Table 11: Hygiene Practices of Students in two districts of Punjab

SL No	About MDM	Per cent
1	Sufficiency of food served	100.0
2.	Knowledge about MDM menu	91.9
3.	Satisfied with the MDM menu	70.2
4.	Hand wash practice before taking the food	48.6
5.	Washing of plates and glasses before taking the food	100.0
6.	Hand washing after defecation	59.5
7.	Regular nail cutting	89.2
8.	Brushing teeth with Brush	37.8
9.	Daily bathing	18.9
10.	Wearing washed clothes daily	81.1

8.6 Knowledge and perceptions of parents of School children about MDM

From each of the selected schools, about 4 parents of the children were interviewed for their knowledge and perceptions about MDM programme. About one fourth of parents were illiterate and only 1% were educated graduation and above. Almost all the parents said that their children were participating in the MDM meal and three fourth of parents stated that the MDM is useful for improvement of health and nutritional status of their children and about two third said that the MDM is providing an additional meal to their children. Almost all the parents stated that their children consuming mid day meal daily and like it and quantity served to their children was adequate. Two thirds of children were having at least two meals at home, apart from one meal at school.

Table 12: Knowledge and perceptions of parents about MDM programme-Punjab

Variables		Fatehgarh Sahib (n=86)	Ludhiana (n=88)	Pooled (n=174)
Educational Qualifications of perents	Illiterate	23.3	25.0	24.1
	Primary	19.7	26.1	23.0
	Secondary	16.3	31.8	24.1
	Higher secondary	15.1	3.4	9.2
	Intermediate	23.3	13.6	18.4
	Graduation and above	2.3	0	1.1
MDM beneficial to children				
Beneficial effects of MDM	Increase Enrollment	26.7	19.3	23.0
	Increase attendance	33.7	79.5	56.9
	Reduce school dropout	25.6	2.3	13.8

	Improves Health & Nutritional status	89.5	55.7	72.4
	Provides additional food	65.1	62.5	63.8
	Improves Scholastic performance	31.4	28.4	29.9
Child participating in MDM		100.0	100.0	100.0
Child like the taste of MDM		100.0	94.3	97.1
Quantity of food adequate		98.8	89.8	94.3
No of meals child takes at home	2	11.6	55.7	33.9
	3	83.7	42.0	62.6
	4	4.7	2.3	3.4
Changes observed in their child as beneficiary of MDM	Nutritional status improved	44.2	47.7	46.0
	Health status improved	80.2	44.3	62.1
	Regularly going to school	39.5	33.0	36.2
	Improvement in scholastic performance	40.7	33.0	36.8
	No change	5.8	8.0	6.9
School Monitoring committee to supervise MDM		75.6	43.2	59.2
Suggestions to strengthen the MDM programme	No changes required	11.6	6.8	9.2
	Regular supply of food	5.8	8.0	6.9
	Improve quality (include milk & fruits)	11.6	3.4	7.5
	Increase quantity	5.8	1.1	3.4
	Change the menu	11.6	6.8	9.2
	Others (programme should be continued, extended up to 10 th class and add seasonal fruits,	24.4	5.7	14.9

About half of the parents opined that they observed improvement in growth and development and health of their children because of consumption of MDM (**Table 12**). More than half of the parents stated that there is a School management Committee (SMC) in the village to monitor the MDM programme. Less than 10% of parents suggested providing fruit and milk and changing the menu. One third of parents stated that hygiene and sanitation should be improved in the schools and kitchens.

8.7 Knowledge and perceptions of Teachers/ MDM In-charges on the programme

In-depth interviews were conducted on 36 teachers/MDM Center In-charges about their knowledge, perceptions and practices about MDM programme. The age of these functionaries was

ranging from 26-59 years. More than half of teachers are postgraduates and completed B.Ed and one fourth were completed graduation. Only one fifth the teachers were aware of all the objectives of MDM, while almost all knew only one objectives of MDM. As per the report of functionaries, all the schools were serving rice, roti, dal, subji, rajhna and kheer on rotation. All the schools had served mid day meal for about 220 days during the previous year. The important reason for not serving food on all school working days was irregular supply of food grains.

As per the report of teachers/MDM in-charges, about more than half of the surveyed schools were supervised by block education Officer/inspectors during the previous month, while only one fifth of schools were supervised by the district superintendent of education (DSE)/others. The important activities carried out during supervisory visit were checking of MDM food, followed by hygiene and verification of records.

Majority of these functionaries suggested that to ensure regular supply of food grains, increase contingency amount and honorarium for cook-cum-helpers and few of the in-charges of MDM suggested that the responsibility of the implementation of MDM may be given to outsiders of education department. The teachers/in-charges of MDM felt that most of time needs to be spent on the implementation of MDM programme and were unable to spend time on teaching activity.

