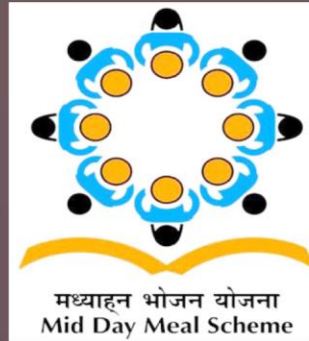


11th

# Joint Review Mission Bihar

(12th to 19th December, 2018)



For official use only



**Government of India**

**Ministry of Human Resource Development**

**Department of School Education & Literacy**



**मध्याह्न भोजन योजना  
Mid Day Meal Scheme**

**Report of 11<sup>th</sup> Joint Review Mission on  
Mid-Day Meal Scheme - Bihar**

**(12<sup>th</sup> to 19<sup>th</sup> December, 2018)**

## Acknowledgment

The JRM team is grateful to the Ministry of HRD, Department of School Education & Literacy, Government of India for constituting this Joint Review Mission and giving us the opportunity to undertake the rapid survey in the state of Bihar. We thank Director and Deputy Director (MDM), and other functionaries of the Department of Education, Government of Bihar for hosting the Joint Review Mission (JRM) and supporting us.

We would also like to thank Dr. R.Hemalatha, Director, ICMR-National Institute of Nutrition, Hyderabad for permitting NIN Research team to participate in the JRM in the state of Bihar and we also thank Dr.B.Naveen Kumar, Scientist B for carrying out analysis of anthropometric data collected during the JRM visits.

We are also thankful to the State functionaries of MDM for their full co-operation given during the entire JRM period (12-19, December 2018). Our special thanks to all the teachers, particularly head masters/MDM-in-charges and also non-teaching staff of the schools visited by the mission for their full co-operative interaction and providing the relevant information on the status of MDM in their respective schools.

Our thanks are due to all the school children and their parents who were participated in the rapid evaluation and their full co-operation in the entire process of data collection particularly anthropometry, clinical examination for nutrition deficiency signs and food & nutrient intakes of the school children during JRM period.

JRM TEAM

Place: Patna, Bihar

Date: 18th December 2018

## Foreword

Undernutrition and hunger are major public health problems in India especially among children and women of reproductive age groups. To mitigate these problems, the government of India and respective state governments have launched several nutrition sensitive programmes during 1970s. The major flagship programmes of Government of India among all the nutrition intervention programmes are Integrated Child Development Services (ICDS) scheme and Mid day meal (MDM). The government of India has been spending huge amount every year on these two programme alone. Thus, there is a need to assess its current status, strengths and weaknesses, if any in the programme in its implementation to enable the implementers/planners to take an appropriate action as mid-course correction. Therefore, the Ministry of HRD-Department of School Education & Literacy, Government of India has proposed to arrange to carry out JRM in consultation with subject experts in the nutrition field.

With the given context, the Department of School Education & Literacy, Government of India, has proposed to conduct JRM in the Bihar state and invited ICMR-National Institute of Nutrition, Hyderabad to carry out the JRM during 12-19 December 2018. Accordingly, in consultation with Department of MDM, Government of Bihar and participation of the Department of School Education & Literacy, Government of India, the JRM was conducted in the state of Bihar during the approved period.

Despite various constraints at field level, the member's constant and tireless dedication we brought out an insights of the present status of MDM scheme at various schools in the select two districts i.e., Muzaffarpur and Gaya. Jointly, the team has tried to cover various aspects related to the MDM scheme like infrastructure development, fund allocation, monitoring, evaluation, status of Rashtriya Bal Swasthya Karyakram (RBSK), food and nutrient supplements being received by the beneficiaries and its delivery channels including anthropometric, dietary measurements and clinical examination for nutritional deficiencies in school children as indicated in the Terms of Reference of the JRM.

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

Dr. Avula Laxmaiah  
Scientist G (Director Grade Scientist) and  
Head, Division of Public Health Nutrition,  
ICMR-National Institute of Nutrition, Hyderabad  
&  
Convener of the JRM team, Bihar

Place: Patna, Bihar  
Date: 18th December 2018

## CONTENTS

### **Executive Summary**

1. Good Practices observed
2. Areas of Concern
3. Recommendations

### **CHAPTER 1**

#### **Introduction**

1. Objectives of MDM
  - 1.1. Composition of Joint Review Mission
  - 1.2. The Terms of Reference for the Joint Review Mission
  - 1.3. Terms of Reference for Nutritional aspects
  - 1.4. Food and Caloric norms under MDM

### **CHAPTER 2**

#### **Profile of State and Selected Districts**

- 2.1 Bihar: An Introduction
  - 2.1.1 Population
- 2.2 District – Muzaffarpur
  - 2.2.1 Population
- 2.3 District – Gaya
  - 2.3.1 Population

### **CHAPTER 3**

#### **Methodology**

- 3.1. Selection of the districts
- 3.2. Sample Size:
- 3.3. Investigations
  - 3.3.1. Nutritional Status Assessment
- 3.4. Dietary Pattern & Frequency of Meals

### **CHAPTER 4**

Review of implementation of Mid-Day Meal in Bihar on Physical and financial parameters during last four years (2014-15 to 2017-18)

- 4.1 Norms of Central assistance under Mid-Day Meal Scheme



- 4.2 National Scenario of coverage of children under MDM
- 4.3 Basic information on implementation of MDMS during 2018-19
- 4.4 Implementation of the Scheme in Bihar during 2014-15 to 2017-18
  - 4.4.1. Coverage of children under MDM in Bihar- Primary
  - 4.4.2. Coverage of children under MDM in Bihar – Upper Primary
  - 4.4.3. Engagement of Cook-cum-helpers
  - 4.4.4. Component wise Details of Allocation and Expenditure
- 4.5. Basic Information on implementation of MDM in District Muzaffarpur
- 4.6. Basic Information on implementation of MDM in District - Gaya

## **CHAPTER: 5**

### **Observations from the Field as per the ToR**

- 5.1 Review of the fund flow mechanism
- 5.2. Review of the coverage of the scheme in the Visited Districts
- 5.3 Review of the Management structure
- 5.4 Review the delivery mechanism of food grains from State to Schools
- 5.5 Review the smooth implementation of the Scheme with particular reference to Interruptions.
- 5.6 Review the Creation of Capital Assets
- 5.7 Construction of Kitchen-cum-stores
- 5.8 Procurement/Replacement of Kitchen Devices
- 5.9. Review the convening the meetings of District Level Committee under Chairpersonship of senior most Member of Parliament (LS)
- 5.10. Management Information System (MIS)
- 5.11. Review of implementation of Automated Monitoring System
- 5.12 Convergence with Rastriya Bal Swasthya Karyakram
- 5.13 Operationalization of Mid-Day Meal Rules, 2015
- 5.14. Payment of Honorarium to Cook-cum-Helpers
- 5.15. System of Storage food grains and other ingredients
- 5.16. Role of Teachers in Mid-Day Meal Scheme.
- 5.17. Tasting of meals by Teachers, Parents and Community
- 5.18. Testing of meals
- 5.19. Involvement of the Community
- 5.20. Bank Account of Cook-cum-helpers
- 5.21. Awareness of the Scheme
- 5.22. Contingency Plan

- 5.23. Involvement of NGOs
- 5.24. Other issues

## **CHAPTER: 6**

### **Nutritional and Anthropometric Assessment**

- 6.1. Terms of reference for nutritional aspects
- 6.2 Results
  - 6.2.1 Food and Nutrient intakes through Mid Day Meal
  - 6.2.2 Nutrient intake of School children through Mid Day Meal: Institutional diet surveys
  - 6.2.3 Food intake of School children through Mid Day Meal: Individual diet surveys
  - 6.2.4 Nutrient intake of School children through Mid Day Meal: Individual diet surveys
- 6.3 Organoleptic characters of MDM meal
- 6.4. In Depth interviews (IDIs)
  - 6.4.1 In depth interview on select functionaries of MDM in-charges/ head master in all the schools visited in both the districts
  - 6.4.2 In depth interviews on parents on their views about MDM in both the districts.
  - 6.4.3 In depth interviews were carried out on different functionaries of MDM about their knowledge & practices on MDM in both the districts.

## **CHAPTER - 7**

### **BEST PRACTICES, ISSUES AND RECOMMENDATIONS**

- 7.1. Best Practices
- 7.2. Areas of Concern
- 7.3. Recommendations
- 7.4. Nutritional Status Based on Anthropometry
- 7.5. Monitoring & Supervision
- 7.6. Training

### **ANNEXURE I to X**

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

School wise details of Infrastructure facilities Districts Muzaffarpur and Gaya

**Some Photographs from the field visit**



## TABLE INDEX

Table 1: Food Norms

Table 2: Revised Food Norms

Table 3: Information on vital parameters - Muzaffarpur District

Table 4: Information on vital parameters –Gaya District

Table 5: Sample covered for Anthropometry (Height, Weight)

Table 6: Anthropometric Indicators for Nutritional Status Assessment

Table 7: Important indicators in implementation of MDM – Bihar

Table 8: Enrolment, PAB Approval and children availed MDM - Primary

Table 9: Enrolment, PAB Approval and children availed MDM – Upper Primary

Table 10: Engagement of Cook-cum-Helpers vis-à-vis PAB Approval

Table 11: Details of Allocation of funds and Expenditure against Central Assistance

Table 12: Utilization of Cooking Cost (Central as well as State Share)

Table 13: Utilization of Honorarium to Cook-cum-helpers

Table 14: Utilisation of Transportation Assistance

Table 15: Utilization of Management Monitoring and Evaluation (MME)

### **Nutritional Assessment Tables**

Table 1.1: Mean Consumption of Foodstuffs (g/student/day) by school children in the Muzaffarpur and Gaya districts through mid day meal: Institutional diet surveys

Table 1.2: Average intake of Nutrients (per child /day) through MDM meal among the school children in of Muzaffarpur and Gaya, Institutional diet survey

Table 2.1: Average intake of Food stuffs (g/student/day) by school children in Muzaffarpur and Gaya District through MDM meal: Actual consumption (Plate and food weights)

- Table 2.2: Average intake of Nutrients (per child/day) through MDM meal among Primary school children in Muzaffarpur and Gaya district Actual consumption (Plate and food weights)
- Table 2.3: Average intake of Nutrients (per day/student) through MDM meal among upper primary school children in the districts of Muzaffarpur and Gaya, Bihar: Actual consumption (Plate and food weights)
- Table 3.1: Average intake of Foodstuffs (g/child/day) by school children in Muzaffarpur and Gaya districts, Bihar through mid day meal: Inventory method at Centralized kitchen
- Table 3.2 Average intake of Nutrients (per child/day) by school children in Muzaffarpur and Gaya districts, Bihar through mid day meal: Inventory method at Centralized kitchen
- Table 4: Level of satisfaction of school children (class 6th to 8th) about the food stuffs served in MDM
- Table 5: Hygiene Practices of Students
- Table 6.1: Coverage of Children in the select districts of Bihar State(Muzaffarpur and Gaya)
- Table 6.2 Coverage of children by Gender
- Table.6.3. Mean  $\pm$  SD Height and weight Percentiles of School Children in the Districts of Muzaffarpur and Gaya, Bihar State
- Table.7. Mean  $\pm$  SD Height and weight Percentiles of School Children in the Muzaffarpur and Gaya Districts, Bihar State by Gender
- Table.8. Prevalence (%) of Undernutrition among School Children in the districts of Muzaffarpur and Gaya in the state of Bihar
- Table.9. Prevalence (%) of Thinnes (undernutrition) and overweight/obesity among School Children in Muzaffarpur and Gaya District of Bihar
- Table.10.1. Prevalence (%) of Thinnes (undernutrition) and overweight/obesity among School Children by Age group and district in state of Bihar

- Table.10.2. Prevalence (%) of Stunting among School Children in Muzaffarpur and Gaya Districts, Bihar State, 12-19 December 2018
- Table.11. Prevalence (%) of Nutritional deficiency signs/symptoms among School Children in Muzaffarpur and Gaya District, Bihar State
- Table -12. Awareness of the MDM in charges about MDM programme and practices
- Table -13. Knowledge, perception of parents about MDM
- Table.14 Knowledge and perception of functionaries
- Table.15. Quality of food grains and its processing in the kitchen
- Table.16. Hygiene practices of Cook cum Helper
- Table.17. Hygiene and sanitation practices
- Table.18. Knowledge, perception & practices of CCH
- Table.19. Knowledge & practices of supervision& monitoring committee on MDM

### **Graph Index**

- Graph 1: Trends of Enrolment and Average number of children availing MDM: (Primary)
- Graph 2: Trends of enrolment and Average number of children availing MDM: Upper Primary
- Graph 3: Engagement of Cook-cum-Helpers vis-à-vis PAB Approval
- Graph 4: Utilization of Cooking Cost (Central as well as State Share)
- Graph 5: Utilization of Honorarium to Cook-cum-helpers
- Graph 6: Utilization of Transportation Assistance
- Graph 7: Utilization of Management Monitoring and Evaluation (MME)
- Graph 8: Day wise average students availing MDM in the visited schools in district – Muzaffarpur
- Graph 9: Day wise average students availing MDM in the visited schools in district – Gaya
- Graph.10. Mean consumption of foods through MDM (primary)
- Graph.11. Mean consumption of foods through MDM (upper primary)

Graph.12. Prevalance (%) of Thinness among 5-14 year children by districts

Graph.13. Prevalance (%) of Thinness among 5-14 year children by gender

Annexure.1: Mean  $\pm$  SD Height (Cm) and Weight (Kg) of the school children in of Muzaffarpur and Gaya district, Bihar

Annexure 2.: Mean  $\pm$  SD Mid upper arm circumference of the school children of Muzaffarpur and Gaya district, Bihar

Annexure. 3: Existing Weekly MDM Menu in Bihar 2018 and suggested recipes

## ABBREVIATIONS

AWP&B	Annual Work Plan & Budget
BAS	Baseline Achievement Survey
BMI	Body Mass Index
BPL	Below Poverty Line
BRC	Block Resource Centre
CEO	Chief Executive Officer
CRC	Cluster Resource Centre
CWSN	Children with Special Needs
DEO	Deputy Education Officer
DIET	District Institute of Education and Training
DISE	District Information System for Education
DC	District Coordinator
EO	Education Officer
GOI	Government of India
GP	Gram Panchayat
ICDS	Integrated Child Development Services
JRM	Joint Review Mission
KGBV	Kasturba Gandhi Balika Vidyalaya
MDM	Mid-day Meal
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MHRD	Ministry of Human Resource Development
MIS	Management Information System
MLA	Member of Legislative Assembly
MP	Member of Parliament
MME	Management Monitoring and Evaluation
MTA	Mother Teacher Association
NFHS	National Family Health Survey

NGO	Non-Governmental Organization
OBC	Other Backward Community
PAB	Programme Approval Board
PRI	Panchayati Raj Institution
PTA	Parent Teacher Association
RBSK	Rashtriya Bal Swasthya Karyakram
SMC	School Management Committee
SE&L	School Education & Literacy
SFD	Special Focus District
ZP	Zila Parishad



## Executive Summary

Undernutrition and hunger is one of the major public health problems in India especially among children and women of reproductive age groups. To mitigate these problems, the government of India and respective state governments have launched several nutrition sensitive programmes during 1970s. The Integrated Child Development services (ICDS) scheme and Mid day meal (MDM) are two major flagship programmes of Government of India among all the nutrition intervention programmes currently operation in India. The government of India has been allocating huge budget for these two programme every year. Thus, there is a need to assess programme current status, strengths and weaknesses, if any in the programme included its implementation to enable the implementers/planners to take an appropriate action as mid-course correction in order to achieve stated objectives. Therefore, the Ministry of HRD-Department of School Education & Literacy, Government of India has proposed to have the JRM in consultation with subject experts in the field of health, nutrition and education.

With the given context, the Department of School Education & Literacy, Government of India, has proposed to conduct JRM in the state of Bihar and invited ICMR-National Institute of Nutrition, Hyderabad to carry out the JRM during 12-19 December 2018 along with other experts. Accordingly, in consultation with Department of MDM, Government of Bihar and participation of the Department of School Education & Literacy, Government of India, the JRM was conducted in the state of Bihar during 12-19 November 2018.

The team has give a briefing session to the functionaries of Department of MDM, Bihar on 12th December 2018 and tenetaive plan was prepared and shared with the host department, Bihar. Accordingly, the JRM Team has visited 35 schools in the select two districts of Bihar viz. Muzaffarpur and Gaya for nutritional assessment and 45 schools (25 in Muzaffarpur and 22 in Gaya) for closely monitoring and implementaion of the MDMS at grass root level. Muzarffarpur was selected by the State Government and Gaya by Ministry of Human Resource Developement, Department of School Educaation &

Literacy, Government of India. During the visits, the team collected information as per the Term of References held discussions and indepth interviews with the select stakeholders i.e. students, teachers, cook-cum-helpers, community members, parents of the students and officials at Block, District and State level.

The JRM team has covered 1452 children, 732 children Muazffarpur district and 720 in Gaya district for assessment of nutrition status and perceptions and practices of the select students, parents, teachers, community members and functionareis.

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.

## **1. Good Practices observed**

- I. e-transfer of funds for cooking cost and honorarium to cook-cum-helpers.
- II. Egg/Fruit provided by State once in a week from its resources.
- III. Additional contribution of Rs.250 per cook-cum-helper per month by the State.
- IV. Cook-cum-Helpers in the visited districts were given training in September, 2018 by the Block Resource Persons.
- V. LPG available in 82% schools. Funds provided to remaining schools for procurement of LPG during 2018-19.
- VI. Aprons and Head gears were use by some CCH in the selected district.
- VII. Storage bins available in all schools for keeping food grains
- VIII. FSSAI or Ag-mark or branded ingredients used for Mid-day Meal by schools.

- IX. Buffer stock of food grains was maintained in all the visited schools.
- X. IVRS is in use for collecting the daily information from the school supplementation of MDM.
- XI. Majority of the children were washing hands before and after eating the mid day meal.
- XII. Very few schools had student recreation and play instruments/structures
- XIII. MDM register is maintained by the HM at the school level.

## 2. Areas of Concern

- I. Interruption in the Mid-day Meal in few schools in Gaya district due to the non-availability of food grain.
- II. The Mid Day Meal Rules notified on 30<sup>th</sup> September, 2015 under National Food Security Act, 2013 are yet to be operationalised.
- III. Less coverage (53%) against enrolment on the basis of the attendance for the last ten days of JRM visit.
- IV. Cash Book not updated in 80% of the visited schools,
- V. Cash in hand kept by schools is more than the weekly or fortnightly requirement of funds.
- VI. Food grain supply chain management needs streamlining to for timely availability of food grains in schools.
- VII. More than 70% Teachers, cook-cum-Helpers, Parents etc. do not know about the food norms.
- VIII. The entitlement of children under Mid-day Meal Scheme needs to be painted at a prominent place in the school.
- IX. Mid day meal logo also needs to be painted outside the kitchen in more than 50% of the visited schools

- X. Toilets in the schools need repair and provision of water supply in almost all schools.
- XI. About 559 hand pumps in the schools are non-functional.
- XII. Visits of Medical Teams to schools are not regular.
- XIII. Health check up of the cook-cum-Helpers not carried out.
- XIV. Non-recording of the observations of teachers and parents in taste register.
- XV. Lack of Community participation in mid day meal Scheme.
- XVI. Absence of Contingency Plan for untoward incident.
- XVII. About 19% (out of a sample of 1452) children were undernourished.
- XVIII. Officials are not even aware about the information to be entered through MDM-MIS, which is an area of deep concern.
- XIX. Entitlement of children under MDM was not displayed in any of the visited schools.
- XX. Kitchen-cum-stores are not constructed in many schools.
- XXI. Storage bins are not available in some of the schools visited.
- XXII. No separate kitchen and store is available in many schools visited during JRM.
- XXIII. No separate toilets are available for girls and boys in many schools where toilets are available, but these were not in use closed permanently for want of running water through taps.

### **3. Recommendations**

- i. Food grain supply-chain-management may be streamlined for ensuring timely supply of food grains.
- ii. Schools may be advised to keep one month's buffer stock as envisaged under MM Guidelines to avoid disruption in mid day meal due to delay in lifting/non-supply of food grains.

- iii. Necessary action may be taken by the State for operationalising Mid Day Meal Rules, 2015.
- iv. State may undertake evaluation study for improving the coverage under Mid Day Meal Scheme up to national level (76%) or more.
- v. Training may organise for writing Cash Book especially on MDM-MIS and for officials at Block and District level.
- vi. Instructions may be issued to the schools against keeping excess cash in hand than the actual requirement estimated on the basis trend of daily expenditure.
- vii. Awareness generation of Mid Day Meal Scheme may be carried out by publicity through print and electronic media.
- viii. The entitlement of children under Mid-day Meal Scheme should be painted at a prominent place in the school in all the visited schools.
- ix. Mid day meal logo also should be painted outside the kitchen in all the schools and Centralised Kitchens as per the prescribed colour scheme.
- x. Proper water supply in the toilets should be ensured to keep them neat and clean and free from the foul smell.
- xi. Repair of 559 defunct hand pumps in schools be carried out on priority basis.
- xii. Implementation of School Health Programme in convergence with Health Department.
- xiii. Cook-cum-Helpers may also medically examine for ensuring that they are free from any contagious disease.
- xiv. The central assistance released for construction of kitchen-cum-stores at unit cost norms @ Rs.60,000/- may be refunded if their construction work has not started as yet and proposal for construction of these kitchen-cum-stores on plinth area norms may be submitted to MHRD as per the State's Schedule of Rates .
- xv. The observations on the quality and taste of mid day meal may be recorded in the taste register by the teacher, CCH, Parents and the community.

- xvi. Community may be motivated for participation in the supervision of preparation of mid day meal and monitoring of the scheme at grass root level.
- xvii. Contingency Plan for handling any untoward incident may be prepared and circulated to all schools.
- xviii. Construction of kitchen-cum-stores in all eligible schools to be completed expeditiously.
- xix. Provision of storage bins in schools.
- xx. Provision of eating plates in Govt. aided schools.
- xxi. The children identified as undernourished may be provided additional servings.
- xxii. Replacement of worn out kitchen devices.
- xxiii. Training and sensitization of cook-cum-helpers and officials at different level.



## CHAPTER 1

### Introduction

Undernutrition is one of the most important constraints in achieving the Sustainable Development Goals. It is widely prevalent among school children and India ranks 2nd in highest child malnutrition in the world. Consequences of undernutrition and hidden hunger are very serious on health and nutrition status leading to negative economic growth of the country.

Therefore, nutritional deficiencies and their incidence among children of school-going age group cannot be neglected. Malnutrition not only increase morbidity and mortality, but also prevents a child from developing into a fully functional adult. It adversely affects education in the following ways:

- i) A malnourished child is less likely to attend school regularly.
- ii) Even if such a child does attend school, he/she finds it difficult to concentrate and participate in teaching-learning activities well enough. He/she therefore, tends to drop out, inter alias, because of the inability to cope up with morbidities.
- iii) Even if the child does not actually drop out, his attainment levels tend to be low.

Education plays a vital role in the development of human capital. The Governments are spending considerable portion of their limited resources to provide educational facilities all over the country. In spite of these efforts the goal of cent percent universalisation of elementary education appears to be far and elusive due to inherent socio-economic factors present in the society. Most of the children from low socio-economic society suffer from undernutrition, more often low attendance, high dropout rates from schools at an early age, which directly affects their overall development. Several National Nutrition programs have been launched by the Government of India to combat these problems. One of the most ambitious and flagship programmes is the Mid Day Meal (MDM) Programme for nutrition supplementation of school going children. By investing in the health and nutrition of

school-age children, a country can increase the human capital of its younger generations and achieve sustainable economic growth and human development.

Primary school age is a dynamic period of physical growth and mental development of the child. The Mid-Day Meal Programme is the world's biggest school lunch programme and is being implemented all over India for primary and upper primary school children, emerging to address the multiple challenges of poverty, hunger, and access to education. Apart from mid-day meal programme which is run by the Government of India in government schools, and government aided schools, there are no other efforts for children in age group 5-14 years.

With a view to enhance enrolment, attendance and retention and simultaneously to improve the nutritional status of children, a Centrally Sponsored Scheme 'National Programme of Nutritional Support to Primary Education (NP-NSPE)' was launched on the 15th August 1995. The scheme was extended in 2008-09, to cover children of upper primary classes and the Scheme was renamed as 'National Programme of Mid-Day Meal in Schools' popularly known as Mid-Day Meal Scheme (MDMS). The MDMS covers all school children studying in I-VIII classes in Government and Government-aided schools, Special Training Centres (STCs) and Madrasas & Maqtabas supported under Samagra Shiksha.

The Mid-day meal is also served during the summer vacations in drought-affected areas. Cooked mid-day meal consists of 100 g of wheat/rice, 20 g of pulses, 50 g of vegetables and 5 g of oil/fat and provides 450 calories of energy and 12 g of protein at primary stage. For upper primary children, it consists of 150 g of wheat/rice, 30 g of pulses, 75 g of vegetables and 7.5 g of oil/fat and it provides 700 calories of energy and 20 g of proteins.

## **1. Objectives of MDM**

The objectives of the Mid-Day Meal Scheme are to address two of the pressing problems for majority of children in India, viz. hunger and education:

- i. Improving the nutritional status of children studying in classes I – VIII in Government and Government-aided schools, Special Training Centers (STCs) and madrasas & Maqtabas supported under Samagra Shiksha.
- ii. Encouraging poor children, belonging to disadvantaged sections, to attend school more regularly and help them concentrate on classroom activities.
- iii. Providing nutritional support to children of elementary stage in drought-affected areas during summer vacations.

A programme of scale and magnitude of Mid Day Meal requires close monitoring and evaluation at all levels. In 2010, the Ministry of Human Resource Development, Govt. of India, decided to review implementation of the programme in all its aspects through the Review Missions, which are also to provide suggestions for improvement.

### **1.1 Composition of Joint Review Mission**

- i. Dr. Avula Laxmaiah, Scientist,G (Epidemiologist) & Head Division of Community Studies National Institute of Nutrition, India Council of Medical Research, Hyderabad, Telangana – Team Leader
- ii. Shri G. Vijaya Bhaskar Director (MDM), MHRD, Govt. of India – Member
- iii. Shri Binod Kumar, Director, MDM, Govt. of Bihar – Member
- iv. Dr. I.I. Meshram, Scientist E (Public Health) National Institute of Nutrition Hyderabad - Member
- v. Shri K.K. Sharma, Chief Consultant, Technical Support Group-Mid Day Meal, New Delhi - Member
- vi. Shri Dinesh Pradhan, Senior Consultant, Technical Support Group-Mid Day Meal , New Delhi - Member

The 11<sup>th</sup> Joint Review Mission was also assisted by Ms. G Neerja, Shri P.V. Sunu, Shri K. Sree Ramakrishna and Shri G.L. Stephan, Research Assistants from National Institute of Nutrition, Hyderabad during its visit to 23 schools in Muzaffapur district and 22 schools in Gaya district for monitoring the implementation of Mid Day Meal Scheme as per the defined terms of reference.

### **1.2 The Terms of Reference for the Joint Review Mission:**

- i. Review the fund flow from State to Schools/implementing agencies.
- ii. Review the coverage of the Scheme
- iii. Review the availability of Management Structure at State, District, Block level
- iv. Review the delivery mechanism of food grains from State to Schools
- v. Review the smooth implementation of the Scheme with particular reference to Interruptions.
- vi. Review the Creation of Capital Assets
- vii. Construction of Kitchen-cum-stores
- viii. Procurement/Replacement of Kitchen Devices
- ix. Review the involvement of NGO's/Trust/Centralized kitchens in the Scheme
- x. Review the payment of Cost of Food grains to Food Corporation of India
- xi. Review the convening the meetings of District Level Committee under Chairpersonship of senior most Member of Parliament (Lok Sabha).
- xii. Review the Management Information System (MIS)
- xiii. Review the implementation of Automated Monitoring System
- xiv. Convergence with Rastriya Bal Swasthya Karyakram for health check-up, supplementation of micronutrients under WIFS & deworming medicine under National deworming day and health check ups and supply of spectacles to children suffering from refractive errors.

- xv. Review the following
- a. Operationalization of Mid-Day Meal Rules, 2015
  - b. Dissemination of Food Safety Guidelines up to District, Block and School
  - c. Enrolment of children and Cook-cum-Helpers under Aadhaar
  - d. Payment of Honorarium to Cook-cum-Helpers
  - e. System of Storage food grains and other ingredients
  - f. Role of Teachers in Mid-Day Meal Scheme.
  - g. Tasting of MDM by Teacher, Parents and Community.
  - h. Testing of meals
  - i. Involvement of Community
  - j. Bank Account of Cook-cum-helpers
  - k. Awareness of the Scheme
  - l. Contingency Plan

### **1.3 Terms of Reference for Nutritional aspects:**

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

g. To suggest some nutritionally balanced region-specific recipes.

#### 1.4 Food and Calories norms under MDM

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

In 2001 Hon'ble Supreme Court of India directed that hot cooked mid day meal containing 300kcal energy and 12 g of protein/day for 200 days to all children studying in classes I-V in all government, local body and government aided primary schools should be provided under Mid Day Meal Scheme.

**Table 1: Food Norms**

Nutritional content	Norm as per NP-NSPE,2004	Revised norm as per NP- NSPE,2006
<b>Calories</b>	300	450
<b>Protein</b>	8-12 g	20
<b>Micro – nutrients</b>	Not prescribed	Adequate quantities of Micro nutrients like Iron, folic Acid and Vitamin A

The above food norms were revised w.e.f. 1<sup>st</sup>December, 2009 as indicated below:

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



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

**Table 2: Revised Food Norms**

S. No.	Items	Quantity per Child per Day	
		Primary	Upper Primary
1.	Food grains	100 g	150 g
2.	Pulse	20 g	30 g
3.	Vegetables (leafy also)	50 g	75 g
4.	Oil & fat	5.0 g	7.5 g
5.	Salt & Condiments	As per need	As per need

## **CHAPTER 2**

### **Profile of State and Selected Districts**

#### **2.1 Bihar: An Introduction**

The ancient name of Bihar was "Vihara" which means monastery. It is located in the eastern part of India. Area wise Bihar is the twelfth largest state and the third most populated state in India. The flora and fauna of this state is enriched by the river Ganges that flows through Bihar before getting distributed in Bengal's deltoid zone. Bihar also has a vast forest land that covers an area of 6,764 sq. kms. This state is linguistically potent too as several languages are spoken here, like the Bhojpuri, Maithili, Magahi, Bajjika and Angika. The capital city of Bihar is Patna which was earlier called Pataliputra. Bihar became the epicenter of power, culture and learning under the rule of some of the greatest emperors of India, namely Samudragupta, Chandragupta Maurya, Vikramaditya and Asoka. It was also home to the two great centers of learning at that time, Vikramshila and Nalanda University. Even today one can find several ancient monuments all over Bihar which are a living proof of the state's 3,000 years old history; these monuments are visited by millions and millions of tourists all over the world. The Mahabodhi Temple located in this state has been declared as a heritage site by the UNESCO.

Bihar is located between the sub-humid Uttar Pradesh in the west and the humid West Bengal in the east. Therefore, it has a transitional climate. It is bordered by Nepal in the north and Jharkhand in the south. River Ganges flows west to east through the middle of the state, dividing the Bihar plain into two unequal halves.

It was the birth place of two principle universities, Nalanda and Vikramshila. The educational infrastructure and methods of the Bihar education was of a very high quality. But the present condition of Bihar education is very depressing.

Presently, Bihar education ranks lowest in the literacy rate among the Indian cities. Patna holds the highest literacy rate in Bihar with 63.82%, Kishangang ranks the lowest with 31.02%. This is because the educational institutes are not of a good quality. As a result, a lot are needed to be done so that the education scenario in Bihar can be developed.

Of late, the central Government as well as the state Government have taken lots of projects in hand to restore the prevailing condition of the Bihar education. The concept of development regarding education would not be fulfilled without the introduction of specialized courses in the field of science and technology. Thus, special attention has been given to this field by the Government.

## Bihar District Map



### 2.1.1 Population

According to the 2011 census, the population of Bihar is 10.41 crores (2011 census) and covers an area of 99200 km sq. Density of population in Bihar is 880 per square kilometers. Urban Population present in the state of Bihar is 10.47 %, Literacy Rate in Bihar goes as high as 47.53 %, Male Literacy among the population of the state is 60.32 %. Female Literacy rate in the state is however low and goes up to 33.57 %. Sex Ratio study indicates that there are 92 females for every 100 males in the population of Bihar.

The population in Bihar consists chiefly of the Hindus and the Muslims. The rest of the population includes Christians, Sikhs, Jains and Buddhists. The state of Bihar can be divided into several Circuits like the Buddhist Circuit, Jain Circuit, Sufi Circuit and so on. This division is indicative of the composition of the different religious communities in Bihar.

