

A close-up photograph of a young girl with a joyful expression, smiling broadly. She is holding a blue spoon and eating from a bright green bowl. She is wearing a light-colored, patterned top. The background is blurred, suggesting an outdoor setting.

Mary's Meals MALAWI IMPACT ASSESSMENT: YEAR ONE

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mary's
meals

a simple solution
to world hunger



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- **Mary's Meals Malawi:**
Becky Evans, Malawi Programme Officer
Eleanor Mwalwanda, Consultant translator
Gem Clarke, Consultant
Innocencia Majawa, Monitoring, Evaluation and Learning Field Officer
Judith Kandunde, Monitoring, Evaluation and Learning Field Officer
Lloyd Pearson Banda, Monitoring, Evaluation and Learning Field Officer
Mercy Gulule, Consultant translator
Moses Chimbetete, Consultant translator
Saul Yapuwa, Monitoring, Evaluation and Learning Field Officer
Triphonia Phiri, Monitoring, Evaluation and Learning Field Officer
Ulemu Mangisa, Consultant translator
- **Mary's Meals International:**
Chris MacLulich, Head of Programmes: Eastern Africa
Chris Martin, Programmes Policy and Impact Officer
David Paterson, Volunteer
Gillian McMahon, Head of Programmes: Policy, Research and Funding
Kirsty Norris-Mbedzi, Malawi Programme Development Officer
- **INTRAC:**
Anne Garbutt, Research Fellow
Dan James, Senior Research Consultant

The research was designed and managed by Gillian McMahon, Head of Programmes: Policy, Research and Funding, Mary's Meals International, who also prepared this report.

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Magnus MacFarlane-Barrow, Mary's Meals founder and Chief Executive



Foreword

Our mission began in response to the words of a 15-year-old child. Edward, who was the eldest of six siblings and whose mother was dying from AIDS, stated that his ambition in life was to have enough food to eat and to go to school one day. The simplicity of those words inspired Mary's Meals to begin serving meals to 200 children at school in Malawi. Now, 14 years since those words were spoken, Mary's Meals is feeding 1,101,206 children every day in their place of education, across 12 countries.

Mary's Meals was inspired by the simple words of a child and is delivering a simple solution. What could be more simple than providing a child with a meal every day in their place of education; a meal to address immediate hunger and an education to provide a ladder out of poverty. The reference to simplicity is not intended to diminish or under-estimate the scale and complexity of the causes and effects of poverty. But keeping it simple is what dares us to believe that we can actually make a positive change in the lives of people who are affected by the complex and often devastating effects of poverty.

We have always believed our work has an impact. We regularly see an immediate impact through the smiling faces of the children receiving Mary's Meals, the singing of the volunteers as they cook, and the appreciation of the teachers and parents who welcome us into their schools and communities. We've also been able to record, through our routine monitoring, marked increases in enrolment and attendance in schools where Mary's Meals are being served. These are both important measures of how we are doing, but we've felt for some time that the real impact of our work extends beyond these anecdotal and restricted measures and that the impact might actually be much greater and longer lasting than those measures would suggest. It is for that reason we developed a new Monitoring and Evaluation Strategy in 2014, and embarked upon this five year Impact Assessment in Malawi. And the first year results of this independently verified analysis are impressive.

The methodology adopted to implement the Impact Assessment may be complex, as is some of the analysis contained in this report, but the impact on the child remains quite simple. In addition to more children choosing to enrol in school and attend class more often, Mary's Meals is reducing classroom hunger, reducing absences, reducing drop-outs from school, increasing concentration and increasing the attention span of the children in the classrooms.

Perhaps even more wonderful are the results based on children's happiness. Before the programme began in their school, we asked children if they were happy, and just over half said yes. When we asked the same question seven months later – after they'd been receiving Mary's Meals – nine out of 10 children said they were happy. That's a lot of extra smiles.

None of this work would be possible without the dedication and commitment of Mary's Meals staff, volunteers and supporters around the world. In Malawi alone, we have 65,000 volunteers, who cook the meals in over 600 schools every day – and throughout the world there are thousands of people who choose to support Mary's Meals because they believe that no child in this world of plenty should go to school hungry. The positive impacts measured and communicated in this report, are the result of the endless 'little acts of love' being performed every day by people all over the world. We are so grateful to everyone who is part of this mission!

This report shows so clearly how Mary's Meals can make a real change. Children are coming to school in their droves to receive their nutritious daily meal, concentrate on their studies and grow up to become men and women who can lift themselves and their communities out of poverty. This makes our dream that we will one day reach the 59 million children who are out of school around the world today, and the millions more who suffer from chronic hunger, burn even more brightly.

Magnus MacFarlane-Barrow
Mary's Meals founder and Chief Executive



Introductory comments

Anne Garbutt
INTRAC Research Fellow

Feeding children so they are better able to get an education is as unquestionable as the need for good parenting. What is more difficult to define is how we can quantify the benefits and eventually the impact of feeding children. INTRAC (International NGO Training and Research Centre) has been working with Mary's Meals to validate the process of measuring impact since April 2014 and this first year report of a five year impact assessment provides robust evidence of impact brought about by the Mary's Meals school feeding programme in Malawi. Throughout the report there is evidence of change that has been statistically verified and triangulated by different stakeholders and data collection methodologies. The research team used a quasi-experimental methodology collecting comparable data from schools with a new feeding programme, schools in the existing feeding programme and a control group of schools. I was able to visit all the schools included in the study area to validate the data collection methodology and I am happy to endorse the research methodology and findings.

The findings throughout this report will show the reader how successful Mary's Meals has been in reducing hunger at school. At baseline, both programme and control group children indicated high levels of hunger during the school day and yet, by the end of year one, the number of children being fed who reported hunger during the school day had reduced significantly. What surprised me was the number of children who reported hunger in the control group had risen – indicating the feeding programme was protecting children from an increasing shortage of food available in Malawi. There has been an indication in this first year of the study of the impact of children not feeling hungry at school on increased enrolment, improved attendance and increased concentration in class. The report also indicates the introduction of feeding in school has reduced the number of children who drop out of school. Finally – and maybe, for me as a parent, an important finding – is the increase in the number of children reporting they are happy at school and they and their teachers recognised a positive change in their lives since receiving a school meal each day.

Whilst I was in country observing the researchers it was also clear to me that there were areas of change that were beyond the research objectives. For example, whilst sitting down with a group of volunteers who were all mothers with children in the school, it became clear that they had begun to change their thinking about why children needed to be fed in school. They discussed the wider issue of the programme being more than Mary's Meals providing a daily meal; rather it was about the social impact on them and their families and how they saw their role in ensuring children stayed in school. Individual stories of change also indicated how the programme is changing attitudes. I met a young orphaned girl called Lydia (pictured opposite) who lives with her grandparents and her brother: Lydia's story highlighted for me how the programme has influenced other members of the children's families; it was her grandfather who heard about Mary's Meals and encouraged Lydia to take the opportunity to go to school and work hard in class. Lydia's attendance has improved. She told us: "The food helps me to work hard so that I will be able to help my family in the future; we used to be hungry and leave early; this is now our opportunity." Lydia is planning to be an accountant one day and take care of her family.

This study is already providing evidence of positive impact. I am looking forward to following the team over the coming four years when they assess if the changes are consistent over the long term.



“The food helps me to work hard so that I will be able to help my family in the future; we used to be hungry and leave early; this is now our opportunity.”

Lydia

Executive summary

The Mary's Meals vision is that every child receives one daily meal in their place of education and that all those who have more than they need, share with those who lack even the most basic things.

Background to the Impact Assessment

Mary's Meals provides one nutritious meal every day in a place of education for vulnerable children in some of the world's poorest communities. It is currently feeding over one million children every day they attend school in 12 countries around the world. Since its inception in 2002, Mary's Meals has gained considerable experience and expertise in the effective delivery of community-based school feeding programmes and, over this time, has continuously developed and refined its approach in order to reach as many children as possible, in the most efficient and sustainable way.

By providing a daily meal at school, Mary's Meals meets the immediate needs of hungry children and encourages them to go to school to gain an education that can, in the future, be their ladder out of poverty. Mary's Meals aims to make lasting positive changes in children's lives, believing that providing meals at school increases access to education and improves engagement and progression within education by reducing classroom hunger. Its experience is that child health and well-being and community support for education also improves and by purchasing local food wherever possible, Mary's Meals aims to contribute to the national economy and improve local livelihoods. Its long-term goal is the support and replication of effective school feeding programmes by national governments.

Today 59 million children¹ around the world are missing school because of poverty. Instead of sitting in a classroom, children are working in fields, begging on street corners, or scavenging among the garbage just to survive. Millions more, 66 million² in fact, attend school so hungry that they are not able to concentrate and learn.

Today, hunger remains the number one risk to health worldwide.³ It kills more people each year than AIDS, malaria and tuberculosis combined. Chronic hunger is almost always caused by poverty. The main reason why people go hungry and are unable to adequately feed their children is because they cannot afford to buy the food that may be available. However, it is also true to say the reverse; that poverty is caused by hunger. Malnourished children cannot develop physically and mentally the way they should. They lack energy, they are susceptible to disease and they often miss out on their education because of their chronic hunger.

There is a strong link between hunger and poor school enrolment and attainment. School feeding programmes are widely recognised as "a catalyst for development"⁴ and independent studies show that they significantly improve the growth and cognitive performance of disadvantaged children in a range of contexts.⁵ Mary's Meals' school feeding programme addresses childhood hunger and enables impoverished children to go to school. Mary's Meals has a proven track record of providing an efficient and effective programme and is a leading agent for change.



Mary's Meals is currently conducting a five-year quasi-experimental impact assessment research project in Malawi to examine and evidence the impact that Mary's Meals' school feeding programme is having on the lives of vulnerable children and their communities. This work is also being rolled out within Mary's Meals' larger country programmes – Malawi, Liberia, Kenya, Haiti and Zambia over time – and is designed, project managed and delivered by Mary's Meals. The project is being independently assessed, evaluated and verified throughout by the International NGO Training and Research Centre (INTRAC).

This report summarises the results obtained from the first year of the impact assessment which was conducted during the academic year 2014/2015 in Malawi, south-eastern Africa, where Mary's Meals has its largest programme. The purpose of the assessment is to examine the impact that Mary's Meals' school feeding programme has on six of its key programme aims, comparing results across two sample groups and one control group:

- **Programme sample group: Children, teachers and volunteers in ten schools where Mary's Meals' programme was introduced at the start of the year.**
- **Control group: Children, teachers and volunteers in ten schools which are not currently supported by Mary's Meals' programme.**
- **Existing sample group: Teachers in schools which have been part of the Mary's Meals programme for a minimum of three years.**

The control group was selected from a group of schools which were planned to be added in to Mary's Meals programme as part of a future programme expansion. Research was conducted with both sample groups at the start and end of the academic year, with additional mid-term research conducted with the programme group and existing group. The total number of surveys conducted within the first year was 3,099, and the total number of people who participated in focus groups was 1,669. Over 150,000 individual question responses were collated, demonstrating change across a broad range of indicators.

1 UNESCO Reaching Out of School Children. <http://www.uis.unesco.org/Education/Pages/reaching-oosc.aspx>

2 World Food Programme Hunger Statistics. <http://www.wfp.org/hunger/stats>

3 World Food Programme, Hunger. <https://www.wfp.org/hunger>

4 World Food Programme, 2013 State of School Feeding. <http://documents.wfp.org/stellent/groups/public/documents/communications/wfp257481.pdf>

5 Kristjansson E, Robinson V, Pettigrew M, Macdonald B, Krasevec J, Janzen L, et al. School feeding for improving the physical and psychological health of disadvantaged elementary school children. Cochrane Database Syst Rev 2007



Results of the Impact Assessment: Year one

The results demonstrate that the introduction of the feeding programme had an impact in a range of areas within the first year:

- **Child hunger at school decreased**
- **The physical and emotional effects of hunger decreased**
- **Enrolment increased**
- **Numbers of children out of school decreased**
- **Attendance improved**
- **General absence and absence due to hunger decreased**
- **General drop out and drop out due to hunger decreased**
- **Children leaving school early during the school day decreased**
- **Concentration and attention at school improved**
- **Happiness at school increased**
- **Anxiety due to hunger decreased**

The research results demonstrate that Mary's Meals' school feeding programme is making a significant impact to decrease levels of child hunger at school and to increase access, participation and progression within primary education. Programme delivery rates were high and many results were directly linked by children, teachers and volunteers to the introduction of the Mary's Meals programme. The study showed consistently positive improvements within Programme schools between baseline and control for multiple indicators, while the trend was for indicators for Control schools to worsen during the period. The trend was also that indicators improved on an upwards curve during the course of the year.