Table 13.1 Knowledge and perceptions of teachers/In-charges of MDM-Punjab

Variables		Fatehgarh Sahib (n=23)	Ludhiana (n=26)	Pooled (n=49)
Education	Intermediate	17.4	0	8.2
	Inter & TTC	8.7	23.0	16.3
	Graduate	4.3	3.8	4.1
	Graduate & B.Ed	13.0	26.9	20.4
	PG & B. Ed	56.6	46.3	51.0
Objectives of MDM	All objectives	17.4	19.2	18.4
	At least 4 objectives	21.7	19.2	20.4
	At least 3 objectives	26.1	23.1	24.5
	At least 2 objectives	34.8	38.5	36.7
	At least 1 objective	100	100	100
Supervision by	Inspector	21.7	96.2	61.2
	Block/mandal education Officer	30.4	30.8	30.6
	DEO	17.4	15.4	16.3
	Local committee	21.7	30.8	26.5
	Others (CRP)	17.4	11.5	14.3

8.8 Knowledge and perceptions of Functionaries of MDM programme

In-depth interviews were also conducted on 12 MDM functionaries (2 DEO, 2 district managers of MDM, and 8 ABMs) for assessing their knowledge and perceptions about MDM programme. Except one, no one were aware of all the objectives of MDM. However, most of them were aware of at least 3 objectives of MDM. Most of ABMs were visiting the centers regularly and were submitting their monthly reports to the respective head departments. During their supervision and monitoring visits, most of them were verifying records and identifying problems. Only half of the functionaries were aware of the correct ration of cereals to be given to each MDM beneficiary, while only one fifth were aware of the amount of pulses to be given to the beneficiary. Only negligible proportion of the functionaries were aware the amount of oil and vegetables to be given to each beneficiary. Most of

the functionaries were suggested to ensure regular supply of food grains, increase contingency amount (Table 14.1& 14.2).

Table 13.2 Knowledge and perceptions of teachers/In-charges of MDM-Punjab

Activities undertaken during supervision	Verification of records	34.8	34.6	34.7
	Identify problems & solve it	21.7	19.2	20.4
	Community mobilization	13.0	11.5	12.2
	Check hygiene	30.4	42.3	36.7
	Check cooked foods	39.1	42.3	40.8
	Others (stock, attendance)	4.3	3.8	4.1
Reasons for improper supply of MDM	Irregularity in food supply	8.7	19.2	14.3
	Problem of transport	8.7	3.8	6.1
	Problem of cook	8.7	3.8	6.1
	Inadequate contingency	11.5	30.8	22.4
	Inferior quality of foods	0	7.7	4.1
	Irregular supply of LPG	30.4	11.5	20.4
Suggestions	Regular supply of food grains	8.7	23.1	16.3
	Increase contingency	43.5	34.6	38.8
	Increase honorium for cook	43.5	26.9	34.7
	Change menu	21.7	7.7	14.3
	Others (Seasonal foods, rotation of in-charges of MDM)	17.4	26.9	22.4
Supply of food grains	Daily	4.3	3.8	4.1
	Monthly	21.8	42.3	32.7
	Quarterly	73.9	53.9	63.2
School health	Monthly	4.3	3.8	4.1

programme is in operation	Quarterly	34.8	30.8	32.7
	Half yearly	56.6	61.6	59.1
	Others	4.3	3.8	4.1
Total Children covered		1847	2801	4648
Total children attended on the day of survey		1622	2264	3886
Availed MDM		100.0	100.0	100.0

Table 14.1: Knowledge and Perceptions of supervisory level functionaries-Punjab

Particulars	N=12	%
	Graduate	41.7
	Post Graduate	58.3
Objectives	All objectives	16.7
	At least 4 objectives	41.7
	At least 3 objectives	58.3
	At least 2 objectives	58.3
Activities during supervision	Verification of records	91.6
	Identify problems & solve it	58.3
	Check hygiene	100.0
	Check cooked foods	83.3
	Others (stock, attendance)	33.3
Measures of assessment of success of MDM	Improve nutritional % health status of children	75.0
	Improve enrollment and attendance of children	83.3
	Decrease drop out	25.0
	Increased scholastic performance	58.3
Suggestions	Increase the cooking cost	58.3
	Increase LPG supply	50.0
	Training for cooks	8.3
	Timely release of funds	8.3
	Increase the cooks salary	25.0

Table 14.2 Knowledge about MDM nutrition norms of supervisory level of functionaries-Punjab

Particulars	Correct responses							
	Cereals		pulses		Oils		Vegetables	
MDM norm	g	%	g	%	ml	%		
Primary	100	33.3	20	8.3	5	8.3	50	8.3
Upper primary	150	66.7	30	91.7	7.5	91.7	75	91.7

8.9 Observation of cooking process and availability infrastructure

In about 81% of schools visited, the quality of rice, dal, roti and vegetables was good. Majority of the cook-cum-helpers were carrying out sieving of raw rice, washing, cooking with lid before cooking the rice and dal. However, almost all the schools, the kanji was discarded, which was not supposed to do, leads to loss of B-vitamins. In majority of schools, separate kitchen buildings are available. Only about 75% of schools, the cooking utensils were adequate. In majority of schools the firewood was used as cooking fuel. In almost all the schools, drinking water facility is available. In one third of schools, children were drinking water directly from the tap/bore pump. In about three fourths of schools, the store room ventilation is satisfactory (Table 15.1 & 15.2).