The chief languages spoken by the population in Bihar are Hindi, Urdu and English. Here you will find the people using their own regional languages as well. The chief dialects are: Bhojpuri in the districts of Champaran (East and West), Saran, and Shahabad. Magahi in central Bihar, that means in the districts of Patna, Gaya and Bihar. Maithili in the north-east, that means in the districts of Muzaffarpur, Vaishali, Darbhanga, Samastipur, Saharsa, Purnia and Bhagalpur.

The people in Bihar are known to the history of India from the very ancient times. It is found that various places of Bihar in the great Indian epics, the Ramayana and the Mahabharata. The population at Bihar is well known for their significant role in the movement for the independence of their Nation.

S No.	District	Headquarters	Population (Census 2011)	Sex Ratio (per 1000)	Average Literacy
1	Araria	Araria	2811569	921	53.53%
2	Arwal	Arwal	700843	928	67.43%
3	Aurangabad	Aurangabad	2540073	926	70.32%
4	Banka	Banka	2034763	907	58.17%
5	Begusarai	Begusarai	2970541	895	63.87%
6	Bhagalpur	Bhagalpur	3037766	880	63.14%
7	Bhojpur	Arrah	2728407	907	70.47%
8	Buxar	Buxar	1706352	922	70.14%
9	Darbhangha	Darbhangha	3937385	911	56.56%
10	East Champaran	Motihari	5099371	902	55.79%
11	Gaya	Gaya	4391418	937	63.67%
12	Gopalganj	Gopalganj	2562012	1021	65.47%
13	Jamui	Jamui	1760405	922	59.79%
14	Jehanabad	Jehanabad	1125313	922	66.80%
15	Kaimur	Bhabua	1626384	920	69.34%
16	Katihar	Katihar	3071029	919	52.24%
17	Khagaria	Khagaria	1666886	886	57.92%
18	Kishanganj	Kishanganj	1690400	950	55.46%
19	Lakhisarai	Lakhisarai	1000912	902	62.42%
20	Madhepura	Madhepura	2001762	911	52.25%
21	Madhubani	Madhubani	4487379	926	58.62%
22	Munger	Munger	1367765	876	70.46%
23	Muzaffarpur	Muzaffarpur	4801062	900	63.43%
24	Nalanda	Bihar Sharif	2877653	922	64.43%
25	Nawada	Nawada	2219146	939	59.76%
26	Patna	Patna	5838465	897	70.68%
27	Purnia	Purnia	3264619	921	51.08%

S No.	District	Headquarters	Population (Census 2011)	Sex Ratio (per 1000)	Average Literacy
28	Rohtas	Sasaram	2959918	918	73.37%
29	Saharsa	Saharsa	1900661	906	53.20%
30	Samastipur	Samastipur	4261566	911	61.86%
31	Saran	Chhapra	3951862	954	65.96%
32	Sheikhpura	Sheikhpura	636342	930	63.86%
33	Sheohar	Sheohar	656246	893	53.78%
34	Sitamarhi	Sitamarhi	3423574	899	52.05%
35	Siwan	Siwan	3330464	988	69.45%
36	Supaul	Supaul	2229076	929	57.67%
37	Vaishali	Hajipur	3495021	895	66.60%
38	West Champaran	Bettiah	3935042	909	55.70%

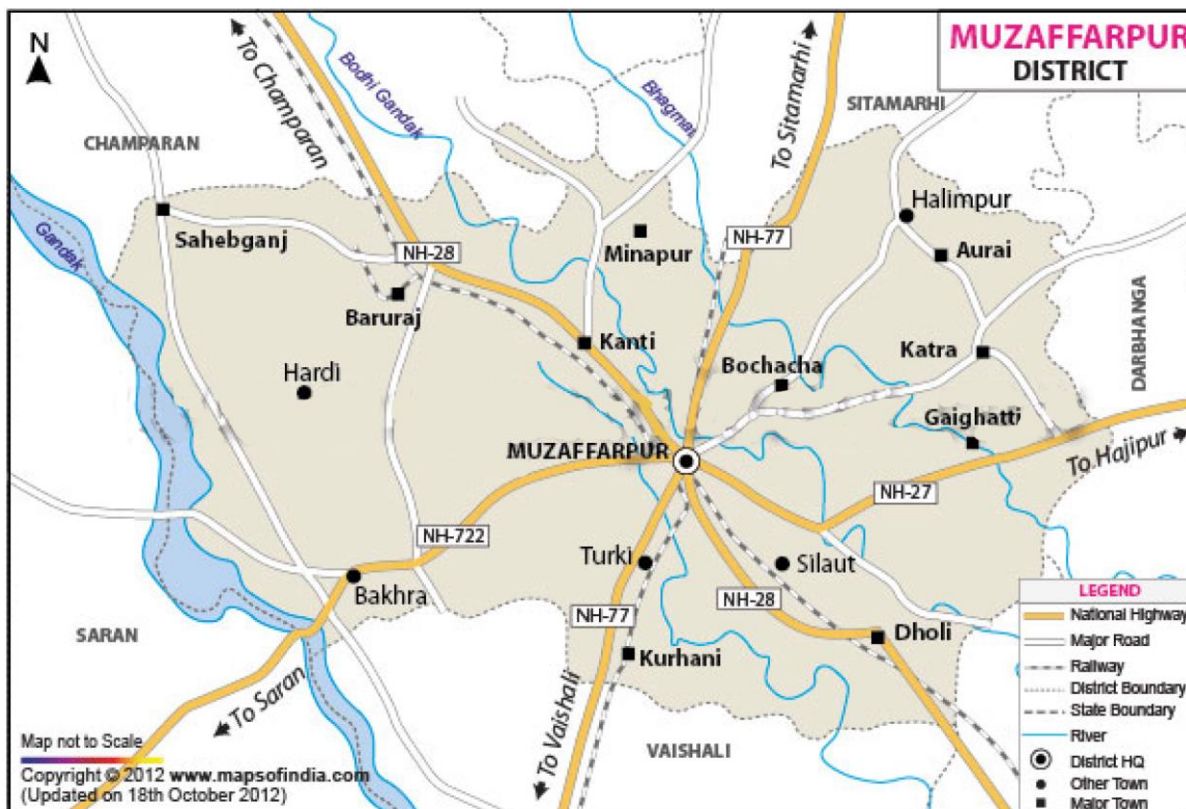
## 2.2 District - Muzaffarpur

Muzaffarpur District is one of the thirty-eight districts of Bihar state, India. Muzaffarpur district is a part of Tirhut Division and it is a sub-metropolitan city located in Muzaffarpur district. It serves as the headquarters of Tirhut division, Muzaffarpur district and the Muzaffarpur Railway District. It is the fourth most populous city in Bihar.

Muzaffarpur is located at 26°07'N 85°24'E. The city lies in a highly active seismic zone of India. This saucer shaped, low-centered town lies on the great Indo-Gangetic plains of Bihar, over Himalayan silt and sand brought by the glacier-fed and rain-fed meandering rivers of the Himalayas.



# Muzaffarpur District Map



As of the 2011 India census, Muzaffarpur had a population of 3,93,724. Males constituted 52.96% (208,509) of the population and females 47.04% (185,215). Muzaffarpur had a literacy rate of 85.07%. Male literacy was 88.77%, and female literacy was 80.91%.

Table 3: Information on vital parameters district - Muzaffarpur

S. N.	Indicator	PAB Approval / Total	Coverage / Utilization
1	No. of Institutions	3073	3028 (45 school landless and Marge)
2	Enrolment (pry)	509097	59.80 (against enrollment)
3	Enrolment (Up. pry)	296689	53.90 (against enrollment)

4	Children (Pry): PAB Approval	304449	92% (against pab approval)
5	Children (U Pry): PAB Approval	159901	91% (against pab approval)
6	Working Days	245	131 (till sept., 2018)
7	No. of cook-cum-helpers	10637	10187
8	Food Grain Lifted (in MTs)	8358.69	6491.10
9	Food Grain utilised (in MTs)	6491.10	5525.36
10	Payment to FCI (Rs. in lakh)	324.94	218.34
11	Cooking Cost utilized (Rs. in lakh)	3539.47	3174.66
12	Hon. to CCH (Rs. in lakh)	901.37	891.75
13	MME (Rs in lakh)	57.38	35.53
14	TA (Rs in lakh)	92.10	44.12
15	Implementation of RBSK	-	245862
15.1	Institutes covered under RBSK	-	845
15.2	Health checkup (no. of children)	-	289281
15.3	IFA administered (no. of children)	-	-
15.4	De-worming tablets (no. of children)	805786	603435
15.5	Spectacles (no. of children)	-	-
16	Infrastructure facility available	2444 Total Sanction	2421 completed, (23 Under process)
16.1	LPG facility	3073	3028
16.2	Drinking Water	3073	3028
16.3	Toilets	3073	3028
17	No. of Institution Inspected	3073	3028
18	Schools having LPG facility	3073	3028
19	Annual Data Entry into MIS portal	3073	3028
20	Monthly Data Entry into MIS portal	3073	3028
21	Number of schools uploading data through AMS	3073	2608
22	Number of children having Aadhaar	805786	519332
23	Cook-cum-helpers having bank a/c	10637	10187
24	CCH receiving hon. through bank a/c	10637	10187

### 2.3 District - Gaya

Gaya is one of the thirty-eight districts of Bihar state, India. It was officially established on 3 October 1865. The district has a common boundary with the state of Jharkhand to the south. Gaya city is both the district headquarters and the second-largest city in Bihar. Gaya finds mention in the great epics, Ramayana and Mahabharata. Rama along with Sita and



Lakshmana visited Gaya for offering PIND-DAAN to their father Dasharath. In Mahabharata, the place has been identified as Gayapuri. About the origin of the name 'Gaya' as referred to in Vayu Purana is that Gaya was the name of a demon (Asura) whose body was pious after he performed rigid penance and secured blessings from Vishnu. It was said that the Gayasura's body would continue to be known as Gaya Kshetra.

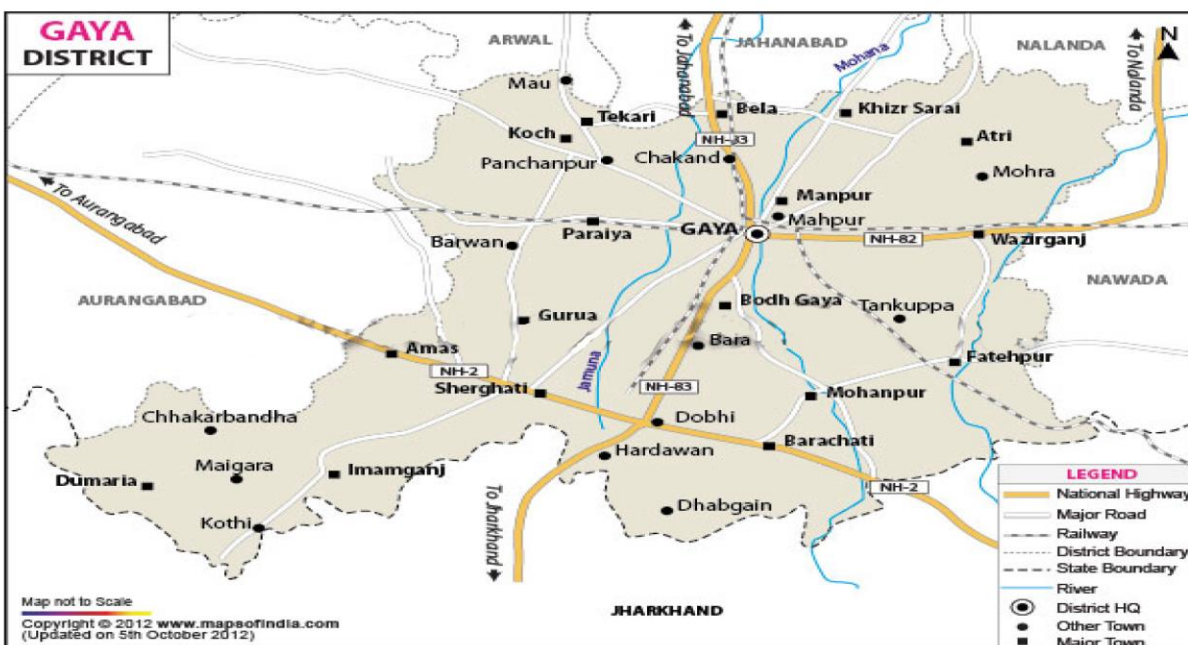
Schools in Gaya are either government run schools or private schools. Schools mainly use Hindi or English as the medium of instruction. The schools are affiliated with the Bihar School Examination Board, the Central Board of Secondary Education (CBSE) or the National Institute of Open Schooling (NIOS). Under the 10+2+3/4 plan, after completing their secondary education, students typically enrol in a school with a higher secondary facility affiliated with the BSEB, the NIOS or the CBSE. Students usually choose from one of three streams — liberal arts, commerce, or science, though vocational streams are also available. Upon completing the required coursework, students may enroll in general or professional degree programmed.

Average literacy rate of Gaya in 2011 were 63.67 compared to 50.45 of 2001. If things are looked out at gender wise, male and female literacy were 73.31 and 53.34 respectively. For 2001 census, same figures stood at 63.27 and 36.66 in Gaya District. Total literate in Gaya District were 2,297,613 of which male and female were 1,368,803 and 928,810 respectively. In 2001, Gaya District had 1,405,453 in its district.

### **2.3.1 Population**

In 2011, Gaya had population of 4,391,418 of which male and female were 2,266,566 and 2,124,852 respectively. In 2001 census, Gaya had a population of 3,473,428 of which males were 1,792,163 and remaining 1,681,265 were females.

## Gaya District Map



**Table 4: Information on vital parameters – District Gaya**

S. N.	Indicator	PAB Approval / Total	Coverage / Utilization
1	No. of Institutions	3106	3106 (09 school landless and Marge)
2	Enrolment (pry)	463702	60.58 %(against enrollment)
3	Enrolment (Up. pry)	233355	53.90 %(against enrollment)
4	Children (Pry): PAB Approval	343618	92% (against pab approval)
5	Children (U Pry): PAB Approval	131525	91% (against pab approval)
6	Working Days	245	131 (till oct 2018)
7	No. of cook-cum-helpers	11094	9310
8	Food Grain Lifted (in MTs)	6018.06 till dec-18	4940.65 till sep-18
9	Food Grain utilised (in MTs)	6018.06 till dec-18	4025.65 till sep-18
10	Payment to FCI (Rs. in lakh)	78.70	78.70
11	Cooking Cost utilized (Rs. in lakh)	2580.36	2164.98
12	Hon. to CCH (Rs. in lakh)	724.89	581.87
13	MME (Rs in lakh)	67.98	35.04
14	TA (Rs in lakh)	0.18	0.15
15	Implementation of RBSK	3106	2509
15.1	Institutes covered under RBSK	3106	2509
15.2	Health checkup (no. of children)	765413	427822
15.3	IFA administered (no. of children)	-	-
15.4	De-worming tablets (no. of children)	697057	418234
15.5	Spectacles (no. of children)	-	-

S. N.	Indicator	PAB Approval / Total	Coverage / Utilization
<b>16</b>	Infrastructure facility available	2753	2683
<b>16.1</b>	LPG facility	3106	2941
<b>16.2</b>	Drinking Water	3106	3106
<b>16.3</b>	Toilets	3106	3106
<b>17</b>	No. of Institution Inspected	3106	3106 (till sept. 2018)
<b>18</b>	Schools having LPG facility	3106	2941
<b>19</b>	Annual Data Entry into MIS portal	3106	3106
<b>20</b>	Monthly Data Entry into MIS portal	3106	3106
<b>21</b>	Number of schools uploading data through AMS	3106	2610
<b>22</b>	Number of children having Aadhaar	495285	252847
<b>23</b>	Cook-cum-helpers having bank a/c	9310	9310
<b>24</b>	CCH receiving hon. through bank a/c	9310	9310

## CHAPTER 3

### METHODOLOGY

Mid-Day Meal is a flagship programme of Government of India providing meals in schools which can help in alleviating short-term hunger and improving nutritional status of children along with bringing an improvement in enrolment rates.

Mid-Day Meal in schools has had a long history in India. In 1925, Mid-Day Meal Programme was introduced for disadvantaged children in Madras Municipal Corporation. By the mid-1980s three States viz. Gujarat, Kerala and Tamil Nadu and the UT of Pondicherry had universalized a cooked Mid-Day Meal Programme with their own resources for children studying at the primary stage and by 1990-91 the number of States implementing the mid-day meal programme with their own resources on a universal or a large scale had increased to twelve states.

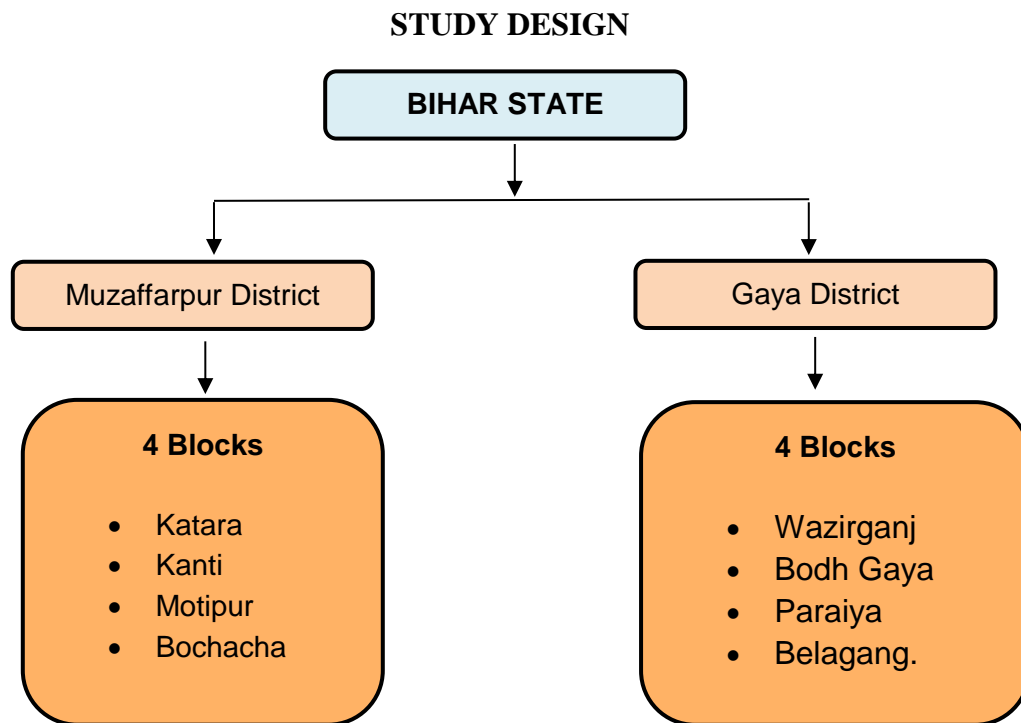
The monitoring of the mid-day meal scheme is carried out by the ministry of human resource development through desk monitoring and field monitoring. The joint review mission carries out the field monitoring of the mid-day meal program in each state. As a part of the monitoring the 11<sup>th</sup> Joint review mission in the state of Bihar was conducted from 12<sup>th</sup> December to 19<sup>th</sup> December, 2018. The experimental plan for the 11<sup>th</sup> Joint Review Mission is discussed below:

#### **3.1. Selection of the districts:**

The study was conducted in the primary and upper primary government run schools, where the mid day meal is in operation. Out of the two districts for the 11<sup>th</sup> JRM review, Gaya was selected by the Ministry of MHRD as poor performing district and second district Muzaffarpur by the Department of Education, Government of Bihar, which is a better performing district in the state. In each district, four blocks were randomly selected. The selected blocks in Muzaffarpur district, were namely Katara, Kanti, Motipur, and Bochacha, while in the district of Gaya, the selected blocks were Wazirganj, Bodh Gaya, Paraiya and Belang.

### 3.2. Sample Size:

In order to get spatial and required sample size, 1452 children were covered in 35 schools (Muzaffarpur 19, Gaya 16) from two blocks Muzaffarpur (n=732), and Gaya (n=720) selected for the purpose (Table 5 to Table 8). Various aspects of the implementation of the MDM program was studied in detail from the children enrolled in the classes I-VIII as well as their parents, teachers, members of SMC and other functionaries.



### List of blocks Covered under JRM

DISTRICT	BLOCK
<b>Muzaffarpur</b> (n=23)	Kanti
	Motipur
	Katra
	Kuudhani
<b>Gaya</b> (n=22)	Wazirganj
	Bodh Gaya
	Paraiya
	Belangan

**Table 5: Sample covered for Anthropometry (Height/Weight)**

District	Boys	Girls	Total
Muzaffarpur	347	385	732
Gaya	333	387	720
Total	680	772	1452

For the measurement of mid upper arm circumference (MUAC), 632 school children from Muzaffarpur and 658 from Gaya were covered.

### 3.3. Investigations

The following Investigations were undertaken in the 11th JRM in Bihar.

#### 3.3.1. Nutritional Status Assessment:

Nutrition Assessment was done in terms of anthropometry (height, weight and MUAC) and dietary assessment (Institutional and Individual diet surveys). Measurement of Weight, and height was carried out among 1452 school children and measurement of mid upper arm circumference (MUAC) was done in 1290 children. Height for age and BMI for age were used as nutrition indices for assessing nutritional status of children by using WHO growth standards 2007.

**Weight:** SECA weighing scales were used for measuring weight (Kg) of children at an accuracy of 100g. The balances were calibrated and standardised daily before weighing of children. Children were asked to remove their shoes and stand straight on the weighing balance.

**Height:** Height of the children were measured using anthropometer. They were asked to remove their shoes and headgear. The children were asked to stand erect with heels touching together and ask them to look straight ahead. The head should be held comfortable erect, arms hanging loosely by the sides..

**BMI:** Body Mass Index (BMI) was calculated using the following formula:

$$\text{BMI} = \text{Weight (Kg)} / \text{Height}^2 (\text{m}^2)$$

**MUAC:** Mid Upper Arm Circumference (MUAC) was measured on left arm using a fibre reinforced non-elastic tape. The child was asked to keep the arm relaxed. Mid point between acromian process of the scapula and the olecranon process of the ulna was marked with the help of a marker. The MUAC tape was then wrapped around the arm at that point gently but firmly to avoid compression of tissue. The circumference was taken to nearest mm.

**Age:** It is important to know the child's age in complete months for calculating the anthropometric indices in order to assess their nutritional status using anthropometry. This information was collected from the school admission registers.

### **3.3. Anthropometric Indices:**

**Height for age:** Height for age reflects long term nutritional status. Low height for age is known as stunting. Thus, stunting indicates chronic undernutrition. It cannot measure short-term changes in the nutrition status.

**BMI for age:** Low BMI for age is known as thinness. Thinness serves as an indicator of short-term undernutrition.

**Table 6: Anthropometric Indicators for Nutritional Status Assessment**

<b>Anthropometric Indices</b>	<b>Nutritional grades</b>
<b>Height for Age</b>	<-3SD- Severe Stunting
	-3SD to -2SD- moderate Stunting
<b>BMI for Age</b>	<-3 SD- Severe Thinness
	-3SD to -2SD- Moderate Thinness
	-2SD to +1SD- Normal
	+1SD to +2SD- Overweight
	>+2SD Obese
	>+3SD Morbidly Obese

### **3.4. Dietary Pattern & Frequency of Meals:**

Institutional diet survey was conducted in 4 schools to measure the quantity and quality of food intakes of the school children. The data pertaining to the number of meals consumed and the dietary pattern was collected from 953 children (Muzaffarpur: 368; 585 in Gaya).

The following information was collected about MDM:

- The children’s perceptions regarding the MDM program and their preferences of various foods served in the MDM was collected through a detailed questionnaire.
- A Semi structured proforma was used for obtaining information regarding the menu, quality as well as quantity of Mid Day Meal served in the schools.
- The parents (who came on request) as well as the teachers’ perceptions of the MDM scheme was assessed using a structured and pretested questionnaire
- The cook-cum-helpers (CCH) were also interviewed about the quality and quantity of ingredients used for the preparation as well as serving of food on a daily basis.
- The teachers and the principals’ views on the implementation of the MDM was collected.



- Data pertaining to the number of children enrolled and the attendance of the students in the school along with the number of beneficiaries of MDM was collected.
- Information was also collected about the taste of the meals by the teachers, maintenance of the tasting and other registers, kitchen facilities, storage of the grains and quantity of food cooked on the day of the visit.
- Information was collected from the head teachers as per the records maintained for cook-cum-helpers and maintained at schools. Spot observations were also made regarding the aspects related to safety, hygiene, cleanliness etc.

Data Analysis: Data analysis was done using Microsoft Excel and SPSS Version 22. WHO Anthro Plus software used for analysis of anthropometric data.

## CHAPTER 4

### **Review of implementation of Mid-Day Meal in Bihar on Physical and financial parameters during last four years (2014-15 to 2017-18)**

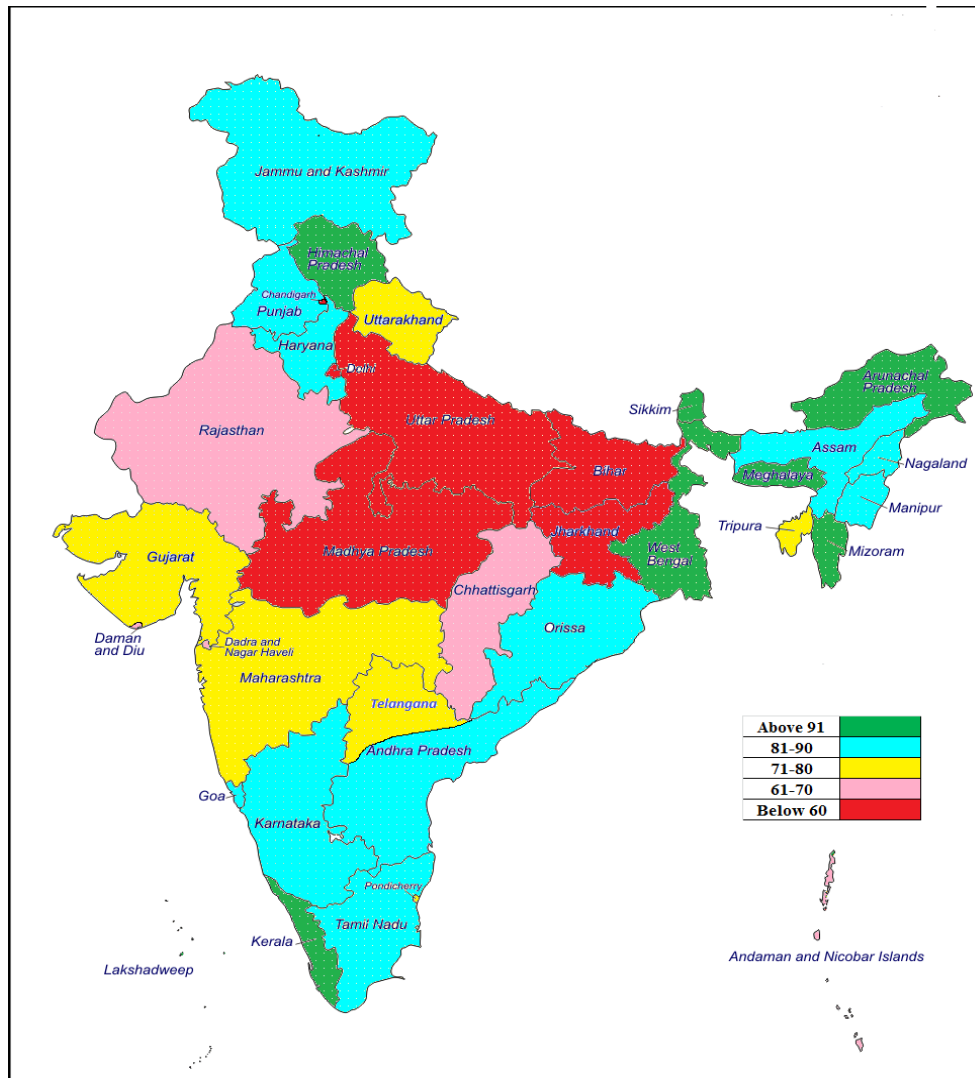
The Mid-Day Meal a Centrally-Sponsored Scheme and Flagship Programme of the Government of India under which all school children studying in Classes I-VIII of Government, Government-Aided, Special Training Centres including Madarasas and Maqtabs supported under Samagra Shiksha are covered. The objectives of the MDM Scheme are to improve nutritional status of children studying in classes I – VIII eligible schools, to encourage poor children belonging to disadvantaged sections to attend school more regularly and to provide nutritional support to children of elementary stage in drought-affected areas even during summer vacation.

#### **4.1 Norms of Central assistance under Mid-Day Meal Scheme**

At present, 100% recurring cost Central assistance is provided for cost of food grains, transportation of food grains from FCI depot to Schools and Management, Monitoring and Evaluation charges. 100% non-recurring Central assistance is provided for procurement/replacement of kitchen devices in schools. The Centre also provides assistance for cooking cost, payment of honorarium to cook-cum-helpers and construction of kitchen-cum-stores as per States Schedule of rates on sharing basis between Centre and State Government in the ratio of 60:40 for Non-NER States and 90:10 for NER States including 3 Himalayan States and 100% for Union Territories.

#### **4.2 National Scenario of coverage of children under MDM**

During 2017-18, 9.51 crore children studying in elementary classes in schools covered under MDM, have availed MDM on an average basis against the total enrolment of 12.38 crore. Thus about 76% of the enrolled children have availed MDM on each school day.