Statistically significant changes were observed between the programme and control groups for a sample of eight key indicators, supporting the conclusion that these changes can be attributed to the Mary's Meals programme intervention. Results in existing schools, where Mary's Meals had been feeding for a minimum of three years were also strong with teachers consistently citing that changes experienced had begun when Mary's Meals started feeding and continued throughout the period.

The key findings across Mary's Meals' six key aims are summarised as follows:

Mary's Meals aim	Impact
Reduced hunger for children living in poverty who attend school	Reduced hunger at school and resulting physical effects reported by children, teachers and volunteers.
Increased access to primary education for children living in poverty	Increased enrolment. Decreased numbers of children out of school in local community. Initial increase in class sizes.
Improved engagement in primary education of children living in poverty	Improved attendance. Decreased absence due to hunger. Decreased incidence of children leaving school early during the school day – incidences of this linked to hunger disappeared completely. Increased concentration at school, attention levels in class, participation in lessons, ability to learn and attainment as reported by children and teachers
Increased progression within primary education by children living in poverty	Decreased drop out and drop out due to hunger. Increased progression and completion reported by teachers.
Improved health and wellbeing of children living in poverty	Increased feelings of happiness at school and decreased levels of anxiety due to hunger. Reduced incidences of children missing school to work.
Increased support for education within vulnerable communities	Increased level of parental involvement in school activities, leading to increased community support for education

Results around levels of play in relation to feeding were less conclusive. There was also an indication that while fewer children in Programme schools were having breakfast before school, more children were eating a meal in the evening after school. However, there was an increase in these figures for the Control group, suggesting that increasing food insecurity may have affected this. The majority of Programme teachers said that class sizes had increased following the introduction of feeding, an area of ongoing discussion between Mary's Meals and local and national authorities in Malawi.

At both impact stages, children in programme schools consistently said that the biggest difference which having Mary's Meals had made to their classroom was 'children in my class pay more attention to the teacher', the second biggest difference cited was 'children in my class are happier'. At both impact stages, teachers in Programme schools also gave these responses and teachers in schools where Mary's Meals has been feeding for at least three years chose these two options equally, suggesting that these impacts are consistent and long-term.

Ultimately the report demonstrates that as well as attracting children in to the classroom and improving enrolment and attendance, school feeding has the power to reduce classroom hunger, improve concentration and participation in class, as well as affecting children's overall happiness and hunger-related anxiety, acting as a key investment in a country's future and a cost-effective route out of poverty for the long-term.



CONTENTS

Contents

15	Introduction
16	About Mary's Meals
19	Mary's Meals' model and programme in Malawi
22	Methodology
33	Results
35	Impact: Reduced hunger for children living in poverty who attend school
42	Impact: Increased access to primary education for children living in poverty
46	Impact: Improved engagement in primary education of children living in poverty
56	Impact: Increased progression within primary education by children living in poverty
60	Impact: Improved health and well-being of children living in poverty
70	Impact: Increased support for education within vulnerable communities
73	Recommendations and learning
75	Conclusion

INTRODUCTION



“For me, Mary’s Meals is a movement of people walking together with the same very simple goal: that every hungry child receives a daily meal at school.”

Magnus MacFarlane-Barrow

Mary’s Meals founder and Chief Executive

Introduction

Mary’s Meals has been providing meals at school to vulnerable children in Malawi since 2002 and has developed strong experience and a wealth of institutional knowledge in delivering effective and efficient school feeding programmes on a large scale. Its monitoring systems, working closely with communities, allowed it to quantify the impressive numerous outputs of its programmes – such as enrolment and attendance – demonstrating improvements in these key educational indicators, however Mary’s Meals’ experience was that the true impact of its programmes were much broader and deeper.

In 2014, Mary’s Meals adopted a new Monitoring, Evaluation and Learning strategy. This strategy examines the impact of its global programmes from a new perspective, developed from years of listening to feedback from the more than one million children it supports every day and their teachers and communities. The strategy also benefits from the knowledge of Mary’s Meals staff who are continuously assessing the performance and impact of its programmes through close community engagement and collaboration with multiple stakeholders, including children, communities, schools, partner organisations, education authorities and governments.

This report provides a summary of the first full year of Mary’s Meals’ work in assessing its impact in Malawi, where it is feeding more than 800,000 school children every day. It includes a summary of Mary’s Meals and its programme in Malawi, detailing the methodology adopted and results from the first academic year of a longitudinal quasi-experimental impact assessment, which compared a pre and post feeding Programme group and a non-feeding Control group.



About Mary's Meals

Mary's Meals is a global movement which works to fulfil the vision that every child receives one daily meal in their place of education and that all those who have more than they need, share with those who lack even the most basic things. Working together with those who share our vision, we believe there is no good reason why this cannot be realised.

Mary's Meals was founded by Magnus MacFarlane-Barrow as Scottish International Relief in 1992, when he began delivering aid to Bosnia-Herzegovina. In 2002 Magnus met a lady called Emma in Malawi. Emma was dying of AIDS and lay on the floor of her hut surrounded by her six young children. Magnus asked her son, Edward, what he hoped for in life. He replied simply: "I want to have enough food to eat and to go to school one day". Edward's words helped inspire the founding of Mary's Meals, and the charity began by feeding 200 children at one school in Malawi.

Fourteen years after serving its first meals, the Mary's Meals movement has expanded significantly. It is now feeding more than one million children every day they attend school in 12 countries around the world. The great majority of the children it supports are in Africa, and the charity also works in Asia, Latin America and the Caribbean.

Mary's Meals believes that every child has a right to an education. Education allows children to develop key life skills⁶ and knowledge, and improves their opportunity to gain employment and provide for themselves and their families in future.⁷ Yet, sadly, millions of children are prevented from gaining an education because of hunger.⁸ Many children have to work; at home, in fields or businesses or have no choice but to search or beg for food. Many more struggle to concentrate and learn when they are at school, because of the debilitating effects of hunger.⁹

6 2013. OECD. What are the social benefits of education? January 2013.

7 Global Partnership for Education: <http://www.globalpartnership.org/who-we-are/the-value-of-education/> 2009. School Feeding Policy. Informal Consultation. World Food Programme. 2013. WFP. State of School Feeding Worldwide.

8 "66 million primary school-age children attend classes hungry across the developing world, with 23 million in Africa alone." <https://www.wfp.org/hunger/stats>

9 2006. World Food Programme. World Hunger Series 2006: Hunger and Learning.

Mary's Meals' programmes are focused on providing a daily meal at school to help remove the barriers which prevent children accessing school and engaging in their education, working directly with children but also at community and national levels.

The key changes our school feeding programmes seek to achieve are:

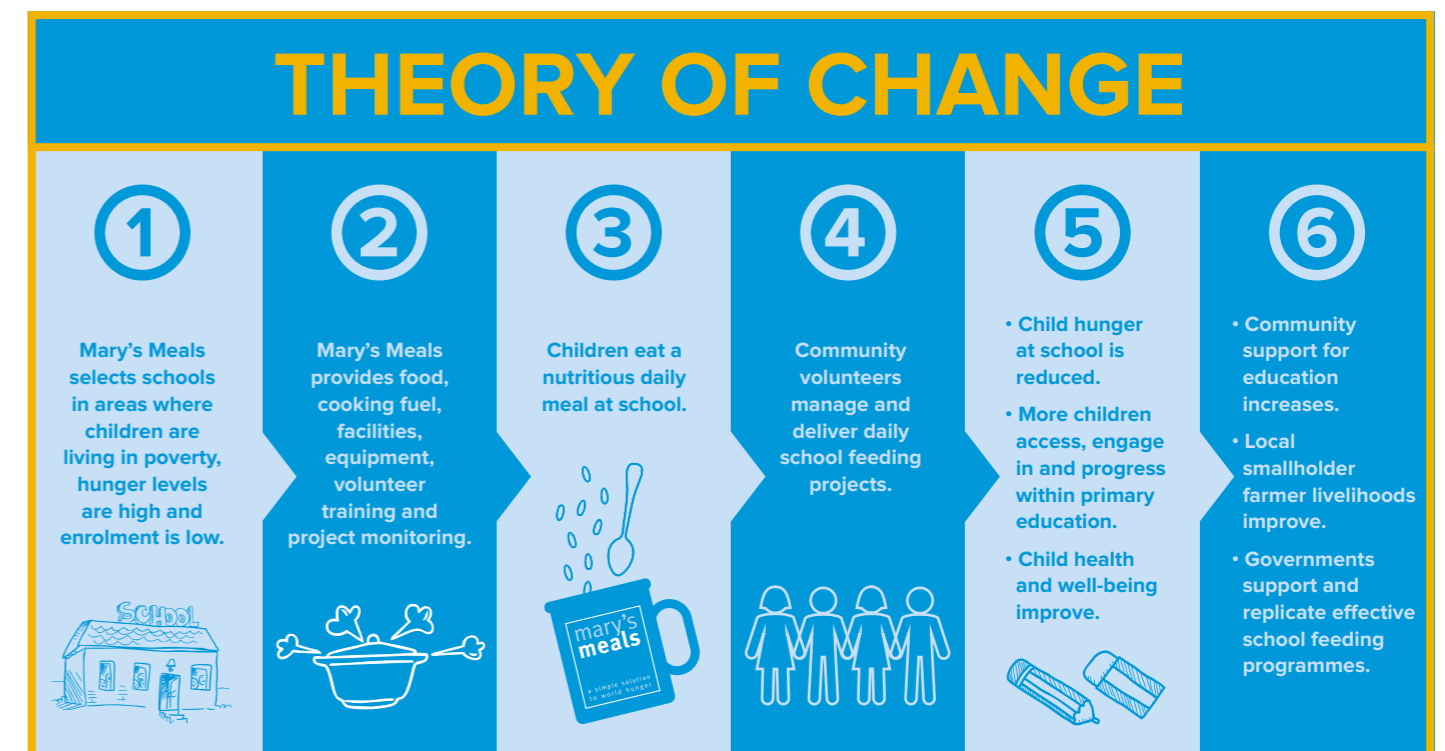
1. **Reduced hunger for children living in poverty who attend school**
2. **Increased access to primary education for children living in poverty**
3. **Improved engagement in primary education of children living in poverty**
4. **Increased progression within primary education by children living in poverty**
5. **Improved health and well-being of children living in poverty**

Our strong emphasis on community ownership encourages local support for education and by purchasing local food wherever possible, we aim to contribute to the national economy and improve local livelihoods. By providing a lasting physical infrastructure, establishing and training strong school feeding committees which own and manage each project and working closely with national governments on school feeding design and policy, we are working to ensure that our projects are sustainable for the long-term. At a secondary level, we therefore aim for our programmes to impact on:

6. **Increased support for education within vulnerable communities**
7. **Improved livelihoods for disadvantaged smallholder farmers**
8. **Support and replication of effective school feeding programmes by Government**

The impact assessment was designed to focus on the first six of these eight key changes – working directly with children, schools and their communities to assess the direct impact of Mary's Meals' programmes.

Our theory of change summarises how Mary's Meals' school feeding programmes – delivered through our field offices and partner staff, plus thousands of volunteers – work to bring about these eight changes in the lives of children and their communities.





Mary's Meals' model and programme in Malawi

Malawi is one of the poorest countries in the world and has huge developmental challenges. Approximately 67% of the population live in multidimensional poverty¹⁰ and the economy in Malawi is unstable. Hunger caused by poverty and chronic food insecurity across the country seriously affects the health of children. The shocking extent of this was revealed recently in a publication by the African Union,¹¹ which stated that during a five-year period, 23% of all child deaths in Malawi were directly associated with under-nutrition. The health of 60% of the working age population in the country is also affected by growth retardation (stunting) in childhood, demonstrating the ongoing impact of hunger on the country's growth and development.