Table 15.1 Observation of cooking process on the day of visit to the schools and availability infrastructure-Punjab

Food Stuffs	Particulars		Percentage
	n		36
Rice	Quality	Good	80.7
		Satisfactory	13.5
	Sieving (Cleaning)		100.0
	Washing before cooking		90.4
	Removal <i>Kanji</i>		73.1
	Cooking with lid		90.4
Dhal	Quality	Good	67.3
		Satisfactory	25.0
	Sieving (Cleaning)		88.8
	Washing before cooking		90.4
	Cooking with lid		86.5
Vegetables	Quality	Good	52.8

	Satisfactory	13.7
	Washing before cooking	70.6
	Washing after cutting	76.5
	Cooking with lid	74.5
	Cutting in to big pieces	23.5
Hand washing of cooks before cooking the food		90.4
Kitchen facility at the school	Open	76.9
	Closed	57.7
Washing of vessels before cooking		100.0
Cooking with lid		100.0
Sufficiency of vessels for cooking		88.5

Table 15.2 Observation of cooking process on the day of visit to the schools and availability infrastructure-Punjab

Availability of drinking water facility in school premises		100.0	
Source of drinking water	Tap	48.1	
	Bore well	44.2	
Utensils for storage of dinking water	Pot	1.9	
	Steel container	9.6	
	Plastic container	3.8	
	Directly from source	76.9	
	Other metal container	7.7	
Whether drinking water container covered with lid		99.2	
Ladle used to collect water from main container		9.6	
Type of cooking fuel used	LPG	75.0	
	Fire wood	78.8	
Iodised salt used for cooking		100.0	
Closed container used for storage of Iodised salt		100.0	
Storage room facility	Having store room		
	Having dunnage facility		40.4
	Ventilation of store room	Good	36.5
		Satisfactory	44.2
		Bad	19.2
	Storage of food material	Closed container	90.4
		In bags	3.8
	open	5.8	
Presence of insects in the store room		17.3	
Insecticidal measures followed		75.0	

9. Conclusions

9.1 Nutritional Adequacy of Mid Day Meal

The quantity of the meal was evaluated by the JRM Nutrition team at the time of serving of meals in 6 schools of the two districts. Overall, the measured quantities of the meal served to the primary and upper primary school children were found to be inadequate and all the ingredients were inadequate for primary and upper primary school children.

The observations with regards to the Mid Day Meal Menu, Quantity and additional foods with suggested recommendations are provided below:

Observations	Recommendations by JRM (Nutrition Team)
Rice and roti is being prepared and served	Rice and wheat preparations are being given, however children are preferring mostly roti.
It was observed that rice kanji is being removed during cooking of rice.	Removal of rice kanji leads to loss of B-complex vitamins. Therefore, Kanji should not be removed and pressure cooking may be followed.
Only 1-2 pulse varieties are being used	Include all pulses in rotation like Moong, redgram, lentil, green gram, Chana etc.
Additional foods like eggs and fruits are being given once a week	These foods may be given at least 3 times a week
Monotony of recipes	Variety of preparations depending on locally available foods should be planned in order to increase acceptability of food by children. The JRM Team has made suggestions on the variety of preparations (Annexure III).
Quantity of rice, pulses and vegetables provided in the MDM meal to the primary and upper primary school children was less than the recommended amount.	It is recommended to ensure the quantity of MDM nutritional norms.
Children are unable to consume the amounts recommended.	Focus should be on portion size with nutrient density with minimal wastage.
Leafy vegetables are not used in most of the schools.	Locally available fresh green leafy vegetables like palak, drumstick & radish leaves, mustard leaves should be included in the menu.
Very less amounts of other vegetables are added.	More seasonal and locally available vegetables & nuts should be incorporated in recipes to make it more nutrients dense.
It was observed that in many schools, vanaspathi is being used as cooking oil	Vanaspathi is a hydrogenated vegetable oil, which contains mostly trans-fatty acids and are harmful to the health of the children

Observations	Recommendations by JRM (Nutrition Team)
Overall quantity of cooked Mid Day Meal is not being practiced based on the attendance of students (cooking daily fixed quantity)	The quantity of each of ingredient used to prepare recipes of Mid Day Meal prepared has to be modified daily depending on the attendance of children.
Most of the parents said that the MDM is very useful for their children. However, they also suggested that it is still better, if seasonal fruits are provided once a week	This may be focused and discussed for its feasibility with the existing price availability.

9.2. Sensory Evaluation of the MDM served in schools of both districts.

1. The MDM guidelines clearly mention that a supervising teacher should taste the prepared meal prior to serving, which was practiced in almost all the schools.
2. The sensory quality of the meals was either good or very good in all the schools surveyed. All the children stated that they got more food if asked additionally.

9.3. Hygiene and practices

1. Most of the students are practicing hand and plate washing before eating meal. It was also observed that cook-cum-helpers are also practicing hand washing and wearing aprons. However, environmental sanitation of kitchens is not satisfactory.
2. In few of the selected schools toilets are not in using conditions and children are compelled to go outside of the school for toilet facility. Construction of toilets, repairs for the existing toilets in some of the schools and maintenance of cleanliness in the toilets is very essential.

9.4. Nutritional status

1. High prevalence of dental caries was observed in school children in both the surveyed districts, especially high in the district of Ludhiana compared to Fethgarh Sahib. There is a need to educate children for good oral hygiene. The prevalence B-complex deficiencies was noticed in <1% of children.
2. The prevalence of stunting and thinness among school children was 12.9% and 10.7% respectively, which needs to be reduced by educating the parents to provide balanced diet even at their homes, because of 2-3 meals are being consumed at home.