### 4.3 Basic information on implementation of MDMS during 2018-19

**Table 7: Important indicators in implementation of MDM – Bihar**

S. N.	Indicator	PAB Approval / Total	Coverage / Utilisation
1	No. of Institutions	70295	70130 (165 landless school merged with another school)
2	Enrolment (pry)	12085879	60% against enrollment

S. N.	Indicator	PAB Approval / Total	Coverage / Utilisation
3	Enrolment (Up. pry)	6186350	56% against enrollment
4	Children (Pry): PAB Approval	8113637	90% against PAB approval
5	Children (U Pry): PAB Approval	3781988	92% against PAB approval
6	Working Days	245	131 days till oct-18
7	No. of cook-cum-helpers	245314	238869
8	Food Grain Lifted (in MTs)	333917.30	163850.18 till sep-18
9	Food Grain utilised (in MTs)	333917.30	142191.29 lakhs till sep-18
10	Payment to FCI (Rs in lakh)	10017.52	6208.52 lakhs till sep-18
11	Cooking Cost utilized (Rs in lakh)	82721.41	41879.06 till sep-18
12	Hon. to CCH (Rs in lakh)	14718.96	6917.91 till sep-18
13	MME (Rs in lakh)	1979.32	1167.80 till sep-18
14	TA (Rs in lakh)	2504.38	1295.65
15	Implementation of RBSK	-	-
15.1	Institutes covered under RBSK	70295	70130
15.2	Health checkup (no. of children)		4971815 children till sep-18
15.3	IFA administered (no. of children)	-	-
15.4	De-worming tablets (no. of children)		10285878
15.5	Spectacles (no. of children)	-	-
16	Infrastructure facility available	66550(total sanctioned)	58843 completed, remaining 7703 kitchen shed amount returned to GOI
16.1	LPG facility	70130	48986 (73%)
16.2	Drinking Water	70130	70130
16.3	Toilets	70130	70130
17	No. of Institution Inspected		100% till oct-18
18	Schools having LPG facility		48986
19	Annual Data Entry into MIS portal	69946	69943
20	Monthly Data Entry into MIS portal	69946	69941 till sep-18

S. N.	Indicator	PAB Approval / Total	Coverage / Utilisation
21	Number of schools uploading data through AMS	68629	49755
22	Number of children having Aadhaar	18272229	11045856
23	Cook-cum-helpers having bank a/c	245316	220138
24	CCH receiving hon. through bank a/c	245316	220138

#### 4.4 Implementation of the Scheme in Bihar during 2014-15 to 2017-18

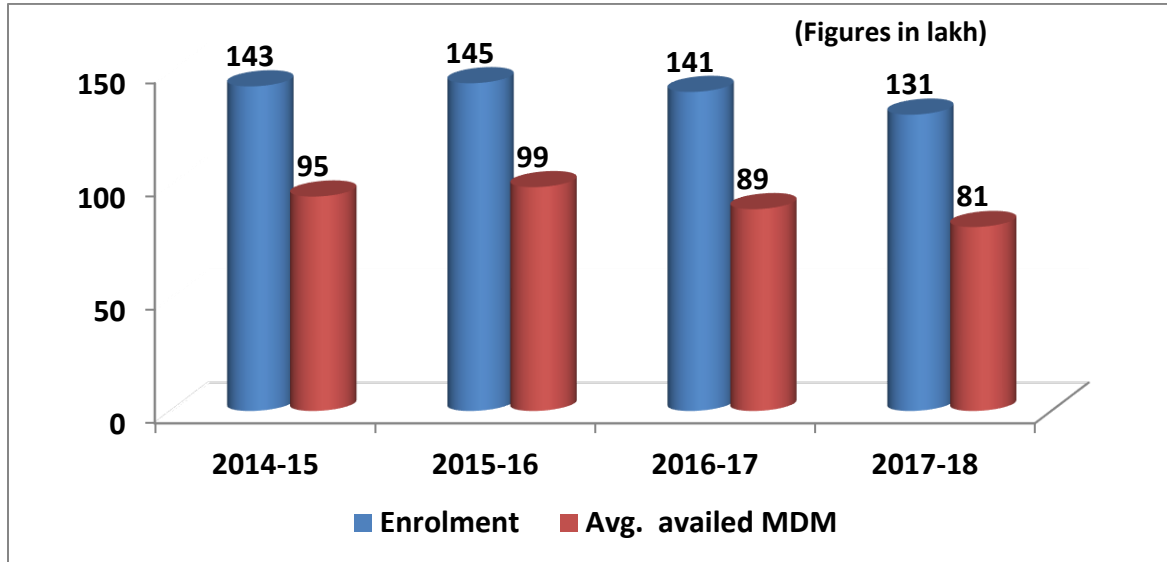
##### 4.4.1. Coverage of children under MDM in Bihar- Primary

The coverage in primary stage under Mid Day Meal scheme is decreasing over the years as it has gone down from 66% in 2015-16 to 62% in 2017-18. However, it is pertinent to mention that the coverage is below the national average of 76% in Primary level. The trend in coverage is given as under:

**Table 8: Enrolment, PAB Approval, and children availed MDM - Primary**

Year	Enrolment	PAB approval	Avg. availed MDM	% availed vs. Enrol.	% availed vs PAB approval
2014-15	14317759	9603047	9457393	66%	98%
2015-16	14457156	9802783	9872954	68%	101%
2016-17	14074077	9802783	8902071	63%	91%
2017-18	13070072	9030199	8113637	62%	90%

**Graph 1: Trends of Enrolment and Average number of children availing MDM:  
(Primary)**



#### 4.4.2. Coverage of children under MDM in Bihar – Upper Primary

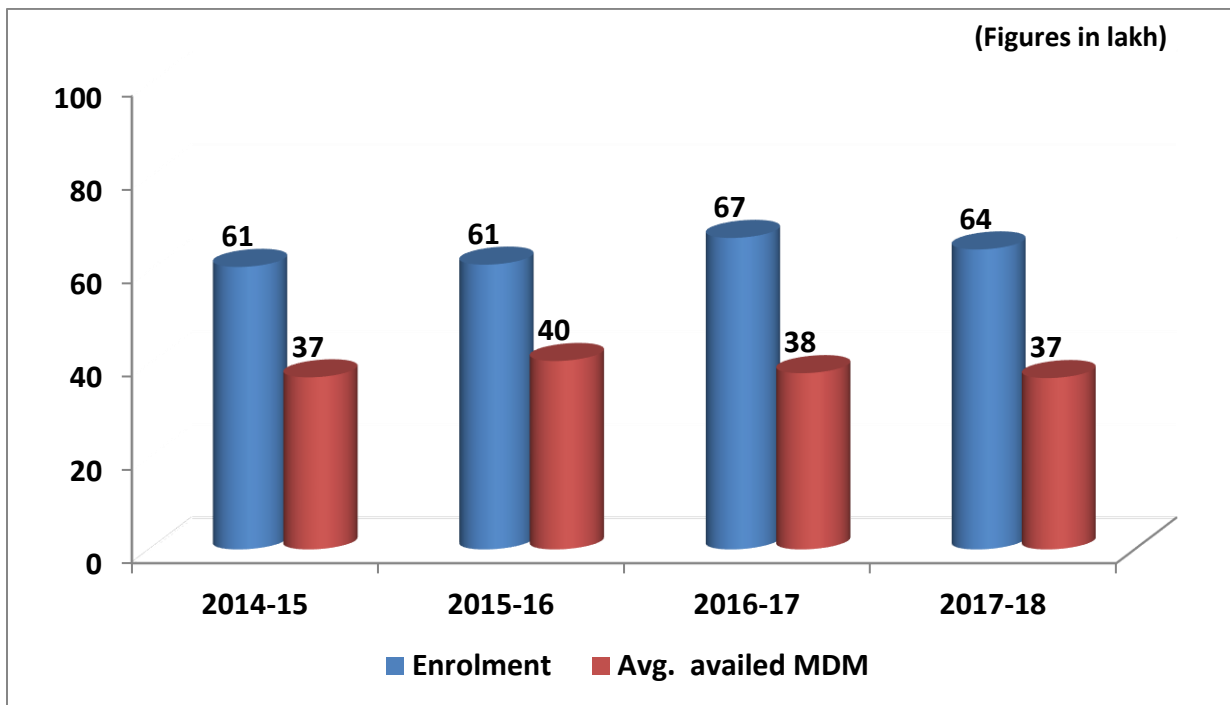
Unlike Primary the decline in enrolment is not as much in upper primary stage, but at the same time the decline in coverage of children under MDMS is quite sharp, as only 57% of the enrolled children have availed mid-day meal during 2017-18 on an average basis, whereas the coverage during 2014-15 was 61% only. The details are given as under:

**Table 9: Enrolment, PAB Approval, and children availed MDM – Upper Primary**

Year	Enrolment	PAB approval	Avg. availed MDM	% availed vs. Enrol.	% availed vs PAB approval
<b>2014-15</b>	6058807	3825787	3693030	61%	97%
<b>2015-16</b>	6107050	3828436	4043553	66%	106%
<b>2016-17</b>	6678964	3826152	3781988	57%	99%
<b>2017-18</b>	6432977	3785988	3677094	57%	97%

**Graph 2: Trends of enrolment and Average number of children availing MDM:**

**Upper Primary**



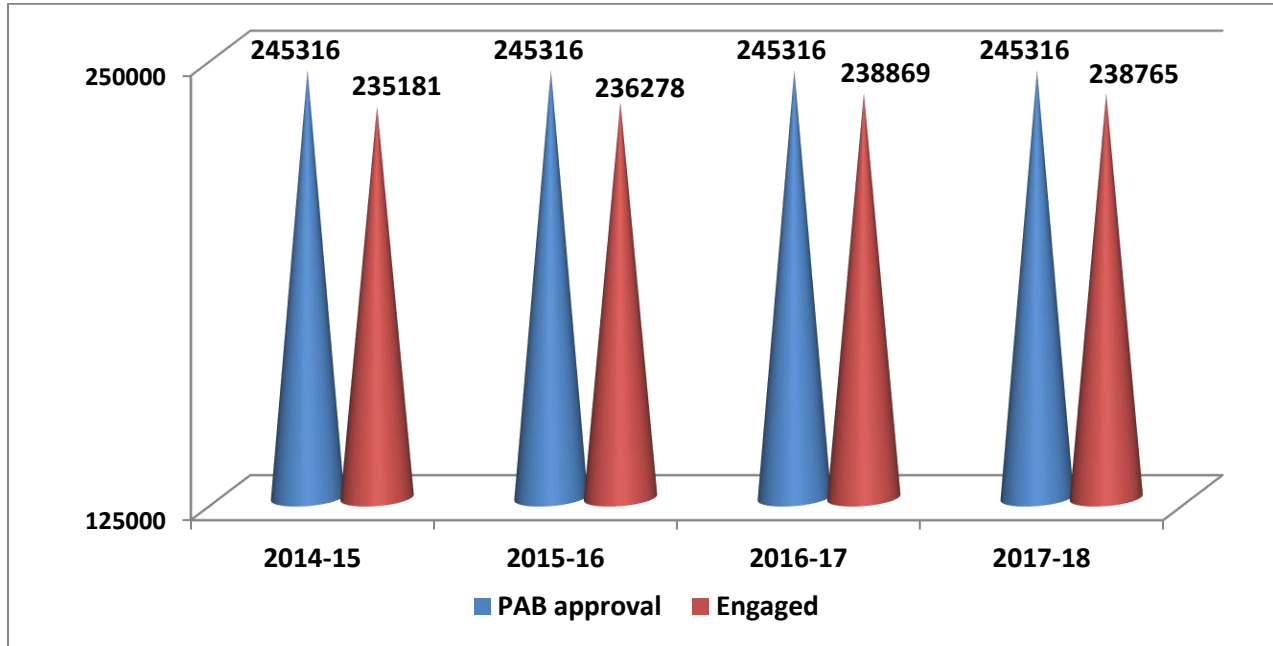
**4.4.3. Engagement of Cook-cum-helpers**

The Programme Approval Board-Mid Day Meal has approved the engagement of 2,45,316 cook-cum-helpers during 2017-18. State has engaged 2,38,765 (97%) during 2017-18 for cooking and serving of MDM.

**Table 10: Engagement of Cook-cum-Helpers vis-à-vis PAB Approval**

Year	PAB approval	Engaged	% Engaged
2014-15	245316	235181	96%
2015-16	245316	236278	96%
2016-17	245316	238869	97%
2017-18	245316	238765	97%

**Graph 3: Engagement of Cook-cum-Helpers vis-à-vis PAB Approval**



**Table 11: Details of Allocation of funds and Expenditure against Central Assistance**

*(Rs. in Lakh)*

Year	Cooking cost*		TA		Hon. to CCH		MME	
	Allocation	Util.	Allocation	Util.	Allocation	Util.	Allocation	Util.
2014-15	133463.36	104485.34	2819.35	2487.00	18398.70	17494.13	2569.87	2436.47
2015-16	144813.97	114470.33	2374.20	2615.42	14718.96	14097.68	2207.83	1687.46
2016-17	154925.35	128935.59	2856.18	2704.85	14718.96	11635.97	2179.18	2179.18
2017-18	148712.28	118414.33	2703.11	2322.11	14718.96	13223.98	2123.23	2030.95

\*Central as well as State Share.

#### 4.4.4. Component wise Details of Allocation and Expenditure

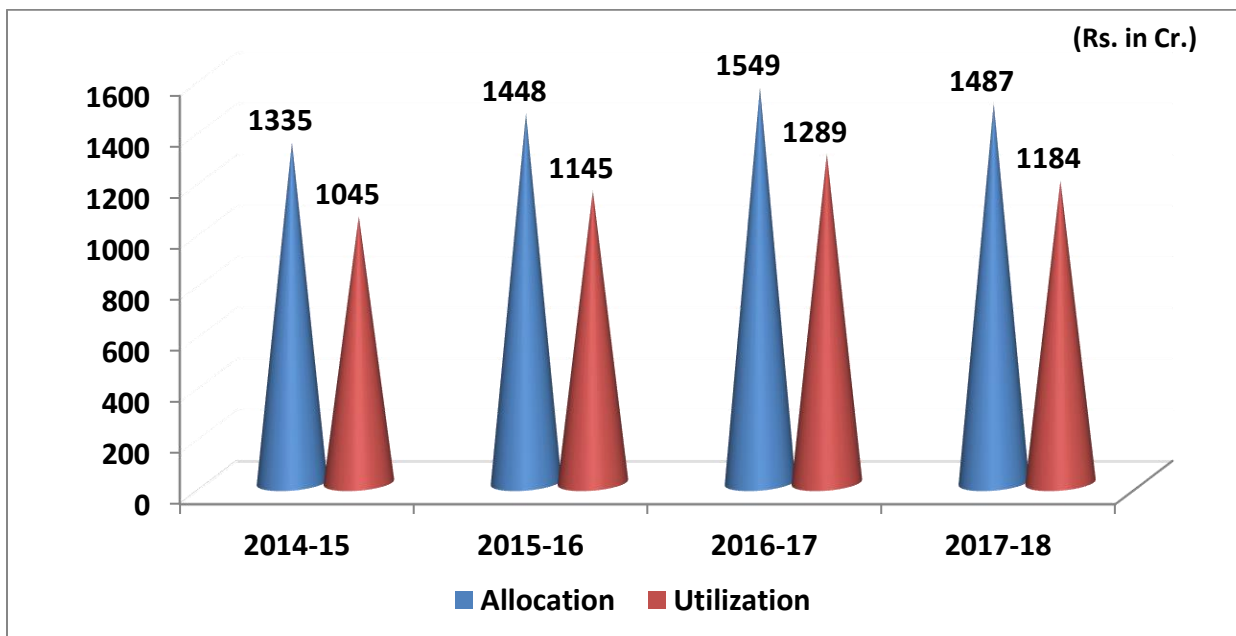
**Table 12: Utilization of Cooking Cost (Central as well as State Share)**

*(Rs in lakh)*

Cooking Cost	2014-15	2015-16	2016-17	2017-18
Allocation of Funds	133463.36	144813.97	154925.35	148712.28
Expenditure	104485.34	114470.33	128935.59	118414.33



**Graph 4: Utilization of Cooking Cost (Central as well as State Share)**

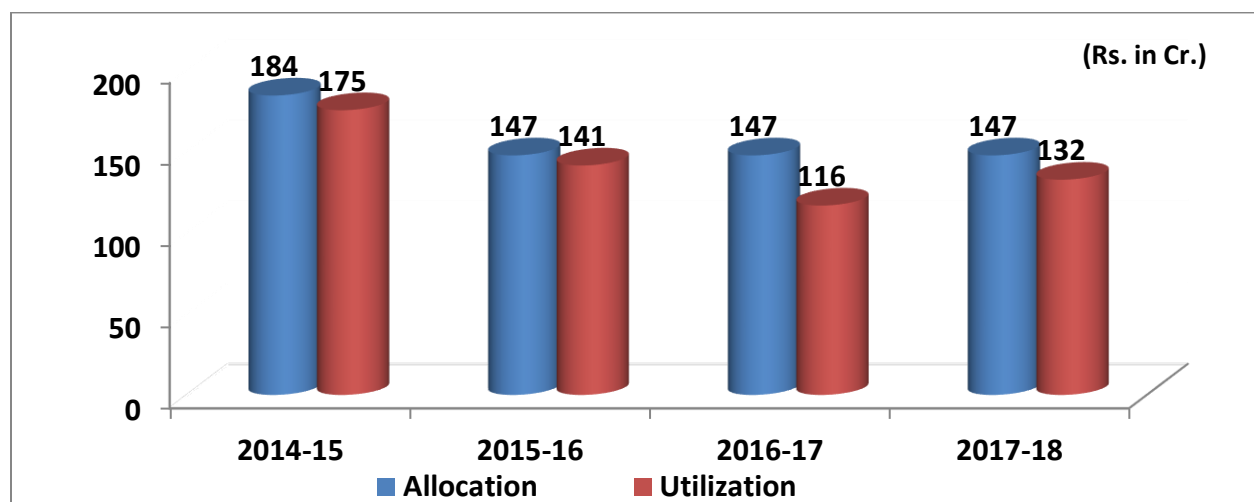


**Table 13: Utilization of Honorarium to Cook-cum-helpers**

*(Rs in lakh)*

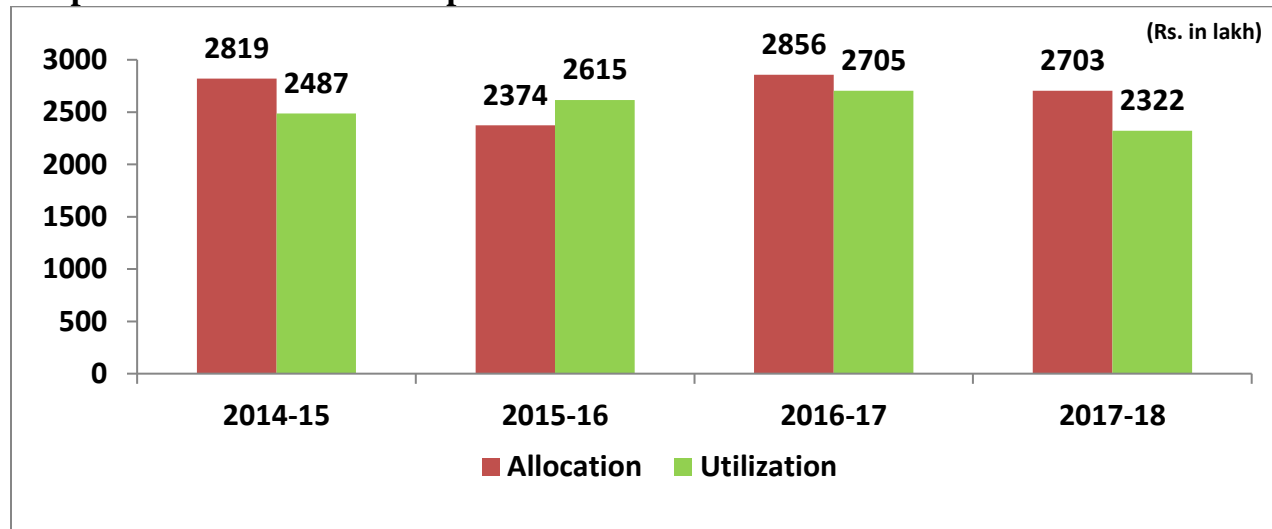
Hon. to CCH	2014-15	2015-16	2016-17	2017-18
Allocation of Funds	18398.70	14718.96	14718.96	14718.96
Expenditure	17494.13	14097.68	11635.97	13223.98

**Graph 5: Utilization of Honorarium to Cook-cum-helpers**



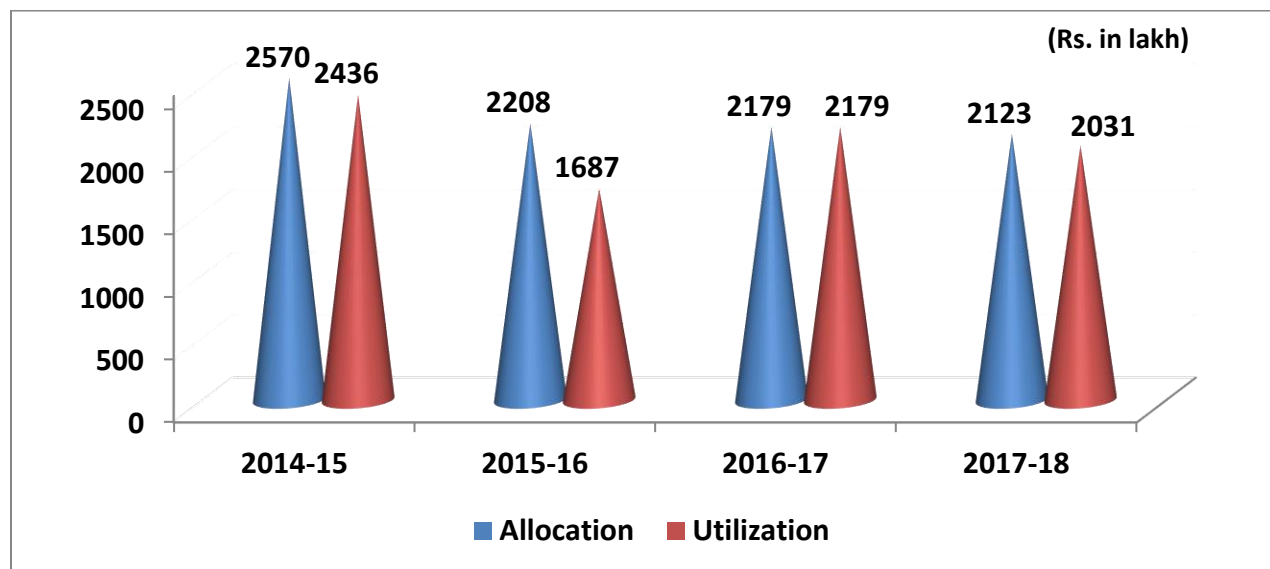
**Table 14:Utilisation of Transportation Assistance***(Rs. in lakh)*

Transportation Assistance	2014-15	2015-16	2016-17	2017-18
Allocation of Funds	2819.35	2374.20	2856.18	2703.11
Expenditure	2487.00	2615.42	2704.85	2322.11

**Graph 6: Utilization of Transportation Assistance****Table 15:Utilization of Management Monitoring and Evaluation (MME)***(Rs. in lakh)*

MME	2014-15	2015-16	2016-17	2017-18
Allocation of Funds	2569.87	2207.83	2179.18	2123.23
Expenditure	2436.47	1687.46	2179.18	2030.95

**Graph 7: Utilization of Management Monitoring and Evaluation (MME)**



#### 4.5. Basic Information on implementation of MDM in District Muzaffarpur

Sl. No.	Indicator	PAB Approval / Total	Coverage / Utilization
1	No. of Institutions	3073	3028 (45 school landless and Marge)
2	Enrolment (pry)	509097	59.80 (against enrollment)
3	Enrolment (Up. pry)	296689	53.90 (against enrollment)
4	Children (Pry): PAB Approval	304449	92% (against pab approval)
5	Children (U Pry): PAB Approval	159901	91% (against pab approval)
6	Working Days	245	131 (till sept., 2018)
7	No. of cook-cum-helpers	10637	10187
8	Food Grain Lifted (in MTs)	8358.69	6491.10
9	Food Grain utilised (in MTs)	6491.10	5525.36
10	Payment to FCI (Rs. in lakh)	324.94	218.34
11	Cooking Cost utilized (Rs. in lakh)	3539.47	3174.66
12	Hon. to CCH (Rs. in lakh)	901.37	891.75

Sl. No.	Indicator	PAB Approval / Total	Coverage / Utilization
13	MME (Rs in lakh)	57.38	35.53
14	TA (Rs in lakh)	92.10	44.12
15	Implementation of RBSK	-	245862
15.1	Institutes covered under RBSK	-	845
15.2	Health checkup (no. of children)	-	289281
15.3	IFA administered (no. of children)	-	-
15.4	De-worming tablets (no. of children)	805786	603435
15.5	Spectacles (no. of children)	-	-
16	Infrastructure facility available	2444 Total Sanction	2421 completed, (23 Under process)
16.1	LPG facility	3073	3028
16.2	Drinking Water	3073	3028
16.3	Toilets	3073	3028
17	No. of Institution Inspected	3073	3028
18	Schools having LPG facility	3073	3028
19	Annual Data Entry into MIS portal	3073	3028
20	Monthly Data Entry into MIS portal	3073	3028
21	Number of schools uploading data through AMS	3073	2608
22	Number of children having Aadhaar	805786	519332
23	Cook-cum-helpers having bank a/c	10637	10187
24	CCH receiving hon. through bank a/c	10637	10187

#### 4.6. Basic Information on implementation of MDM in District - Gaya

As per the information provided by the District Authorities the basic information on implementation of MDM in district Gaya is given below:

S. N.	Indicator	PAB Approval / Total	Coverage / Utilization
1	No. of Institutions	3106	3106 (09 school landless and Marge)
2	Enrolment (pry)	463702	60.58 % (against enrollment)
3	Enrolment (Up. pry)	233355	53.90 % (against enrollment)
4	Children (Pry): PAB Approval	343618	92% (against pab approval)
5	Children (U Pry): PAB Approval	131525	91% (against pab approval)
6	Working Days	245	131 (till oct 2018)
7	No. of cook-cum-helpers	11094	9310
8	Food Grain Lifted (in MTs)	6018.06 till dec-18	4940.65 till sep-18
9	Food Grain utilised (in MTs)	6018.06 till dec-18	4025.65 till sep-18
10	Payment to FCI (Rs. in lakh)	78.70	78.70
11	Cooking Cost utilized (Rs. in lakh)	2580.36	2164.98
12	Hon. to CCH (Rs. in lakh)	724.89	581.87
13	MME (Rs in lakh)	67.98	35.04
14	TA (Rs in lakh)	0.18	0.15
15	Implementation of RBSK	3106	2509
15.1	Institutes covered under RBSK	3106	2509
15.2	Health checkup (no. of children)	765413	427822
15.3	IFA administered (no. of children)	-	-
15.4	De-worming tablets (no. of children)	697057	418234
15.5	Spectacles (no. of children)	-	-
16	Infrastructure facility available	2753	2683
16.1	LPG facility	3106	2941
16.2	Drinking Water	3106	3106
16.3	Toilets	3106	3106
17	No. of Institution Inspected	3106	3106 (till sept. 2018)
18	Schools having LPG facility	3106	2941

S. N.	Indicator	PAB Approval / Total	Coverage / Utilization
19	Annual Data Entry into MIS portal	3106	3106
20	Monthly Data Entry into MIS portal	3106	3106
21	Number of schools uploading data through AMS	3106	2610
22	Number of children having Aadhaar	495285	252847
23	Cook-cum-helpers having bank a/c	9310	9310
24	CCH receiving hon. through bank a/c	9310	9310

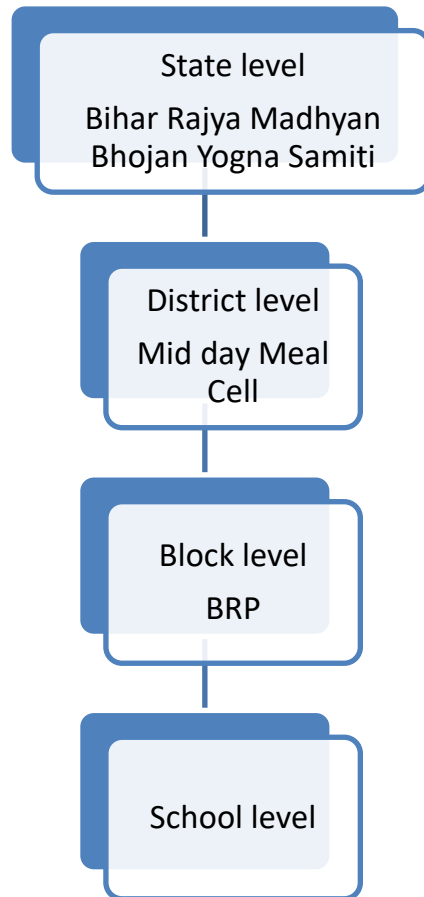
## CHAPTER: 5

### Observations from the Field as per the ToR

#### 5.1 Review of the fund flow mechanism

The fund flow from the State to districts and from district to schools directly through e-transfer. Once the allotment is drawn from the treasury it is sub allotted to the district through e-transfer on the basis of last three-month average expenditure. From district level office, fund is generated on basis of auto generated school wise invoice from MIS as per school level expenditure, after that district transfer required fund to school through RTGS.

Graphical representation of the existing mechanism for release of funds under MDM is shown as under:



The flow of funds released under Mid Day Meal Scheme during 2018-19 is given below:

Component	Fund received		Funds released			
	Date	Amount	District		School	
			Date	Amount	Date	Amount
Cost of FG	30.4.18	2503.20	11.5.18	2503.20		
	29.9.18	1756.51	4.11.18	1025.20		
Cooking cost	30.4.18	20671.65	11.5.18	20671.65	21.5.18	20671.65
	29.9.18	28908.39	4.11.18	17025.96		
Hon. to CCH	30.4.18	3409.38	11.5.18	3409.38	21.5.18	3409.38
	29.9.18	4155.40	4.11.18	1258.96		
Transportation Asst.	30.4.18	628.80	11.5.18	628.80		
	29.9.18	450.80	4.11.18	220.85		
MME	30.4.18	489.78	11.5.18	489.78	21.5.18	489.78
	29.9.18	679.80	4.11.18	345.36		
Kitchen-cum-store	-	-	-	-	-	-
Kitchen Devices	-	-	-	-	-	-

JRM observed that the funds for cooking cost were released to the schools at regular intervals by the State. The first instalment was released on 3<sup>rd</sup> April, 2018 followed by regular release in June, July, August, September and November, 2018. Thus funds were available with the schools at any given point of time.

## 5.2. Review of the coverage of the scheme in the Visited Districts

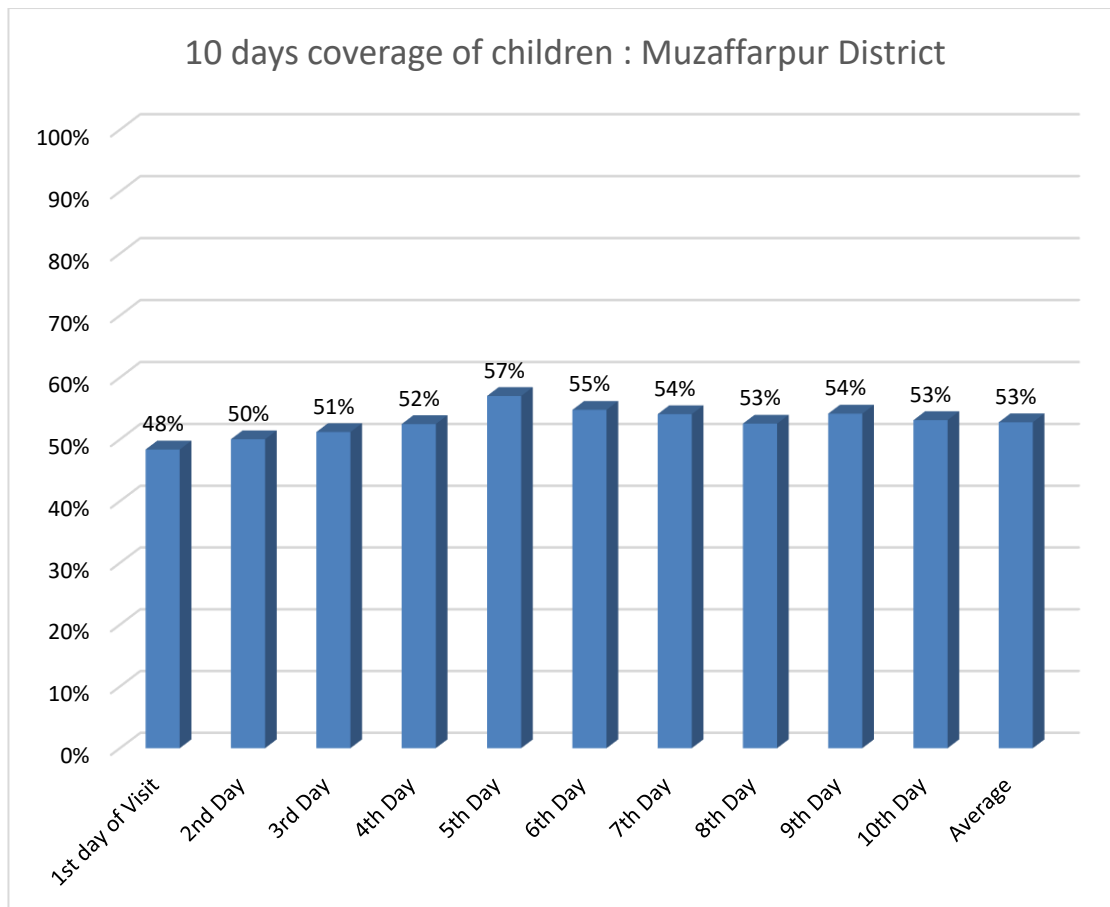
The cumulative enrolment in these schools was 16893 against which 8818 Children (53%) availed MDM on average basis during the last 10 days in both districts.

### District Muzaffarpur

The enrolment in elementary classes was 9818 in 23 visited schools in Muzaffarpur. 5212 (53%) children availed mid day meal on an average basis during the last ten days including the day of visit.