Mary's Meals' programme in Malawi has grown steadily since its inception and is now feeding a total of 806,735 children at 635 primary schools every school day, representing over 28% of all primary school aged children in the country.¹² Mary's Meals is also feeding 7,265 children in 45 under-six centres in the southern region. Mary's Meals reaches children in 20 of Malawi's districts, building strong and lasting relationships with individual schools as well as zonal and district level local authorities. The Malawi programme is Mary's Meals' first and largest school feeding programme and follows the Mary's Meals Model of school feeding as outlined below:

- All of our projects provide one nutritious daily meal to every child in a place of education. This approach promotes the inclusion of vulnerable children and helps foster the spirit of community within each school. Working with volunteers from each community, Mary's Meals Malawi provides a meal of fortified Corn Soya Blend; a porridge-like food locally known as likuni phala, which is provided for every child each school day during morning break. Mary's Meals coordinates all food and utensil procurement, transportation and delivery to schools and works with the community to build a permanent kitchen and storage in each school.
- Our programmes target the poorest and most vulnerable children. Mary's Meals field staff conduct ongoing research and regularly meet with national and local government, education authorities and other implementing organisations to assess where need is greatest taking into account factors including high levels of food insecurity, poverty, child malnutrition as well as low enrolment and attendance rates and to coordinate our approach.
- The school and local community are equal partners with Mary's Meals in delivering our programmes and our programmes are completely dependent on volunteers. Once the food is delivered to the schools, the school and volunteers are responsible for organising the project, preparing the food and serving it to the children. We engage with the community, train the volunteers before the project starts and provide ongoing monitoring and support to ensure that the programme is running well. Mobilising volunteers in this way allows us to keep costs low and reinforces community ownership of the project. In Malawi alone, the programme is supported by over 65,000 volunteers. Mary's Meals Malawi school feeding officers also make bi-weekly school visits and play a key role in monitoring enrolment, attendance rates and consumption rates as well as providing ongoing training and support to volunteers, the school administration and community.

¹⁰ United Nations Development Programme profile for Malawi <http://hdr.undp.org/en/countries/profiles/MWI>

¹¹ The Cost of Hunger in Malawi, The African Union. <https://www.wfp.org/content/cost-hunger-malawi>

¹² Mary's Meals Enrolment November 2015 and UNESCO population of the official age for primary education both sexes (number) 2013. UNESCO – <http://stats.uis.unesco.org/unesco/TableViewer/tableView.aspx?ReportId=173>

- We are committed to working closely with national governments and ensuring that our school feeding programmes are aligned with government priorities. Almost every high-income and middle-income country in the world, from Brazil to Scotland, implements its own school feeding programme, however in all of the countries in which Mary's Meals works, many children live in extreme poverty, experiencing hunger every day, and although school feeding is frequently featured in national government policy, the national government does not currently have the resources to implement its own school meals programme to reach all vulnerable children. Mary's Meals therefore provides a daily meal at school to meet this need, delivering our programmes in order to support each country in the transition to national government implementation. We believe in supporting governments to do this as long as necessary, recognising the state as the best and most appropriate institution to deliver school feeding programmes in the long term. As such, we engage with national governments on policy, sharing knowledge and learning and delivering Mary's Meals programmes as a demonstration of best practice in school feeding through our principles of community ownership, consistent and reliable delivery and efficient low-cost implementation. Mary's Meals Malawi is a key implementer of the government of Malawi's Universal School Meals Programme; it has a long term memorandum of understanding with the government and is a core member of the government's task force on school feeding.
- With this in mind, Mary's Meals is willing to make a long-term commitment where appropriate, meeting vulnerable children's immediate needs while working towards handover to national governments in future. Mary's Meals has been working in some schools in Malawi for over a decade and has been privileged to witness a generation of children who have completed their entire primary education with Mary's Meals, allowing there to be a consistent and long-term impact of school feeding on their lives.

Our approach:

- Wherever possible, the food served in our programmes is procured locally. This means that we buy from local suppliers, who buy from thousands of local small-holder farmers, thereby providing support to the farmers and their families. All of the primary ingredients of the Corn Soya Blend provided in Malawi are grown locally (excluding the vitamin and mineral mix which is not available for purchase in Malawi). This local procurement promotes local and national economic growth, providing an assured market for agricultural production.
- We strive to maintain low costs, ensuring that funds can be used to maximum effect, to reach as many children as possible. At least 93% of donations go on charitable work and we are very careful to keep our running costs as low as we can. This low cost approach is made possible by an established, efficient delivery model in Malawi relying on the mobilisation and active voluntary participation of parents, teachers and community leaders who work in partnership with Mary's Meals and the government to deliver the meal in each school.
- We focus on developing strong organisational capacity in the countries we work in, recognising the importance of utilising local knowledge and expertise. We therefore recruit, develop and train national staff, helping to maximise the lasting local impact of our programmes. Mary's Meals Malawi's office is based in the southern region and has over 80 members of national staff who are essential to the efficient delivery of the programme. These staff provide training to thousands of local volunteers in food preparation, hygiene and health and safety every year, strengthening communities and helping to encourage the development of key planning and organisation skills.

- We pride ourselves on the consistency of our programmes. Our strong logistics mean that our programmes are almost always delivered as planned, so that the schools are never without a food supply, which helps to strengthen communities' trust in Mary's Meals and foster ongoing support. Mary's Meals Malawi consistently maintains an annual feeding rate of over 90%, illustrating the efficiency and strength of its logistics systems and community partnerships.
- We continuously adapt our programme design to suit local needs and context and pride ourselves in adopting innovative new approaches wherever possible. Our experience is that the strong community relationship and resulting local support for education created by our programmes, provides a strong platform for additional projects to build on, multiplying the impact of the school feeding programme. Mary's Meals Malawi works in partnership with a range of different organisations who are able to build on our existing relationships with schools and benefit from strong school community relationships which have been established.
- We believe in the importance of minimising the environmental impact of our projects and piloting new innovations in techniques and resources on an ongoing basis. Mary's Meals Malawi is currently piloting the use of fuel efficient briquettes and woodlots across large samples of schools.

At the heart of Mary's Meals, we believe in the innate goodness of people. Most of the volunteers providing meals at schools in Malawi are dedicated parents, grandparents, older siblings, aunts and uncles, who will always believe in the importance of their children not being hungry at school. We also receive great support from people across their local community who want to support children's education in their area because they believe in this cause. Walking in solidarity with them is a movement of supporters and volunteers around the world, who are also someone's child, parent, grandparent, sibling, aunt or uncle, continuing to support and fundraise for Mary's Meals because they also understand and believe in the simple importance of school feeding.



Methodology

The first academic year of this five-year quasi-experimental impact assessment took place in Malawi between September 2014 and June 2015 (academic year 2014/15). The purpose of the longitudinal assessment is to examine the impact that Mary's Meals' school feeding programme has on the lives of vulnerable children and their communities, enabling Mary's Meals to evaluate the impact, effectiveness and efficiency of its programmes and to learn and adapt accordingly.

Hypothesis design

The focus of the research is on assessing the impact of Mary's Meals' programmes on the first six of Mary's Meals' eight key changes (detailed on page 17). Mary's Meals has long-term experience in monitoring school feeding programmes, witnessing their impact on children and the wider community, and in working in the Malawian context.

There are also multiple studies which have evaluated the impact of school feeding programmes, documenting both the changes which can be brought about by school feeding and the challenges in evaluating this, particularly within a sub-Saharan African context. With most indicators, eliminating a range of additional causal factors can be challenging. Buttenheim et al. write that: "Previous empirical work has found mixed evidence for the impact of school feeding... [However] results are most compelling for school enrolment and attendance, particularly where initial rates of participation are low."¹³

Several studies demonstrate statistically significant increases in enrolment following the introduction of feeding,¹⁴ however studies assessing educational attainment have proved more difficult. While a range of studies have monitored exam pass rates and progression, as well as conducting specific testing on short-term memory, attention span and numerical and logical reasoning, there are issues around attainment outcomes relating to the range of other causal factors affecting attainment. Exam results can be subject to corruption, for example, and attainment can be affected by varied teaching quality, materials and resources, class size and childhood background, such as access to pre-school education. In addition to this, many rural primary schools in Malawi only cover Standards 1 to 5 while exams are held in Standard 8.

Outcomes relating to improved nutritional status and long-term health can also be challenging to monitor, as studies which measure height and weight for age, can be complicated by pre-existing levels of stunting as well as the varied levels of food consumed outside of the one meal provided at school. Adelman et al. write that: "To understand the ultimate impact of the program on nutritional status, it is necessary to consider effects on anthropometry or micronutrient status in blood or urine concentrations."¹⁵

The six outcomes and methods for assessing them within this study were therefore specifically selected as areas which Mary's Meals' experience suggested are most directly impacted by the introduction of its programmes, asking questions with the key participants in the programme; children, teachers and the school community. In both areas discussed above (attainment and nutrition) and throughout the study, Mary's Meals has chosen to take a distinct approach, focusing on hunger, participation and attainment as reported by children, teachers and volunteers. Additional topics such as leaving early during the school day, happiness and anxiety due to hunger were also included in the research, based on Mary's Meals' in-depth experience of the changes reported by children and communities.

¹³ Buttenheim, Alderman and Friedman. Impact Evaluation of School Feeding Programs in Lao PDR. The World Bank. Development Research Group. 2011.

¹⁴ Adelman, Gilligan and Lehrer. How effective are Food for Education programs? A Critical Assessment of the Evidence from Developing Countries. Food Policy Review. 2008.

¹⁵ Adelman, Gilligan and Lehrer. How effective are Food for Education programs? A Critical Assessment of the Evidence from Developing Countries. Food Policy Review. 2008.

Further hypotheses were that the biggest change for children would be experienced within the first three to four months of the programme, before children grew used to having meals at school; and that teachers in schools where Mary's Meals had been feeding for more than three years would report less of an impact than teachers newly experiencing children receiving meals in their schools.

Research design

The Impact Assessment was designed to compare several indicators relating to the introduction of Mary's Meals' school feeding programme between two sample groups and a control group. These are:

1. **Programme group: Schools which were not receiving Mary's Meals prior to feeding beginning in October 2014.**
2. **Control group: Schools which are not part of the Mary's Meals programme and were not due to begin receiving Mary's Meals until May 2016.**
3. **Existing group: Schools which are part of the Mary's Meals programme and have been receiving feeding for a minimum of three years (since September 2011 or earlier).**

A control group was used to gather data that can provide a comparison to demonstrate the change brought about by the introduction of the feeding programme against any natural changes which would have occurred over the period. Mary's Meals chose to begin feeding children within control group schools in line with planned future expansions, approximately 18 months after the Programme group began to receive meals at school. It was felt that this was within the ethical limitations of the study; as the use of a control group for the full length of the study would not be in accordance with Mary's Meals' mission, vision, values and principles of child protection. The Existing group complements the analysis by providing further evidence on the longer-term changes and impact which teachers attribute to the school feeding programme.

The assessment was designed, managed and delivered by staff within Mary's Meals International (based in Glasgow) and Mary's Meals Malawi (based in Blantyre) with additional consultants used to increase capacity when necessary. Data analysis, management and reporting was also undertaken by Mary's Meals staff. The assessment design, methodology and implementation was, and continues to be, subject to robust on-going external review by INTRAC,¹⁶ who were selected through a tendering process. The outputs of the INTRAC consultancy were to review and advise on assessment methodology, research methods and plans as well as to review impact assessment reports via frequent meetings and field visits.

Anne Garbutt, INTRAC Fellow, met with senior Mary's Meals programmes staff in Glasgow during 2014 and 2015 and visited the Mary's Meals Malawi programme in February 2015, producing a report on this visit. The report stated: "The overall conclusion of the INTRAC consultant visit to observe Mary's Meals impact assessment data collection process is very positive. The methodology for selecting schools, the participant sampling processes employed and the interview techniques are suitably robust and reflect the reality on the ground. Clearly the overall standard of enumerators for Mary's Meals is high. INTRAC is happy to endorse the data collection processes as observed in Malawi."