3. The prevalence of any current morbidity among school children was about 4%, which is lower compared to national figure. It was also observed that there was no emergency medical facility at schools, which may be provided in all the schools and selected teachers may be trained in the use of primary aids.



Recommendations

- 1.** The system of release of funds needs to be improved by removing intermediary levels i.e. district. Funds may directly be released to implementing agencies by the State through banking channel.
- 2.** The Mid Day Meal Menu should have more variety and nutrient density per portion. The JRM- Nutrition team recommends implementation of the suggested recipes in a phased manner, particularly with inclusion of green leafy vegetables at least twice a week and seasonal fruits once a week.
- 3.** It was observed that most of the schools are using vanaspathi, which is highly saturated fat. It is recommended to use refined vegetable oils in the place of vanaspathi.
- 4.** Prevalence of undernutrition was observed to be higher in the district of Ludhiana and it may be due to more migrant population settled in those areas. The parents and teachers may be sensitized about the balance nutrition and health education. Identify those children, who need special ration.
- 5.** It was observed that upper primary children are being provided same quantity of meals as is being provided for primary children. The State Govt. should ensure that all the children must be provided meals as per the prescribed norms.
- 6.** Sensitisation and capacity building of officials at District and Block levels towards their role and responsibilities is essential for effective implementation of MDMS.
- 7.** State should use the information available at MDM-MIS portal to evaluate the performance of scheme and also for focused inspections and monitoring.
- 8.** The State Govt. should engage adequate number of Cook-cum-Helpers in the schools as per norms. There is a need to educate the cooks regarding proper weighing of raw ingredients.
- 9.** The rights and entitlements of children, menu, MDM logo, and emergency contact numbers should be displayed prominently on the walls of the schools.
- 10.** Most of the parents and teachers are requesting to provide mid day meal to 9th and 10th standard children, as they also need an additional nutrients because they are in adolescent growth spurt.

11. The JRM team places on record its appreciation in terms of provision of storage bins for cereals grains. Although purified water systems are available, however, they are not in working conditions in most of the places. It may be ensured that these may be repaired on priority basis.

12. Monitoring and Supervision:

- **Inspections by the officials-** Considering that the scheme is not properly monitored in the State, it may ensure that all the parameters related to MDMS be properly monitored through a structured format.
- **Setting up of State Review Mission** to review the implementation of the Scheme in districts on quarterly basis is recommended.
- **Conducting Research Study** – The State should conduct research study on the areas like capacity building, community involvement etc.

13. The JRM team recommends use the Mid Day Meal as a medium to impart Nutrition Education to children, teachers and parents. Health and Nutrition education should become an integral part of the scheme.

14. Periodic feedback may be obtained for further improvement of from the stakeholders and other concerned officials/teachers who are engaged at the grass root level.

15. State may explore the possibility of convergence with corporates for using of the funds available under Corporate Social Responsibility (CSR).

16. The schools should be encouraged to organize health melas, cooking competitions and pro-active parents and community participation. The team has indicated important nutrition messages along with specific recipes recommended for implementation.

17. Convergence with State Health Authorities may be strengthened for ensuring effective implementation of School Health Programme.

18.Emergency Plan may be finalized along with the “Dos and Don’ts” in case of emergency. The Primary Health Centers should also be equipped suitably to handle cases of food poisoning or any untoward incident in the school.

19.Social Audit may be encouraged through participation of community so as to bring transparency and accountability in the scheme.

The State Govt. is requested to submit ATN (Action taken note) to GOI within three months.

(Shri Prabhcharan Singh)

(Dr. J.J. Babu)

(Dr. Jatinder Grover)

(Dr. R. S. Ghumman)

(Shri V.K. Nayyar)

(Dr. A. Laxmaiah)

Annexure-I

S.No.	School	Enrolment	Attendance on various days										Av.	%age
			1	2	3	4	5	6	7	8	9	10		
A.	District- Fatehgarh Sahib													
a)	Khamano Kalan Block (Fatehgarh Sahib)													
1	GES , SandhariMajara	26	25	26	23	26	26	26	26	26	26	26	26	98%
2	GHS , Sidhupur Kalan	76	70	69	61	60	63	61	68	67	70	68	66	86%
3	GES Sidhupur Kalan	51	51	50	43	51	51	50	51	50	49	49	50	97%
4	GHS , JatanaUcha	81	69	70	71	76	66	51	68	73	75	72	69	85%
5	GESJatanaUcha	65	43	44	43	43	35	40	44	44	42	34	41	63%
b)	Fatehgarh Sahib Block (Sirhind-2)													
6	GMS , Ajnali	157	139	120	137	130	139	127	109	139	137	144	132	84%
7	GES , Ajnali	206	191	178	187	189	184	185	181	197	197	198	189	92%
8	GES, SangatPurSodhian	50	48	50	49	48	50	49	49	49	50	48	49	98%
9	GHS, SangatPurSodhian	70	66	53	65	68	62	51	56	66	64	64	62	88%
10	GHS, Sanipur	100	88	84	90	87	88	76	81	91	92	93	87	87%
11	GES, Sanipur	82	71	82	82	82	81	82	82	82	82	82	81	99%
c)	Fatehgarh Sahib Block (Bassi Pathana-2)													
12	GES, Shaheedgarh	91	81	82	83	81	79	83	79	80	84	80	81	89%
13	GMS, Shaheedgarh	56	50	52	47	46	50	49	48	39	51	42	47	85%
d)	Fatehgarh Sahib Block -1													
14	GES, Rasoolpur	74	68	64	62	60	71	70	57	56	51	54	61	83%
15	GMS, Rasoolpur	58	50	55	52		51	47	42	40	51	50	49	84%