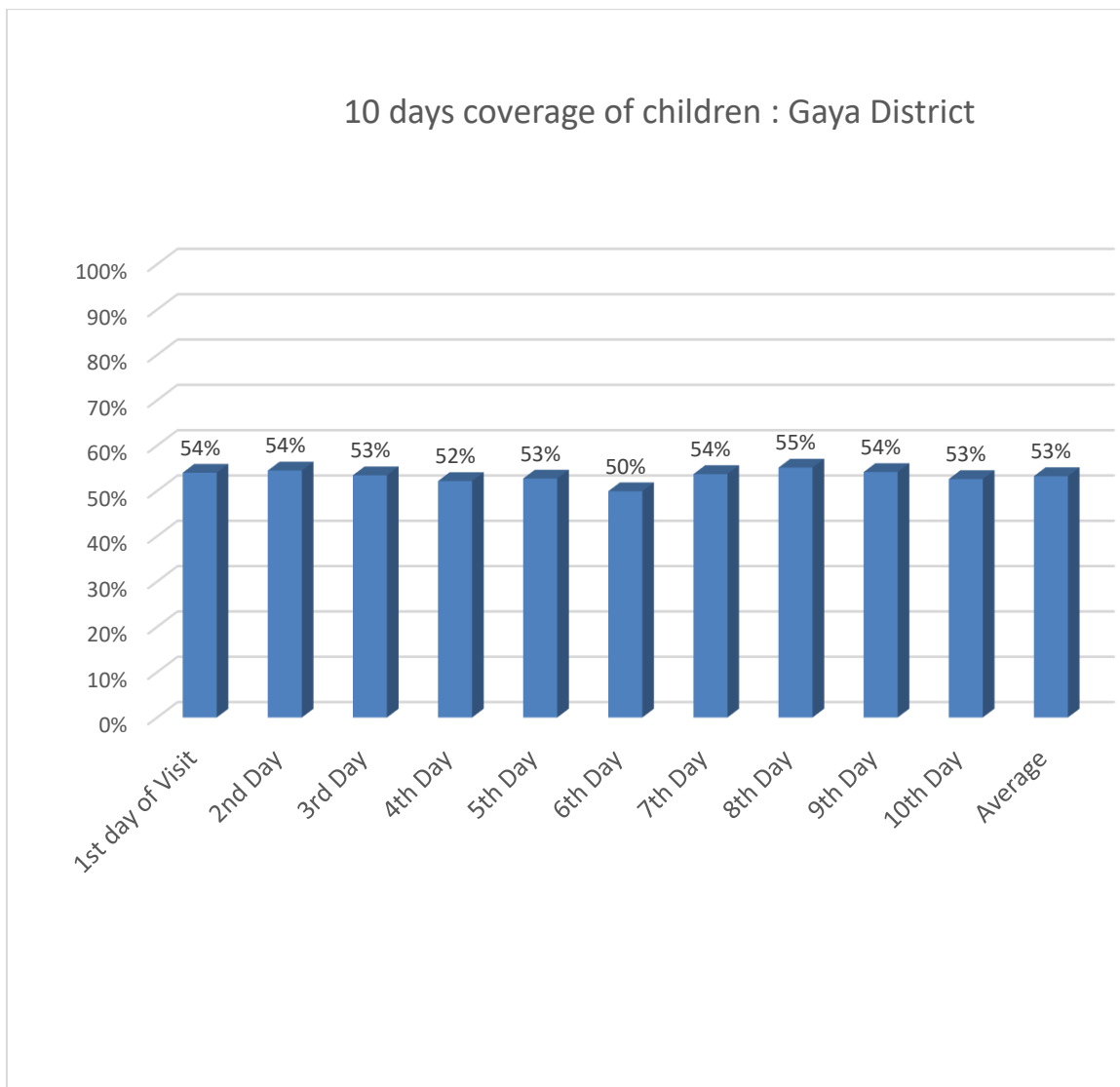
**Graph 8: Day wise average students availing MDM in the visited schools in district  
– Muzaffarpur**



### District – Gaya

In the 22 visited schools in Gaya district, 7113 children were enrolled. Out of these 3787 children (53%) have availed MDM on an average basis during the last ten days including the day of visit.

**Graph 9:Day wise average students availing MDM in the visited schools in district  
– Gaya**

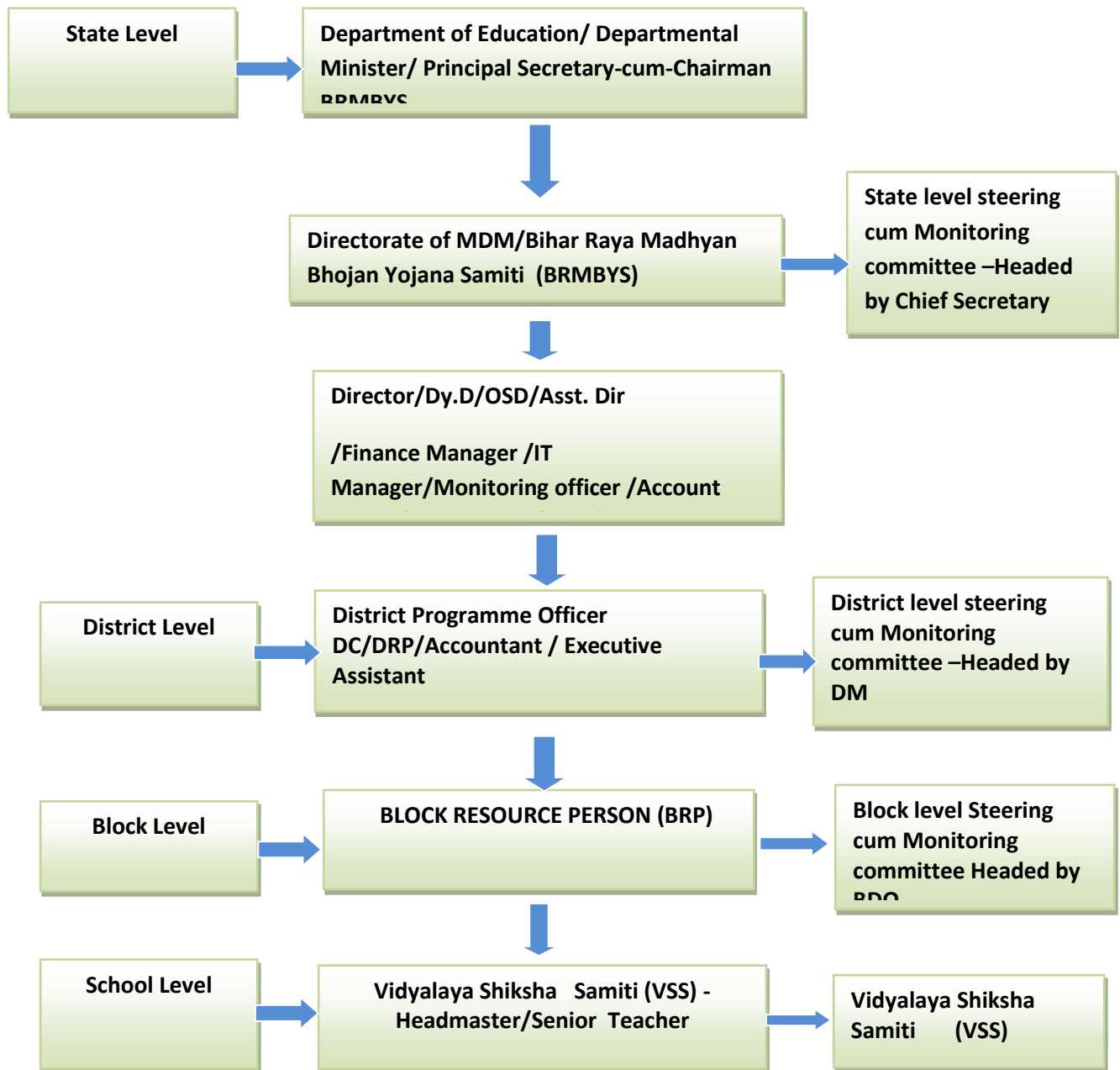


The coverage in against enrolment in both districts is below the national average of 76%.

### 5.3 Review of the Management structure

Management Structure for implementation of the Mid Day Meal Scheme at State, District, Block and School level is as follows:

#### Management Structure - State Level



As per the information provided by the State the requirement and deployment of manpower under MDM is as under:

Level	No. of regular personnel		No. of contractual personnel	
	Required	Deployed	Required	Engaged.
<b>State</b>	17	3	24	5
<b>District</b>	35	17	35	18
<b>Block</b>	357	154	357	173

It is evident from the data that there is acute shortage of manpower at different levels. It is therefore recommended to fill up the vacant posts / engage personals for more effective implementation of the scheme.

The Joint Review Mission observed that schools were being inspected regularly on monthly basis by the cluster heads, superintendent and Extension officers. However, it was also observed that the inspection needs to be more focused as most of the times inspecting officials are not providing adequate attention to vital parameters in implementation of MDM.

#### 5.4 Review the delivery mechanism of food grains from State to Schools

The Food grain of Fair Average Quality (FAQ) is supplied by Food Corporation of India (FCI) under Mid-Day Meal Scheme. The food grain lifted by the State is transported to the schools by the approved transport agency engaged on the basis of e-tender. The JRM team observed that sufficient quantity of food grains was available in all schools. The food grain is kept in every school in the storage bins to protect it from the pest infestation. Register is maintained at the school level showing details about the quantity of rice received and consumed every day.

### 5.5 Review the smooth implementation of the Scheme with particular reference to Interruptions.

Joint Review Mission observed interruption in few schools during the months of September and October, 2018 due to the non-availability of food grains. The students of elementary classes could have been paid Food Security Allowance, as per the provisions of Section 8 of National Food Security Act, 2013 and Mid Day Meal Rules, 2015, for those number of days for which meals were not served to them. But Government of Bihar has not so far operationalized the Mid Day Meal Rules, 2015. The State Government may take necessary action for operationalisation of MDM Rules and take necessary action for payment of Food Security Allowance to the children who could not be provided mid day meal due to non-availability of food grains in the schools during 2018.

### 5.6 Review the Creation of Capital Assets

Capital Assets such as Kitchen-cum-stores, provision of Liquefied Petroleum Gas, Drinking Water and Toilets in the schools enable preparation of mid day meal in safe and hygienic environment. Joint Review Mission was informed that following capital assets have been created against the approval of Programme approval Board:

Item	Muzaffarpur district		Gaya district	
	PAB approval	Achievement	PAB approval	Achievement
<b>Kitchen-cum-stores</b>	2444	2421	2753	2083
<b>LPG</b>	3073	3028	3106	2941
<b>Drinking Water facility</b>	3073	3028	3106	3106
<b>Toilets</b>	3073	3028	3106	3106

The State has released funds to all districts for the procurement of LPG connection during 2018-19.

JRM observed that the toilets in almost every school do not have facility of water due to which stinking smell emanates from these toilets. Most of the schools in both the districts do not have fencing due to which the villagers defecate the toilets after the school hours. The schools are not able to get them cleaned regularly because no sweepers have not been posted in the schools or funds are not allocated to the schools for cleaning the toilets or the campus of the school. Same was the case for drinking water facility. Although hand pumps have been provided in all the schools, most of them are not functional. JRM was given a list 589 non-functional hand pumps in various schools. The school authorities have taken up the matter with the concerned department through proper channel. But the matter is still pending for over a year. The last reminder has been sent during the last week.

JRM recommends that the meeting of State Level Steering-cum-Monitoring Committee matter may be convened for resolving these issues in convergence with line departments.

## 5.7 Construction of Kitchen-cum-stores

The State Government has submitted the following information in the 2<sup>nd</sup> Quarterly Progress Report for the quarter ending on 30.09,2018 for the construction of sanctioned Kitchen-cum-stores:

Kitchen –cum-stores sanctioned		Total	Status of construction		
Primary	Upper Pry	66550	Constructed	In-Progress	Construction yet to start
38916	27634			58353	494

These kitchen-cum-stores were sanctioned on unit cost norms @ Rs.60000/- per kitchen-cum-store. However, due to the increase in the cost of construction, it is not possible to

construct the kitchen-cum-stores. The State desires that fresh sanction may be given for the construction of kitchen-cum-stores on plinth area norms as per approved schedule of rates of the State Government's technical authority for the kitchen-cum-stores whose construction has not yet started.

JRM recommends that the detailed proposal in this regard may be submitted to MHRD along with the supporting documents and provide matching State Share.

## **5.8 Procurement/Replacement of Kitchen Devices**

As per MDM guidelines, non-recurring central assistance is admissible to all the schools for procuring cooking utensils, serving devices and storage bins under Mid Day Meal Scheme. As per the information provided by State all the sanctioned units of kitchen devices have been procured.

The JRM found that all the visited schools had adequate number of cooking and serving utensils except the some schools which requested for additional kitchen devices as indicated below:

However, the following schools requested for additional kitchen devices as mentioned below:

- i) Government Middle School, Bisadhi had 150 eating plates against the enrolment of 390. The School authorities desired that 150 additional eating plates may be provided for serving mid day meal to the students. One additional Gas chulha is also required by the school to prepare mid day meal before the lunch time.
- ii) Government Middle School, Tarwan requires two tubs for food grains.
- iii) Kanya Primary School, Kenarchatti, Wazirganj Block in Bodh Gaya require two Handi (15 Kg each) and 90 eating plates.
- iv) Government Middle School, Ladhoura in Kudni Block of Muzaffarpur district require cooking utensil (8Kg capacity) and 250 eating plates.

- v) Government Primary School, Turkey Kanya, Kudhni block in Muzaffarpur require 2 Rice Bowls and buckets.

The kitchen devices become obsolete due to usual wear and tear over a period of time. It is possible that schools in other districts which have not been visited by the JRM, may have demand for replacement of kitchen devices or additional kitchen devices. Instead of processing each proposal in piece meal manner, JRM recommends that consolidated proposal may be considered by the State by obtaining demand from other districts also.

### **5.9. Review the convening the meetings of District Level Committee under Chairpersonship of senior most Member of Parliament (LS)**

The MDM guidelines provides for monitoring structures at various levels for monitoring and supervision of the scheme. The MHRD has constituted a District level committee under the chairpersonship of the senior most Member of Parliament (Lok Sabha) in the district. The committee is supposed to meet atleast once in a quarter. As per the information provided by the State, 32 meetings of the District Level Committee under the Chairpersonship of Senior most Member of Parliament (Lok Sabha). JRM was also informed that meetings of District Level Committee under the Chairpersonship of District Magistrates are being held regularly for monitoring the implementation of scheme.

JRM recommends that meetings of DLCs both under the Chairpersonship of Senior most Member of Parliament (LS) and District Magistrates.

### **5.10. Management Information System (MIS)**

Web-enabled Management Information System for Mid Day Meal (MIS-MDM) was launched in June, 2012 for monitoring of the scheme. The States are required to make Monthly as well as Annual Data entries in the MIS-MDM. The State has made 100% monthly data entries up to October, 2018.



### **5.11. Review of implementation of Automated Monitoring System:**

The JRM team observed that the daily data reporting for the number of beneficiaries of mid day meal scheme on each day is being submitted by the schools through Automated Monitoring System (AMS using Interactive Voice Response System (IVRS). However, 30-32 % schools are unable to provide the information due to call drop, network issues particularly in remote areas etc. Efforts are made to collect the data by sending a missed call to the non-responding Head Masters/Teachers for providing the information. Sending such missed call involves additional financial implications to the State Government. JRM learnt that the annual expenditure for collection of daily data from schools is Rs.70 lakh per annum at existing rates.

It is relevant to mention that NIC, Himachal Pradesh has developed an application through which daily data of beneficiaries under mid day meal is collected from the schools through Short Message Service (sms) which involves nominal cost. About 17 States and UTs have already adopted this NIC-HP model for daily data collection. The state Government may consider adopting NIC-HP model for daily data collection through sms based application.

### **5.12 Convergence with Rastriya Bal Swasthya Karyakram for health check-up, supplementation of micronutrients under WIFS & de-worming medicine under National de-worming day and health checkups and supply of spectacles to children suffering from refractive errors.**

Mid Day Meal Guidelines envisage health check up of the students through Rashtriya Bal Swasthya Karyakaram (RBSK) under National Health Mission of the Ministry of Health & Family Welfare. The Medical Teams from the Health Department visited some schools (40%) during 2018. But the teachers informed that they get regular supply of Iron Folic Acid and de-worming tablets from the State Health Department and distribute them to the students as per the direction of Health Department. School Health Cards (SHC) prepared

by the Medical Teams was not kept by the schools because they have been given to the children.

JRM recommends that the Health Department may be requested to depute their teams to the schools for health check up of the children.

### **5.13 Operationalization of Mid-Day Meal Rules, 2015**

The Central Government notified the National Food Security Act on 10<sup>th</sup> September, 2013 with a view to provide food security to enable human beings to lead a life with dignity. Section 39 of the Act envisage notification of rules for Mid Day Meal Scheme in consultation with State Governments. In compliance with the above provisions of NFSA, 2013 Mid Day Rules, 2015 were notified on 30<sup>th</sup> September, 2015 in the Gazette of India. All State Governments were advised to operationalise these MDM Rules and also provide wide publicity for complying with the provisions of these rules.

JRM was informed that Government of Bihar has not so far operationalized the Mid May Meal Rules, 2015. The State Government may take necessary action for operationalising the MDM Rules and also provide payment of Food Security Allowance to the children who could not be provided mid day meal due to non-availability of food grains in the schools during 2018.

### **5.14. Payment of Honorarium to Cook-cum-Helpers**

The JRM observed that honorarium to cook-cum-helpers in the visited schools has been paid up to October, 2018 in Muzaffarpur district and November, 2018 in Gaya district by e-transfer in to their Bank Accounts

JRM also observed the 50% of the engaged CCH are deployed at the schools level for serving and washing the eating plates and the utensils for keeping the cooked meals supplied by Centralized Kitchen. The payment for the remaining 50% CCH eligible for

engagement on the basis of enrolment, is made to the CCH. Thus the system of apportionment of CCH between the Centralized Kitchen and schools exists.

### **5.15. System of Storage food grains and other ingredients**

Buffer stock of food grains was available in all the visited schools. The food grain was stored in the storage bins (2-3 in number) in all the schools. The MDM ingredients are also stored properly in the air tight plastic containers and kept in the storage trunks in each school.

In the Centralized Kitchen managed by Ekta Shakti Foundation in village Dhubha, Nagar Parishad Gaya, the food grain and other ingredient were kept on the elevated stacks.

### **5.16. Role of Teachers in Mid-Day Meal Scheme.**

As per the MDM guidelines, the role of the teacher is to organize, supervise and ensure serving of mid day meal in an orderly manner in such a manner that the meals are consumed by the children during the lunch hours. The cooking and serving of mid day meal is done by CCH due to which the teachers are able to attend to their teaching and learning activities. But the teachers further informed that they have to maintain the record of Mid Day Meal for each day for which they have to spend extra time beyond school hours. They further informed that they do not have working knowledge of record keeping for inventory and cash management. This was also observed by the JRM because almost 85 to 90 percent of the visited schools had not maintained the cash book properly.

JRM recommends that a training programme may be organised for the teachers on inventory and cash management and they should be advised to make necessary entries in the stock and cash book on daily basis. The cash in bank pass book and cash book should tally with each other.

JRM further observed that all the teacher had withdrawn funds from the bank in excess of their requirement for a fortnight. They should be advised to draw funds from the bank in proportion to their daily requirement for procurement of ingredients up to a fortnight.

### **5.17. Tasting of meals by Teachers, Parents and Community**

The Teachers and Cook-cum-helpers in the visited schools informed that they tasted the mid-day meal before it is served to the children in the school. The JRM team observed that Taste register was not available in 30% of the visited schools. Even where it was available, it was not maintained properly. The Teacher or the CCH had signed it without giving comments on the quality and taste of the meals. In some schools the VSS members also tasted the meal whenever they visited the school for some meeting. The tasting of meal by parents was not observed by JRM.

### **5.18. Testing of meals**

The Mid Day Meal Rules, 2015 envisage that State Food and rugs department should draw meal samples from the randomly selected schools for testing by accredited laboratories so as to analyse that the meal conforms to the prescribed energy and nutrition levels.

JRM was informed that M/S Anacon Lab, Nagpur-NABL accredited lab, has been identified by the State Government for testing of randomly selected at least from 5 schools in each district on a pilot basis. The said laboratory has already collected 190 meals samples for testing from various schools. The analysis report of the laboratory is awaited.

### **5.19. Involvement of the Community**

Community participation is essential for supervision and monitoring of the implementation of any programme at grass root level. The MDM guidelines envisage the community participation in mid day meal for developing wholesome and varied menu as per the availability of local ingredients and culturally acceptable food habits. Guidelines have also been issued for involving the community in Tithi Bhojan which is concept for serving

meal or sweets etc. to the school children by the community to celebrate the birth of a child in the family, success in competition, marriage in the family. MHRD has also requested the States and UTs to keep a roster of the parents of the children, community member for supervising the preparation and tasting of mid day meal.

JRM observed that lack of involvement of the community in any of the above mentioned activities. JRM recommends that concerned authorities may motivate the parents of children and community members for their participation on rotational basis in supervising the preparation of mid day meal and tasting of meal before it is served to the children.

## **5.20. Bank Account of Cook-cum-helpers**

All the Cook-cum-Helpers engaged in under Mid Day Meal Scheme in the schools in both the visited districts have saving bank account. Their honorarium is e-transferred in to these bank accounts.

## **5.15 Awareness of the Scheme**

MDM Menu has been displayed in almost all the schools. MDM logo was available in 50% of the schools. However, it was not painted as per the prescribed colour scheme. The entitlement of children under MDM was not displayed in any of the visited schools.

JRM team interacted with the personnel working at the Centralized kitchen about the food norms. Although they were aware of the norms for primary and upper primary for the raw food grain but they were not aware about the quantity of the meal after cooking. The NIN team gave them necessary guidance in this regard.

JRM also spoke to the parents and other members of the community about their knowing the food norms and entitlements of their children under Mid Day Meal Scheme. They were also not aware of the food norms. Most of them desired to know whether they can ask the

teacher about the entitlement of their children under Mid Day Meal Scheme. The JRM team explained to these parents that they should know about the rights of their children under mid day meal scheme. Their continuous supervision and monitoring of the scheme would improve the quality and delivery mechanism of meals to their children.

The State Government may issue guidelines to all schools to print the daily menu, MDM Logo, entitlement of students as per food norms, daily attendance against enrolment, stock position of food grains at prominent places in the schools. Publicity may also be arranged through print and electronic media for the scheme for awareness generation of stake holders.

### **5.16 Contingency Plan**

The JRM was informed by the Teachers that they have first aid box in the schools to handle any untoward incident in the school. In case of emergency, they take the children to the nearby doctor for medical advice. But 90% of the visited schools did not have the telephone Number of the nearest Primary Health Centre (PHC). However, JRM noticed that 50% of the visited schools had displayed the telephone Number of Police, Fire Brigade, Ambulance etc.

The school authorities were informed that Government of Odisha has prepared a detailed contingency plan to tackle any untoward incident. They suggested that the State Government may be requested to provide a copy of this Contingency Plan for reference during any emergency. JRM therefore, recommends that State Government may develop its own Contingency Plan on the line of Odisha Contingency Plan and circulate it to all schools.

### **5.17 Involvement of NGOs**

M/S Ekta Shakti Foundation is serving Mid Day Meal to 30,470 upper primary) children (17617 in primary and 12853 in Upper Primary) in 165 schools (86 primary and 79 upper

primary) in urban area of Bodh Gaya block of Gaya district. The distance of the farthest school from the Centralized Kitchen is 15 Kms.

JRM team visited the above Centralized Kitchen at 5.30 AM on 15<sup>th</sup> December, 2018 to oversee the process of preparing of meals and the quality of food grain as well as other ingredients used for mid day meal. A sack was randomly selected for seeing quality of mid day meal. The other ingredients were also inspected.

The Management Team of the Centralised kitchen informed that the cooking of meal starts at 5.30 AM and cooking as per the menu of the day is completed by 9.30 AM every day. The cooked meal is transported in 17 vehicles to the schools in the steel containers without any seal on the container. The weight of cooked meal or cooked pulses/vegetables is not mentioned on the containers. JRM team was informed that each container carries 10-12 kgs of cooked food and small container has a capacity of 4.5 kgs for carrying cooked pulses and vegetables. They are neither weighed at the Centralised Kitchen nor at the schools because they do not have the weighing machines. The quantity of cooked MDM is supplied on estimation basis for the number of students present in the school. But the claim for MDM supplied by the Centralized Kitchen is submitted for the number of students present in the school.

JRM Team was further informed that 3 samples have been got tested by the Centralized Kitchen from the accredited laboratory and all were found to conform to the prescribed norms.

The cook-cum-helpers engaged on the basis of enrolment of children in the schools covered by the Centralized Kitchen is apportioned in 50:50 ratio between the Kitchen and school. The honorarium of CCH is also received proportionately by the Centralized Kitchen and CCH through e-transfer in their bank account.

JRM team was informed that no donation has been received by the Centralized Kitchen for mid day meal. The duly filled proforma submitted by Shri Sanjay Kumar, Authorised Signatory on behalf of the Centralized kitchen is enclosed.

It would be observed from the above information, that insulated vessels are not used by the Centralized Kitchen for transporting and deliver of the mid day meal in the schools. The mid day meal is transferred in to the vessels (kitchen devices) of the school. This process of inter-transfer of meals in different vessels further lowers the temperature of the cooked mid day meal. By the time, the meal is to be served, the temperature of cooked meal further comes down below the recommended temperature of 65 degree Celsius. Thus the possibility of food getting spoiled or contaminated may not be ruled out. JRM also interacted with the children in Government Middle School, Bodh Gaya to know their view on the MDM supplied by the Centralized kitchen. The children complained about the poor quality of potatoes and fruits served to them. They also informed that the rice are not cooked properly. Choley are sometimes infested. Only radish is given as salad instead of cucumber, tomato and carrot.

JRM recommends that suitable guidelines may be issued by the State Government to the Centralized Kitchen for ensuring safety, quality, maintenance of prescribed temperature of cooked meals, supply of meals after weighing at per entitlement of children, testing of meal samples from accredited labs taken by the State Food & Drugs Department from the randomly selected schools.

#### **5.24. Other issues**

The BPOs submitted a joint representation to JRM for enhancing their salary etc. The representation is self-explanatory and forwarded to the State Authorities for taking appropriate decision in this regard because the issue relates to the State Government and also beyond the Terms of Reference of JRM.



## CHAPTER 6

### DIET AND NUTRITIONAL STATUS OF SCHOOL CHILDREN

#### 6.1. Terms of reference for nutritional aspects

1. To assess the anthropometric measurements (height, weight and MUAC) of a sample of children availing MDM.
2. Height and weight has to be measured for calculation of Body Mass Index (BMI)
3. To classify the children who are undernourished and over nourished
4. To review Quality and Quantity of the food supplement served as MDM
5. To review perception of children, parents and community on the mid day meal with respect to its quality and quantity
6. To suggest some nutritionally balanced region-specific recipes

In order to fulfil the ToR, the results are provided in 3 sections

**SECTION I:** Nutritional assessment of School children using anthropometric indices (TOR 1, 2 & 3)

**SECTION II:** Evaluation of MDM food supplement, diet pattern & satisfaction levels of children, parents, teachers (TOR 4, 5) was collected.

**SECTION III:** Nutritionally balanced region-specific recipes (TOR 6) are provided.

## 6.2 RESULTS

### ***6.2.1 Food and Nutrient intakes through Mid Day Meal:***

#### ***Institutional diet surveys***

The average cereal intake of the primary school children was 81g/day as against the stipulated MDM nutrition norms of 100g/day, while among upper primary school children; it was 81g/day as against 150g/day. The consumption of pulses and vegetables among both

the group children was 17 g as against 20 and 30g respectively. Fats and oils intakes were 4g among both the groups (**Table 1.1**).

### ***6.2.2 Nutrient intake of School children through Mid Day Meal: Institutional diet surveys***

The intake of energy (425 Kcal/child/day) and protein (11.5g/child/day) through mid day meal among school children was low when compared to the MDM nutrition norms (energy: 450 Kcal primary; 750 Kcal upper primary, protein: 12g primary, 20g upper primary) **Table 1.2**.

### ***6.2.3 Food intake of School children through Mid Day Meal: Individual diet surveys***

The actual intake of cereals among the primary school children was 83g/student/day as against the stipulated MDM nutrition norms of 100g/day, while among upper primary school children; it was 82g/student/day as against 150g/day. The consumption of pulses and vegetables among both the groups was adequate. Fat and oil intake were similar (5g) among primary children while it was lower among upper primary children (5.2g Vs 7.5g) (**Table 2.1**).

### ***6.2.4 Nutrient intake of School children through Mid Day Meal: Individual diet surveys***

The actual intake of energy (472 Kcal/child/day) and protein (14.1g/student/day) through mid day meal among primary school children was adequate according to the MDM nutrition norms (energy: 450 Kcal; protein: 12g) while it was 485 kcal and 14g proteins among upper primary school children (MDM norm 700Kcal and 20 g protein) **Table 2.2**

### ***Nutrient intakes through MDM and at home***

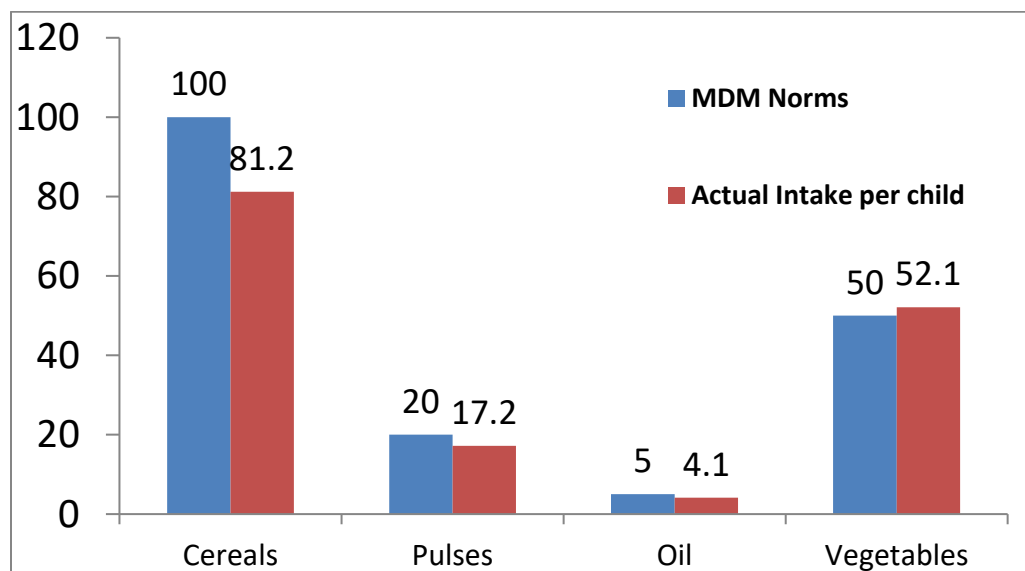
While considering the nutriment intakes through MDM as well as at home, the consumption level still grossly deficient for all the nutrients except protein, It C and folate(**Table.2.3**).

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

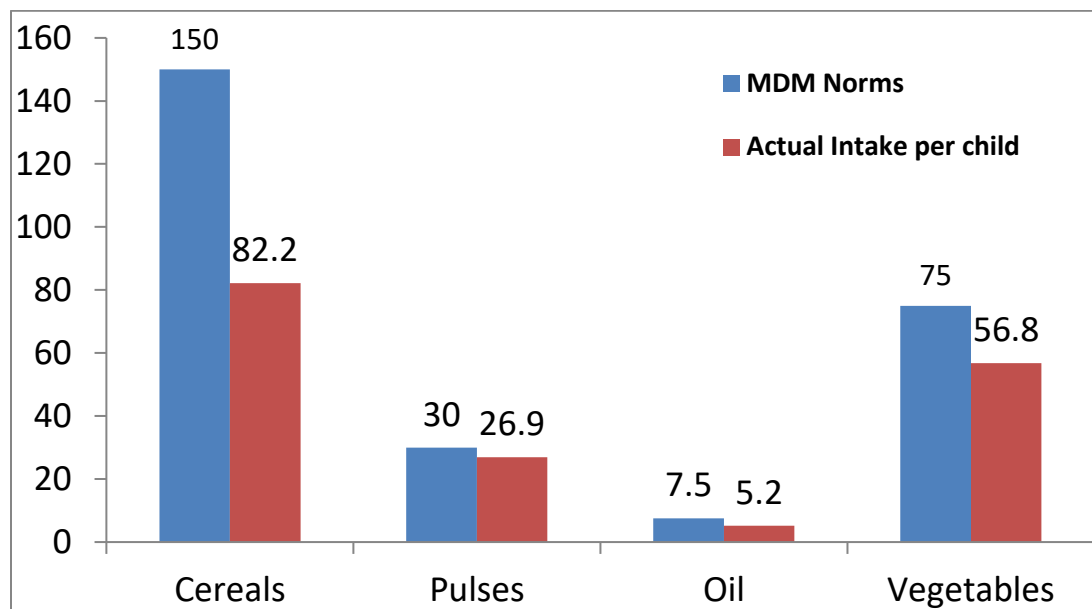
The prescribed nutrition norms to be provided through Mid Day Meal are as follows:

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 .

**Graph.10. Mean consumption of foods through MDM (primary)**



**Graph.11. Mean consumption of foods through MDM (upper primary)**



### ***6.3 Organoleptic characters of MDM meal***

#### **Food and nutrient intake from the centralised kitchen**

The average consumption of cereals was 119 g as against 125 g and average consumption of pulses was only 14 g against 25g. The intake of fat and oil 2g as against 6.3g. vegetable intake was only 36g as against 63g. (**Table 3.1**).

The intake of all the nutrients were deficient except protein and thiamine (table.3.2)

The quality of MDM was also assessed by Sensory Evaluation. The parameters included were 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 scale.

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

subji and dal separately and with help of structured schedule organoleptic evaluation was carried out with respect to food served. The majority of the students (15-44%) stated that the meal appearance, colour, odour, texture, taste and overall palatability were either good or very good for khichidi, 56-78% for potato mashed, 67-100% for rice, 70-93% for subji and 81-93% for dal. About 56-85% stated that the meal is satisfactory in terms of its appearance, colour, odour, taste, texture and overall palatability for khichidi, 15-22% for potato mashed curry, 15-33% for rice, 7-15% for subji and 7-19% for dal (**Table 4 & 5**).

### ***Knowledge and practices of students about MDM and hygiene practices***

All the children stated that the served quantity of mid day meal was sufficient to meet their hunger and about 77% of students aware of weekly menu of MDM and 60% were satisfied with the present menu. All the students stated that they are washing hands before taking the meal, and were also washing their glasses and plates before taking the meal and 70% were washing hands after defecation. About two third (70%) of students stated that bathing and brushing teeth daily and only 17% wear washed clothes daily (**Table 5**).