INTRAC have also reviewed and validated all qualitative and quantitative research data and results and provided support on statistical analysis.

¹⁶ www.intrac.org



Sampling

Ten Programme group schools were selected using stratified random sampling of schools within a population of 15,993 children within the area of Mary's Meals Malawi's planned October 2014 programme expansion in Chikwawa and rural Blantyre. These areas were initially selected for expansion using Mary's Meals standard needs analysis process. Ten schools were also selected for the control group using a stratified random sample of schools within a similar population in Neno and Mwanza, where Mary's Meals planned to expand its Malawi programme in May 2016.

The stratified (computer-generated) random sample was based on:

- 1. Geography. Ensuring a proportionate balance between Programme group sample population schools in Chikwawa (2,015 children in six schools), Blantyre (1,259 in one urban school and 12,719 children in 22 rural schools) and control group sample population schools in Neno and Mwanza. This stratification allowed for analysis of anticipated varying levels of poverty and food insecurity between the two areas. Five schools were randomly selected from the sample populations within each area.**
- 2. School type. The schools within the sample area consist of both junior schools (Standards 1-5) and regular primary schools (Standards 1-8) and sampling was weighted to account for this. All schools in Chikwawa are junior schools, however the random selection for the rural Blantyre sample population was weighted to ensure a balance of junior and regular schools.**
- 3. Standard. For children, the survey chose a random sample of children within the first, fourth and final grades.**
- 4. Random selection within classes. Surveyors selected every fifth child in the classroom, ensuring that they varied where they began counting so that there was an even distribution throughout the classroom space.**

All available teachers and head teachers within each school were surveyed. As the total number of teachers available was limited to the total number of staff within each school, some teachers were also selected from a random sample of 23 additional schools within the total populations distributed proportionately between the two areas to meet the required sample size.

All volunteers within each school were also selected, as well as a random sample of additional schools distributed proportionately between the two areas. Fifteen additional household surveys were carried out with the Programme groups at baseline and impact stage two to further enrich contextual understanding.

Sampling for Existing group schools was based on a random sample of schools which were within the Mary's Meals Malawi programme prior to September 2011. Within these, surveys were only carried out with teachers who had been teaching before Mary's Meals introduced feeding at their school. Some schools had not retained any teachers prior to Mary's Meals beginning feeding and in these cases, the school was removed from the sample and another randomly selected school was added.

The sample aimed to use a confidence interval of 5 and confidence level of 95%. The sample sizes and survey numbers achieved for the different groups are as follows:

		# Schools	Baseline	Impact 1	Impact 2
Control	Child	10 (+1)	350	-	416
	Teacher	19 (+1)	107	-	135
	Community	10 (+1)	65	-	81
Programme	Child	10 (+1)	378	322	350
	Teacher	22 (+1)	157	139	133
	Volunteer	10 (+1)	74	73	62
	Households	-	15	-	15
Existing	Teachers	43	-	-	227
Totals			1146	534	1419

The total number of people spoken to via focus groups was as follows:

		Baseline	Impact 1	Impact 2
Control	Child	321	-	177
	Teacher	23	-	42
Programme	Child	286	249	188
	Teacher	85	56	54
	Volunteer	73	52	49
Existing	Teacher	-	-	14
Totals		788	357	524

The total number of surveys conducted was 3099. The total number of people who participated in focus groups was 1669.



Implementation

Feeding began as planned within the programme group schools on 20 October 2014, with children in programme schools receiving a daily hot meal of fortified Corn Soya Blend porridge, known locally as likuni phala, prepared by volunteers, at around 10:30am each school day. Children in the control group schools were not receiving food at school.

A team of Mary's Meals Malawi staff, consisting of a Programme Officer and four Monitoring, Evaluation and Learning Field Officers were responsible for coordinating and conducting surveys within each school. They were also supported by additional Mary's Meals staff and consultants to conduct focus groups. The team were experienced Mary's Meals field staff who were familiar with the existing programme and were well trained before commencing surveying. This team was also responsible for conducting surveys and focus groups with the control group, however to avoid any bias in response this was conducted under the 'identity' of INTRAC. Staff did not identify themselves as Mary's Meals staff or wear Mary's Meals clothing and separate non-branded vehicles were hired for this exercise. Participants were told that the purpose of the research was related to education and there was no reference to school feeding or Mary's Meals at any time.

Surveys and focus groups were carried out with children and volunteers during the school day, with teachers participating in surveys and focus groups after the school day had ended. As there are no volunteers available for Control group schools that are not currently within the programme, surveys were conducted with school PTAs and local community members. This was arranged by the head teacher in conjunction with the Mary's Meals Malawi programme officer on the day of surveying.

As one hypothesis of the research was that the greatest change, particularly for young children, would be within the first 3-4 months of receiving feeding, a first impact stage was included for the Programme

group during February 2015. Both the Control group and Programme group were then revisited at the end of the academic year. The timeline for completed research to date is as follows:

Stage	Baseline	Stage 1	Stage 2
Date	September/ October/November 2014	February 2015	June/July 2015
Sample Group	Programme Group Control Group	Programme Group	Programme Group Control Group Existing Group

Purpose and focus – survey questions

Baseline survey formats were developed with around 50 questions for children, teachers, volunteers and households and were refined using an iterative process which included testing within schools that were not part of the research project as well as external review by INTRAC and other research experts working on a voluntary basis. The surveys gathered basic information on participants as well as information relating to Mary's Meals outcomes on education, hunger, well-being, and community support for education. Each survey was translated into Chichewa and modified to ensure cultural appropriateness. All surveying and focus groups were conducted in line with Mary's Meals' Child Protection Code of Conduct and permission slips were completed for every child. Data was collected by hand and then entered into Excel at Mary's Meals Malawi's office, allowing data entry to be cross-checked and verified.

Enrolment data was gathered for all programme and control group schools disaggregated by grade and gender. Attendance data was also gathered at Programme group schools. School level data collection within Control group schools was inadequate to provide reliable attendance data, however robust data will be collected once Mary's Meals' programme is established at these schools.

Data analysis

Full data analysis was conducted by Mary's Meals staff in Glasgow and replicated and checked by INTRAC. Additional statistical analysis, using SPSS (Statistical Package for the Social Sciences), was then conducted by INTRAC on a sample of eight outcomes, using three approaches:

1. **Pair-wise comparison of differences between the programme and control groups, at baseline and impact stages, and between baseline and impact stages for each of the programme and control groups, using respondent level data for all eight outcomes.**
2. **Comparison of the changes observed in six outcomes at school-level from baseline to impact stage 2, between the programme and control schools. This was performed as a method of accounting for possible cluster effects at school level.**
3. **Multivariate analysis of respondent level data for six outcomes, to take account of possible independent variables that may explain difference observed.**

A confidence level of 95% was adopted for all tests.



1. Pairwise comparison at respondent level

It was not possible to calculate changes in outcome variable at respondent level, as samples were independent (i.e. not always the same children were surveyed at each stage). However, it was possible to compare the independent samples pairwise:

- **Control – baseline vs. impact 2**
(hypothesis: no difference)
- **Programme – baseline vs. impact 2**
(hypothesis: difference impact 2>baseline)
- **Baseline – control vs. programme**
(hypothesis: no difference)
- **Impact stage two – control vs. programme**
(hypothesis: difference programme>control)

Outcome variables were measured by four or five point Likert scales and analysed using the non-parametric Mann-Whitney U test, since the data structure fitted closely with the test assumptions and it was relatively straightforward to calculate effect size.¹⁷

For a majority of outcomes, statistically significant differences, with medium to large effect sizes were observed when comparing the change in the programme group between baseline and impact and when comparing the programme with the control group (at impact). For all except one outcome, negligible or insignificant effects were observed, when comparing the change in the control group between baseline and impact, and when comparing the programme and control group at baseline.

2. Aggregation of outcomes to school level

For six selected outcomes,¹⁸ it was possible to compare the changes between baseline and impact stage two across the schools in programme or control groups. By aggregating to school level, we control for the possibility that respondent level outcomes are influenced by differences in the contexts of schools between the programme and control groups. The test proportions (i.e. number of responses for each question in the reference categories) were broken down by school and compared baseline against impact. Z-scores were generated as a test for the difference in the proportions observed at baseline and impact.¹⁹

In the programme group, the majority of schools showed significant changes in a positive direction for all outcomes. Furthermore, the average effect sizes across schools in the programme group were medium or large with the exception of happiness where the average was small. In the control group, only a minority of schools showed significant changes in outcomes in a positive direction, with the

¹⁷ Effect size is important, as the study design could be considered somewhat over-powered, given the size of differences observed. Intrac followed Cohen (1988) in classifying effect sizes as small, medium and large.

¹⁸ For school level analysis, the outcome relating to teachers was excluded because of the much larger sample of schools used for teachers, and the outcome relating to volunteers was excluded because of the small sample sizes to make estimates at school level.

¹⁹ 1-tailed p-values were generated, as each outcome has a clear hypothesis, and in many cases the z-scores for the control group showed significant changes in outcome in a negative direction.

exception of one outcome where five schools showed positive change. However, all effect sizes were negligible. The school level results therefore corroborate the findings at respondent level, indicating that any effects at school level are small in comparison to the effect sizes.

3. Multivariate analysis of respondent level data

Multivariate analysis was also carried out to explore whether – and to what degree – school-based effects, or potentially other confounding variables, influenced the changes observed for six outcomes.

A multinomial cumulative logistic model was constructed for each independent variable (4-point or 5-point scale) using the child and teacher respondent-level data. Outcomes were entered as the dependant variable, and independent variables were: programme/control group, age, gender and year group (for children only). School and period (baseline/impact) were entered as interaction terms with the programme/control group.

In all cases, the modelling was constrained by a quasi-separation in the data, meaning maximum likelihood could not be calculated, likely due to the non-normal distribution of many of the outcome variables – particularly for the programme group at impact stage where a very high proportion of respondents²⁰ reported the same response categories. As such, the validity of the model fit provided a broad indication only.

On all variables, the programme and the programme-period interaction variables were statistically significant and for all but two outcomes, had the largest F-value (measure of contribution). The analysis of happiness had the lowest overall predictive power, and age was the strongest predictor, rather than programme group. The effects of school were significant, but with a relatively low contribution to the model, compared with other terms. Age was significant but with a low contribution to the model for all outcomes except for happiness. Gender was significant for only two outcomes, and made a low contribution to the model. Overall, the analysis corroborated the findings from simple tests that although other school and respondent level effects are present, they do not explain the majority of the variation observed between programme and control groups. Statistically significant changes were observed between the programme and control groups. Eight outcomes were tested, and large effect sizes were observed in three outcomes, medium in three outcomes and small effects in one outcome.

The study was partially blinded and selection of school clusters was randomised as far as practicable, minimising the possibility of systematic error. Cluster effects at school level (resulting from, for example, differing contexts) were tested for and found to be low. There is some possibility of systematic bias in the programme group arising from fear of losing the programme, but it is unlikely that such biases could yield such consistent results within schools and between schools, and across different variables. Given the design of the study, statistical testing supports the conclusion that the changes observed in key outcomes can be attributed to the Mary's Meals programme intervention.

The statistical findings are provided alongside corresponding results within this report. A more detailed report of statistical tests by INTRAC is available separately.

Focus group reports were compiled and then sorted by theme, with analysis looking at broad trends across answers and approximate frequency of answers. This was also externally verified by INTRAC.

²⁰ >95% or <5% in three of the outcome variables.



Future development of research

The Control group entered the Mary’s Meals’ Malawi programme in May 2016. In-depth work with both Programme and Control Groups will continue throughout the five year period.

External environment

During the time period of the first year of research the country of Malawi faced a number of challenges, which are likely to have influenced the research results.

Firstly, the country was experiencing a period of political turmoil, with several senior politicians involved in the ‘Cashgate’ scandal which had caused international donors, including the UK, EU and USA to cease bilateral support to the government. This impacted negatively on an already-troubled economy, and exchange rates and commodity prices fluctuated considerably throughout the period, providing an unstable income base for the majority of the families within both the Programme and Control groups. It also appeared to have an impact on education resourcing, as teachers in focus groups often reported that they had not been paid for several months. In many cases teachers were not in classrooms because of this and head teachers reported that teacher attendance was unreliable due to pay issues.