16	GES, Chunni Kalan	106	94	90	97	99	86	87	84	84	94	97	91	86%
17	GSSS Chunni Kalan	128	113	119	110	99	119	113	111	110	97	99	109	85%
S.No.	School	Enrolment	Attendance on various days										Av.	%age
			1	2	3	4	5	6	7	8	9	10		
18	GSSS, Badaliala Singh	84	81	72	74	75	70	71	71	72	74	79	74	88%
19	GESKotlafazal Peer Jain	130	104	110	111	103	108	101	100	96	107	109	105	81%
20	GMS, Kotlafazal Peer Jain	78	56	66	67	69	71	71	70	68	61	58	66	84%
21	GESsamashpur	87	80	82	80	81	81	83	84	81	80	79	81	93%
22	GSSS, Samashpur	117	102	100	102	110	107	98	100	96	102	110	103	88%
e)	Fatehgarh Sahib Block (Amlah-1)													
23	GSSS (B) Amlah	237	215	216	211	206	215	209	134	211	201	205	202	85%
24	GSSS(G) Amlah	246	220	220	204	220	222	219	183	186	211	217	210	85%
25	GESBainiZair	45	43	45	45	45	45	40	40	45	41	40	43	95%
26	GMS, Bhambrian	61	53	60	57	52	53	55	35	47	53	55	52	85%
27	GES, Bhambrian	57	49	55	54	53	49	53	51	52	47	59	52	92%
28	GES, RurkiUccha	64	62	63	58	62	62	60	50	54	61	60	59	93%
29	GMS, RurkiUccha	40	35	37	30	37	39	39	38	35	38	40	37	92%

District- Ludhiana															
S.No	School	Enrolment	Attendance on various days										Av.	%age	
			1	2	3	4	5	6	7	8	9	10			
B.	District- Ludhiana														

f)	Ludhiana Block (Sudhar)													
30	GSSS, Halwara	250	192	209	220	184	208	206	205	79	87	206	180	72%
31	GES, Halwara	178	148	148	153	152	159	151	161	147	147	154	152	85%
32	GES, Raikot (Boys)	620	546	549	555	523	527	527	533	497	445	540	524	85%
S.No.	School	Enrolment	Attendance on various days										Av.	%age
			1	2	3	4	5	6	7	8	9	10		
33	Dr. Dwarka Nath Girls GHS Raikot (Girls)	113	82	98	91	91	100	86	98	71	83	95	90	79%
34	GES Bassian (Boys)	85	74	76	78	62	72	70	73	78	76	71	73	86%
35	Shaheed Gurinder Singh GSSSBassian	171	143	132	142	141	147	143	145	98	93	137	132	77%
g)	Ludhiana Block (Khanna-2)													
36	GES, Libra	98	92	93	92	92	89	91	87	88	86	88	90	92%
37	GSSS, Libra	161	83	88	136	142	138	115	134	143	112	45	114	71%
38	GES Bahomajra	52	50	51	51	46	45	50	47	50	47	48	49	93%
39	GES no-10	130	107	80	112	98	69	109	105	105	60	65	91	70%
40	GHS Bulepur	56	50	48	50	46	43	47	44	46	43	41	46	82%
41	GHS, Bhadla Nicha	144	125	106	124	106	110	127	126	121	73	66	108	75%
h)	Ludhiana Block (Doraha)													
42	GES Bilaspur	111	100	93	103	93	75	91	90	91	81	73	89	80%
43	GES Landha	96	90	93	95	94	86	89	95	91	50	84	87	90%
44	GMS, Landha	71	67	67	68	65	63	66	69	67	58	60	65	92%
45	GPS Bhathal	45	43	40	43	43	45	44	44	44	44	44	43	96%
i)	Ludhiana Block (Mangat-1)													
46	GES, Chahar	97	88	91	92	97	92	93	90	91	89	88	91	94%

47	GMS, Chahar	69	61	65	66	64	63	61	68	65	64	63	64	93%
48	GES, Rajapur	40	33	37	36	37	38	37	38	38	38	39	37	93%
49	GESGorsian	16	13	14	12	14	14	14	14	14	13	14	14	85%
50	GES, LadhiaKhurd	88	56	81	78	82	64	73	78	72	64	73	72	82%
51	GMS, LadhiaKhurd	46	38	40	38	41	41	36	32	33	39	38	38	82%
S.No.	School	Enrolment	Attendance on various days										Av.	%age
			1	2	3	4	5	6	7	8	9	10		
52	GES, Baghakhurd	72	60	63	68	67	67	68	67	63	60	52	64	88%
53	GES, Talwara	141	118	125	130	121	125	125	119	123	99	83	117	83%
j)	Ludhiana Block (Samrala-I)													
54	GSSS (B) Samrala	231	202	199	196	212	198	191	209	207	201	200	202	87%
55	GES, SamralaDhillion Patti	44	41	35	32	31	40	37	38	34	31	38	36	81%
56	GHS, Utala	112	101	104	94	98	99	100	95	98	100	102	99	88%
57	GES, RajewalKulewal	80	67	64	72	61	73	71	68	70	63	69	68	85%
58	GHS, RajewalKulewal	146	134	136	123	129	125	128	123	130	131	132	129	88%
k)	Ludhiana Block Machiwara-I)													
59	GES, Aadiana	46	34	37	33	34	34	38	39	40	31	29	35	76%
60	GSSS, Machiwara	211	199	193	190	196	184	182	191	183	195	192	191	90%