### ***Anthropometry***

The anthropometric measurements such as weight, height, and mid upper arm circumference (MUAC) was carried out among all the selected school children. The mean height and weight were more among children from Gaya (132.5 cm and 27.6 kg) compared to children from Muzaffarpur (125.1 cm and 23.8 kg) district. All the mean anthropometric parameters of these children were less, when compared to the WHO standards (**Table 6.1-7**).

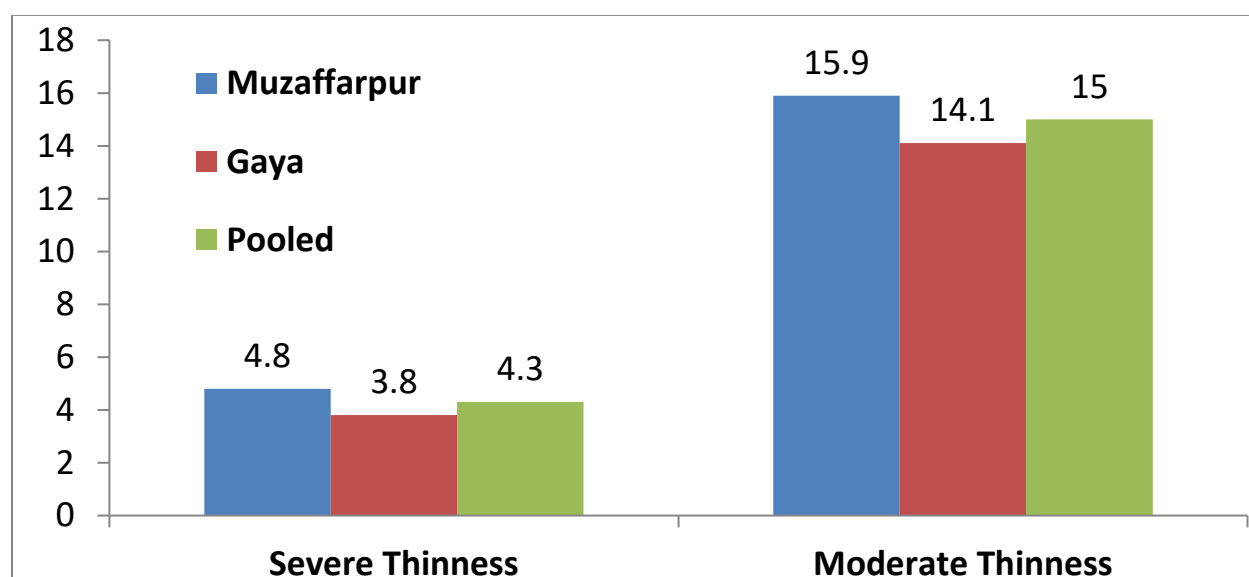
### ***Prevalence of stunting***

Overall, the prevalence of stunting ( $<-2SD$ , height for age) among school children was about 32%. The proportion was higher in the Muzaffarpur district (35.9%) when compared to Gaya district (27.1%) (**Table 8**).

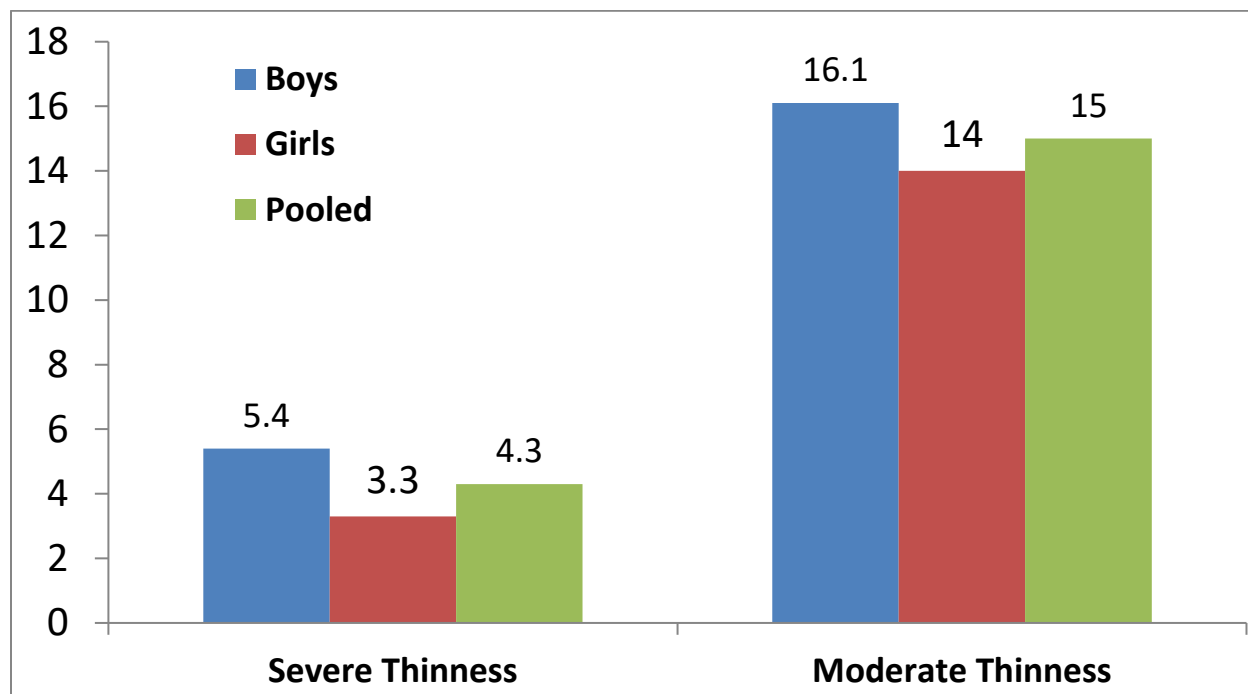
### ***Prevalence of Thinness, overweight and obesity***

Overall, the prevalence of overweight and obesity (> +1SD and above, BMI-Z scores) among school children was 2%. The prevalence of thinness was 19% and was higher among children from Muzaffarpur district (20.7%) compared to Gaya district (17.9%) (Table 9 & 10 and Graph.12 & 13). The prevalence of overweight and obesity by BMI for age classification was 2.7% in the districts among the school children.

**Graph.12. Prevalance (%) of Thinness among adolescents by districts**



**Graph.13. Prevalance (%) of Thinness among adolescents by gender**



***Clinical Examination: Nutritional deficiency signs***

The prevalence of total goitre was about 4%, which was higher in Gaya district (5.3%) compared to Muzaffarpur (2%). The prevalence of conjunctival xerosis and Bitot spots, deficiency signs of Vitamin A, was 0.8% and 1.6% respectively in the Gaya and Muzaffarpur districts. B complex vitamin deficiency sign angular stomatitis was about 2%, while dental fluorosis was 3% among children (**Table 11**).

**6.4. In Depth interviews (IDIs)**

**6.4.1 In depth interview were conducted to the select functionaries of MDM in-charges/ head master in all the schools visited in both the districts).**

**Muzaffarpur district** – A total of 19 MDM in-charges were interviewed to know their knowledge and practices on MDM. Among the interviewed, 63% were in the age group of <50 yrs age and the rest were more than 50 yrs (37%). More than 80% of the teachers were educated up to Graduation & above and had >12 yrs of service ((**Table 12**))

Nearly 50% of the teachers were aware of all the objectives of MDM. Majority (90%) of the teachers were aware of the objectives like 'MDM to improve the Nutritional & Health status of the children' and 'MDM to improve the school attendance'. All the teachers interviewed were aware of the weekly menu.

In all the schools visited, MDM was found serving of food on all the working days in the previous academic year except in one school, where the less feeding days were attributed to the absent of cook. In nearly 50% of the schools visited, the attendance of the children was < 30% to the students' enrolment.

All the teachers interviewed expressed that the children like the taste of MDM food. Also, all of the teachers informed that the local community is feeling the need of the programme and there is one village committee existing in the village to monitor the MDM.

Nearly 35% of the teachers reported that they have encountered some problems in implementing the MDM in their schools. Major problems they have specified were

- MDM work found affecting the regular school activities and so a separate teacher can be given exclusively to monitor the daily MDM work.
- Problems with the cooks
- Less contingency amount
- Less honorarium to the CCH

Majority (84%) of the teachers told that they were getting the food material from the Block HQ every month. Nearly 70% of the teachers told that School health programme is in operation in their schools at least yearly.

Nearly 70% of the teachers reported that the respective BRP of the local area have visited their schools in the previous month. The activities undertaken during their visits include



checking of hygiene practices, verifying the stocks & records and checking the cooked food.

**Gaya district** – A total of 14 in-charges were interviewed to know their knowledge and practices on MDM. Among the interviewed, 52% were in the age group of <50 yrs age and the rest were more than 50 yrs. More than 75% of the teachers were educated up to Graduation & above and possess >12 yrs of service.

Nearly 50% of the teachers were aware of all the objectives of MDM. Majority of the teachers were aware of the objectives like ‘MDM to improve the Nutritional & Health status of the children’ and ‘MDM to improve the school attendance’. All the teachers interviewed were aware of the weekly menu.

In all the schools visited, MDM was found served for all the working days in the previous academic year except in one school, where the less feeding days were attributed to non-availability of food stock. In more than 50% of the schools visited, the attendance of the children was < 50% to the student’s enrolment

All the teachers interviewed expressed that the children were liking the taste of MDM food. Also, all of the teachers informed that the local community is feeling the need of the programme and there is one village committee existing in the village to monitor the MDM.

Nearly 35% of the teachers reported that they have encountered some problems in implementing the MDM in their schools. Major problems they have specified were

- MDM work found affecting the regular school activities and so a separate teacher can be given exclusively to monitor the daily MDM work.
- Problems with the cooks
- Less contingency amount

Majority (85%) of the teachers told that they were getting the food material from the Block HQ every month. Nearly 80% of the teachers told that Children health programme is in operation in their schools.

Nearly 90% of the teachers reported that the respective BRP of the local area have visited their schools in the previous month. The activities undertaken during their visits include checking the hygiene practices, verifying the stocks & records and checking the cooked food (**Table.12**)

#### **6.4.2 In depth interviews was conducted on parents on their views about MDM in both the districts.**

**Muzaffarpur district** – A total of 72 parents were interviewed to know their knowledge on MDM. Among the interviewed, 18% were below <30 yrs age, 69% were 30-40 years of age and 13% were more than 40 yrs of age. Majority (65%) of the parents were illiterate, 17% had primary education, while 11% were having secondary education.

Majority (97%) parents stated that MDM is beneficial for children, for increase enrolment (8%), increase attendance (44%), reduce drop out (11%), improve health & nutritional status (5.7%) and 51% stated that it provide additional food. All the parent stated that their children were participating in MDM, 3% stated that the children likes the taste of food, 98% stated that the quantity is adequate for children. About 53% parents stated that children took 2 meals at home while 46% stated 3 meals at home. Majority (96%) stated that they will send their children to school if MDM is stopped. About 47% parents stated that there is improvement in the nutritional status of children, 21% stated improvement in health, 36% stated regularity in schools while 4% stated no change. About 26% parents were aware of shiksha committee in the village, while 6% were member in the committee. About 11% suggested to increase the quality of food supplied to schools, while 3% suggested regular supply of food (**Table 13**).

**Gaya district** – A total of 44 parents were interviewed to know their knowledge on MDM. Among the interviewed, 16% were below <30 yrs age, 68% were 30-40 years of age and 16% were more than 40 yrs of age. About 39% of the parents were illiterate, 11% had primary education, while 11% were having secondary education and 11% had higher secondary education.

Majority (93%) parents stated that MDM is beneficial for children, for increase enrolment (18%), increase attendance (63.6%), reduce drop out (20.5%), improve health & nutritional status (45.5%) and 57% stated that it provides additional food. All the parents stated that their children were participating in MDM, and children like the taste of food, 98% stated that the quantity is adequate for children. About 64% parents stated that children took 2 meals at home, while 34% stated 3 meals at home. Majority (93%) stated that they will send their children to school even if MDM stopped. About 37% parents stated that there is an improvement in the nutritional status of children, 30% stated improvement in health, 52% stated regularity in schools, while 16% stated no change. About 48% parents were aware of shiksha committee in the village, while 14% were member in the committee. About 7% suggested to increase the quality of food supplied to schools, 9% suggested regular supply of food while 2% suggested change in menu (**Table 13**).

#### **6.4.3 In depth interviews were carried out on different functionaries of MDM about their knowledge & practices on MDM in both the districts.**

##### ***Functionaries***

**Muzaffarpur and Gaya district** – A total of 14 functionaries of which 6 were block resource persons, 2 district resource persons, 2 district project officer, 2 block education officer, and 2 district programmer were interviewed to know their knowledge on MDM. Among the interviewed, age ranges from 24-42 yrs for BRP, 32-42 years for DRP, 51-53 years for DPO, 51-5 yrs for BEOs. Half (50%) of the functionaries were graduate, and 50% had post-graduation.

About 50% each of BRPs had 3-6 yrs and 9-12 yrs of service, while for DRPs, it was 6-2 yrs. All the DPO and BEO had more than 12 yrs of service. All the functionaries stated that the MDM can improve nutrition and health status of children, 50% BRP and DRP and all DPO and District programmer stated that it also improves in attendance, all functionaries stated reduce drop-out and 50-75% stated improve scholastic performance as objectives of MDM. All the BRP were visiting quarterly, DRP half yearly and DPO yearly to the schools. Activities carried out during supervisory and monitoring visits include verification of records (100%), community mobilization 50-100%), check hygienic practices and cooking foods (100% each). All the functionaries except district programme officer correctly stated quantity of cereals and pulses being given to children, all BRP and 50% other functionaries correctly stated oil and vegetables being given to each children, all BRP and 50% of other functionaries correctly stated energy and protein being given to children. All the functionaries stated that the program is successful in their areas in the form of improved nutrition and health status of children, improved in attendance (50-100%), reduced drop-out (50%) and improve scholastic performance (33-50%).

### ***Kitchen Environment & Hygiene***

Observation of the kitchen environment and pre-preparatory methods of the cooks was assessed in all the schools visited in both the districts (**Table 14**).

**Muzaffarpur district** – A total of 18 kitchens were observed for food quality supplied under MDM. About 44% rice, 39% of dal and vegetables were satisfactory and 56% rice, and 61% dal and vegetables was good in quality. Eggs given to children was observed good in quality in 2 observed schools. About 67% rice and 50% dal was observed to be sieved before cooking. 39% CCH stated removal of kanji from rice. Washing of all food being cooked was observed in all the schools, while 3% stated adding salt in rice while cooking (**Table 15**).

All the cook-cum helper (CCH) stated that the children wash their hands before taking food and also washes plates and glasses. All the CCH stated that they were washing their hand before cooking, wash utensils, before and after cooking and prepare foods covered with lid. All the kitchens were observed clean and were having sufficient vessels for cooking. Drinking water was available in all the school premises mostly bore well and all were using water directly from the source. About 83% were cooking food in closed room. About 85% of schools have LPG gas connection while only 11% were using firewood for cooking purpose. All the schools were using iodized salt and mustard oil for cooking. All the schools have storage room facility and 33% had dunnage facility. About 44% schools were storing rice in closed container while 56% were storing in closed gunny bags. No insects were observed in 78% of store room while 22% were following insecticidal measures (Table 16).

**Gaya district** – A total of 14 kitchens were observed for food quality supplied under MDM. About 36% rice, 29% of dal and 42% of vegetables were satisfactory and 64% rice, 71% dal and 57% vegetables was good in quality. All the HGLVs were observed good in quality. About 57% rice was observed to be sieved before cooking. Washing of rice being cooked was observed in all the schools, 29% CCH stated removal of kanji from rice while 35% stated adding salt in rice while cooking.

All the CCH stated that the children wash their hands before taking food and also washes plates and glasses. All the CCH stated that they were washing their hand before cooking, wash utensils, before and after cooking and prepare foods covered with lid. All the kitchens were observed clean and were having sufficient vessels for cooking. Drinking water was available in 86% of the school premises mostly bore well (85.6%) and were using water directly from the source. All were cooking food in closed room. About 71% of schools have LPG gas connection while only 29% were using firewood for cooking purpose. All the schools were using iodized salt and mustard oil for cooking. All the schools have storage room facility and 64% had dunnage facility. About 79% schools were storing rice

in closed container while 21% were storing in closed gunny bags. No insects were observed in 78% of store room while 29% were following insecticidal measures.

### ***Students***

**Muzaffarpur district** – A total of 130 children were interviewed to know their knowledge about MDM and their perceptions. Among the children interviewed, 50% were boys and 50% were girls. About 21% were in between 7-9 years of age, 53% were 10-12 years and 26% were 13-15 years of age. Majority (61.5%) of the children belongs to other backward community, 18% belonged to scheduled caste and 17% were from forward communities.

Majority (97.7%) children stated that they take breakfast at home before coming to school; all the children stated of consuming MDM at school and also stated the taste is good. About 92% children stated that they ask for second serving, 99% stated that the food is served hot. Only 57% stated that they wash their hand with soap before eating, only 5% stated of bringing plates from home, majority (97.7%) stated they can concentrate on studies at school because of MDM and 97% stated to sit in queue while eating (**Table 12**)

**Gaya district** – A total of 131 children were interviewed to know their knowledge on MDM. Among the children interviewed, 57% were boys and 43% were girls. About 19% were in between 7-9 years of age, 52% were 10-12 years and 29% were 13-15 years of age. About half (48.%) of the children belongs to other backward community, 37% belonged to scheduled caste and 13% were from forward communities.

Majority (96.9%) children stated that they take breakfast at home before coming to school; all the children stated of consuming MDM at school and also stated the taste is good. About 64% children stated that they ask for second serving, 91% stated that the food is served hot. Only 61% stated that they wash their hand with soap before eating, only 6% stated of bringing plates from home, majority (92.4%) stated they can concentrate on studies at school because of MDM and 95% stated to sit in queue while eating (**Table 12**).

### ***Cook Cum Helpers***

In-depth interviews were conducted to the Cook Cum Helpers (CCH) in the schools visited in both the districts.

**Muzaffarpur** – A total of 18 CCHs were interviewed in the district. The general profile of the CCHs was, majority of them belong to Hindu religion and married. Most of them were illiterates.

Nearly 20% of the CCHs told that the MDM food was not served in their schools for < 7 days in the past 6 months due to non-availability of food grains.

In majority (89%) of the schools, head master used to maintain the MDM records and will instruct the CCH what to cook on the day. Most of the CCHs opined they will cook as per the days attendance using standard measure for measuring the raw quantities.

Less than 25% of the CCHs told that the teachers were participating in the cooking and serving activity. Though more than half of the CCHs were aware of the food entitlements, they only know about the Cereal (Rice) entitlements and felt that the entitlements are sufficient to the children. Nearly 20% of the CCHs reported that some of the children were not taking the food due to the inferior quality. Majority of CCHs (83%) and teachers (69%) tasted the food before serving and all the CCHs told that they were taking the leftover food to their home. Majority of the CCHs have undergone training on hygiene and food safety and few were found wearing the aprons/hats while cooking (**Table.18**).

**Gaya** – A total of 20 CCHs were interviewed in the district. The general profile of the CCHs was, majority of them belong to Hindu religion and married. Most of them were illiterates.

In all the schools, head master used to maintain the MDM records and he/she only will instruct the CCH what to cook on the day. All the CCHs opined they will cook as per the ‘days’ attendance using standard measure for measuring the raw quantities.

Less than half of the CCHs told that the teachers were participating in the cooking and serving activity. Though more than half of the CCHs were aware of the food entitlements, they only know about the Cereal (Rice) entitlements and felt that the entitlements are sufficient to the children. Nearly 40% of the CCHs reported that some of the children were not taking the food due to the inferior quality.

All the CCHs (100%) and teachers (90%) tasted the food before serving and all the CCHs told that they were taking the leftover food to their home. Majority of the CCHs have undergone training on hygiene and food safety and few were found wearing the aprons/hats while cooking (**Table.18**). In depth interviews was conducted on **SMC** on their views about MDM in both the districts.

### ***SMC Members***

**Muzaffarpur and Gaya district** – A total of 14 SMC members (21% male; 79% female) were interviewed to know their knowledge on MDM. The mean age was 42 years. Among the interviewed, 7% were Hindus and 215 were Muslims. About 14% were illiterate 21% had primary education, while 29% each were having secondary and higher secondary education.

About 57% were aware of food entitlement of the children, 7% stated that they were mobilizing community for donation, and all stated that the children sit together while eating (**Table 19**).



## CHAPTER: 7

### BEST PRACTICES, ISSUES AND RECOMMENDATIONS

#### 7.1 Best Practices:

- I. e-transfer of funds for cooking cost and honorarium to cook-cum-helpers.
- II. Egg/Fruit provided by State once in a week from its resources.
- III. Additional contribution of Rs.250 per cook-cum-helper per month by the State.
- IV. Cook-cum-Helpers in the visited districts were given training in September, 2018 by the Block Resource Persons.
- V. State provided eating plates to schools from its resources.
- VI. LPG available in 82% schools. Funds provided to remaining schools for procurement of LPG during 2018-19.
- VII. Aprons and Head gears provided to all CCH by the State.
- VIII. Storage bins available in all schools for keeping food grains
- IX. FSSAI or Ag-mark or branded ingredients used for Mid day Meal by schools.
- X. Buffer stock of food grains was maintained in all the visited schools.
- XI. IVRS is in use for collecting the daily information form the school supplementation of MDM.
- XII. Majority of the children were washing hands before and after eating the mid day meal.
- XIII. Very few schools had student recreation and play instruments/structures
- XIV. MDM register is maintained by the HM at the school level.

#### 7.2. Areas of Concern

- I. Interruption in the Mid-day Meal in few schools in Gaya district due to the non-availability of food grain.

- II. The Mid-Day Meal Rules notified on 30<sup>th</sup> September, 2015 under National Food Security Act, 2013 are yet to be operationalised.
- III. Less coverage (53%) against enrolment on the basis of the attendance for the last ten days of JRM visit.
- IV. Cash Book not updated in 80% of the visited schools,
- V. Cash in hand kept by schools is more than the weekly or fortnightly requirement of funds.
- VI. Food grain supply chain management needs streamlining to ensure timely availability of food grains in schools.
- VII. More than 70 % Teachers, cook-cum-Helpers, Parents etc. do not know about the food norms.
- VIII. The entitlement of children under Mid-day Meal Scheme needs to be painted at a prominent place in the school in schools.
- IX. Mid-day meal logo also not painted outside the kitchen in more than 50% of the visited schools
- X. Toilets in the schools need repair and provision of water supply in almost all schools.
- XI. About 559 hand pumps in the schools are non-functional.
- XII. Visits of Medical Teams to schools are not regular.
- XIII. Health check-up of the cook-cum-Helpers not carried out for two years in four schools.
- XIV. Non-recording of the observations of teachers and parents in taste register.
- XV. Less Community participation in mid-day meal Scheme.
- XVI. Absence of Contingency Plan for untoward incidents.
- XVII. About 19 % (out of a sample of 1452) children were malnourished.
- XVIII. Officials are not even aware about the information to be entered through MDM-MIS, which is an area of deep concern.

- XIX. Entitlement of children under MDM was not displayed in any of the visited schools.
- XX. Kitchen-cum-stores are not constructed in many schools.
- XXI. Storage bins are not available in some of the schools visited.
- XXII. No separate kitchen and store is available in many schools visited during JRM.
- XXIII. No separate toilets are available for girls and boys in many schools where toilets are available, but these were not in use closed permanently for want of running water through taps.

### **7.3. Recommendations**

- i. Food grain supply-chain-management may be streamlined for ensuring timely availability of food grains.
- ii. Schools may be advised to keep one month's buffer stock as envisaged under MM Guidelines to avoid disruption in mid-day meal due to delay in lifting/non-supply of food grains.
- iii. Necessary action may be taken by the State for operationalising Mid-Day Meal Rules, 2015.
- iv. State may undertake evaluation study for assessing the ways and means to increase coverage under Mid-Day Meal Scheme at least up to national level (76%) or more.
- v. Training may be organised for writing Cash Book and for officials at Block and District level, especially on MDM-MIS.
- vi. Instructions may be issued to the schools against keeping excess cash in hand than the actual requirement estimated on the basis trend of daily expenditure.
- vii. Awareness generation of Mid-Day Meal Scheme may be carried out by publicity campaign through print and electronic media.
- viii. The entitlement of children under Mid-day Meal Scheme should be painted at a prominent place in the school in all the visited schools.

- ix. Mid-day meal logo also should be painted outside the kitchen in all the schools and Centralised Kitchens as per the prescribed colour scheme.
- x. Proper water supply in the toilets should be ensured to keep them neat and clean and free from the foul smell.
- xi. Repair of 559 defunct hand pumps in schools be carried out on priority basis.
- xii. Implementation of School Health Programme in convergence with Health Department would enable the provision of Weekly Iron Folic Acid and De-worming tablets to the children.
- xiii. Cook-cum-Helpers may also be got medically examined for ensuring that they are free from any contagious disease.
- xiv. The central assistance released for construction of kitchen-cum-stores at unit cost norms @ Rs.60,000/- may be refunded if their construction work has not started as yet and proposal for construction of these kitchen-cum-stores on plinth area norms may be submitted to MHRD as per the State's Schedule of Rates .
- xv. The observations on the quality and taste of mid-day meal may be recorded in the taste register by the teacher, CCH, Parents and the community.
- xvi. Community may be motivated for participation in the supervision of preparation of mid-day meal and monitoring of the scheme at grass root level.
- xvii. Contingency Plan for handling any untoward incident may be prepared and circulated to all schools.
- xviii. Schools receiving mid day meal from the Centralized Kitchen may be advised to weigh the quantity of meal at the time of delivery by Centralised Kitchen on the basis of entitlement of cooked meal per child per day.
- xix. The Centralised Kitchen in Bodh Gaya may be advised to supply mid day meal in insulated container for maintaining the prescribed temperature of 65 degree Celsius up to lunch time.

7.4. **Nutritional status based on anthropometry:** Overall the nutritional status of the children revealed the prevalence of stunting and thinness was 35.9%, and 19.3% respectively. The prevalence of overweight was 1.9% and obesity 0.2%. Strengthening the MDM programme by introducing variety in recipes which meet the nutritional norms may help to reduce the burden of undernutrition. The health services in terms of health check-up of children along with good coverage of Deworming tablets and once weekly IFA tablet needs to be appreciated. Looking into all these,

- i) Each child should have a record book of nutrition health index at entry level. The record should be maintained till the child leaves the school so that tracking can be done easily for monitoring of moderate and severely undernourished or anemic child.
- ii) It is appreciated that BMI of children is being calculated in schools. Those who are found undernourished may be given extra servings of meal.
- iii) The BMI cut off for children and adolescent to be used for in schools.
- iv) The school may be given appreciation/award for maximum coverage of MDM along with least prevalence of under nutrition and Iron deficiency anemia.

7.5. **Monitoring & supervision:** It is a vital component for the success of any programme.

- i) Display of Entitlement, Menu and Logo of Mid Day Meal Scheme at a prominent place, where it is easily visible to community.
- ii) The teachers reported that they tasted the food daily. However, tasting record register was not maintained on a daily basis, which is a missing component in the programme. Tasting register should be maintained.
- iii) The officials should visit the school regularly and enter the remarks in the school visitor register.

- iv) Unified formats may be designed for field level monitoring and each official should submit the same after visit to higher authority.
- v) The data coming from MIS system should be put to use.
- vi) SMC was very active in most of the schools. They supported in proper implementation of MDM. SMC members, who are given the responsibility of monitoring the ongoing MDM programme should be asked to enter their comments in the register.
- vii) The State may constitute State level Joint Review Mission teams for Mid Day Meal on the lines of Central Government. The teams may visit 5-6 districts in a year to oversee the implementation of the MDM scheme.
- viii) The centre may do a multicentre review project of 5 years by roping in the home science/foods and nutrition colleges of each state as stakeholders for evaluation. Such studies will bring in uniformity in evaluation and reporting along with the progress made by each state. The recommendations emerging may help to strengthen the largest nutrition programme of the country

7.6. **Training:** Training on sensitization and capacity building maybe done on the following aspects

- i) Supervisors, Principals and teachers on the role and responsibilities for the effective implementation of MDM
- ii) Teachers, Parents and children about the MDM programme, the norms, menu etc.
- iii) Food safety training, food ration to be provided to the child, standardization of recipes, cooking methods needs to be taught to cooks and helpers & all the stake holders
- iv) Sanitation and Hygiene practices to be followed by children, cooks and helpers.
- v) Involvement of Home Science/ Foods and Nutrition college teachers for training, capacity building and development of IEC materials to impart key messages related to MDM.
- vi) Research in the area of MDM may be supported by the Government.
- vii) MDM week celebrations may be planned with the help of all stakeholders

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

  
Dinesh Pradhan

  
K.K. Sharma

  
Dr. I.I. Meshram

  
Vinod Kumar **SINGH**

  
Dr. Avula Lanammaiah

# Nutritional Assessment Tables



**Table 1.1: Mean Consumption of Foodstuffs (g/student/day) by school children in the districts of Muzaffarpur and Gaya districts through mid day meal: Institutional diet surveys**

Food Stuffs	Primary Children	Upper Primary Children	Actual Intake per child (g)
	MDM Norms (g)	MDM Norms (g)	
Cereals	100	150	81.2
Pulses	20	30	17.2
Fat & Oils (Mustard Oil)	5	7.5	4.1
Vegetables	50	75	52.1
Egg	1 Unit	1 Unit	1 Unit
Condiments & Spices	-	-	2.8

**Table 1.2: Average intake of Nutrients (per child /day) through MDM meal among the school children in the districts of Muzaffarpur and Gaya, Bihar State: Institutional diet survey**

Students	Protein (g)	Energy (K cal)	Fat (g)	Calcium (mg)	Iron (mg)	Vitamin A (µg)	Thiamin (mg)	Ribomgflavin (mg)	Niacin (mg)	Vitamin C (mg)	Total folate (µg)
Nutrient intake through MDM	11.5	425.0	5.4	33.1	2.5	6.3	0.2	0.1	2.3	14.6	41.8
Nutrient intake through home food	36.0	1351.5	17.7	236.2	9.4	85.2	0.9	0.6	10.3	20.8	91.7
Total	47.5	1776.5	23.1	269.3	11.9	91.5	1.1	0.7	12.6	35.4	133.5
RDA	39.1	2050.0	43.3	733.3	23.0	566.6	2.0	2.4	13.6	40.0	133.3

Deficit/Excess	8.4	-273.5	-20.2	-464	-11.1	-475	-0.9	-1.7	-1.0	-4.6	0.2
----------------	-----	--------	-------	------	-------	------	------	------	------	------	-----

**Table 2.1: Average intake of Food stuffs (g/student/day) by school children in the districts of Muzaffarpur and Gaya, Bihar through MDM meal: Actual consumption (Plate and food weights)**

Food Stuffs	Primary Children		Upper Primary Children	
	MDM Norms (g)	Actual Intake (g)	MDM Norms (g)	Actual Intake (g)
Cereals	100	82.7	150	82.2
Pulses	20	28.2	30	26.9
Fat & Oils (Mustard Oil)	5	5.0	7.5	5.2
Vegetables	50	62.6	75	56.8
Egg	1 Unit	1 Unit	1 Unit	1 Unit

**Table 2.2: Average intake of Nutrients (per child/day) through MDM meal among Primary school children in the district of Muzaffarpur and Gaya, Bihar: Actual consumption (Plate and food weights)**

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)	Total Folate (µg)
Nutrient intake	14.1	471.9	6.4	43.4	3.2	8.6	0.2	0.2	2.7	17.9	56
Nutrient intake at home	33.45	1252.3	16.8	225.5	8.7	80.3	0.8	0.5	9.6	19.3	86.8
Total	47.55	1724.2	23.2	268.9	11.9	88.9	1	0.7	12.3	37.2	142.8
RDA	32.4	1810	31.2	700	19.7	550	0.9	1	13	40	125

Deficit/Excess	15.15	-85.8	-8	-431	-7.8	-461	0.1	-0.3	-0.7	-2.8	17.8
----------------	-------	-------	----	------	------	------	-----	------	------	------	------

**Table 2.3: Average intake of Nutrients (per day/student) through MDM meal among upper primary school children in the districts of Muzaffarpur and Gaya, Bihar: Actual consumption (Plate and food weights)**

Type of School	Protein (g)	Energy (K cal)	Fat (g)	Calcium (mg)	Iron (mg)	Vitamin A (µg)	Thiamin (mg)	Ribomflavin (mg)	Niacin (mg)	Vitamin C (mg)	Total Folate (µg)
Nutrient intake	14.2	485.1	6.4	41.1	3.2	7.9	0.2	0.2	2.7	16.8	51.9
Nutrient intake at home	40.95	1550	19.5	257.5	10.7	95	1.05	0.65	11.85	24	101.5
Total	55.15	2035.1	25.9	298.6	13.9	102.9	1.25	0.85	14.55	40.8	153.4
RDA	53.1	2540	42.5	800	29.5	600	1.3	1.5	15	40	150
Deficit/Excess	2.05	-504.9	-16.6	-501	-15.6	-497	-0.05	-0.65	-0.45	0.8	3.4