In January 2015, Malawi was then hit by severe flooding which was particularly destructive in the south of the country, badly affecting schools in Chikwawa. Many school buildings and family homes were damaged and children missed an average of approximately two weeks of school. Mary’s Meals supported the large scale relief efforts in the area and life returned to normal relatively quickly, however the flooding was followed by an early cessation of the rainy season which led to drought and had a longer term impact on food availability across the country. By the end of 2015 national maize prices were reported to have doubled, with food insecurity particular concerning for rural households.²¹

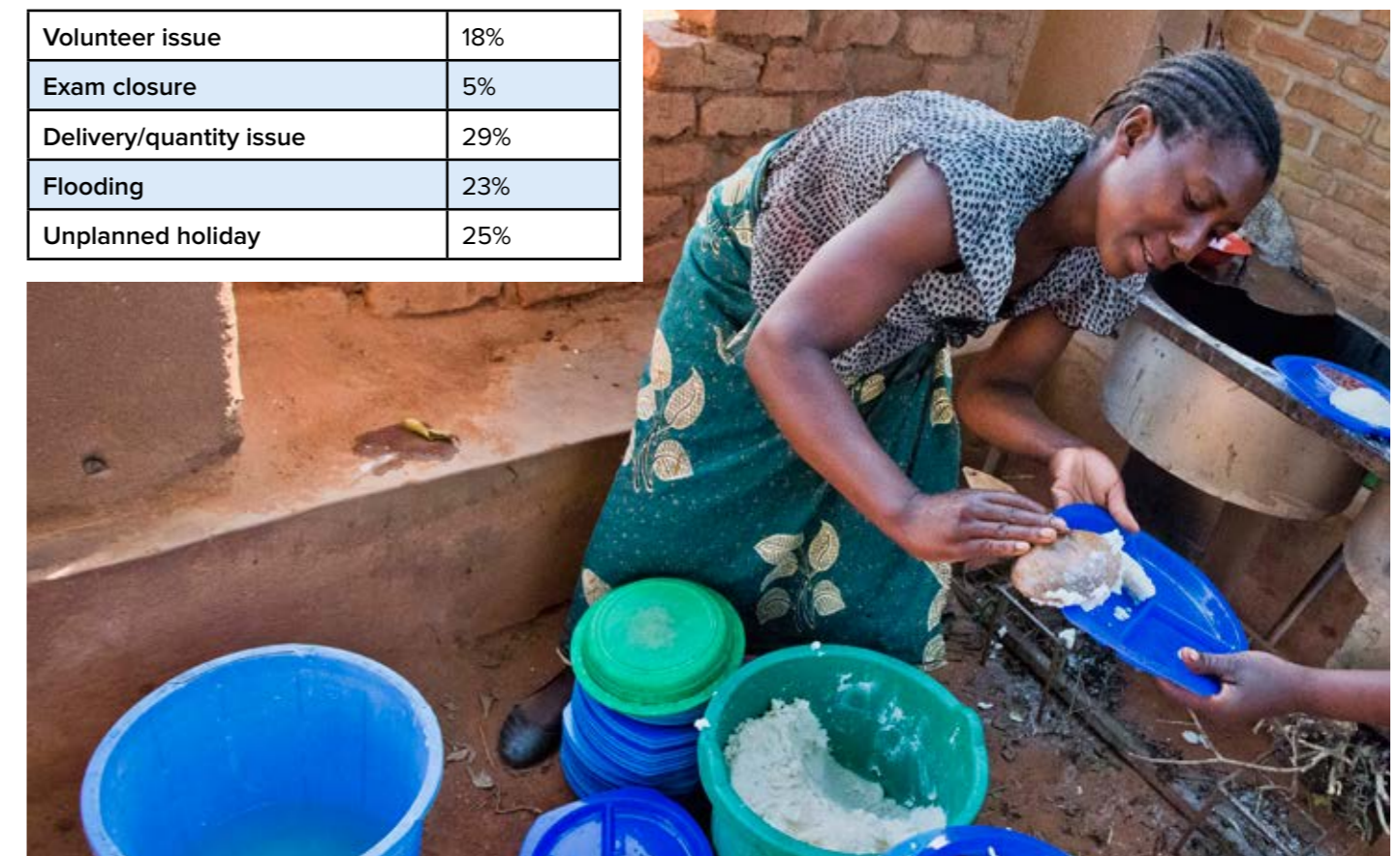
The overall impact of these events was that life for Malawian children and their families became even more challenging throughout this period, with poverty and food insecurity increasing, alongside the need to rely on social safety-net interventions. The research provides a snapshot of life for these communities at a particularly challenging time, in a country where the context is constantly evolving.

Programme delivery

During the one-year period, children in the Programme schools received Mary’s Meals food at school on 93.4% of planned days. The table below provides an analysis of the reasons that feeding did not take place, showing that the majority of reasons for non-feeding were beyond Mary’s Meals’ control. Flooding in particular is not a cyclical occurrence in these areas, meaning that these results are not necessarily indicative of Mary’s Meals’ routine delivery rates to these communities. Delivery/quantity issues relate to where there is a lack of available food to be prepared at the school, either due to delivery issues (e.g. road destroyed by flooding) or a shortage of food due to a surge in enrolment numbers. In all cases these issues were quickly resolved, helping to encourage ongoing volunteer confidence in the programme.

Table: Reasons for non-feeding at schools

Volunteer issue	18%
Exam closure	5%
Delivery/quantity issue	29%
Flooding	23%
Unplanned holiday	25%



²¹ World Food Programme. mVAM Malawi Bulletin Number 1: December 2015.



Results

The research at all schools demonstrated significant and compelling evidence of need for vulnerable children and their families living in some of the poorest areas of Malawi, building on evidence used as part of Mary's Meals' needs assessment selection criteria. Before receiving meals at school, most children said that they felt hungry all day at school and parents told us that their children often went without food for long periods of time.

Hunger was a factor in preventing children from going to school, leaving school early during the day, not attending regularly and in dropping out altogether. Children and teachers reported that children had difficulty in concentrating, paying attention and participating in class, and many were required to repeat years and were unable to progress onto the next grade. Most children were anxious and worried while they were at school because of hunger.

Following the introduction of Mary's Meals school feeding, the impact assessment research presents robust evidence to demonstrate the significant positive impact of the programme on these vulnerable children and their families. The majority of children report never feeling hungry at school, and all teachers observed that the children in their classes are less hungry. School enrolment and attendance levels rose significantly following the introduction of Mary's Meals and remained consistently higher than the levels before school feeding began.

Children told us that they never leave school early in the day now because they are hungry and most teachers said that children are more attentive in class and ask more questions. Drop-out levels have decreased and teachers reported that the children appear to be happier, with improved energy levels. Anxiety due to hunger has decreased for the children and the majority feel that Mary's Meals has really made a difference to their lives.

Further information on the results obtained against each of the six Mary's Meals key changes are provided over the following pages.

Abbreviations	
CB	Control baseline
CI	Control impact
PB	Programme baseline
PI	Programme impact



Mary's Meals key outcome: Reduced hunger for children living in poverty who attend school

The research found that:

- By the end of the academic year, hunger at school, and its negative impact, had decreased significantly for the children in the Programme group.
- At impact stages one and two Programme volunteers repeatedly said that hunger had decreased noticeably among their children and that they felt their children were healthier.
- Existing group teachers said that the difference Mary's Meals had made to hunger levels amongst children in their class was that children are less hungry or much less hungry.
- While fewer children in Programme schools are having breakfast before school, more children are eating a meal in the evening after school. In surveys at impact stage two, Programme children who said that they do not eat breakfast before school stated that this was because their parent/guardian knew that they were going to have a meal at school. However there was an increase in these figures for the Control group, suggesting that increasing food insecurity may have affected this.

Evidence of need

The majority of children said that they never or only sometimes eat breakfast before school because there's no food to eat at home.

The majority of volunteers said that their children never take food to school to eat during the day.

At the end of the academic year, the majority of control group children said: "I don't eat anything during the school day" because there is no food or money available.

The majority of volunteers (63.9%) said that their children go without food for a whole day at least sometimes.

A key aim of Mary's Meals' programmes is to reduce basic levels of hunger for children at school and the surveys and focus groups asked direct questions around child hunger levels at school and the effect that this has on the children. The trend around the responses highlighted that hunger at school was a serious issue for children in both Programme and Control groups at baseline.

The research examined the average levels of food consumed by the children in both groups and eating patterns around the school day. Findings around basic levels of food generally consumed by children were stark and indicative of the need for the programme. In both surveys and focus groups, the majority of children and their parents indicated that children in both groups experience high hunger levels, with limited access to sufficient amounts of nutritious food on a daily basis.

Children go without food for a whole day

At baseline, 63.9% of Programme volunteers and 43.5% of Control group community members said that their children go without food for a whole day at least sometimes, and in focus groups at Programme and Control group schools, many children and community members talked about household coping mechanisms for food shortages. A Standard 8 child at Ng’onga Primary explained:

“It depends on us all having food. They [my parents] need to skip some days in order to keep moving on days when there is no flour. If I eat today I might miss tomorrow.”

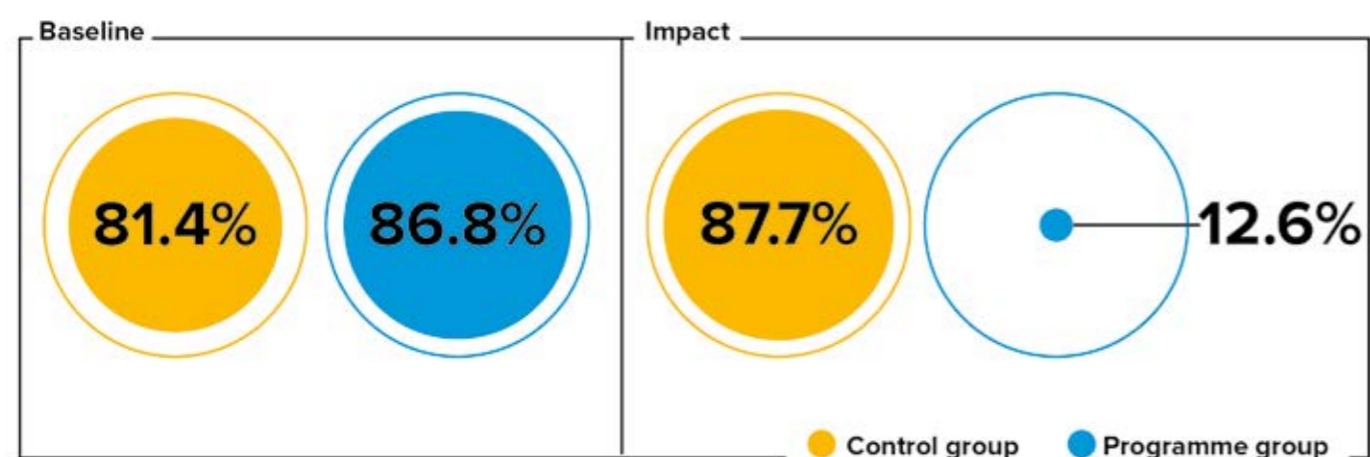


By the end of the academic year, hunger at school, and its negative impact, had decreased significantly for the children in the Programme group. At the same time, hunger at school and its negative impact had increased for children in the Control group, demonstrating the chronic need in Control group schools and highlighting the net impact of Mary’s Meals’ programme, where hunger at school had improved for Programme children at a time when it was worsening for other children within Malawi.

At baseline, 86.8% of Programme group children said that they felt hungry at school at least sometimes; by stage one this had decreased to 32.3%, by the end of the academic year it was 12.6%. At baseline, 81.4% of Control group children said that they felt hungry at school at least sometimes; by impact stage this had increased to 87.7%. The increase in Control group data indicates that the change for Programme group children is attributable to the introduction of

Mary’s Meals’ school feeding programme and highlights the worsening situation for children in Control group schools. Statistical analysis of this outcome showed significant differences with large effect sizes, when comparing the change in the programme group between baseline and impact, and when comparing the programme with the control group at impact.

Percentage of children saying they feel hungry at school at least sometimes.