Annexure- II

S.No.	School	Kitchen-cum-store	Kitchen Devices		Drinking Water	Mode of Cooking		Fire Extinguisher	Toilets		Logo	Food Norms	Menu
			COOKING UTENSILS	PLATES		LPG	Fire Wood		Boys	Girls			
A. District- Fatehgarh Sahib													
a) Khamanon Kalan Block (Fatehgarh Sahib)													
1	GES , SandhariMajara	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
2	GHS , Sidhupur Kalan	pucca	unsufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
3	GES Sidhupur Kalan	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
4	GHS , JatanaUcha	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
5	GES JatanaUcha	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
b)Fatehgarh Sahib Block (Sirhind-2)													
6	GMS , Ajnali	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
7	GES , Ajnali	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
8	GES, SangatPurSodhian	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
9	GHS, SangatPurSodhian	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
10	GHS, Sanipur	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
11	GES, Sanipur	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
c)Fatehgarh Sahib Block (Bassi Pathana-2)													
12	GES, Shaheedgarh	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No

13	GMS, Shaheedgarh	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
d)	Fatehgarh Sahib Block -1												
14	GES, Rasoolpur	pucca	sufficient	sufficient	yes	yes	yes	Yes	yes	yes	No	No	No
S.No.	School	Kitchen-cum-store	Kitchen Devices		Drinking Water	Mode of Cooking		Fire Extinguisher	Toilets		Logo	Food Norms	Menu
			COOKING UTENSILS	PLATES		LPG	Fire Wood		Boys	Girls			
15	GMS, Rasoolpur	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
16	GES, Chunni Kalan	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
17	GSSS Chunni Kalan	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
18	GSSS, Badaliala Singh	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
19	GES Kotlafazal Peer Jain	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
20	GMS, Kotlafazal Peer Jain	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
21	GES samashpur	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
22	GSSS, Samashpur	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
e)	Fatehgarh Sahib Block (Amlah-1)												
23	GSSS (B) Amlah	pucca	sufficient	sufficient	yes	yes	yes	No	yes	yes	No	No	No
24	GSSS(G) Amlah	pucca	sufficient	sufficient	yes	yes	yes	No	yes	yes	No	No	No
25	GES BainiZair	pucca	sufficient	sufficient	yes	yes	yes	No	yes	yes	No	No	No
26	GMS, Bhambrian	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
27	GES, Bhambrian	pucca	sufficient	sufficient	yes	yes	yes	No	yes	yes	No	No	No
28	GES, RurkiUccha	pucca	sufficient	sufficient	yes	yes	yes	No	yes	yes	No	No	No
29	GMS, RurkiUccha	pucca	sufficient	sufficient	yes	yes	yes	No	yes	yes	No	No	No

S.No.	School	Kitchen-cum-store	Kitchen Devices		Drinking Water	Mode of Cooking		Fire Extinguisher	Toilets		Logo	Food Norms	Menu	
			COOKING UTENSILS	PLATES		LPG	Fire Wood		Boys	Girls				
B.	District- Ludhiana													
f)	Ludhaina Block (Sudhar)													
30	GSSS, Halwara	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No	
31	GES, Halwara	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No	
32	GES, Raikot (Boys)	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No	
33	Dr. Dwarka Nath Girls GHS Raikot (Girls)	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No	
34	GES Bassian (Boys)	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No	
35	Shaheed Gurinder Singh GSSS Bassian	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No	
g)	Ludhiana Block (Khanna-2)													
36	GES, Libra	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	yes	yes	No	No
37	GSSS, Libra	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	yes	yes	No	No
38	GES Bahomajra	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	yes	yes	No	No
39	GES no-10	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	yes	yes	No	No
40	GHS Bulepur	pucca	unsufficient	unsufficient	yes	yes	yes	yes	yes	yes	yes	yes	No	No
41	GHS, Bhadla Nicha	pucca	unsufficient	unsufficient	yes	yes	yes	yes	yes	yes	yes	yes	No	No
h)	Ludhiana Block (Doraha)													
42	GES Bilaspur	pucca	sufficient	unsufficient	yes	yes	yes	yes	yes	yes	yes	yes	No	No
43	GES Landha	pucca	sufficient	unsufficient	yes	yes	yes	yes	yes	yes	yes	yes	No	No
44	GMS, Landha	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	yes	yes	No	No