**Table 3.1: Average intake of Foodstuffs (g/child/day) by school children in the districts of Muzaffarpur and Gaya, Bihar through mid day meal: Inventory method at Centralized kitchen**

Food Stuffs	Average Food Norms for P&UP (g/ml)	Institutional Individual Intake(g/ml)	Deficit/Excess (g/ml)
Cereals	125	119	-6
Pulses	30	13.6	-11.4
Fat & Oils (Mustard Oil)	6.3	1.8	-4.7
Vegetables	62.5	36.3	-26.2
Egg	1 Unit	1 Unit	Fruit/Egg

**Table 3.2 Average intake of Nutrients (per child/day) by school children in the districts of Muzaffarpur and Gaya, Bihar through mid day meal: Inventory method at Centralized kitchen**

Students	Protein (g)	Energy (K cal)	Fat (g)	Calcium (mg)	Iron (mg)	Vitamin A (µg)	Thiamin (mg)	Ribomgflavin (mg)	Niacin (mg)	Vitamin C (mg)	Total folate (µg)
Nutrient intake through MDM	13.3	507.4	2.7	19.3	1.8	2.7	1.8	0.14	2.6	9.5	27.6
Nutrient intake at home	36.0	1351.5	17.7	236.2	9.4	85.2	0.9	0.6	10.3	20.8	91.7
Total	49.3	1858.9	20.4	255.5	11.2	87.9	2.7	0.7	12.9	30.3	119.3
RDA	39.1	2050.0	43.3	733.3	23.0	566.6	2.0	2.4	13.6	40.0	133.3
Deficit/Excess	10.2	-191.1	-22.9	-477.8	-11.8	-478.7	0.7	-1.7	-0.7	-9.7	-14.0

**Table 4: Level of satisfaction of school children (class 6<sup>th</sup> to 8<sup>th</sup>) about the food stuffs served in MDM**

Menu	Level of Satisfaction	Food stuffs served (N=27)				
		Kichidi	choran	Rice	Sabji	Dal
Appearance	Good/very good	37.0	77.8	100	85.2	92.6
	Satisfactory	63.0	22.2	0	14.8	7.4
Colour	Good/very good	33.3	77.8	100	88.9	81.5
	Satisfactory	66.7	22.2	0	11.1	18.5
Odour/Aroma	Good	14.8	77.8	100	88.9	85.2
	Satisfactory	85.2	22.2	0	11.1	14.8

Menu	Level of Satisfaction	Food stuffs served (N=27)				
		Kichidi	choran	Rice	Sabji	Dal
Texture	Good/very good	44.4	55.6	100	88.9	81.5
	Satisfactory	55.6	44.4	0	11.1	18.5
Taste	Good/very good	37.0	77.8	85.2	70.4	85.2
	Satisfactory	63.0	22.2	14.8	29.6	14.8
Overall Palatability	Good	14.8	85.2	66.7	92.6	85.2
	Satisfactory	85.2	14.8	33.3	7.4	14.8

**Table 5: Hygiene Practices of Students**

SL No	About MDM	Per cent
1	Sufficiency of food served	100
2.	Knowledge about MDM menu	76.7
3.	Satisfied with the MDM menu	60.0
4.	Hand wash practice before taking the food	100
5.	Washing of plates and glasses before taking the food	96.7
6.	Hand washing after defecation	70.0
7.	Regular nail cutting	76.7
8.	Brushing teeth with Brush	70.0
9.	Daily bathing	70.0
10.	Wearing washed clothes daily	16.7

**Table 6.1: Coverage of Children in the select districts of Bihar State  
(Muzaffarpur and Gaya)**

Age (Years)	Muzaffarpur		Gaya		Pooled	
	N	Percent	N	Percent	N	Percent
5	19	2.6	23	3.2	42	2.9
6	86	11.7	62	8.6	148	10.2
7	90	12.3	65	9.0	155	10.7
8	131	17.9	60	8.3	191	13.2
9	126	17.2	99	13.8	225	15.5
10	110	15.0	110	15.3	220	15.2
11	61	8.3	96	13.3	157	10.8
12	57	7.8	90	12.5	147	10.1
13	30	4.1	72	10.0	102	7.0
14	17	2.3	30	4.2	47	3.2
15	5	.7	13	1.7	18	1.3
<b>5-15 years</b>	<b>732</b>	<b>100.0</b>	<b>720</b>	<b>100.0</b>	<b>1452</b>	<b>100.0</b>

**Table 6.2 Coverage of children by Gender**

Gender	DISTRICTS					
	Muzaffarpur		Gaya		Total	
	N	%	N	%	N	%
<b>Male</b>	347	47.4	333	46.3	680	46.8
<b>Female</b>	385	52.6	387	53.8	772	53.2
<b>Total</b>	<b>732</b>	<b>100.0</b>	<b>720</b>	<b>100.0</b>	<b>1452</b>	<b>100.0</b>

**Table.6.3.Mean ± SD Height and weight Percentiles of School Children in the Districts of Muzaffarpur and Gaya, Bihar State**

District	Variable	N	Mean	SD	Median	Percentile 05	Percentile 25	Percentile 75	Percentile 95
<b>Muzaffarpur</b>	Height (cm)	732	125.9	13.41	124.10	106.60	116.05	134.00	151.10
	Weight (Kg)	732	23.8	6.95	22.00	15.90	18.80	27.00	38.10
	MUAC (cm)	632	17.3	2.22	16.90	14.30	15.75	18.40	21.50
	HAZ	732	-1.6	1.13	-1.65	-3.37	-2.29	-0.88	0.37
	BMI-Z	732	-1.3	1.06	-1.21	-3.01	-1.88	-0.58	0.36
<b>Gaya</b>	Height (cm)	720	132.5	14.98	131.85	110.25	119.95	145.25	157.25
	Weight (Kg)	720	27.6	8.83	25.35	16.45	20.25	33.45	44.00
	MUAC (cm)	658	18.3	2.58	17.80	14.90	16.30	20.00	23.40
	HAZ	720	-1.3	1.36	-1.31	-3.48	-2.12	-0.39	1.00
	BMI-Z	720	-1.2	1.06	-1.15	-2.92	-1.79	-0.52	0.57
<b>Total</b>	Height (cm)	1452	129.2	14.59	127.35	108.10	117.60	140.25	154.10
	Weight (Kg)	1452	25.7	8.16	23.40	16.10	19.30	30.50	41.80
	MUAC (cm)	1290	17.8	2.46	17.30	14.60	16.00	19.20	22.40
	HAZ	1452	-1.4	1.26	-1.45	-3.43	-2.24	-0.65	0.70
	BAZ	1452	-1.2	1.06	-1.19	-2.95	-1.84	-0.55	0.43

**Table.7.Mean  $\pm$  SD Height and weight Percentiles of School Children in the Districts of Muzaffarpur and Gaya, Bihar State by Gender**

Gender	Variable	N	Mean	SD	Median	Percentile 05	Percentile 25	Percentile 75	Percentile 95
<b>Boys</b>	Height (cm)	680	130.30	14.95	128.40	109.50	118.55	140.30	158.20
	Weight (Kg)	680	25.86	7.95	23.70	16.50	19.90	30.20	41.95
	MUAC (cm)	603	17.55	2.29	17.10	14.50	16.00	19.00	21.80
	HAZ	680	-1.27	1.30	-1.36	-3.35	-2.09	-0.50	0.92
	BAZ	680	-1.32	1.04	-1.31	-3.07	-1.89	-0.69	0.29
<b>Girls</b>	Height (cm)	772	128.19	14.20	126.40	107.30	117.20	140.00	151.40
	Weight (Kg)	772	25.50	8.34	23.00	15.70	19.00	31.10	41.80
	MUAC (cm)	687	18.02	2.58	17.50	14.70	16.10	19.40	23.10
	HAZ	772	-1.57	1.21	-1.57	-3.54	-2.34	-0.77	0.40
	BAZ	772	-1.12	1.07	-1.08	-2.79	-1.74	-0.42	.62
<b>Total</b>	<b>Height (cm)</b>	<b>1452</b>	<b>129.18</b>	<b>14.59</b>	<b>127.35</b>	<b>108.10</b>	<b>117.60</b>	<b>140.25</b>	<b>154.10</b>
	<b>Weight (Kg)</b>	<b>1452</b>	<b>25.67</b>	<b>8.16</b>	<b>23.40</b>	<b>16.10</b>	<b>19.30</b>	<b>30.50</b>	<b>41.80</b>
	<b>MUAC (cm)</b>	<b>1290</b>	<b>17.80</b>	<b>2.46</b>	<b>17.30</b>	<b>14.60</b>	<b>16.00</b>	<b>19.20</b>	<b>22.40</b>
	<b>HAZ</b>	<b>1452</b>	<b>-1.43</b>	<b>1.26</b>	<b>-1.45</b>	<b>-3.43</b>	<b>-2.24</b>	<b>-0.65</b>	<b>0.70</b>
	<b>BAZ</b>	<b>1452</b>	<b>-1.21</b>	<b>1.06</b>	<b>-1.19</b>	<b>-2.95</b>	<b>-1.84</b>	<b>-0.55</b>	<b>0.43</b>



**Table.8. Prevalence (%) of Undernutrition among School Children in the districts of Muzaffarpur and Gaya in the state of Bihar**

Nutrition status	Muzaffarpur and		Gaya		Total	
	N	Percent	N	Percent	N	Percent
Severe Stunting (<Median-3SD)	68	9.3	70	9.7	138	9.5
Moderate Stunting (Median <-3SD to < -2SD)	195	26.6	125	17.4	320	22.1
Normal (>Median-2SD)	469	64.1	523	72.8	992	68.4
Total	732	100.0	718	100.0	1450	100.0

**Table.9. Prevalence (%) of Thinness (undernutrition) and overweight/obesity among School Children in the districts of Muzaffarpur and Gaya, Bihar**

Nutrition grade	Muzaffarpur		Gaya		Pooled	
	N	Percent	N	Percent	N	Percent
<b>Severe Thinnes</b> (<Median-3SD)	35	4.8	27	3.8	62	4.3
<b>Moderate Thinnes</b> (Median-3SD to Median -2SD)	116	15.9	101	14.1	217	15.0
<b>Normal</b> (Median-2SD to Median+1SD)	566	77.5	573	79.8	1139	78.7
<b>Overweight</b> (Median+1SD to Median+2SD)	12	1.6	15	2.1	27	1.9
<b>Obesity</b> (>Median+2SD)	1	0.1	2	0.3	3	0.2
<b>Overweight and Obesity</b>	<b>13</b>	<b>1.7</b>	<b>17</b>	<b>2.4</b>	<b>30</b>	<b>2.1</b>
<b>Total</b>	<b>730</b>	<b>100.0</b>	<b>718</b>	<b>100.0</b>	<b>1448</b>	<b>100.0</b>

**Table.10.1. Prevalence (%) of Thinness (undernutrition) and overweight/obesity among School Children by Age group and district in state of Bihar**

Particulars			BMI for Age (BMI Z-Scores)									
			Severe thinness ( $< \text{Median} - 3\text{SD}$ )		Moderate thinness (Median $> -3\text{SD}$ to $< -2\text{SD}$ )		Normal (Median $> -2\text{SD}$ to + $< 1\text{SD}$ )		Overweight (Median $> +1\text{SD}$ to Median $< +2\text{SD}$ )		Obese ( $\geq \text{Median} + 2\text{SD}$ )	
			n	%	n	%	n	%	n	%	n	%
<b>Muzaffarpur</b>	Age Group	5-9yrs	15	3.3	57	12.6	374	82.7	5	1.1	1	0.2
		10-15yrs	20	7.2	59	21.2	192	69.1	7	2.5	0	0
	<b>Total</b>	<b>35</b>	<b>4.8</b>	<b>116</b>	<b>15.9</b>	<b>566</b>	<b>77.5</b>	<b>12</b>	<b>1.6</b>	<b>1</b>	<b>0.1</b>	
<b>Gaya</b>	Age Group	5-9yrs	7	2.3	39	12.7	257	83.7	3	1.0	1	0.3
		10-15yrs	20	4.9	62	15.1	316	76.9	12	2.9	1	0.2
	<b>Total</b>	<b>27</b>	<b>3.8</b>	<b>101</b>	<b>14.1</b>	<b>573</b>	<b>79.8</b>	<b>15</b>	<b>2.1</b>	<b>2</b>	<b>0.3</b>	
<b>Total</b>	Age Group	5-9yrs	22	2.9	96	12.6	631	83.1	8	1.1	2	0.3
		10-15yrs	40	5.8	121	17.6	508	73.7	19	2.8	1	0.1
	<b>Total</b>	<b>62</b>	<b>4.3</b>	<b>217</b>	<b>15.0</b>	<b>1139</b>	<b>78.7</b>	<b>27</b>	<b>1.9</b>	<b>3</b>	<b>0.2</b>	

**Table.10.2. Prevalence (%) of Stunting among School Children in the districts of Muzaffarpur and Gaya, Bihar 11-19**

Gender	BMI for Age (BMI Z-Scores)									
	Severe thinness ( $< \text{Median} - 3\text{SD}$ )		Moderate Thinness (Median $> -3\text{SD}$ to $< -2\text{SD}$ )		Normal ( $> \text{Median} - 2\text{SD}$ to $< +1\text{SD}$ )		Overweight (Median $> +1\text{SD}$ to Median $< +2\text{SD}$ )		Obese ( $\geq \text{Median} + 2\text{SD}$ )	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Male	37	5.4	109	16.1	523	77.0	n	%	2	0.3
Female	25	3.3	108	14.0	616	80.1	8	1.2	1	0.1
<b>Total</b>	<b>62</b>	<b>4.3</b>	<b>217</b>	<b>15.0</b>	<b>1139</b>	<b>78.7</b>	<b>19</b>	<b>2.5</b>	<b>3</b>	<b>0.2</b>

**Table.11. Prevalence (%) of Nutritional deficiency signs/symptoms among School Children in Bihar**

Nutrition Deficiency signs	By Gender						By Districts					
	Boys		Girls		Total		Muzaffarpur		Gaya		Total	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
<b>NAD</b>	585	85.2	661	84.9	1246	85.0	628	84.9	618	85.1	1246	85.0
<b>Conjunctival xerosis</b>	6	0.9	6	0.8	12	0.8	7	.9	5	0.7	12	0.8
<b>Bitot spots</b>	9	1.4	14	1.8	23	1.6	14	1.0	9	1.3	23	1.6
<b>Angula Stomatitis</b>	19	2.8	14	1.8	33	2.3	18	2.4	15	2.1	33	2.3
<b>Phrynoderma</b>	2	0.3	3	0.4	5	0.3	2	0.3	3	0.4	5	0.3
<b>Dental caries</b>	7	1.0	6	0.8	13	0.9	13	1.8	0	0.0	13	0.9
<b>Fluorosis</b>	26	3.8	23	3.0	49	3.3	26	3.5	23	3.2	49	3.3
<b>Palpable goitre</b>	12	1.7	39	5.0	51	3.5	15	2.0	36	5.0	51	3.5
<b>Visible goitre</b>	2	0.3	0	0.0	2	0.1	0	0.0	2	0.3	2	0.1

**Table -12. Awareness of the MDM In charges about MDM programme and practices**

		<b>Muzaffarpur</b>	<b>Gaya</b>
<b>No. of In-charge teachers interviewed</b>		<b>19</b>	<b>14</b>
Age of the teacher	< 50 yrs	63.2	56.0
	>50 yrs	36.8	44.0
Education Qualification	Intermediate	15.8	28.0
	Graduation	26.3	22.0
	PG	57.9	50.0
Duration of service	<12 yrs	15.9	21.4
	>12 yrs	84.1	78.6
Objectives of MDM	To improve the Health & Nutrition Status	89.5	92.9
	To improve school enrolment	47.4	42.8
	To improve school attendance	89.5	78.6
	To reduce school dropouts	42.1	35.7
	To improve scholastic performance	15.8	35.7
Children liking MDM		100	100
SMC committee in the village		100	100
Community feel the need of the programme		100	100
Difficulties in implementing the programme		36.8	35.7
Problem with cook		5.3	7.1
Less contingency		0	14.3
Inferior food quality		10.5	7.1
Others		15.8	7.1
School health programme operation in school		73.7	85.7
Supervision of Officials	BRO	68.4	92.9
	BEO	5.3	21.4
	DEO	0	0
	SMC	5.3	7.1

**Table -13. Knowledge, perception of parents about MDM**

		<b>Muzaffarpur (N:72)</b>	<b>Gaya (N:44)</b>	<b>Total (N:116)</b>
Age	<30 years	18	16	17
	30-40 years	69.4	68.2	68.8
	>40 years	12.6	15.8	14.2
Education	Illiterate	65.3	38.6	56.0
	Primary	16.7	11.4	14.7
	Secondary	11.1	18.7	13.8
	Higher Secondary	5.5	11.4	7.8
	Class 10+2	1.4	9.8	4.3
	Graduation & above	-	9.8	3.4
% of parents felt that MDM was beneficial		97.2	93.2	96.6
If beneficial, it will .....	Increase enrolment	8.3	18.2	12.1
	Increase attendance	44.4	63.6	51.7
	Reduce dropout rate	11.1	20.5	14.7
	Improve health& nutrition status	59.7	45.5	54.3
	Provides additional food	51.4	56.8	53.4
	Improve scholastic programme	20.8	11.4	17.2
	Other	9.7	2.2	6.9
Child participation in MDM		100	100	100
Child likes taste of food		93.1	100	95.7
Quantity of MDM adequate		98.7	97.7	96.6
No.of meals consumed by the child at home	Two	52.8	63.6	56.6
	Three	45.8	34.1	41.7
	Four and more	1.4	2.2	1.7
Changes observed in children due to participation in MDM	Improvement in nutritional status	47.2	38.6	44.0
	Improvement in health status	20.8	29.5	24.1
	Regularity in schooling	36.1	52.3	42.2
	Improvement in performance in school exams	19.4	29.5	23.3
	No changes observed	4.2	15.9	11.2
Supervision committee in village		26.4	47.7	34.5
Are you the Member of the committee		5.6	13.6	8.6

Suggestion to improve the MDM	Regular supply of food materials	2.8	9.1	5.2
	Increase the quality of food	11.1	6.8	9.5
	Increase the quantity	-	4.5	1.7
	Change of menu	4.2	2.2	3.4

**Table.14 Knowledge and perception of functionaries**

	BRP	BRP	DPO	BPO	Dist.programmer
N	6	2	2	2	2
Age	24-42	32-42	51-53	51-59	52-55
	27.3	37	52	55	53.5
<b>Education</b>					
Graduate	3(50%)	1(50%)	50%	-	-
Post Graduate	3(50%)	1(50%)	50%	100%	100%
<b>Duration of service</b>					
3-6 years	3(50%)	-	-		50%
6-9 years	-	50%	-		50%
9-12 years		50%	-		
>12 years	-	-	100%	100%	-
<b>Aware of Objectives of MDM</b>					
Improve nutritional and health status	100%	100%	-	100%	50%
Improve the attendance	50%	50%	100%	-	100%
Reduce the dropout	100%	100%	100%	100%	-
Improve the scholastic performance	75%	75%	50%	100%	50%
<b>Frequency of visiting schools</b>					
Fortnightly				100	100
Monthly					
Quarterly	100				
Half yearly		100			
Yearly			100		
Never					
<b>Activities during visits</b>					
Verifying records	100	100	100		
Problem solving	-	50	-		
Community activities	100	50			
Check the hygienic practices	100	50	100	100	100
Check cooked food	50	100	100	100	100
<b>Aware of MDM entitlements</b>					
Cereals	100	100	100	100	50
Pulses	100	100	100	50	50
Oil	100	50	50	50	50
Vegetables	100	50	50	50	50
Calories	100	50	50	50	50
Protein	100	50	50	50	50
<b>Programme successful</b>					
	100	100	100	100	100

<b>Changes observed in the schools after implementation of MDM</b>					
Improve nutritional status of children	100	50		50	50
Improve school attendance and improvement	50	100	50	50	50
Reduce dropout rates	50	50	-	-	-
Scholastic performance	33	50	-	-	-

**Table.15. Quality of food grains and its processing in the kitchen**

		Rice	Dal	Vegetables	GLVs	Eggs
<b>Muzaffarpur</b>						
Quality	N	18	18	18	5	2
Satisfactory		55	38.7	38.7	-	
Good		55.6	61.3	61.3		100
Sieving	Yes	66.7	50			
Washing before cooking		100	100	100	100	
Removal of kanji		38.9				
Cooking with lid		100	100	100		
Add oil			100			
Add salt		38.9	100			
<b>Gaya</b>						
Quality	N	14	14	7	7	
Satisfactory		35.7	28.6	42.8		
Good		64.3	71.4	57.2	100	
Sieving	Yes	57.1				
Washing before cooking		100				
Removal of kanji		28.6				
Cooking with lid		71.4				
Add oil						
Add salt		35.4				

**Table.16. Hygiene practices of Cook cum Helper**

Particulars	N	Muzaffarpur (%)	Gaya (%)
Hand washing of children before food	18	100	100
Washing of plates & glasses	18	100	100
Hand washing by CCH before preparing food	18	100	100
Washing of vessels before cooking	18	100	100
Washing of vessels after cooking	18	100	100
Cooking with lid	18	100	100
Cleanliness of cooking area	18	100	100
Sufficient vessels for cooking	18	100	100
Yes			
Source of drinking water	18	100	100
Tap	2	11.2	14.3
Bore well	16	88.8	85.7
Drinking water facility in school premises		100	85.7
Utensils for storage-directly from source		100	85.7
Place of cooking			
Openly cooked		16.7	
Closed Kitchen		83.3	100
Type of fuel used			
LPG		88.8	71.4
Fire wood		11.2	28.6
Used iodized salt		100	100
Storage of iodized salt			100
Closed container		100	100
Type of oil used-mustard		100	100
Storage room facility	Yes	100	100
Dunnage facility	Yes	33.3	64.3
Ventilation of room			
Satisfactory		50	42.8
Good		50	57.1
Storage of food materials			
Closed container		44.4	78.6
Closed gunny bags		55.6	21.4
Presence of insects in store room		77.8	100
No			
Insecticidal measure taken		22.2	28.6
Yes			



**Table.17. Hygiene and sanitation practices**

		Muzaffarpur (n:130)	Gaya (N:131)	Total (N:261)
Gender	Boys	50	56.5	
	Girls	50	43.5	
Religion	Hindu	87.7	96.2	92.3
	Muslim	12.3	1.5	6.5
	Sikh	-	2.3	1.2
Age Group	7-9 years	20.8	19.1	19.5
	10-12 years	53.1	51.9	52.1
	13-15 years	26.2	29	27.6
Category	SC	17.7	36.6	27.2
	ST	4.6	1.5	3.1
	OBC	61.5	48.9	55.2
	OC	16.6	13.0	14.6
Perceptions and practices of students	Eating of breakfast before coming to school	97.7	96.9	97.3
	Eat MDM	100.0	99.2	99.6
	Taste of MDM good	100.0	96.9	98.5
	Quantity sufficient	100.0	95.4	97.7
	Getting Second serving	92.4	64.1	78.2
	Serving Hot meals	99.2	90.8	95.0
	Wash hand with soap	56.9	61.1	59.0
	Bringing utensils from home	5.3	6.1	5.8
	Concentrate better	97.7	92.4	95.0
Sit/stand in queue for food	96.9	95.4	95.8	

**Table.18. Knowledge, perception & practices of CCH**

	<b>Particulars</b>	<b>Muzaffarpur</b>	<b>Gaya</b>
N		18	20
Gender	Female	100	100
Marital Status	Married	94.4	75.0
	Un-married	0	5.0
	Widowed	5.6	20.0
Religion	Hindu	94.4	95.0
	Muslim	5.6	5.0
Education	Illiterate	66.8	60.0
	Primary	16.7	20.0
	Middle	16.7	20.0
No. Of days MDM not served in the past 6 months		22.2	0
No. of such days	< 7 days	22.2	0
Reason	Non availability of Foods	11.1	0
	Cook not available	11.1	0
Maintenance of the registers by	Cook	5.6	0
	Head Master	88.8	100
	Registers not maintained	5.6	0
Decision for cooking	As per the weekly menu	11.1	40.0
	As per the instructions of HM	72.2	60.0
Quantity of cooking on the day	Same as the previous day	5.6	0
	Attendance	66.7	100
	As HM	11.1	0
Measurement of ration by	Using standard measure	88.9	100
	Approximate	11.1	
Teachers taking part in MDM activity		22.2	45.0
Aware of food entitlements		55.6	85.0
Adequacy of food grains to the children		83.3	90.0
Refusal of children to eat food as the taste was not good		22.2	40.0
Taste the meal before serving	CCH	83.3	100
	Teacher	69.4	90.0
	SMC	11.1	0
	Parents	11.1	0
Leftover food was taken home by CCH		100	100
Health check ups		22.2	5.0
Mode of Honorarium as account transfer		100	100
Wear Apron/hat during cooking		38.9	80.0
Training on hygiene and food safety		83.3	90.0

**Table.19. Knowledge & practices of supervision& monitoring committee on MDM**

Particulars		n	%
Gender	Male	3	21.4
	Female	11	78.6
Age (Mean)		14	(42)
Religion	Hindu	11	78.6
	Muslim	3	21.4
Social group	OBC	9	64.3
	Others	5	35.7
Educational qualification	Illiterate		14.3
	Primary		21.4
	Middle		28.6
	SSC		28.6
	Higher Secondary		7.1
Aware of food entitlements for the children (MDM)		8	57.1
Type of contribution by community			
SMC mobilized community-donation		1	7.1
Sufficiency of Ingredients for children		10	71.4
All children sit together and eat		14	100

**Annexure.1**  
**Mean ± SD Height (Cm) and Weight (Kg) of the school children in the districts of Muzaffarpur and Gaya, Bihar**

Age (Yrs)	Boys							Girls							Total						
	N	Height (cm)			Weight (kg)			N	Height (cm)			Weight (kg)			N	Height (cm)			Weight (kg)		
		Mean	SD	Median	Mean	SD	Median		Mean	SD	Median	Mean	SD	Median		Mean	SD	Median	Mean	SD	Median
<b>MUZAFFARPUR DISTRICT</b>																					
5	8	109.0	3.86	109.60	17.03	0.84	17.20	11	104.82	6.37	105.50	15.81	2.00	16.50	19	106.44	5.79	105.75	16.28	1.72	17.00
6	39	112.3	5.72	112.60	17.61	1.80	17.60	47	111.41	5.48	111.60	17.31	2.16	17.40	86	111.80	5.57	112.20	17.44	2.00	17.45
7	42	117.1	5.51	116.30	19.56	2.48	19.65	48	114.48	4.98	115.55	18.56	2.21	18.70	90	115.68	5.36	115.90	19.03	2.38	18.85
8	62	120.7	6.75	120.45	20.71	2.61	20.25	69	118.48	6.15	118.40	19.87	2.81	19.30	131	119.53	6.51	119.20	20.27	2.74	19.70
9	64	125.8	6.19	125.90	23.49	3.88	22.70	62	124.75	7.92	124.65	23.27	4.41	22.25	126	125.29	7.09	125.20	23.38	4.14	22.50
10	52	132.5	7.34	130.70	26.34	4.96	24.95	58	130.55	8.45	130.35	25.11	4.60	24.45	110	131.46	7.97	130.50	25.69	4.79	24.65
11	22	135.7	7.85	136.30	27.16	4.18	27.25	39	135.44	8.79	135.20	29.08	7.00	28.10	61	135.54	8.40	135.90	28.39	6.17	27.90
12	32	143.3	11.53	142.50	32.69	5.89	31.60	25	142.15	8.25	138.30	31.16	7.39	33.30	57	142.80	10.15	141.80	32.02	6.57	31.80
13	15	148.8	6.33	148.60	34.34	5.41	33.20	15	147.81	7.29	147.70	36.89	4.90	37.00	30	148.28	6.72	147.85	35.61	5.23	35.00
14	7	152.5	4.87	153.20	36.90	3.60	35.90	10	151.95	6.53	150.35	38.50	6.27	38.10	17	152.19	5.74	152.00	37.84	5.26	36.00
15	4	143.8	1.91	143.75	32.90	1.56	32.90	1	151.40	0.0	151.40	44.90	0.0	44.90	5	146.30	4.62	145.10	36.90	7.01	34.00
<b>GAYA DISTRICT</b>																					
5.	12	113.66	5.29	114.15	18.61	1.63	18.45	11	110.08	6.26	111.70	17.17	2.62	16.00	23	111.95	5.93	112.50	17.92	2.23	18.10
6	29	114.60	7.09	115.20	18.46	2.34	18.40	33	114.34	5.69	113.70	18.21	2.58	17.50	62	114.46	6.33	114.45	18.33	2.46	17.95
7	26	116.12	4.16	114.80	18.91	1.79	19.10	39	117.53	5.20	117.60	19.44	2.52	19.30	65	116.97	4.83	117.10	19.23	2.26	19.20
8	31	122.15	8.63	123.10	20.80	4.10	20.70	29	120.29	8.16	120.10	20.62	3.28	20.10	60	121.25	8.39	122.15	20.71	3.69	20.45
9	49	131.47	8.84	131.70	25.58	4.51	24.50	50	126.29	8.93	126.05	23.67	4.65	23.75	99	128.86	9.21	128.50	24.61	4.66	24.10
10	50	130.23	7.81	130.55	25.37	3.86	24.70	60	130.75	10.33	131.15	26.17	6.31	24.70	110	130.52	9.23	130.65	25.80	5.33	24.70
11	39	141.37	12.34	140.50	32.16	7.55	30.20	57	138.92	8.65	139.60	31.10	6.17	31.00	96	139.91	10.32	139.60	31.53	6.74	30.80
12	41	148.82	8.80	149.00	35.84	6.76	34.80	49	144.19	7.51	144.40	35.21	7.22	33.70	90	146.30	8.40	146.75	35.49	6.98	34.60
13	32	149.48	11.97	152.50	36.36	8.39	37.45	40	147.61	5.48	147.20	38.71	5.95	38.95	72	148.44	8.94	148.70	37.66	7.18	38.40
14	17	154.54	8.61	155.00	38.64	7.51	39.50	13	143.46	12.46	148.10	35.12	8.83	37.60	30	149.74	11.68	150.25	37.11	8.15	38.30
15	7	150.38	3.04	150.10	36.38	4.61	35.35	6	151.06	5.76	150.60	40.14	8.17	37.40	13	150.69	4.24	150.30	38.09	6.42	36.80

5	20	111.94	5.23	113.00	18.03	1.57	18.00	22	107.45	6.72	106.65	16.49	2.38	16.25	42	109.53	6.42	109.60	17.20	2.16	17.50
6	68	113.26	6.40	113.70	17.97	2.08	17.95	80	112.62	5.72	112.10	17.68	2.37	17.40	148	112.92	6.03	112.70	17.81	2.24	17.60
7	68	116.69	5.03	116.05	19.31	2.25	19.20	87	115.85	5.27	116.20	18.96	2.38	19.10	155	116.22	5.17	116.10	19.11	2.32	19.10
8	93	121.18	7.42	121.20	20.74	3.16	20.60	98	119.01	6.81	118.50	20.09	2.96	19.60	191	120.07	7.18	119.70	20.41	3.07	19.90
9	113	128.27	7.93	127.50	24.40	4.28	23.40	112	125.44	8.38	125.15	23.45	4.50	22.90	225	126.86	8.26	126.40	23.92	4.41	23.20
10	102	131.37	7.62	130.55	25.86	4.46	24.85	118	130.65	9.41	130.75	25.65	5.54	24.60	220	130.99	8.62	130.60	25.75	5.06	24.70
11	61	139.33	11.20	138.70	30.36	6.93	29.10	96	137.50	8.83	137.60	30.28	6.56	29.25	157	138.21	9.82	138.40	30.31	6.69	29.20
12	73	146.40	10.38	146.90	34.46	6.54	33.60	74	143.50	7.77	143.10	33.84	7.48	33.65	147	144.94	9.24	144.60	34.15	7.01	33.60
13	47	149.25	10.43	151.10	35.71	7.57	36.20	55	147.66	5.96	147.60	38.21	5.70	38.40	102	148.39	8.32	148.35	37.06	6.71	37.95
14	24	153.95	7.66	154.15	38.13	6.58	37.70	23	147.15	10.98	149.50	36.59	7.84	37.60	47	150.62	9.94	150.50	37.38	7.19	37.60
15	11	148.73	4.07	149.60	35.51	4.26	34.55	7	151.12	5.15	151.00	40.93	7.56	41.00	18	149.75	4.54	150.25	37.84	6.28	36.20