Children never or sometimes eat breakfast

At baseline, 62.7% of Programme group children and 51.4% of Control group children said that they never or sometimes eat breakfast before school. 80.6% of volunteers and 69.8% of Control group community members also said that their children never or sometimes eat breakfast before school. Throughout every stage, the main reason given by children for not eating breakfast was ‘no food to eat at home’.²²

At all three stages, children in focus groups said that they did not eat breakfast every day before school, often saying that there was no food available at home for them to eat.²³ Some pupils said they skipped breakfast because they had to walk long distances to get to school. Several children identified having less breakfast or food generally as being seasonal, in line with recognised Malawian harvest cycles, with lean season beginning around November and peaking in January/February. A ten-year-old girl in Standard 1 at Namisi, a Control group school, said: “Sometimes I bring food to school and sometimes I have breakfast. In January there is less food at home.” Notably, at all but one stage, more girls than boys said that they always eat breakfast.²⁴

A 13-year-old female pupil in Standard Eight at Ng’onga described how her daily pattern affects what she eats: “Most of the time I don’t eat any breakfast before coming to school. If I do eat it will be phala. The days when I prepare breakfast, I wake up very early in the morning to cook food. For those times when I don’t eat anything, when I knock off at school, I get home too late so it’s hard for me to get up at dawn [the next day]. I finish here at 2pm and get home around 4 pm. Then I do my housework – drawing water from the well, cleaning plates and everything so that by the time I finish that type of work it’s too late and I get tired. I do the housework until I go to sleep.”

Food at school

In focus groups children indicated that they rarely took food to school to eat during the day. The most common food taken to school was maize, carried to school in a recycled plastic bottle. Again, this was identified as being a seasonal luxury. At baseline, 61.1% of Programme volunteers and 34.4% of Control group community members said that their children never bring food to eat during the school day. The trend was that more children tend to eat a meal in the evening; at baseline 47.9% of Programme children and 62.0% of Control group children said that they ‘always’ eat a meal in the evening after school, with surveys with parents supporting these findings.²⁵

At both baseline and stage two, Control group children explained that they regularly felt hungry at school and cited examples of how this makes them feel including feeling weak, dizzy and sleepy, suffering from stomach and head aches, and distracted. Several children said that the hunger was worst around midday. At both Programme impact stages children expressed that they now rarely felt hungry at school. Several said that they felt hungry before having their meal, but that they didn’t feel hungry again until later. Programme group children frequently referred to hunger at school in the past tense.

Following the introduction of Mary’s Meals’ programme, Programme volunteers identified an immediate impact on their children’s food consumption levels. At baseline, 63.9% of Programme volunteers said that their children go without food for a whole day at least sometimes; by the end of the academic year

²² PB 83.7%, PI1 70.4%, PI2 67.6%, CB 83.3%, CI 95.5%

²³ A range of breakfast foods were identified including nsima and various relishes, phala, sweet potato, fried maize, banana, potatoes.

²⁴ An average of 5.1% more girls than boys who were surveyed gave this answer.

²⁵ At baseline, 58.3% of volunteers and 85.7% of Control group community members said that their children eat a meal in the evening always or most of the time. In household surveys, the percentage of parents saying that their children ‘always’ eat a meal in the evening increased from 25% to 67%.



this had decreased to 16.1%. At baseline, 43.5% of Control group community members said that their children go without food for a whole day at least sometimes and by the end of the academic year this was 40.7%. While the figure for the Control group remained constant, the percentage of parents giving this response reduced significantly, suggesting that this change is attributable to the introduction of Mary's Meals' school feeding programme. The result also highlights the lack of food available to children during weekends and school holidays, which was discussed in focus groups.

These children's results were also supported by teachers and volunteers. At baseline the majority – 94.4% of Programme group volunteers and 92.1% of Control group community members – said that their children are hungry at school at least sometimes. By stage two this had remained constant for the Control group (95.1%) and had decreased significantly to 21.0% for the Programme group, suggesting that this change is attributable to the introduction of Mary's Meals' school feeding programme. In addition, in household surveys, parents saying that their children are hungry at school at least sometimes, reduced from 100% to 36%.²⁶

Focus group feedback also supported this with parents talking about the problem of hunger at school for their children. At impact stages one and two Programme volunteers repeatedly said that hunger has decreased noticeably among their children and that they felt their children were healthier, a belief echoed in focus groups with children and teachers. At every stage, almost every volunteer/community member in both groups said that it was important or very important that children are not hungry at school.²⁷

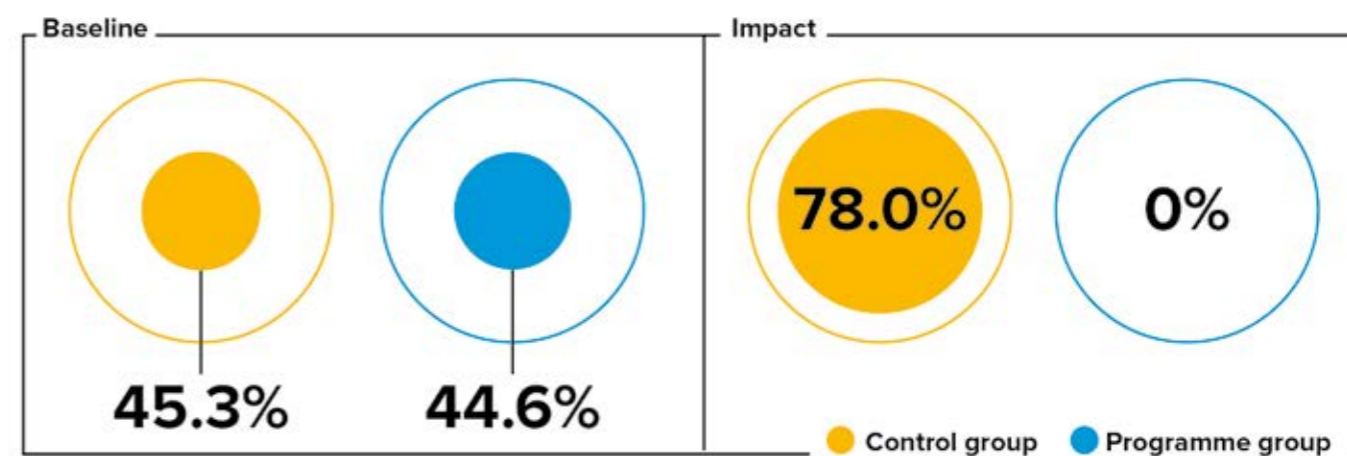
Focus groups and surveys suggested that the children liked the likuni phala they receive and that they felt full and energised after eating it. Responses from teachers and volunteers also supported this view. At impact stage two 99.1% of children said that they like the likuni phala.

There was also a change for both groups in food consumption during the school day. At baseline, 44.6% of Programme children said that they don't eat anything during the school day.²⁸ The vast majority (89.3%), said that the reason for this was 'no food/money available', results for Control group children were very similar.²⁹ By impact stages one and two the percentage of Programme children who said that they don't eat at school had decreased to 0.0% while the percentage for Control group children had increased to 78.0%. Almost all Control group children (98.1%) said that the reason for this was 'no food/money available', supporting the evidence on worsening hunger for children in Control group schools.

²⁶ Sometimes 36%, Most of the time 0%, Always 0%.
²⁷ PB 100.0%, PI1 100.0%, PI2 98.4%, CB 100.0%, CI 100.0%.
²⁸ 37.4% girls, 52.5% boys surveyed gave this answer.

²⁹ At baseline, 45.3% of Control group children (40.7% girls, 49.7% boys) said that they don't eat at school. 84% said that the reason for this was 'no food/money available'.

Percentage of children saying they do not eat anything during the school day.



Classroom hunger

At both impact stages, 100% of impact stage 1 and 96.2% of impact stage 2 teachers in the Programme group, and 97.8% of existing teachers said that the difference Mary's Meals had made to hunger levels amongst children in their class is that children are less hungry or much less hungry. Importantly, 99.1% of teachers in schools where Mary's Meals has been feeding for at least three years felt that this change was caused by Mary's Meals' programme, with 85.3% saying that this change had begun when Mary's Meals started feeding and continued throughout the period.

Programme teachers in focus groups talked about how children, in particular younger children, complained of hunger much less and survey results supported these opinions. At baseline, the percentage of Programme teachers who said that children in their class 'never' complain of hunger was 7.1%, by stage one this had increased to 82.0% and by stage two it was 86.5%. 85.0% of Existing group teachers also selected this response. Meanwhile, at baseline, 15.0% of control teachers said that children in their class 'never' complain of hunger, by impact this had remained constant at 17.8% suggesting that this change is attributable to the introduction of Mary's Meals' school feeding programme.

The impact on how worried teachers are about hunger levels of children in their class was less strong (see table below), however the statistics indicated that this had decreased for Programme group schools and was less stark in schools where Mary's Meals has been operating for several years. This is perhaps linked to ongoing food security issues for children at all schools across the research. Indeed, the vast majority of teachers consistently said that they see children arriving at school hungry because they have not had enough to eat in the morning throughout all three groups and at every stage.³⁰

Table: Teachers who describe hunger levels in their class as worrying or very worrying.

Stage	Programme Teachers	Control Teachers	Existing
Baseline	100%	95.3%	-
Stage one	59.4%	-	-
Stage two	66.9%	100.0%	45.4%

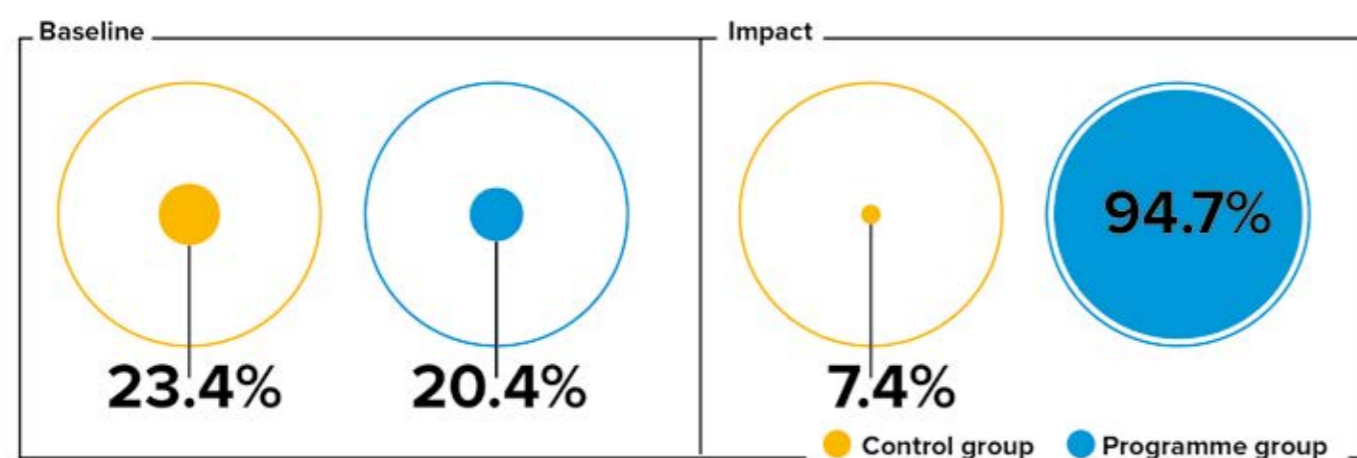
³⁰ PB 99.4%, PI1 97.8%, PI2 99.2%, ET 97.8%, CB 96.2%, CI 100%.

Increased energy

Focus group results supported these findings. The majority of Existing and Programme group teachers said that they now see healthier children coming to school but that they are still coming to school hungry. A male teacher from Katete Primary School said: “The children are looking healthy, they are energetic. A good example is the children who are playing here. In the past, they would just knock off and run home. But this time around they stick around, up until three or four they are still playing around because of the porridge.”

The physical effects of hunger stated by children were also supported by teachers through focus groups. At baseline, the percentage of programme teachers who said that children in their class ‘never’ fall asleep due to hunger was 20.4%, by stage one this had increased to 92.1% and by stage two it was 94.7%. 96.9% of Existing group teachers also selected this response. At baseline, 23.4% of control group teachers said that children in their class ‘never’ fall asleep due to hunger, by impact this had decreased to 7.4%, suggesting that this change is attributable to the introduction of Mary’s Meals’ school feeding programme and again highlighting worsening circumstances for Control group children.