S.No.	School	Kitchen-cum-store	Kitchen Devices		Drinking Water	Mode of Cooking		Fire Extinguisher	Toilets		Logo	Food Norms	Menu
			COOKING UTENSILS	PLATES		LPG	Fire Wood		Boys	Girls			
45	GPS Bhathal	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
l)	Ludhiana Block (Mangat-1)												
46	GES, Chahar	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
47	GMS, Chahar	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
48	GES, Rajapur	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
49	GES Gorsian	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
50	GES, LadhiaKhurd	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
51	GMS, LadhiaKhurd	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
52	GES, Baghakhurd	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
53	GES, Talwara	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
j)	Ludhiana Block (Samrala-I)												
54	GSSS (B) Samrala	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
55	GES, SamralaDhillion Patti	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
56	GHS, Utala	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
57	GES, RajewalKulewal	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
58	GHS, RajewalKulewal	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
k)	Ludhiana Block Machiwara-I)												

59	GES, Aadiana	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No
60	GSSS, Machiwara	pucca	sufficient	sufficient	yes	yes	yes	yes	yes	yes	No	No	No

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ANNEXURE III

SUGGESTED NUTRITIOUS RECIPES FOR MDM PUNJAB

1. METHI/PALAK PAROTA + DHAL TADKA

PRIMARY SCHOOLS: METHI/PALAK PAROTA

S.No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Wheat flour	100	341	12.1
2	Methi/palak leaves	20	9.8	0.9
3	Vegetable oil	3.5	31.5	0.0
Total			382.3	13.0

DHAL TADKA

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Bengal Gram dhal	7	26.0	1.5
2	Lentil	7	24.0	1.8
3	Green gram	7	24.2	1.6
4	Onion	10	5.0	0.12
5	Vegetable Oil	1.5	13.5	0.0
Total			92.7	5.0
Methi/Palak Parota + Dhal Tadka (Grand Total)			475	18

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

UPPER PRIMARY SCHOOLS: METHI/PALAK PAROTA

S.No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Wheat flour	150	511.5	18.2
2	Methi/palak leaves	30	14.7	1.32
3	Vegetable oil	5.0	45	0.0
Total			571.2	19.5

DHAL TADKA

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Bengal Gram dhal	10	37.2	2.1
2	Lentil	10	34.3	2.41
3	Green gram	10	34.6	2.3
4	Onion	15	7.5	0.2
5	Vegetable Oil	2.5	22.5	0.0
Total			136.1	7.0
Methi/Palak Parota + Dhal Tadka (Grand Total)			707.3	26.5

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

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2. ALOO PAROTA & CURD + SEASONAL FRUIT

PRIMARY SCHOOLS: ALOO PAROTA & CURD

S.No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Wheat flour	100	341	12.1
2	Potato	30	29.1	0.5
3	Vegetable oil	5.0	45	0.0
4	Curd	25.0	29.3	1.1
Total			444.4	13.7

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

SEASONAL FRUIT

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Fruit (Banana)	100	116	1.2
Total			116	1.2
Aloo Parota & Curd + Seasonal Fruit (Grand Total)			560.4	14.9

UPPER PRIMARY SCHOOLS: ALOO PAROTA & CURD

S.No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Wheat flour	150	511.5	18.2
2	Potato	50	48.5	0.8
3	Vegetable oil	7.5	67.5	0.0
4	Curd	40	46.8	1.7
Total			674.3	20.7

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

SEASONAL FRUIT

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Fruit (Banana)	100	116	1.2
Total			116	1.2
Aloo Parota & Curd + Seasonal Fruit (Grand Total)			790.3	21.9

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3. VEGETABLE JEERA RICE + VEGETABLE DHAL

PRIMARY SCHOOLS: VEGETABLE JEERA RICE

S.No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Rice	100	345	6.8
2	Carrot	10	4.8	0.09
3	Potato	10	9.7	0.16
4	Peas	5	15.5	1.0
5	Cumin seeds	3	10.7	0.56
6	Vegetable Oil	3.5	31.5	0.0
Total			417.2	8.6

VEGETABLE DHAL

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Green gram dhal / lentil	20	66.8	4.8
2	Bottle Gourd	15	1.8	0.03
3	Onion	10	5.0	0.12
4	Vegetable Oil	1.5	13.5	0.0
Total			85.5	4.9
Vegetable Jeera Rice + Vegetable Dhal (Grand Total)			502.7	13.6

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

UPPER PRIMARY SCHOOLS: VEGETABLE JEERA RICE

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Rice	150	517.5	10.2
2	Carrot	20	9.6	0.18
3	Potato	20	19.4	0.32
4	Peas	10	31.8	2.0
5	Cumin seeds	5	17.8	0.94
6	Vegetable Oil	5	45	0.0
Total			641	13.6

VEGETABLE DHAL

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Green gram dhal / lentil	30	100.2	7.2
2	Bottle Gourd	25	3.0	0.05
3	Onion	15	7.5	0.18
4	Vegetable Oil	2.5	22.5	0.0
Total			133.2	7.4
Vegetable Jeera Rice + Vegetable Dhal (Grand Total)			774.2	21

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

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4. VEGETABLE DALIA

PRIMARY SCHOOLS: VEGETABLE DALIA

S.No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Wheat Dalia	100	341	12.1
2	Green gram dhal	20	66.8	4.8
3	Potato	10	9.7	0.16
4	Carrot	10	4.8	0.09
5	Tomato	5	1.0	0.05
6	Groundnuts	5	28.4	1.3
7	Vegetable Oil	5	45	0.0
Total			496.7	18.5