## Annexure 2.

### Mean $\pm$ SD Mid upper arm circumference of the school children in the districts of Muzaffarpur and Gaya, Bihar

Age (Years)	Gender															
	Male								Female							
	MUAC (cm)								MUAC (cm)							
	Valid N	Mean	SD	Median	P 05	P 25	P 75	P 95	Valid N	Mean	SD	Median	P 05	P 25	P 75	P 95
<b>MUZAFFARPUR DISTRICT</b>																
5	8	15.93	.91	15.70	14.80	15.30	17.10	17.20	10	15.40	.81	15.20	14.00	15.00	15.90	17.00
6	34	15.19	1.04	15.30	13.30	14.50	15.90	16.90	33	15.58	1.13	15.30	14.10	14.90	16.30	17.90
7	34	15.70	1.15	15.70	13.50	15.10	16.40	17.80	36	16.02	1.34	16.05	14.00	15.00	16.90	18.90
8	46	16.10	1.20	16.00	14.00	15.30	17.00	17.90	54	16.16	1.54	16.00	14.20	15.20	16.60	20.30
9	56	16.79	1.62	16.35	14.30	16.00	17.70	19.90	50	17.25	1.65	17.20	14.40	16.20	18.40	19.70
10	49	17.54	1.45	17.30	15.30	16.60	18.40	20.30	52	17.74	1.65	17.75	15.60	16.40	18.50	21.70
11	22	17.70	1.81	17.60	15.10	16.70	19.00	20.20	39	18.96	2.52	18.70	16.00	16.90	20.60	25.00
12	32	19.39	1.71	19.05	17.30	18.00	20.30	22.10	25	19.41	1.96	19.30	16.80	18.10	20.70	22.00
13	15	19.93	1.47	20.30	17.50	18.60	21.40	22.10	15	20.97	1.79	21.30	17.50	19.00	22.40	24.00
14	7	20.21	1.52	20.00	18.10	19.00	21.00	22.80	10	21.26	2.33	20.75	19.00	20.20	21.50	27.30
15	4	18.95	.78	18.95	18.40	18.40	19.50	19.50	1	23.60		23.60	23.60	23.60	23.60	23.60
<b>GAYA DISTRICT</b>																
5	12	15.94	.88	15.90	14.80	15.20	16.50	17.70	7	16.16	1.11	15.90	15.00	15.00	17.50	17.80
6	23	15.75	.89	15.80	14.60	15.20	16.10	17.00	30	16.00	1.20	15.85	14.50	15.00	16.90	18.20
7	20	16.19	.98	16.20	14.50	15.70	16.80	17.90	36	16.43	1.04	16.50	14.70	15.65	17.10	18.20
8	28	16.27	1.33	16.05	14.50	15.65	16.70	17.90	28	16.66	1.33	16.75	14.70	15.65	17.65	18.90
9	47	17.55	1.69	17.40	15.40	16.30	18.40	20.50	47	17.70	1.53	17.70	15.30	16.80	18.40	20.30
10	45	17.23	1.51	17.10	14.30	16.50	18.00	20.20	58	17.99	1.87	17.65	15.50	16.70	18.80	22.00
11	36	19.01	2.25	19.25	14.70	17.25	20.85	22.40	55	19.16	2.29	18.80	16.00	17.70	20.30	23.30
12	35	20.13	2.24	20.30	16.10	18.70	21.50	24.30	48	20.52	2.56	20.35	16.60	18.80	22.00	24.70
13	31	20.09	2.51	20.20	15.60	18.60	21.40	24.00	34	21.83	2.38	21.75	17.50	20.30	23.70	25.70
14	15	20.71	2.40	21.40	14.70	19.30	22.30	24.10	13	20.25	2.69	20.40	15.20	18.70	22.00	24.40
15	4	20.60	2.46	20.00	18.50	18.50	23.30	23.30	6	21.48	4.06	19.80	17.40	19.20	23.40	27.60

Age (Years)	Gender															
	Male								Female							
	MUAC (cm)								MUAC (cm)							
	<b>POOLED</b>															
	Valid N	Mean	SD	Median	P 05	P 25	P 75	P 95	Valid N	Mean	SD	Median	P 05	P 25	P 75	P 95
5	20	15.94	.87	15.80	14.80	15.30	16.50	17.70	17	15.71	.99	15.40	14.00	15.00	16.10	17.80
6	57	15.41	1.01	15.50	13.60	14.80	16.00	17.00	63	15.78	1.17	15.50	14.20	14.90	16.80	17.90
7	54	15.88	1.11	15.95	13.60	15.20	16.40	17.80	72	16.22	1.21	16.25	14.20	15.45	17.00	18.20
8	74	16.16	1.25	16.00	14.00	15.30	17.00	17.90	82	16.33	1.49	16.20	14.30	15.30	17.10	19.00
9	103	17.13	1.69	16.60	14.70	16.00	18.10	20.50	97	17.47	1.60	17.40	15.00	16.60	18.40	20.30
10	94	17.39	1.48	17.10	15.00	16.50	18.20	20.30	110	17.87	1.77	17.70	15.60	16.60	18.70	21.70
11	58	18.51	2.18	18.75	14.70	17.10	19.60	22.30	94	19.07	2.37	18.80	16.00	17.30	20.40	23.30
12	67	19.77	2.03	19.70	16.50	18.30	21.30	23.70	73	20.14	2.42	20.30	16.60	18.30	21.80	24.50
13	46	20.04	2.21	20.25	16.20	18.60	21.40	23.40	49	21.57	2.23	21.50	17.50	20.30	23.00	25.50
14	22	20.55	2.13	20.65	18.10	19.30	21.80	23.40	23	20.69	2.54	20.70	16.00	19.30	22.00	24.40
15	3	19.94	2.00	19.50	18.40	18.50	20.00	23.30	7	21.83	3.73	21.60	17.40	19.20	23.60	27.60

### Annexure. 3

#### Existing Weekly MDM Menu in the state of Bihar 2018

Week	Menu
Monday	Rice + Dhal + GLV sabji
Tuesday	Jeera Rice + Soyabean , Potato curry
Wednesday	Kichidi + Chokha + Fruit
Thursday	Rice + Dhal + GLV sabji
Friday	Pulaov + Channa dhal sabji + salad + Egg / Fruit
Saturday	Kichidi (GLV) + Chokha + Fruit

#### LIST OF SUGGESTED MODEL RECIPES

##### 1.1 Dalia (Broken wheat Kichidi+ Ragi Ladoo)-Primary

Ingredients	Quantity (g)	Energy (Kcal)	Protein (g)	Fat (g)
Broken Wheat	100	244.0	8.8	1.4
Green Gram Dal	20	65.2	4.8	0.3
Onion	20	11.4	0.4	0.0
Tomato	10	2.0	0.1	0.1
Potato	30	20.4	0.5	0.1
Carrot	15	5.0	0.0	0.1
Coriander leaves	5	3.2	0.4	0.1
Oil	2	18.0	0.0	2.0
<b>Total</b>		<b>369.2</b>	<b>14.9</b>	<b>4.0</b>
<b>Ragi Ladoo</b>				
Ragi	30	96.3	2.2	0.6
Sugar/Jaggery	20	79.6	0.4	0.0
Oil	3	27.0	0.0	3.0
		<b>202.9</b>	<b>2.5</b>	<b>3.6</b>
<b>Total</b>		<b>572.05</b>	<b>17.42</b>	<b>7.57</b>



### 1.2 Dalia (Broken wheat Kichidi+ Ragi Ladoo)-Secondary

Ingredients	Quantity (g)	Energy (Kcal)	Protein (g)	Fat (g)
Broken Wheat	150	366.0	13.2	2.1
Green Gram Dal	30	97.8	7.2	0.4
Onion	30	17.1	0.5	0.1
Tomato	15	3.0	0.1	0.1
Potato	45	30.6	0.7	0.1
Carrot	20	6.6	0.0	0.1
Coriander leaves	8	4.8	0.6	0.1
Oil	3	27.0	0.0	3.0
<b>Total</b>		552.9	22.3	5.9
<b>Ragi Ladoo</b>				
Ragi	45	144.5	3.2	0.9
Sugar/Jaggery	10	39.8	0.2	0.0
Oil	5	40.5	0.0	4.5
<b>Total</b>		224.8	3.4	5.4
<b>Grand total</b>		830.5	22.8	21.5

### 2.1. Sambhar rice + Groundnut ladoo-Primary

Ingredients	Quantity (g)	Energy (Kcal)	Protein (g)	Fat (g)
Rice	100	356.0	7.9	0.5
Red gram dhal	15	49.7	3.3	0.2
Drumstick	10	2.9	0.3	0.0
Ladies finger	10	2.7	0.2	0.0
Bottle gourd	10	1.2	0.1	0.0
Raddish	10	3.2	0.1	0.0
Onion	5	2.9	0.1	0.0
Tomato	5	1.0	0.0	0.0
Oil	4	36.0	0.0	4.0
Coriander leaves	0	0.2	0.0	0.0
Curry leaves	0	0.3	0.0	0.0
Asofoetida	0	0.3	0.0	0.0
Cumin seeds	0	0.8	0.0	0.0
Mustard seeds	0	1.3	0.0	0.1
Fenugreek seeds	0	0.6	0.1	0.0
<b>Total</b>		458.9	12.1	5.0
<b>Groundnut ladoo</b>				
Groundnut	20	104.0	4.7	7.9
jaggery	10	35.4	0.2	0.0
Oil	1	9.0	0.0	1.0
<b>Total</b>		148.4	4.9	8.9
<b>Grand Total</b>		607.3	17.0	13.9

## 2.2. Sambhar rice + Groundnut ladoo-Secondary

Ingredients	Quantity (g)	Energy (Kcal)	Protein (g)	Fat (g)
Rice	150	445.00	9.88	0.63
Red gram dhal	25	82.8	5.4	0.4
Drumstick	15	4.4	0.4	0.0
Ladies finger	15	4.1	0.3	0.0
Bottle gourd	15	1.8	0.1	0.0
Raddish	15	4.8	0.1	0.0
Onion	5	2.9	0.1	0.0
Tomato	5	1.0	0.0	0.0
Oil	6	54.0	0.0	6.0
Coriander leaves	1	0.3	0.0	0.0
Curry leaves	1	0.7	0.0	0.0
Asofoetida	0	0.7	0.0	0.0
Cumin seeds	0	1.2	0.1	0.1
Mustard seeds	0	2.0	0.1	0.2
Fenugreek seeds	0	0.9	0.1	0.0
<b>Total</b>		606.4	16.6	7.4
<b>Groundnut ladoo</b>				
Groundnut	30	153.0	5.9	12.1
jaggery	15	53.1	0.3	0.0
Oil	2	18.0	0.0	2.0
<b>Total</b>		224.1	6.1	14.1
<b>Grand Total</b>		830.5	22.8	21.5

## 3.1 Vegetable biryani + mixed vegetable sabji+ milk (Primary)

Ingredients	Quantity (g)	Energy (Kcal)	Protein (g)	Fat (g)
Rice	100	356.0	7.9	0.5
Peas	20	18.6	1.5	0.0
Beans	2.5	1.1	0.1	0.0
Potato	2.5	1.7	0.0	0.0
Onions	2.5	1.4	0.0	0.0
Carrot	2.5	0.8	0.0	0.0
cauliflower/Broccoli	2.5	0.6	0.1	0.0
Onion	5.0	2.9	0.1	0.0
Oil	2.5	22.5	0.0	2.5
Coriander leaves	0.3	0.2	0.0	0.0
curry leaves	0.3	0.3	0.0	0.0
Asofoetida	0.1	0.3	0.0	0.0
cumin seeds	0.3	0.8	0.0	0.0
mustard seeds	0.3	1.3	0.0	0.1
fenugreek seeds	0.3	0.6	0.1	0.0
<b>Total</b>		409.0	9.8	3.2

Potato	20.0	13.6	0.3	0.0
Cauliflower	5.0	1.2	0.1	0.0
Fenugreek leaves	5.0	1.7	0.2	0.0
Onions	5.0	2.9	0.1	0.0
Tomato	5.0	1.0	0.0	0.0
Oil	2.5	27.0	0.0	3.0
Coriander leaves	0.3	0.2	0.0	0.0
curry leaves	0.3	0.3	0.0	0.0
Asofoetida	0.1	0.3	0.0	0.0
cumin seeds	0.3	0.8	0.0	0.0
mustard seeds	0.3	1.3	0.0	0.1
fenugreek seeds	0.3	0.6	0.1	0.0
	<b>Total</b>	50.7	0.9	3.3
<b>Milk</b>	<b>100</b>	107.0	3.7	6.6
<b>Grand total</b>		566.7	14.5	13.1

### 3.2 Vegetable biryani + mixed vegetable sabji+ Milk (Secondary)

Ingredients	Quantity (g)	Energy (Kcal)	Protein (g)	Fat (g)
Rice	150.0	534.0	11.9	0.8
Peas	30.0	27.9	2.2	0.0
Beans	2.5	1.1	0.1	0.0
Potato	2.5	1.7	0.0	0.0
Onions	2.5	1.4	0.0	0.0
Carrot	2.5	0.8	0.0	0.0
cauliflower/Broccoli	2.5	0.6	0.1	0.0
Onion	5.0	2.9	0.1	0.0
Oil	4.0	36.0	0.0	4.0
Coriander leaves	0.4	0.2	0.0	0.0
curry leaves	0.4	0.5	0.0	0.0
Asofoetida	0.2	0.7	0.0	0.0
cumin seeds	0.4	1.1	0.0	0.1
mustard seeds	0.4	1.8	0.1	0.1
fenugreek seeds	0.4	0.8	0.1	0.0
<b>Total</b>		611.4	14.6	5.1
Potato	30.0	20.4	0.5	0.1
Cauliflower	10.0	2.3	0.2	0.0
Fenugreek leaves	10.0	3.4	0.4	0.1
Onions	7.5	4.3	0.1	0.0
Tomato	7.5	1.5	0.1	0.0
Oil	4.0	36.0	0.0	4.0
Coriander leaves	0.4	0.2	0.0	0.0
curry leaves	0.4	0.5	0.0	0.0

Asofoetida	0.2	0.7	0.0	0.0
cumin seeds	0.4	1.1	0.0	0.1
mustard seeds	0.4	1.8	0.1	0.1
fenugreek seeds	0.4	0.8	0.1	0.0
<b>Total</b>		72.9	1.5	4.5
<b>Milk</b>		107.0	3.7	6.6
<b>Grand total</b>		791.3	19.8	16.1

#### 4.1 Palak Rice + Milk: Primary

Ingredients	Quantity (g)	Energy (Kcal)	Protein (g)	Fat (g)
Rice	100	356.00	7.90	0.50
Spinach	20	4.80	0.42	0.12
Potato	10	6.80	0.16	0.02
Beans	10	4.30	0.29	0.10
soya bean	20	75.80	7.34	3.92
onions	5	2.85	0.09	0.01
tomato	5	1.00	0.05	0.03
Oil	5	45.00	0.00	5.00
Coriander leaves	0.25	0.16	0.02	0.00
curry leaves	0.25	0.33	0.01	0.00
asfoetida	0.1	0.33	0.01	0.00
cumin seeds	0.25	0.76	0.03	0.04
mustard seeds	0.25	1.28	0.05	0.10
fenugreek seeds	0.25	0.59	0.06	0.01
		499.99	16.43	5.94
<b>Milk</b>		107.0	3.7	6.6
<b>Grand Total</b>		606.9	20.13	12.5

#### 4.2 Palak Rice + Milk: Primary Palak Rice + Milk: Secondary

Ingredients	Quantity (g)	Energy (Kcal)	Protein (g)	Fat (g)
Rice	150	534.0	11.9	0.8
Spinach	25	6.0	0.5	0.2
Potato	20	13.6	0.3	0.0
Beans	15	6.5	0.4	0.2
soya bean	30	113.7	11.0	1.6
onions	7.5	4.3	0.1	0.0
tomato	7.5	1.5	0.1	0.0
Oil	7.5	67.5	0.0	7.5
Coriander leaves	0.35	0.2	0.0	0.0
curry leaves	0.35	0.5	0.0	0.0
asofoetida	0.2	0.7	0.0	0.0
cumin seeds	0.35	1.1	0.0	0.1
mustard seeds	0.35	1.8	0.1	0.1
fenugreek seeds	0.35	0.8	0.1	0.0
total		752.0	24.6	10.5
<b>Milk</b>		107.0	3.7	6.6
<b>Grand Total</b>		859	28.3	17.1

#### 5.1 Roti +Dhal+Sabji (Primary)

Ingredients	Quantity (g)	Energy (Kcal)	Protein (g)	Fat (g)
<b>Roti</b>				
Wheat flour	100	320	10.6	1.5
<b>Dhal</b>				
Red gram dhal	20	66.2	4.34	0.32
turmeric	0.2	0.562	0.0154	0.01
cumin seeds	0.2	0.608	0.0278	0.0332
Rcp	0.5	1.185	0.0635	0.032
oil	2.5	22.5	0	2.5
<b>GLV curry</b>				
Spinach/local available Glv	10	2.40	0.21	0.06
Potato	10	6.80	0.16	0.02
Cauliflower	10	2.30	0.22	0.04
Cabbage	10	2.20	0.14	0.01
Onion	5	3.40	0.08	0.01
Tomato	5	1.00	0.05	0.03
Oil	5	45.00	0.00	5.00
Coriander leaves	0.25	0.16	0.02	0.00
Curry leaves	0.25	0.33	0.01	0.00
Asafoetida	0.1	0.33	0.01	0.00
Cumin seeds	0.25	0.76	0.03	0.04
Mustard seeds	0.25	1.28	0.05	0.10
Fenugreek seeds	0.25	0.59	0.06	0.01
<b>Total</b>		477.6	16.1	9.7

## 5.2 Roti +Dhal+Sabji (Secondary)

Ingredients	Quantity (g)	Energy (Kcal)	Protein (g)	Fat (g)
<b>Roti</b>				
Wheat flour	150	480	15.9	2.25
<b>Dhal</b>				
Red gram dhal	30	99.3	6.51	0.48
Turmeric	0.3	0.843	0.0231	0.015
Cumin seeds	0.3	0.912	0.0417	0.0498
Rcp	0.5	1.185	0.0635	0.032
Oil	3.8	34.2	0	3.8
<b>GLV sabji</b>				
Spinach/local available glv	20	4.80	0.42	0.12
Potato	20	13.60	0.32	0.04
Cauliflower	10	2.30	0.22	0.04
Cabbage	10	2.20	0.14	0.01
Onion	8	5.44	0.13	0.02
Tomato	8	1.60	0.07	0.04
Oil	7.5	67.50	0.00	7.50
Coriander leaves	0.35	0.22	0.03	0.00
Curry leaves	0.35	0.46	0.01	0.00
Asafoetida	0.2	0.66	0.01	0.00
Cumin seeds	0.35	1.06	0.05	0.06
Mustard seeds	0.35	1.79	0.07	0.14
Fenugreek seeds	0.35	0.82	0.09	0.02
<b>Total</b>				
		<b>718.9</b>	<b>24.1</b>	<b>14.6</b>

## Annexure-I

## School Details

Sl.	District	Block	School	School Type	Category	Enrolment	Enrolment Having Aadhaar	% having Aadhaar	Ramarks
1	Muzaffarpur	Kanti	UMS Middle School, Ratnpura	Primary +U.Primary	Co-education	380			Aadhar Data not available
2	Muzaffarpur	Kanti	Middle School Sine	Primary +U.Primary	Co-education	560	485	87%	
3	Muzaffarpur	Kanti	UMS Khajuri	Primary +U.Primary	Co-education	303	210	69%	
4	Muzaffarpur	Kanti	UMS Bhuara	Primary +U.Primary	Co-education	423	300	71%	
5	Muzaffarpur	Kanti	MS Birpur	Primary +U.Primary	Co-education	664	664	100%	
6	Muzaffarpur	Kanti	P S Manpura	Primary	Co-education	112	90	80%	
7	Muzaffarpur	Motipur	Adarsh GMS	Primary+U.Primary	Co-education	654	665	102%	
8	Muzaffarpur	Motipur	GPS Baraitha Nariya	Primary	Co-education	172	107	62%	
9	Muzaffarpur	Motipur	GMS Brahampura	Primary+U.Primary	Co-education	1270	821	65%	Pry level under process
10	Muzaffarpur	Motipur	UMS Batraul	Primary+U.Primary	Co-education	346	302	87%	
11	Muzaffarpur	Motipur	GMS Sanhadumbar	Primary+U.Primary	Co-education	474		0%	
12	Muzaffarpur	Motipur	MS Motipur	Primary+U.Primary	Co-education	482	482	100%	
13	Muzaffarpur	Motipur	GMS Motipur (Sanskrit)	Primary+U.Primary	Co-education	597	597	100%	
14	Muzaffarpur	Katra	GMS Khanpur (Urdu)	Primary+U.Primary	Co-education	765	605	79%	
15	Muzaffarpur	Katra	P S Kanpur Urdu	Primary	Co-education	197	125	63%	
16	Muzaffarpur	Katra	GPS Barhad	Primary	Co-education	105	41	39%	
17	Muzaffarpur	Katra	UMS Hathouri	Primary+U.Primary	Co-education	622	622	100%	
18	Muzaffarpur	Katra	GMS Hathouri	Primary	Co-education	520	520	100%	
19	Muzaffarpur	Khudhani	PS Bakarpur	Primary	Co-education	56	44	79%	
20	Muzaffarpur	Khudhani	M S Ladauri	Primary+U.Primary	Co-education	546	400	73%	
21	Muzaffarpur	Khudhani	M S Adarsh Baraiya	Primary+U.Primary	Co-education	288	250	87%	
22	Muzaffarpur	Khudhani	P S Turki Kanya	Primary	Co-education	179	153	85%	

23	Muzaffarpur	Khudhani	PS Manriya	Primary	Co-education	163	120	74%	
24	Gaya	Wazirganj	Adarsh Primary School	Primary	Co-education	222	129	58%	
25	Gaya	Wazirganj	GMS Tarwan	Pry+U.Primary	Co-education	924	739	80%	
26	Gaya	Wazirganj	GMS Kenar Chatt	Pry+U.Primary	Co-education	890		0%	
27	Gaya	Wazirganj	Kanya Primary Kenarchatti	Primary	Co-education	168	120	71%	
28	Gaya	Bodh Gaya	Middle School Striorough Baiju Bhign	Primary	Co-education	280	280	100%	
29	Gaya	Bodh Gaya	GMS Batsarpur	Pry+U.Primary	Co-education	492	150	30%	
30	Gaya	Bodh Gaya	PS Gaur Bigha	Primary	Co-education	116	116	100%	
31	Gaya	Bodh Gaya	GMS Basadhi	Primary	Co-education	390	380	97%	
32	Gaya	Bodh Gaya	Govt. Girls Middle Schools	Pry+U.Primary	Co-education	356	178	50%	
33	Gaya	Paraiya	MS Rajahari	Pry+U.Primary	Co-education	255	200	78%	
34	Gaya	Paraiya	MS Phurhuriya	Pry+U.Primary	Co-education	283	283	100%	
35	Gaya	Paraiya	MS Kasthuia	Pry+U.Primary	Co-education	182	109	60%	
36	Gaya	Paraiya	MS Kapasiya	Pry+U.Primary	Co-education	276	276	100%	
37	Gaya	Paraiya	UMS Mubarakpur	Pry+U.Primary	Co-education	136	93	68%	
38	Gaya	Paraiya	PS Fathapur	Primary	Co-education	128	128	100%	
39	Gaya	Paraiya	MS Kojari	Pry+U.Primary	Co-education	348	320	92%	
40	Gaya	Paraiya	PS Tarma	Primary	Co-education	86	86	100%	
41	Gaya	Belaganj	MS Ore(HT)	Pry+U.Primary	Co-education	287	215	75%	
42	Gaya	Belaganj	Adarsh MS Silonja	Pry+U.Primary	Co-education	409	327	80%	
43	Gaya	Belaganj	PS Panpur	Primary	Co-education	80	68	85%	
44	Gaya	Belaganj	Kanya MS Belaganj	Pry+U.Primary	Girls	476	476	100%	
45	Gaya	Belaganj	PS Rambigha	Primary	Co-education	231	150	65%	
					Total	16893	12426	74%	



## Annexure-II

Coverage of Children during 10 days of JRM Visit															
Sl.	District	Block	School	Enrolment	1st day of Visit	2nd Day	3rd Day	4th Day	5th Day	6th Day	7th Day	8th Day	9th Day	10th Day	Average
1	Muzaffarpur	Kanti	UMS Middle School, Ratnpura	380	114	168	190	206	187	174	181	195	190	182	179
2	Muzaffarpur	Kanti	Middle School Sine	560	230	184	220	318	228	209	242	223	261	311	243
3	Muzaffarpur	Kanti	UMS Khajuri	303	115	127	152	160	213	159	160	148	136	149	152
4	Muzaffarpur	Kanti	UMS Bhuara	423	191	218	178	193	255	269	231	223	207	245	221
5	Muzaffarpur	Kanti	MS Birpur	664	345	345	232	278	393	328	336	336	348	284	323
6	Muzaffarpur	Kanti	P S Manpura	112	78	91	90	80	94	92	88	90	92	91	89
7	Muzaffarpur	Motipur	Adarsh GMS	654	375	355	410	400	470	445	425	400	385	380	405
8	Muzaffarpur	Motipur	GPS Baraitha Nariya	172	117	120	115	119	116	144	134	127	136	115	124
9	Muzaffarpur	Motipur	GMS Brahampura	1270	540	482	519	449	504	499	538	547	643	597	532
10	Muzaffarpur	Motipur	UMS Batraul	346	207	162	178	179	214	240	225	230	202	198	204
11	Muzaffarpur	Motipur	GMS Sanhadumbar	474	207	213	184	245	196	169	150	113	136	122	174
12	Muzaffarpur	Motipur	MS Motipur	482	264	261	260	246	262	273	253	268	286	303	268
13	Muzaffarpur	Motipur	GMS Motipur (Sanskrit)	597	298	322	312	347	399	381	366	384	366	338	351
14	Muzaffarpur	Katra	GMS Khanpur (Urdu)	765	413	399	486	439	403	416	417	421	500	411	431
15	Muzaffarpur	Katra	P S Kanpur Urdu	197	132	102	139	162	143	134	135	139	142	165	139

16	Muzaffarpur	Katra	GPS Barhad	105	43	64	71	68	71	67	67	69	67	64	65
17	Muzaffarpur	Katra	UMS Hathouri	622	263	329	280	272	370	323	310	306	332	310	310
18	Muzaffarpur	Katra	GMS Hathouri	520	235	292	285	305	355	312	336	276	216	262	287
19	Muzaffarpur	Khudhani	PS Bakarpur	56	39	29	42	31	41	43	40	39	37	38	38
20	Muzaffarpur	Khudhani	M S Ladauri	546	230	283	293	305	301	306	284	266	262	266	280
21	Muzaffarpur	Khudhani	M S Adarsh Baraiya	288	130	186	199	155	173	189	186	163	171	174	173
22	Muzaffarpur	Khudhani	P S Turki Kanya	179	135	132	131	145	155	154	142	144	143	145	143
23	Muzaffarpur	Khudhani	PS Manriya	163	76	77	90	81	88	84	95	83	91	96	86
24	Gaya	Wazirganj	Adarsh Primary School	222	99	88	89	93	91	89	92	82	96	93	91
25	Gaya	Wazirganj	GMS Tarwan	924	565	557	567	590	552	560	504	587	553	508	554
26	Gaya	Wazirganj	GMS Kenar Chatt	890	453	413	434	438	424	315	430	414	414	373	411
27	Gaya	Wazirganj	Kanya Primary Kenarchatti	168	100	126	130	129	123	126	129	132	130	129	125
28	Gaya	Bodh Gaya	Middle School Striorough Baiju Bhign	280	80	87	70	84	70	73	74	87	79	76	78
29	Gaya	Bodh Gaya	GMS Batsarpur	492	177	175	166	136	132	139	200	199	182	183	169
30	Gaya	Bodh Gaya	PS Gaur Bigha	116	81	89	75	70	80	78	89	95	88	85	83
31	Gaya	Bodh Gaya	GMS Basadhi	390	353	385	376	374	365	358	383	395	392	367	375
32	Gaya	Bodh Gaya	Govt. Girls Middle Schools	356	171	206	193	126	203	202	174	197	201	198	187
33	Gaya	Paraiya	MS Rajahari	255	118	123	150	155	145	158	150	158	155	153	147
34	Gaya	Paraiya	MS Phurhuriya	283	156	127	133	120	132	150	134	132	130	132	135
35	Gaya	Paraiya	MS Kasthuia	182	117	114	115	66	121	101	123	106	99	117	108

36	Gaya	Paraiya	MS Kapasiya	276	138	141	127	136	134	117	135	135	156	139	136
37	Gaya	Paraiya	UMS Mubarakpur	136	63	64	73	66	64	64	71	66	63	65	66
38	Gaya	Paraiya	PS Fathapur	128	95	94	98	101	95	98	102	89	102	98	97
39	Gaya	Paraiya	MS Kojari	348	150	161	127	152	147	142	118	142	120	146	141
40	Gaya	Paraiya	PS Tarma	86	70	72	70	62	68	70	75	70	73	66	70
41	Gaya	Belangan	MS Ore(HT)	287	158	140	148	128	149	156	168	156	136	134	147
42	Gaya	Belangan	Adarsh MS Silonja	409	237	237	214	198	179	80	227	212	213	205	200
43	Gaya	Belangan	PS Panpur	80	61	60	53	51	53	52	52	53	52	52	54
44	Gaya	Belangan	Kanya MS Belangan	476	257	265	264	280	282	284	246	268	280	284	271
45	Gaya	Belangan	PS Rambigha	231	142	152	129	156	141	139	144	147	138	139	143
			Total	16893	8618	8817	8857	8894	9381	8961	9161	9112	9201	8988	8999
					51%	52%	52%	53%	56%	53%	54%	54%	54%	53%	53%

## Publicity and awareness of the MDMS

Sl.	District	Block	School	Enrolment	Display Menu	Menu decided by	Display of MDM Logo
1	Muzaffarpur	Kanti	UMS Middle School, Ratnpura	380	Yes	State	No
2	Muzaffarpur	Kanti	Middle School Sine	560	Yes	State	No
3	Muzaffarpur	Kanti	UMS Khajuri	303	Yes	State	No
4	Muzaffarpur	Kanti	UMS Bhuara	423	Yes	State	No
5	Muzaffarpur	Kanti	MS Birpur	664	Yes	State	No
6	Muzaffarpur	Kanti	P S Manpura	112	Yes	State	No
7	Muzaffarpur	Motipur	Adarsh GMS	654	Yes	State	No
8	Muzaffarpur	Motipur	GPS Baraitha Nariya	172	Yes	State	No
9	Muzaffarpur	Motipur	GMS Brahampura	1270	Yes	State	No
10	Muzaffarpur	Motipur	UMS Batraul	346	Yes	State	No
11	Muzaffarpur	Motipur	GMS Sanhadumbar	474	Yes	State	No
12	Muzaffarpur	Motipur	MS Motipur	482	Yes	State	No
13	Muzaffarpur	Motipur	GMS Motipur (Sanskrit)	597	Yes	State	No
14	Muzaffarpur	Katra	GMS Khanpur (Urdu)	765	Yes	State	No
15	Muzaffarpur	Katra	P S Kanpur Urdu	197	Yes	State	Yes
16	Muzaffarpur	Katra	GPS Barhad	105	Yes	State	No
17	Muzaffarpur	Katra	UMS Hathouri	622	Yes	State	No
18	Muzaffarpur	Katra	GMS Hathouri	520	Yes	State	No
19	Muzaffarpur	Khudhani	PS Bakarpur	56	Yes	State	No
20	Muzaffarpur	Khudhani	M S Ladauri	546	Yes	State	No
21	Muzaffarpur	Khudhani	M S Adarsh Baraiya	288	Yes	State	No
22	Muzaffarpur	Khudhani	P S Turki Kanya	179	Yes	State	No
23	Muzaffarpur	Khudhani	PS Manriya	163	Yes	State	No
24	Gaya	Wazirganj	Adarsh Primary School	222	Yes	State	No
25	Gaya	Wazirganj	GMS Tarwan	924	Yes	State	No

26	Gaya	Wazirganj	GMS Kenar Chatt	890	Yes	State	No
27	Gaya	Wazirganj	Kanya Primary Kenarchatti	168	Yes	State	Yes
28	Gaya		Middle School Striorough Baiju Bhign	280	No	State	No
29	Gaya	Bodh Gaya	GMS Batsarpur	492	Yes	State	No
30	Gaya	Bodh Gaya	PS Gaur Bigha	116	Yes	State	No
31	Gaya	Bodh Gaya	GMS Basadhi	390	Yes	State	No
32	Gaya	Bodh Gaya	Govt. Girls Middle Schools	356	No	No	No
33	Gaya	Paraiya	MS Rajahari	255	Yes	State	No
34	Gaya	Paraiya	MS Phurhuriya	283	Yes	State	No
35	Gaya	Paraiya	MS Kasthuia	182	Yes	State	No
36	Gaya	Paraiya	MS Kapasiya	276	Yes	State	No
37	Gaya	Paraiya	UMS Mubarakpur	136	Yes	State	No
38	Gaya	Paraiya	PS Fathapur	128	Yes	State	No
39	Gaya	Paraiya	MS Kojari	348	Yes	State	No
40	Gaya	Paraiya	PS Tarma	86	Yes	State	No
41	Gaya	Belagang	MS Ore(HT)	287	Yes	State	No
42	Gaya	Belagang	Adarsh MS Silonja	409	Yes	State	No
43	Gaya	Belagang	PS Panpur	80	Yes	State	No
44	Gaya	Belagang	Kanya MS Belagang	476	Yes	State	No
45	Gaya	Belagang	PS Rambigha	231	Yes	State	No