Percentage of teachers saying children in their class never fall asleep due to hunger.



Surveys and focus groups also explored issues around ‘replacement feeding’, where children are potentially given less food at home because their parents know that they have eaten at school. The table below shows how children and volunteers/community members reported changes in levels of food consumption outside the school day:

Table: Changes in food consumption for Programme and Control group children.

	Programme Baseline	Programme Impact stage 2	Control Baseline	Control Impact
Children saying they ‘never’ or ‘sometimes’ eat breakfast before school.	62.7%	85.7%	51.4%	67.5%
Volunteers/community members saying their children ‘never’ or ‘sometimes’ eat breakfast before school.	80.6%	91.9%	69.8%	70.4%
Children saying they ‘always’ eat a meal in the evening after school.	47.9%	55.0%	62.0%	69.2%
Volunteers/community members saying their children ‘always’ eat a meal in the evening after school.	31.9%	67.7%	69.8%	71.6%

The data suggests that while fewer children in Programme schools are having breakfast before school, more children are eating a meal in the evening after school, however there was also a minor change in Control group figures. There may also be a seasonal trend in the data which will be further explored over the course of the longitudinal study. In surveys at impact stage two, 28% of Programme children who said that they do not regularly eat breakfast before school stated that this was because they or their parent/guardian knew that they were going to have a meal at school. However in focus groups children and volunteers who said that their children now eat less at home also consistently said that this was a deliberate choice because the children were less hungry after having porridge at school. An eight-year-old boy in Standard 1 at Ng’onga Primary said for example: “If I eat porridge here, I eat less nsima at home... because I feel full.”

Many mothers also spoke of how this allowed them to give slightly more food to their younger children, with one saying: “Before, when there wasn’t enough food I wouldn’t eat, which meant I had no milk to [breast] feed my baby, now we can all have a little bit more and I am able to get up and feed him.”



Mary’s Meals impact

Programme volunteers saying ‘my children go without food for a whole day at least sometimes’ changed from 63.9% to 16.1%.

Children saying ‘I never feel hungry at school’ changed from 13.2% to 87.4%.

Volunteers saying ‘my children feel hungry at school’ at least sometimes changed from 94.4% to 21.0%.

Children saying ‘I don’t eat anything during the school day’ changed from 44.6% to 0%.

96.2% of teachers said that children in their class are less hungry.

Teachers saying ‘children in my class never complain of hunger’ changed from 7.1% to 86.5%.

Teachers saying children never fall asleep in their class due to hunger changed from 20.4% to 94.7%.

Programme children saying they ‘never’ or ‘sometimes’ eat breakfast before school changed from 62.7% to 85.7%.

Programme children saying they ‘always’ eat a meal after school changed from 47.9% to 55.0%.

Mary's Meals key outcome: Increased access to primary education for children living in poverty

The research found that:

- By the end of the academic year, enrolment at Programme group schools has increased and become gender balanced.
- At this early stage, there has been good progress in reducing the imbalance between numbers of children in lower and higher standards.
- The vast majority of teachers and volunteers said that fewer children in the local community are out of school since Mary's Meals began feeding.
- The majority of Programme teachers said that class sizes had increased following the introduction of feeding. Mary's Meals works closely with local and national authorities to highlight the need for increased resources when school enrolments increase.

Evidence of need
High levels of children out of school in Malawi.
Hunger and poverty were commonly cited as reasons for children not enrolling at school.
At baseline, more than 50% of Programme and Control volunteers said that they knew of more than five children in the local area who were out of school.

Enrolment

A key aim for Mary's Meals' programmes is to increase access to education for vulnerable children, decreasing numbers of children out of school. International education indicators for Malawi vary according to different sources and may not be reliable. UNICEF state that over 10% of Malawian children are out of school,³¹ however it is likely that the real figure is much higher.

Between baseline and June 2015, enrolment in the programme group schools increased by a total of 36.3%. The increase for boys was 33.1% and 39.8% for girls. The average enrolment increase within Mary's Meals' Malawi programme, taken from several years of analysis covering multiple schools, is approximately 8% within the first month of the introduction of feeding, rising to approximately 13% after three months and 16% by the end of the first year. These increases are exceptional, even within Mary's Meals' programme and are deemed to have been partly affected by the flooding in Chikwawa which damaged school buildings and family homes, causing migration between schools. Furthermore enrolment within Control group schools increased by 15.48% during this same period when national population growth rates are estimated to be approximately 2.8%.³²

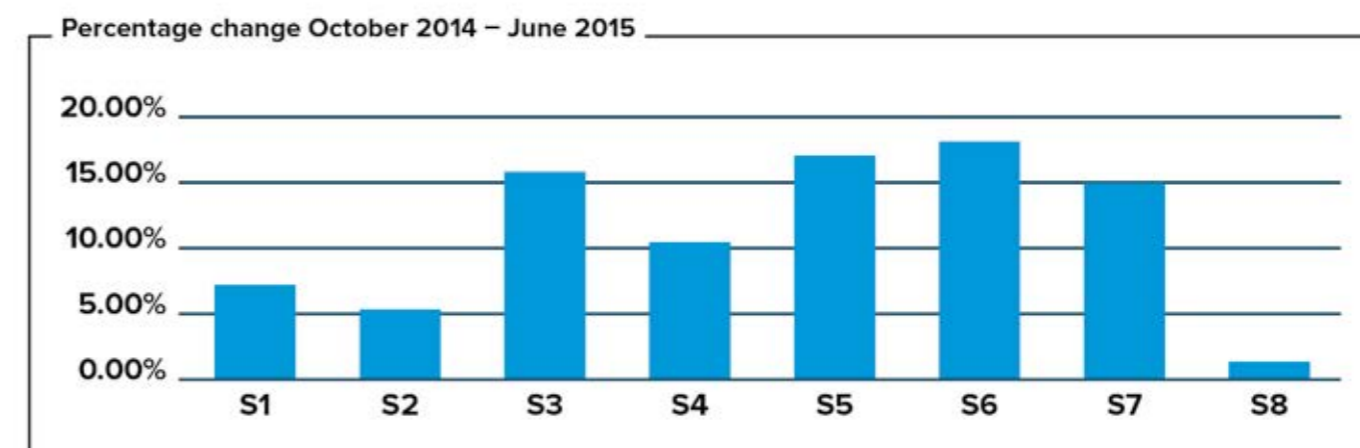
³¹ <http://www.unicef.org/malawi/children.html>

³² Population growth rate (average annual %) 2010-2015. <http://data.un.org/CountryProfile.aspx?crName=malawi>

Importantly, at baseline stage, boys made up 52% of the total number of children enrolled, within one academic year, this had stabilised to 50%, with 53% of new-enrollees being female. Girls currently represent 50.5% of all children in schools in Mary's Meals' overall programme in Malawi.

The following table provides an analysis of percentage changes by standard in Programme schools during the course of the first year of the programme, showing that new children enrolled across all age groups. It should be noted that the percentage change will also be higher for standards with smaller numbers of enrolment. At this early stage, there has been good progress in reducing the imbalance between numbers of children in lower and higher standards with the proportion of children in Standard 4 to Standard 1 increasing from 73% to 75% and from 45% to 46% for Standard 8 to Standard 1.

Graph: Enrolment increases in Programme schools by standard.



The research found multiple reasons for children not being enrolled at school, all of which largely linked back to poverty. In fact, the multiple choice response of 'poverty' was not included in baseline survey formats but added in at later stages, as it was so often provided in focus groups, mainly by teachers, but also by volunteers. Reasons were very similar across the Programme and Control groups, with hunger commonly cited. The other most commonly cited reasons included work, having to help at home, lack of parental encouragement (cited by teachers) and early marriage/pregnancy. Early marriage and pregnancy were common discussion points within focus groups, with early marriage being a reason for both boys and girls not attending or dropping out. Surveys with volunteers found that after 'school not suitable for my child's age' (e.g. child not aged 5-14), 'early marriage' was the most common reason for volunteers' school aged children not being enrolled. Focus group discussions also highlighted cases where children who had left Primary school to marry and or have a baby had returned to school following the introduction of feeding.

Mary's Meals as an incentive for enrolling at school

Survey and focus group research with teachers and volunteers supported the theory that the introduction of Mary's Meals' school feeding programme had provided an incentive for children to enrol at school and contributed to the increased enrolment numbers. This was evident both for Programme schools and schools where Mary's Meals has been feeding for several years. At the end of the first year, the majority (97.0%) of Programme teachers said that fewer or much fewer children in the local community are out of school since Mary's Meals started feeding.³³ 93.9% of teachers in schools where Mary's Meals has been feeding for at least three years also said that fewer children in the local

³³ 90.2% much less, 6.8% less.

community are out of school since Mary's Meals started feeding, 93.4% of these teachers felt that this change was caused by Mary's Meals' programme. 88.7% said that Mary's Meals' impact on this began when Mary's Meals started feeding and continued throughout the period.

At both stages one and two, over 90% of Programme volunteers also said that fewer or much fewer children in the local community are out of school since Mary's Meals started feeding.³⁴ At Programme baseline, 52.8% of volunteers said that they knew of more than five children in the local area who were out of school, by stage two, this had decreased to 30.6%. While at control baseline, 58.5% of community members said that they knew of more than five children in the local area who were out of school and this had increased to 69.1% by stage two. Those answering 'more than 20', decreased by 12.7% for the programme group, while increasing by 13.7% for the control group, showing a marked deviation between the two groups.

A female volunteer from Chigubudu cited hunger as the main reason for children not enrolling at school before the introduction of the programme, saying: "But now, since there is porridge, you can't even have to ask children to come to school. They wash themselves and rush to come to school."

In focus groups, children also said that they felt fewer children in their local community were out of school, often citing the introduction of feeding as affecting this. A male Standard 4 pupil at Ng'onga said that more children are enrolled because: "Previously when we used to come, there was hunger. When we come now we will be learning and eating porridge." While 'to learn' continued to be the most popular and obvious response to why children had enrolled at school, by stage two, 16.7% of programme group children gave 'I wanted to get a meal' as their main reason for going to school.

Class size changes

At both impact stages Programme group teachers largely said that their class sizes had increased since Mary's Meals started feeding at their school, (PI1 77.0%, PI2 80.5%). 96.0% of Existing group teachers also said that their class sizes were bigger since Mary's Meals started feeding in their school at least three years ago. The most commonly given reasons for this are provided in the following table (strongest in bold).

Table: Reasons for class size increases reported by teachers

	Programme Impact Stage One	Existing Teachers	Programme Impact Stage Two
Children/families want to learn	35.1%	32.0%	34.2%
Children/families want to get a job in future	11.7%	15.7%	24.0%
Children want to get a meal (Mary's Meals)	37.2%	28.6%	36.0%

In the programme impact focus groups, several teachers mentioned that the increase in enrolment was putting pressure on other resources at the school (space in classrooms, other school materials, and toilets), with one teacher for example saying: "Classrooms are not enough now. Children are learning under a tree." Mary's Meals has a close collaborative relationship with the Malawian government and works closely with the education authorities at all levels, working towards its stated programme aim: 'support and replication of effective school feeding programmes by governments'. As part of this, Mary's Meals regularly highlights the need for increased resources resulting from facilitating universal

access to education at a district and national level, which is regularly acknowledged and responded to as resources allow.

Interestingly, when asked at stage two, 72.9% of Programme teachers said that the children's learning in class is positively or very positively affected by the increase in class size; 14.0% said 'no change'. 58.5% of Existing group teachers also said that the children's learning in class is positively or very positively affected by the increase in class size; 12.1% said 'no change'. In focus groups, teachers sometimes discussed their teaching methods, highlighting that the effect of changes in class size varied depending on teaching style and the purpose of the lesson.