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

UPPER PRIMARY SCHOOLS: VEGETABLE DALIA

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Wheat Dalia	150	511.5	18.2
2	Green gram dhal	30	100.2	7.2
3	Potato	20	19.4	0.32
4	Carrot	20	9.6	0.18
5	Tomato	10	2.0	0.09
6	Groundnuts	10	56.7	2.53
7	Vegetable Oil	7.5	67.5	0.0
Total			766.9	28.5

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

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5. VEGETABLE FRIED RICE + PALAK SAAG

PRIMARY SCHOOLS: VEGETABLE FRIED RICE

S.No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Rice	100	345	6.8
2	Carrot	10	4.8	0.09
3	Beans	5	7.9	0.37
4	Tomato	5	1.0	0.05
5	Peas	20	63	4
6	Vegetable Oil	3.5	31.5	0.0
Total			453.2	11.3

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

PALAK SAAG

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Palak	10	2.6	0.2
2	Potato	15	14.6	0.24
3	Onion	5	2.5	0.06
4	Vegetable Oil	1.5	13.5	0.0
Total			33.2	0.5
Vegetable Fried Rice + Palak Saag (Grand Total)			486.4	11.8

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

UPPER PRIMARY SCHOOLS: VEGETABLE FRIED RICE

S.No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Rice	150	517.5	6.8
2	Carrot	15	7.2	0.09
3	Beans	10	15.8	0.37
4	Tomato	10	2.0	0.05
5	Peas	30	78.5	4
6	Vegetable Oil	5	45	0.0
Total			666	17.2

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

PALAK SAAG

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Palak	15	3.9	0.3
2	Potato	15	14.6	0.24
3	Onion	10	5.0	0.12
4	Vegetable Oil	2.5	22.5	0.0
Total			46.0	0.66
Vegetable Fried Rice + Palak Saag (Grand Total)			712	17.9

Condiments and spices such as turmeric, red chilli powder, ginger, garlic, salt may be added as per taste

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6. SWEET KHICHIDI + VEGETABLE SALAD

PRIMARY SCHOOLS: SWEET KHICHIDI

S.No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Rice	100	345	6.8
2	Bengal gram dhal/ Green gram dhal	20	74.4	4.2
3	Jaggery	20	76.6	0.08
4	Vegetable Oil	5	45	0.0
Total			541	11.1

VEGETABLE SALAD

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Carrot	20	9.6	0.18
2	Raddish	10	1.7	0.07
3	Tomato	20	4	0.18
4	Onion	10	5	0.12
5	Lime	2	1.14	0.02
Total			21.4	0.6
Sweet Khichidi + Vegetable Salad (Grand Total)			562.4	11.7

UPPER PRIMARY SCHOOLS: SWEET KHICHIDI

S.No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Rice	150	517.5	10.2
2	Bengalgram dhal/ Greengram dhal	30	111.6	6.24
3	Jaggery	30	114.9	0.12
4	Vegetable Oil	7.5	67.5	0.0
Total			811.5	16.6

VEGETABLE SALAD

S. No.	Food Item	Amount (g)	Energy (Kcal)	Protein (g)
1	Carrot	30	14.4	0.3
2	Raddish	20	3.4	0.14
3	Tomato	30	6.0	0.27
4	Onion	15	7.5	0.18
5	Lime	3	1.7	0.03
Total			33.0	0.92
Sweet Khichidi + Vegetable Salad (Grand Total)			844.5	17.5

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Annexure- IV

List of Schools With Negative Cooking Cost and/ or Food Grain

A. District- Fatehgarh Sahib			
a) Khamanon Kalan Block (Fatehgarh Sahib)			
		Cooking Cost	Foodgrain
1	Govt. Ele. School, JatanaUcha	negative	-
b) Fatehgarh Sahib Block -1			
2	Govt. Ele. School, Chunni Kalan	-	Negative
3	Govt. Sen Sec.SchoolChunni Kalan	-	negative
c) Fatehgarh Sahib Block (Amloh-1)			
4	Govt. Ele. School BainiZair	-	Negative
5	GMS, Bhambrian	-	Negative
6	Govt. Ele. School, Bhambrian	-	Negative
B. District- Ludhiana			
d) Ludhaina Block (Sudhar)			
7	Govt. Sr. Sec. School Halwara	negative	negative
8	Govt . Primary School, Halwara	negative	-
9	Govt. Primary School, Raikot (Boys)	negative	-
10	Dr. DwarkaNath Girls High School Raikot (Girls)	negative	-
11	Govt Primary School Bassian (Boys)	negative	-
12	Shaheed Gurinder Singh Sr. Sec. School Bassian	negative	-
e) Ludhaina Block (Khanna-2)			
13	Govt Sr. Sec. School, Libra	negative	negative
14	Govt. Primary School, Bahomajra	negative	-
15	Govt . Primary School no-10	negative	-
16	Govt. High School, Bulepur	negative	-
17	Govt. High School, BhadlaNicha	negative	-
f) Ludhaina Block (Doraha)			
18	Govt. Primary School Bilaspur	negative	negative
19	Govt.Primary School Landha	negative	negative
20	Govt. Middle School, Landha	negative	-
g) Ludhaina Block (Mangat-1)			
21	Govt. Ele school Chahar	Negative	Negative
22	GMS, Chahar	Negative	-

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23	GMS, LadhiaKhurd	Negative	-
h) Ludhaina Block (Machiwara-I)			
24	GSSS, Machiwara	-	Negative