Infrastructure available at schools level									
Sl.	District	Block	School	Enrolment	Availability			Mode of Cooking	Remarks
					Kitchen	Kitchen devices	Eating plates		
1	Muzaffarpur	Kanti	UMS Middle School, Ratnpura	380	Yes (Small)	Yes	Yes	LPG	
2	Muzaffarpur	Kanti	Middle School Sine	560	Yes (Small)	Yes	Yes	Firewood (LPG Stolen)	Meal Cooking in old excess classroom
3	Muzaffarpur	Kanti	UMS Khajuri	303	Yes	Yes	Yes	LPG	
4	Muzaffarpur	Kanti	UMS Bhuara	423	Yes	Yes	Yes	LPG	
5	Muzaffarpur	Kanti	MS Birpur	664	Yes (not in use due to small dust particles falling from roof)	Yes	Yes	LPG	Meal Cooking in old excess classroom
6	Muzaffarpur	Kanti	P S Manpura	112	Yes	Yes	Yes	LPG	
7	Muzaffarpur	Motipur	Adarsh GMS	654	Yes	Yes	Yes	LPG	
8	Muzaffarpur	Motipur	GPS Baraitha Nariya	172	No	Yes	Yes	LPG	Cooking in classroom, No paper for school land
9	Muzaffarpur	Motipur	GMS Brahampura	1270	Yes	Yes	Yes	LPG	Cooking in old classroom due to small in size
10	Muzaffarpur	Motipur	UMS Batraul	346	Yes	Yes	Yes	LPG	
11	Muzaffarpur	Motipur	GMS Sanhadumbar	474	Yes	Yes	Yes	LPG	Cooking in old classroom due to small in size
12	Muzaffarpur	Motipur	MS Motipur	482	Yes	Yes	Yes	LPG	Cooking in old classroom due to small in size
13	Muzaffarpur	Motipur	GMS Motipur (Sanskrit)	597	Yes	Yes	Yes	LPG	
14	Muzaffarpur	Katra	GMS Khanpur (Urdu)	765	Yes	Yes	Yes	LPG	

15	Muzaffarpur	Katra	P S Kanpur Urdu	197	Yes	Yes	Yes	LPG	
16	Muzaffarpur	Katra	GPS Barhad	105	Yes	Yes	Yes	Firewood	
17	Muzaffarpur	Katra	UMS Hathouri	622	Yes	Yes	Yes	LPG	
18	Muzaffarpur	Katra	GMS Hathouri	520	Yes	Yes	Yes	LPG	
19	Muzaffarpur	Khudhani	PS Bakarpur	56	Yes	Yes	Yes	LPG	
20	Muzaffarpur	Khudhani	M S Ladauri	546	Yes	Yes	Yes	LPG	
21	Muzaffarpur	Khudhani	M S Adarsh Baraiya	288	Yes	Yes	Yes	LPG	
22	Muzaffarpur	Khudhani	P S Turki Kanya	179	Yes	Yes	Yes	LPG	
23	Muzaffarpur	Khudhani	PS Manriya	163	Yes	Yes	Yes	LPG	
24	Gaya	Wazirganj	Adarsh Primary School	222	Yes	Yes	Yes	LPG	
25	Gaya	Wazirganj	GMS Tarwan	924	Yes	Yes	Yes	LPG	
26	Gaya	Wazirganj	GMS Kenar Chatt	890	Yes	Yes	Yes (insufficient)	LPG	Eating plates (insufficient)
27	Gaya	Wazirganj	Kanya Primary Kenarchatti	168	Yes	Yes	Yes	LPG	
28	Gaya	Bodh Gaya	Middle School Striorough Baiju Bhign	280	No	Yes	Yes (insufficient)		200 eating plates (insufficient)
29	Gaya	Bodh Gaya	GMS Batsarpur	492	No	Yes	No	Firewood	
30	Gaya	Bodh Gaya	PS Gaur Bigha	116	Yes	Yes	Yes	LPG	
31	Gaya	Bodh Gaya	GMS Basadhi	390	Yes	Yes	Yes (insufficient)		150 eating plates (insufficient)
32	Gaya	Bodh Gaya	Govt. Girls Middle Schools	356	Serving by NGO				
33	Gaya	Paraiya	MS Rajahari	255	Yes	Yes	Yes	LPG	

34	Gaya	Paraiya	MS Phurhuriya	283	Yes	Yes	Yes	LPG	
35	Gaya	Paraiya	MS Kasthuia	182	Yes	Yes	Yes	Firewood	No gas connection due to the more security deposit(Rs.7000/-) asking by the agency
36	Gaya	Paraiya	MS Kapasiya	276	Yes	Yes	Yes (insufficient)	Firewood	No use of gas due to long distance (21 kms)to deliver cylinder by agency. Less eating plates only 44 available at school.
37	Gaya	Paraiya	UMS Mubarakpur	136	Yes	Yes	Yes	LPG/Firewood	Gas connection available not in use due to non supply of cylinder
38	Gaya	Paraiya	PS Fathapur	128	Yes	Yes	Yes (insufficient)	Firewood	No gas connection due to the more security deposit(Rs.7000/-) asking by the agency
39	Gaya	Paraiya	MS Kojari	348	Yes	Yes	Yes	Firewood	-do-
40	Gaya	Paraiya	PS Tarma	86	Yes	Yes	Yes	Firewood	-do-
41	Gaya	Belangang	MS Ore(HT)	287	Yes	Yes	Yes	Firewood	-do-
42	Gaya	Belangang	Adarsh MS Silonja	409	Yes	Yes	Yes	LPG/Firewood	-do-
43	Gaya	Belangang	PS Panpur	80	No (No land available)	Yes	Yes	LPG	Cooking in class room
44	Gaya	Belangang	Kanya MS Belangang	476	Yes	Yes	Yes	Firewood	No gas connection due to the more security deposit(Rs.7000/-) asking by the agency
45	Gaya	Belangang	PS Rambigha	231	Yes	Yes	Yes	LPG	



Cook-cum-helpers details										
Sl.	District	Block	School	Enrolment	Cook-cum-helpers			Payment of Honorarium	Mode of payment	Honorarium received
					Male	Female	Total	Regular		
1	Muzaffarpur	Kanti	UMS Middle School, Ratnpura	380	0	4	4	Yes	E-transfer	Upto Nov,2018
2	Muzaffarpur	Kanti	Middle School Sine	560	0	6	6	Yes	E-transfer	Upto Nov,2018
3	Muzaffarpur	Kanti	UMS Khajuri	303	1	1	2	Yes	E-transfer	Upto Nov,2018
4	Muzaffarpur	Kanti	UMS Bhudara	423	0	6	6	Yes	E-transfer	Upto Nov,2018
5	Muzaffarpur	Kanti	MS Birpur	664	1	5	6	Yes	E-transfer	Upto Nov,2018
6	Muzaffarpur	Kanti	P S Manpura	112	0	3	3	Yes	E-transfer	Upto Nov,2018
7	Muzaffarpur	Motipur	Adarsh GMS	654	0	5	5	Yes	E-transfer	Upto Sep, 2018
8	Muzaffarpur	Motipur	GPS Baraitha Nariya	172	0	3	3	Yes	E-transfer	
9	Muzaffarpur	Motipur	GMS Brahampura	1270	0	8	8	Yes	E-transfer	Oct,2018
10	Muzaffarpur	Motipur	UMS Batraul	346	1	3	4	Yes	E-transfer	Jul, 2018
11	Muzaffarpur	Motipur	GMS Sanhadumbar	474	0	4	4	Yes	E-transfer	
12	Muzaffarpur	Motipur	MS Motipur	482	0	5	5	Yes	E-transfer	Aug,18
13	Muzaffarpur	Motipur	GMS Motipur (Sanskrit)	597	0	5	5	Yes	E-transfer	
14	Muzaffarpur	Katra	GMS Khanpur (Urdu)	765	1	5	6	Yes	E-transfer	Upto Aug,2018
15	Muzaffarpur	Katra	P S Kanpur Urdu	197	0	3	3	Yes	E-transfer	Upto Oct, 2018
16	Muzaffarpur	Katra	GPS Barhad	105	0	2	2	Yes	E-transfer	Upto Aug,2018
17	Muzaffarpur	Katra	UMS Hathouri	622	0	6	6	Yes	E-transfer	Upto Aug,2018
18	Muzaffarpur	Katra	GMS Hathouri	520	0	5	5	Yes	E-transfer	Upto Aug,2018
19	Muzaffarpur	Khudhani	PS Bakarpur	56	0	2	2	Yes	E-transfer	
20	Muzaffarpur	Khudhani	M S Ladauri	546	0	6	6	Yes	E-transfer	May,2018

21	Muzaffarpur	Khudhani	M S Adarsh Baraiya	288	0	5	5	Yes	E-transfer	
22	Muzaffarpur	Khudhani	P S Turki Kanya	179	0	3	3	Yes	E-transfer	
23	Muzaffarpur	Khudhani	PS Manriya	163	0	3	3	Yes	E-transfer	Oct,2018
24	Gaya	Wazirganj	Adarsh Primary School	222	0	3	3	Yes	E-transfer	
25	Gaya	Wazirganj	GMS Tarwan	924	0	7	7	Yes	E-transfer	2-3 Months Delay
26	Gaya	Wazirganj	GMS Kenar Chatt	890	1	6	7	Yes	E-transfer	
27	Gaya	Wazirganj	Kanya Primary Kenarchatti	168	0	3	3	Yes	E-transfer	
28	Gaya	Bodh Gaya	Middle School Striorough Baiju Bhign	280	0	4	4	Yes	E-transfer	Nov,2018
29	Gaya	Bodh Gaya	GMS Batsarpur	492	0	3	3	Yes	E-transfer	
30	Gaya	Bodh Gaya	PS Gaur Bigha	116	0	2	2	Yes	E-transfer	
31	Gaya	Bodh Gaya	GMS Basadhi	390	0	5	5	Yes	E-transfer	Nov,2018
32	Gaya	Bodh Gaya	Govt. Girls Middle Schools	356	0	4	4	Yes	E-transfer	
33	Gaya	Paraiya	MS Rajahari	255	0	3	3	Yes	E-transfer	Oct,2018
34	Gaya	Paraiya	MS Phurhuriya	283	0	4	4	Yes	E-transfer	Jul, 2018
35	Gaya	Paraiya	MS Kasthuia	182	0	3	3	Yes	E-transfer	Oct,2018
36	Gaya	Paraiya	MS Kapasiya	276	0	6	6	Yes	E-transfer	
37	Gaya	Paraiya	UMS Mubarakpur	136	0	2	2	Yes	E-transfer	
38	Gaya	Paraiya	PS Fathapur	128	0	3	3	Yes	E-transfer	Jul, 2018
39	Gaya	Paraiya	MS Kojari	348	0	4	4	Yes	E-transfer	
40	Gaya	Paraiya	PS Tarma	86	0	2	2	Yes	E-transfer	Sep,2018
41	Gaya	Belagang	MS Ore(HT)	287	0	3	3	Yes	E-transfer	Sep,2018
42	Gaya	Belagang	Adarsh MS Silonja	409	0	6	6	Yes	E-transfer	Sep,2018
43	Gaya	Belagang	PS Panpur	80	0	2	2	Yes	E-transfer	
44	Gaya	Belagang	Kanya MS Belagang	476	0	5	5	Yes	E-transfer	Sep,2018
45	Gaya	Belagang	PS Rambigha	231	0	4	4	Yes	E-transfer	Sep,2018
					5	182	187			

Inspection by higher authorities							
Sl.	District	Block	School	Enrolment	Inspection	Inspected by	
					Carried out	CRC/BRC	District officials
1	Muzaffarpur	Kanti	UMS Middle School, Ratnpura	380	Yes	CRC/BRC	Occasionally
2	Muzaffarpur	Kanti	Middle School Sine	560	Yes	CRC/BRC	Occasionally
3	Muzaffarpur	Kanti	UMS Khajuri	303	Yes	CRC/BRC	Occasionally
4	Muzaffarpur	Kanti	UMS Bhuara	423	Yes	CRC/BRC	Occasionally
5	Muzaffarpur	Kanti	MS Birpur	664	Yes	CRC/BRC	Occasionally
6	Muzaffarpur	Kanti	P S Manpura	112	Yes	CRC/BRC	Occasionally
7	Muzaffarpur	Motipur	Adarsh GMS	654	Yes	CRC/BRC	No
8	Muzaffarpur	Motipur	GPS Baraitha Nariya	172	Yes	CRC/BRC	Occasionally
9	Muzaffarpur	Motipur	GMS Brahampura	1270	Yes	CRC/BRC	Occasionally
10	Muzaffarpur	Motipur	UMS Batraul	346	Yes	CRC/BRC	
11	Muzaffarpur	Motipur	GMS Sanhadumbar	474	Yes	CRC/BRC	
12	Muzaffarpur	Motipur	MS Motipur	482	Yes	CRC/BRC	
13	Muzaffarpur	Motipur	GMS Motipur (Sanskrit)	597	Yes	CRC/BRC	
14	Muzaffarpur	Katra	GMS Khanpur (Urdu)	765	Yes	CRC/BRC	Occasionally
15	Muzaffarpur	Katra	P S Kanpur Urdu	197	No	No	No
16	Muzaffarpur	Katra	GPS Barhad	105	Yes	CRC/BRC	No
17	Muzaffarpur	Katra	UMS Hathouri	622	No	No	No
18	Muzaffarpur	Katra	GMS Hathouri	520	Yes	CRC/BRC	No
19	Muzaffarpur	Khudhani	PS Bakarpur	56	Yes	CRC/BRC	No
20	Muzaffarpur	Khudhani	M S Ladauri	546	No	CRC/BRC	No
21	Muzaffarpur	Khudhani	M S Adarsh Baraiya	288	Yes	CRC/BRC	No
22	Muzaffarpur	Khudhani	P S Turki Kanya	179	Yes	CRC/BRC	No
23	Muzaffarpur	Khudhani	PS Manriya	163	Yes	CRC/BRC	No
24	Gaya	Wazirganj	Adarsh Primary School	222	Yes	CRC/BRC	Occasionally
25	Gaya	Wazirganj	GMS Tarwan	924	Yes	CRC/BRC	Occasionally
26	Gaya	Wazirganj	GMS Kenar Chatt	890	Yes	CRC/BRC	Occasionally
27	Gaya	Wazirganj	Kanya Primary Kenarchatti	168	Yes	CRC/BRC	Occasionally
28	Gaya	Bodh Gaya	Middle School Striorough Baiju Bhign	280	Yes	CRC/BRC	Occasionally

29	Gaya	Bodh Gaya	GMS Batsarpur	492	Yes	CRC/BRC	Occasionally
30	Gaya	Bodh Gaya	PS Gaur Bigha	116	Yes	CRC/BRC	Half yearly
31	Gaya	Bodh Gaya	GMS Basadhi	390	Yes	CRC/BRC	No
32	Gaya	Bodh Gaya	Govt. Girls Middle Schools	356	Yes	CRC/BRC	Occasionally
33	Gaya	Paraiya	MS Rajahari	255	Yes	CRC/BRC	Occasionally
34	Gaya	Paraiya	MS Phurhuriya	283	Yes	CRC/BRC	Occasionally
35	Gaya	Paraiya	MS Kasthuia	182	Yes	CRC/BRC	Occasionally
36	Gaya	Paraiya	MS Kapasiya	276	Yes	CRC/BRC	Once in six month
37	Gaya	Paraiya	UMS Mubarakpur	136	Yes	CRC/BRC	No
38	Gaya	Paraiya	PS Fathapur	128	Yes	CRC/BRC	Occasionally
39	Gaya	Paraiya	MS Kojari	348	Yes	CRC/BRC	No
40	Gaya	Paraiya	PS Tarma	86	Yes	CRC/BRC	No
41	Gaya	Belagang	MS Ore(HT)	287	Yes	CRC/BRC	No
42	Gaya	Belagang	Adarsh MS Silonja	409	Yes	CRC/BRC	No
43	Gaya	Belagang	PS Panpur	80	Yes	CRC/BRC	Occasionally
44	Gaya	Belagang	Kanya MS Belagang	476	Yes	CRC/BRC	Occasionally
45	Gaya	Belagang	PS Rambigha	231	Yes	CRC/BRC	No

## Anexure-VII

School Health Programme								
Sl.	District	Block	School	Enrolment	Children Health Card available at schools	Health Check-up	Doctor Visit	Distribution of (IFA,Dworming, Vitamin -A)
1	Muzaffarpur	Kanti	UMS Middle School, Ratnpura	380	Yes (kept with children's home)	Yes	Jun, 18	Yes
2	Muzaffarpur	Kanti	Middle School Sine	560	Yes (kept with children's home)	Yes	May,18	Yes
3	Muzaffarpur	Kanti	UMS Khajuri	303	Yes (kept with children's home)	Yes	May,18	Yes
4	Muzaffarpur	Kanti	UMS Bhuara	423	Yes (kept with children's home)	Yes	No	Yes
5	Muzaffarpur	Kanti	MS Birpur	664	Yes (kept with children's home)	Yes	No	Yes
6	Muzaffarpur	Kanti	P S Manpura	112	Yes (kept with children's home)	Yes	Yes	Yes
7	Muzaffarpur	Motipur	Adarsh GMS	654	Yes	Yes	2016	Yes
8	Muzaffarpur	Motipur	GPS Baraitha Nariya	172	Yes	Yes	2017	Yes
9	Muzaffarpur	Motipur	GMS Brahampura	1270	Yes	Yes	2016	Yes

10	Muzaffarpur	Motipur	UMS Batraul	346	Yes	Yes	2017	Yes
11	Muzaffarpur	Motipur	GMS Sanhadumbar	474	No	No	2016	Yes
12	Muzaffarpur	Motipur	MS Motipur	482	Yes	Yes	2017	Yes
13	Muzaffarpur	Motipur	GMS Motipur (Sanskrit)	597	No	Yes	Sep,2018	Yes
14	Muzaffarpur	Katra	GMS Khanpur (Urdu)	765	Yes (250 children have health card)	Yes	No	No
15	Muzaffarpur	Katra	P S Kanpur Urdu	197	Yes	Yes	Nov,18	Yes
16	Muzaffarpur	Katra	GPS Barhad	105	No	No	No	No
17	Muzaffarpur	Katra	UMS Hathouri	622	Yes	Yes	Oct,2018	Yes
18	Muzaffarpur	Katra	GMS Hathouri	520	Yes	Yes	No	Yes
19	Muzaffarpur	Khudhani	PS Bakarpur	56	Yes	Yes	Sep,2018	Yes
20	Muzaffarpur	Khudhani	M S Ladauri	546	No	No		No
21	Muzaffarpur	Khudhani	M S Adarsh Baraiya	288	Yes	Yes	Sep,2018	Yes
22	Muzaffarpur	Khudhani	P S Turki Kanya	179	Yes	Yes	Jan,2018	Yes
23	Muzaffarpur	Khudhani	PS Manriya	163	No	No		Yes
24	Gaya	Wazirganj	Adarsh Primary School	222	No	No	No	Yes
25	Gaya	Wazirganj	GMS Tarwan	924	Yes	Yes	Yes	Yes
26	Gaya	Wazirganj	GMS Kenar Chatt	890	Yes	Yes	2017	Yes
27	Gaya	Wazirganj	Kanya Primary Kenarchatti	168	Yes	Yes	May,18	Yes
28	Gaya	Bodh Gaya	Middle School Striorough Baiju Bhign	280	No	No	No	Yes
29	Gaya	Bodh Gaya	GMS Batsarpur	492	No	No	No	Yes
30	Gaya	Bodh Gaya	PS Gaur Bigha	116	Yes	Yes	May,18	Yes
31	Gaya	Bodh Gaya	GMS Basadhi	390	No	No	Aug,2012	Yes
32	Gaya	Bodh Gaya	Govt. Girls Middle Schools	356	No	No	No	No
33	Gaya	Paraiya	MS Rajahari	255	Yes	Yes	Jul,18	Yes
34	Gaya	Paraiya	MS Phurhuriya	283	Yes	Yes	Sep,2018	Yes
35	Gaya	Paraiya	MS Kasthuia	182	No	No	No	Yes
36	Gaya	Paraiya	MS Kapasiya	276	Yes	Yes	Apr,2018	Yes
37	Gaya	Paraiya	UMS Mubarakpur	136	Yes	Yes	Jan,2018	Yes

38	Gaya	Paraiya	PS Fathapur	128	Yes	Yes	Sep,2018	Yes
39	Gaya	Paraiya	MS Kojari	348	Yes	Yes	Jul,17	Yes
40	Gaya	Paraiya	PS Tarma	86	Yes	Yes	Sep,17	Yes
41	Gaya	Belagang	MS Ore(HT)	287	Yes	Yes	2017	Yes
42	Gaya	Belagang	Adarsh MS Silonja	409	Yes	Yes	Oct, 2017	Yes
43	Gaya	Belagang	PS Panpur	80	Yes	Yes	Jul,2017	Yes
44	Gaya	Belagang	Kanya MS Belagang	476	Yes	Yes	Jul,2017	Yes
45	Gaya	Belagang	PS Rambigha	231	Yes	Yes	Jul,2017	Yes

Contingency plan at school level							
Sl.	District	Block	School	Enrolment	Availability of contingency plan	Tasting Register	Before Serving meal tasted by
1	Muzaffarpur	Kanti	UMS Middle School, Ratnpura	380	No	Yes	Teacher/Parent
2	Muzaffarpur	Kanti	Middle School Sine	560	No	Yes	Teacher/Parent
3	Muzaffarpur	Kanti	UMS Khajuri	303	No	Yes	Teacher/Parent
4	Muzaffarpur	Kanti	UMS Bhuara	423	No	Yes	Teacher/Parent
5	Muzaffarpur	Kanti	MS Birpur	664	No	Yes	Teacher/Parent
6	Muzaffarpur	Kanti	P S Manpura	112	No	Yes	Teacher/Parent
7	Muzaffarpur	Motipur	Adarsh GMS	654	Yes	Yes	Teacher/Parent
8	Muzaffarpur	Motipur	GPS Baraitha Nariya	172	Yes	Yes	Teacher/Parent/SMC
9	Muzaffarpur	Motipur	GMS Brahampura	1270	No	Yes	Teacher/Parent/SMC
10	Muzaffarpur	Motipur	UMS Batraul	346	No	Yes	Teacher/Parent/SMC
11	Muzaffarpur	Motipur	GMS Sanhadumbar	474	Yes	Yes	Teacher/Parent/SMC
12	Muzaffarpur	Motipur	MS Motipur	482	No	Yes	Teacher/Parent/SMC
13	Muzaffarpur	Motipur	GMS Motipur (Sanskrit)	597	No	Yes	Teacher/Parent/SMC
14	Muzaffarpur	Katra	GMS Khanpur (Urdu)	765	No	Yes	No
15	Muzaffarpur	Katra	P S Kanpur Urdu	197	No	No	No
16	Muzaffarpur	Katra	GPS Barhad	105	No	Register available upto 3/7/14	No
17	Muzaffarpur	Katra	UMS Hathouri	622	No	Not intimate properly	
18	Muzaffarpur	Katra	GMS Hathouri	520	Yes	Yes	HM/Cooks
19	Muzaffarpur	Khudhani	PS Bakarpur	56	No	Yes	HM/Cooks
20	Muzaffarpur	Khudhani	M S Ladauri	546	No	Yes	HM/Cooks



21	Muzaffarpur	Khudhani	M S Adarsh Baraiya	288	Yes	Yes	HM/Cooks
22	Muzaffarpur	Khudhani	P S Turki Kanya	179	No	Yes	HM/Cooks
23	Muzaffarpur	Khudhani	PS Manriya	163	Yes	Yes	HM/Cooks
24	Gaya	Wazirganj	Adarsh Primary School	222	No	Yes	HM/Cooks
25	Gaya	Wazirganj	GMS Tarwan	924	No	Yes	HM/Cooks
26	Gaya	Wazirganj	GMS Kenar Chatt	890	No	Yes	HM/Cooks
27	Gaya	Wazirganj	Kanya Primary Kenarchatti	168	Yes	Yes	HM/Cooks
28	Gaya	Bodh Gaya	Middle School Striorough Baiju Bhign	280	No	Yes	HM/Cooks
29	Gaya	Bodh Gaya	GMS Batsarpur	492	No	Yes	HM/Cooks
30	Gaya	Bodh Gaya	PS Gaur Bigha	116	Yes	Yes	HM/Cooks/Parents
31	Gaya	Bodh Gaya	GMS Basadhi	390	Yes	Yes	HM/Cooks/Parents/SMC
32	Gaya	Bodh Gaya	Govt. Girls Middle Schools	356	No	No	
33	Gaya	Paraiya	MS Rajahari	255	No	Yes	HM/Cooks/Parents
34	Gaya	Paraiya	MS Phurhuriya	283	No	Yes	HM/Cooks/Parents/SMC
35	Gaya	Paraiya	MS Kasthuia	182	Yes	Yes	HM/Cooks/Parents
36	Gaya	Paraiya	MS Kapasiya	276	Yes	Yes	HM/Cooks/Parents
37	Gaya	Paraiya	UMS Mubarakpur	136	No	Yes	HM/Cooks/Parents
38	Gaya	Paraiya	PS Fathapur	128	No	Yes	HM/Cooks/Parents/SMC
39	Gaya	Paraiya	MS Kojari	348	No	Yes	HM/Cooks/Parents
40	Gaya	Paraiya	PS Tarma	86	No	Yes	HM/Cooks/Parents
41	Gaya	Belangan	MS Ore(HT)	287	Yes	Yes	HM/Cooks/Parents
42	Gaya	Belangan	Adarsh MS Silonja	409	No	Yes	HM/Cooks/Parents
43	Gaya	Belangan	PS Panpur	80	No	Yes	HM/Cooks/Parents
44	Gaya	Belangan	Kanya MS Belangan	476	No	Yes	HM/Cooks/Parents

Muzaffarpur : Coverage of Children during 10 days of JRM Visit															
Sl.	District	Block	School	Enrolment	1st day of Visit	2nd Day	3rd Day	4th Day	5th Day	6th Day	7th Day	8th Day	9th Day	10th Day	Average
1	Muzaffarpur	Kanti	UMS Middle School, Ratnpura	380	114	168	190	206	187	174	181	195	190	182	179
2	Muzaffarpur	Kanti	Middle School Sine	560	230	184	220	318	228	209	242	223	261	311	243
3	Muzaffarpur	Kanti	UMS Khajuri	303	115	127	152	160	213	159	160	148	136	149	152
4	Muzaffarpur	Kanti	UMS Bhuaara	423	191	218	178	193	255	269	231	223	207	245	221
5	Muzaffarpur	Kanti	MS Birpur	664	345	345	232	278	393	328	336	336	348	284	323
6	Muzaffarpur	Kanti	P S Manpura	112	78	91	90	80	94	92	88	90	92	91	89
7	Muzaffarpur	Motipur	Adarsh GMS	654	375	355	410	400	470	445	425	400	385	380	405
8	Muzaffarpur	Motipur	GPS Baraitha Nariya	172	117	120	115	119	116	144	134	127	136	115	124
9	Muzaffarpur	Motipur	GMS Brahampura	1270	540	482	519	449	504	499	538	547	643	597	532
10	Muzaffarpur	Motipur	UMS Batraul	346	207	162	178	179	214	240	225	230	202	198	204
11	Muzaffarpur	Motipur	GMS Sanhadumbar	474	207	213	184	245	196	169	150	113	136	122	174
12	Muzaffarpur	Motipur	MS Motipur	482	264	261	260	246	262	273	253	268	286	303	268
13	Muzaffarpur	Motipur	GMS Motipur (Sanskrit)	597	298	322	312	347	399	381	366	384	366	338	351
14	Muzaffarpur	Katra	GMS Khanpur (Urdu)	765	413	399	486	439	403	416	417	421	500	411	431
15	Muzaffarpur	Katra	P S Kanpur Urdu	197	132	102	139	162	143	134	135	139	142	165	139
16	Muzaffarpur	Katra	GPS Barhad	105	43	64	71	68	71	67	67	69	67	64	65
17	Muzaffarpur	Katra	UMS Hathouri	622	263	329	280	272	370	323	310	306	332	310	310

18	Muzaffarpur	Katra	GMS Hathouri	520	235	292	285	305	355	312	336	276	216	262	287
19	Muzaffarpur	Khudhani	PS Bakarpur	56	39	29	42	31	41	43	40	39	37	38	38
20	Muzaffarpur	Khudhani	M S Ladauri	546	230	283	293	305	301	306	284	266	262	266	280
21	Muzaffarpur	Khudhani	M S Adarsh Baraiya	288	130	186	199	155	173	189	186	163	171	174	173
22	Muzaffarpur	Khudhani	P S Turki Kanya	179	135	132	131	145	155	154	142	144	143	145	143
23	Muzaffarpur	Khudhani	PS Manriya	163	76	77	90	81	88	84	95	83	91	96	86
			Total	9878	4777	4941	5056	5183	5631	5410	5341	5190	5349	5246	5212
			Muzaffarpur	48%	50%	51%	52%	57%	55%	54%	53%	54%	53%	53%	53%

Gaya : Coverage of Children during 10 days of JRM Visit															
Sl.	District	Block	School	Enrolment	1st day of Visit	2nd Day	3rd Day	4th Day	5th Day	6th Day	7th Day	8th Day	9th Day	10th Day	Average
1	Gaya	Wazirganj	Adarsh Primary School	222	99	88	89	93	91	89	92	82	96	93	91
2	Gaya	Wazirganj	GMS Tarwan	924	565	557	567	590	552	560	504	587	553	508	554
3	Gaya	Wazirganj	GMS Kenar Chatt	890	453	413	434	438	424	315	430	414	414	373	411
4	Gaya	Wazirganj	Kanya Primary Kenarchatti	168	100	126	130	129	123	126	129	132	130	129	125
5	Gaya	Bodh Gaya	Middle School Striorough Baiju Bhign	280	80	87	70	84	70	73	74	87	79	76	78
6	Gaya	Bodh Gaya	GMS Batsarapur	492	177	175	166	136	132	139	200	199	182	183	169
7	Gaya	Bodh Gaya	PS Gaur Bigha	116	81	89	75	70	80	78	89	95	88	85	83
8	Gaya	Bodh Gaya	GMS Basadhi	490	353	385	376	374	365	358	383	395	392	367	375
9	Gaya	Bodh Gaya	Govt. Girls Middle Schools	354	171	206	193	126	203	202	174	197	201	198	187
10	Gaya	Paraiya	MS Rajahari	255	118	123	150	155	145	158	150	158	155	153	147
11	Gaya	Paraiya	MS Phurhuriya	283	156	127	133	120	132	150	134	132	130	132	135
12	Gaya	Paraiya	MS Kasthuia	182	117	114	115	66	121	101	123	106	99	117	108
13	Gaya	Paraiya	MS Kapasiya	276	138	141	127	136	134	117	135	135	156	139	136
14	Gaya	Paraiya	UMS Mubarakpur	136	63	64	73	66	64	64	71	66	63	65	66

15	Gaya	Paraiya	PS Fathapur	128	95	94	98	101	95	98	102	89	102	98	97
16	Gaya	Paraiya	MS Kojari	348	150	161	127	152	147	142	118	142	120	146	141
17	Gaya	Paraiya	PS Tarma	86	70	72	70	62	68	70	75	70	73	66	70
18	Gaya	Belagang	MS Ore(HT)	287	158	140	148	128	149	156	168	156	136	134	147
19	Gaya	Belagang	Adarsh MS Silonja	409	237	237	214	198	179	80	227	212	213	205	200
20	Gaya	Belagang	PS Panpur	80	61	60	53	51	53	52	52	53	52	52	54
21	Gaya	Belagang	Kanya MS Belagang	476	257	265	264	280	282	284	246	268	280	284	271
22	Gaya	Belagang	PS Rambigha	231	142	152	129	156	141	139	144	147	138	139	143
			Total	7113	3841	3876	3801	3711	3750	3551	3820	3922	3852	3742	3787
			Gaya		54%	54%	53%	52%	53%	50%	54%	55%	54%	53%	53%

Some glimpse of field visit

Schools



Cook-cum-helpers







Serving hot cooked meals





Kitchen-cum-stores



Storage of food grains