Mary's Meals' impact
By the end of the academic year, enrolment at Programme group schools had increased by 36%.
Enrolment at Programme group schools had become gender balanced, changing from 53% male/47% female to 50% male/50% female.
At this early stage, there has been good progress in reducing the imbalance between numbers of children in lower and higher standards.
97% of teachers said that fewer children in the local community are out of school.
93.9% of teachers in schools where Mary's Meals has been feeding for at least three years said that fewer children in the local community are out of school since Mary's Meals started feeding. 93.4% of these teachers felt that this change was caused by Mary's Meals' programme. 88.7% said that Mary's Meals' impact on this began when Mary's Meals started feeding and continued throughout the period.
95.2% of volunteers said that fewer children in the local community are out of school.
The percentage of Programme volunteers who knew of more than five children in the local area who were out of school changed from 52.8% to 30.6%. While the percentage of community members in the control group giving this response changed from 58.5% to 69.1%.
The percentage of Programme volunteers/Control group community members who knew of 'more than 20' children who were out of school in the local community decreased by 12.7% for the programme group, while increasing by 13.7% for the control group.
The majority of Programme teachers said that class sizes had increased following the introduction of feeding.

³⁴ Impact 1, 90.3%. Impact 2, 95.2%.

Mary's Meals key outcome: Improved engagement in primary education of children living in poverty

The research found that:

- **Attendance at Programme group schools increased. The increase was bigger for girls than for boys.**
- **Teachers and parents said that children's attendance had improved since the introduction of feeding.**
- **Absence due to hunger decreased – a statistically significant result.**
- **Children wanting to go home early during the school day decreased – a statistically significant result.**
- **Children identified concentration as a problem and many identified a clear link between being hungry and their inability to concentrate while in class.**
- **Children finding it hard to concentrate in class reduced considerably – a statistically significant result.**
- **By the end of the academic year, children receiving Mary's Meals were more likely to ask questions and participate in lessons.**
- **Children and teachers said that their grades had improved since Mary's Meals started feeding.**

Absence and attendance

Evidence of need
Hunger often cited as a reason for absence from school by children, teachers and volunteers.
23.7% of Programme teachers cited 'hunger' as one of the main reasons for children not attending school at baseline.
At baseline, 5.6% of Programme group children who had been absent stated that the main reason they had been absent was hunger, missing an average of 1.6 days in the previous two weeks.

Attendance

Mary's Meals not only aims to improve the number of children enrolling at school but also levels of daily attendance at school and engagement within education, and results in these areas were also compelling. Attendance data from the Programme group schools shows that overall attendance increased from an average of 71% per month to 87%. The change for boys was from 72% to 86%, whereas for girls it increased from 70% to 88%, again suggesting a stronger improvement for girls.

Survey questions with all three groups also supported physical record keeping, with results showing an improvement in Programme group school attendance against a decrease in attendance in Control group school, perhaps linked to increasing food insecurity. At baseline, 75.2% of Programme teachers said that the average attendance in their class was 70% or more; 97.7% of Programme teachers at stage two said that average attendance was over 70%. At baseline, 91.6% of control teachers said that the average attendance in their class is 70% or more; by stage two this had decreased to 61.5%. 93.8% of teachers in schools where Mary's Meals has been feeding for at least three years also said that the average attendance in their class is 70% or more. In addition, in household surveys, when asked how many full days their children are absent on an average month, Programme parents responding 'none' or 'up to five' changed from 20% to 93%.

Mary's Meals as an incentive to attend school

The vast majority of children reported that they attend school more or much more because of Mary's Meals.³⁵ The majority of Programme teachers also supported this, with the change also increasing further between stages one and two. At stage one, 94.3% of programme teachers said children attend school more or much more since Mary's Meals began feeding, by stage two, this had increased to 96.2% of teachers. 98.7% of teachers in schools where Mary's Meals has been feeding for at least three years said that children attend school more or much more since Mary's Meals began feeding, suggesting that this increase is consistent and long-term. 98.7% of these teachers felt that this change was caused by Mary's Meals' programme. 82.4% said that this change had begun when Mary's Meals started feeding and continued throughout the period.

Reasons for not attending school

Focus groups supported this, with reasons for absence consistent across Programme and Control group baselines. At baseline the most common reasons children gave for their absence at school were sickness and hunger. At programme impact stages, children no longer cited hunger and mainly cited reasons relating to illness as well as dirty clothes, lack of materials, heavy rain (stage one only), funerals and helping with cotton harvest or herding animals (stage two only). There is a clear link between hunger and illness and there appeared to be an overlap in these two responses. In focus groups it was apparent that some of the symptoms which children identified with feeling sick were more likely to be symptoms of hunger. At the same time, hunger can often lead to ill health and it was difficult for some smaller children to differentiate between the two.

Absence due to hunger

Children repeatedly cited porridge as a reason for reduced absenteeism at their school, with a female Standard Seven pupil at Makalanga Primary saying: "Before, I knew that when I came to school, I would stay with hunger from morning up to the knocking off hour, so we preferred to be home, maybe we could look for something to eat".

A male Standard Four pupil at Monjo Primary said: "The porridge has brought more courage to us to be present at school and it also makes us understand more in class."

Data trends also supported the indicated decrease in absence due to hunger. As hunger was no longer cited as the most common reason for absence, children and teachers tended to cite 'sickness' as the most common reason. At baseline, 23.7% of Programme teachers cited 'hunger' as one of

³⁵ Stage one 85.0%, stage two 95.1%.



the main reasons for children not attending school, by impact stage two 0.3% of teachers gave this response. At baseline, 11.0% of control teachers cited 'hunger' as one of the main reasons for children not attending school, by impact stage 25.5% of teachers gave this response. Statistical analysis of this outcome showed significant differences with large effect sizes, when comparing the change in the Programme between baseline and impact, and when comparing the Programme group with the Control group at impact. However, statistically significant differences with medium effect sizes were also observed between Programme and Control group at baseline and between baseline and impact in the Control group,³⁶ making interpretation of this outcome more difficult.

These statistics again suggest an improvement following the introduction of Mary's Meals for children in Programme group schools while life became even more challenging for children in Control group schools. The most common reason cited by teachers in schools where Mary's Meals has been feeding for at least three years was sickness, only 4.8% of teachers stated that the main reason for children not attending school was hunger. In a focus group, a male teacher from Chigubudu said: "It has increased the spirit of coming to school daily... in the past when there was no porridge, a lot of students used to sleep in class."

At baseline, 5.6% of the 196 Programme group children who had been absent in the past two weeks stated that the main reason they had been absent was hunger. By the end of the academic year, this had decreased to 0.5%. The average number of school days in the past two weeks missed by children citing hunger as the reasons for their absence at baseline was 1.6 days,³⁷ meaning that children had missed an average of one and a half school days out of ten, representing a significant amount of learning time lost due to hunger. At the same point at the end of the academic year, 4.1% of control group children stated they had been absent in the past two weeks due to hunger. The average number of days missed by children citing hunger as the reasons for their absence was 2.1 days.³⁸

³⁶ A possible reason for the large degree of variation observed in this outcome is the design of the question, which asked teachers to cite up to three main reasons for children not attending school, with hunger being one option among those. It is possible that while the number of children not attending school may decrease (or increase), the reasons do not change (and vice versa). Thus the question is potentially not sensitive to the absolute numbers of children attending school.

³⁷ 11 children

³⁸ 11 children

Mary's Meals' impact

Overall attendance for Programme group schools increased from an average of 71% per month to 87%. The change for boys was from 72% to 86%, whereas for girls it increased from 70% to 88%.

The percentage of teachers saying that attendance in their class was over 70% changed from 75.2% to 97.7%.

95.1% of children said that they attend school more because of Mary's Meals.

96.2% of teachers said that children in their class attend school more because of Mary's Meals.

98.7% of teachers where Mary's Meals has been feeding for more than three years said that children in their class attend school more because of Mary's Meals.

Programme group teachers citing 'hunger' as one of the main reasons for children not attending school changed from 23.7% to 0.3%, whereas Control group teachers citing 'hunger' as one of the main reasons for children not attending school changed from 11.0% to 25.5%.

Leaving school early

Evidence of need

32.5% of Programme group children and 23.2% of Control group children stated that they want to go home when they are at school because they are hungry, at least sometimes.

28.8% of the Programme group children who said they left school early in the past two weeks,³⁹ stated that hunger was one of the main reasons for this, leaving early on an average of two days in a two week period.⁴⁰

Hunger as a reason for leaving school early during the school day

Results for leaving school early during the school day showed a clear link to hunger. At baseline, 32.5% of Programme group children and 23.2% of Control group children stated that they want to go home when they are at school because they are hungry, at least sometimes. By the end of the academic year, this remained constant at 20.9% for Control group schools, while it had decreased to 2.3% for children in schools receiving Mary's Meals, suggesting that this change is attributable to the introduction of Mary's Meals' school feeding programme. Statistical analysis of this outcome showed significant differences with medium effect sizes, when comparing the change in the Programme

³⁹ At baseline, 15.2% of total number of Programme children surveyed said they left school early in the last two weeks.

⁴⁰ 19 children.



group between baseline and impact, and small effect sizes when comparing the Programme with the Control group at impact.

In addition, at baseline, of the Programme group children who said they left school early in the past two weeks,⁴¹ 28.8% stated that hunger was one of the main reasons for this. The average number of days they left early in a two week period was two days.⁴² By the end of the academic year, this had decreased to 0.0%. At baseline, 44.8% of Control group children said they left school early in the past two weeks due to hunger, at the end of the academic year, this had decreased to 24.6%. The average number of days they left early was 1.7 days.⁴³

Statistical analysis of this outcome showed significant differences with medium effect sizes, when comparing the change in the Programme group between baseline and impact, and small effect sizes when comparing the Programme with the Control group at impact. This result appears to differ from the overall Control group trend, however it should be noted that ‘sickness’ was a more common response at this stage – likely to be a first and more obvious choice over hunger for a child who is ill.

The majority of children in Programme focus groups stages one and two said they did not leave school early as frequently now that Mary’s Meals was available at their school. Some mentioned that they used to leave early because they were hungry and would go home to find food, for example a boy in Standard 4 at Chigubudu said: “We used to dodge school early because of hunger, now we stay. Previously it was hard. A lot of us were just sleeping and feeling weak when we attended classes. We couldn’t even concentrate. But now, since there is porridge, we are able to understand, because the porridge has ended the hunger.”

Findings with teachers strongly supported children’s feedback. At baseline, Programme teachers said that on a normal school day, an average of 7.1 pupils leave early during the day, by the end of the academic year this had decreased to 3.1 pupils. At baseline, Control teachers said that on an average day, an average of 3.6 pupils leave early during the school day, by the end of the academic year this had increased to 7.7 pupils. There was a clear correlation between standards for these responses, with the highest proportion of children who leave early being in the younger standards and the corresponding impact at stages one and two were strongest with younger children. Focus groups supported these findings with teachers saying that the small number of children who had remained in school until the final standards were more used to classroom hunger and less likely to leave. One teacher at a Programme baseline school said: “Children who come to school without having breakfast leave early because they are hungry.” Another reported: “It happens. They always leave and they mostly lie that they have a headache, but actually it’s just that they are hungry.”

At baseline, the most common ‘main reason’ selected by Programme group teachers (35.5%) for children leaving school early during the school day was hunger. By the end of the academic year, this had decreased to 2.0%. At the same point at the end of the academic year, the most common

‘main reason’ selected by Control group teachers (33.5%) was hunger. Teachers in schools where Mary’s Meals has been feeding for at least three years said the most common reason for children leaving early during the school day was sickness. Only 1.9% of teachers stated that the main reason for children leaving school early was hunger.

The impact on children leaving early during the school day appeared to increase between stages one and two. At stage one 83.9% of programme teachers said that children leave early during the school day less often since Mary’s Meals started feeding and 95.2% gave this response by stage two. 84.6% of teachers in schools where Mary’s Meals has been feeding for at least three years also said that children are leaving early during the school day less often since Mary’s Meals started feeding, suggesting that this change is consistent and long-term. 94.4% of these teachers felt that this change was caused by Mary’s Meals’ programme. 83.7% said that this change had begun when Mary’s Meals started feeding and continued throughout the period. Children also confirmed this in focus groups, for example, a female student in Standard 8 at Ng’onga said: “Before the children used to abscond from classes. Now they stay in school and eat – they don’t have anything to do at home so they stay.”

At baseline, in focus groups Programme and Control teachers and volunteers also reported that children leave early during the day due to hunger and in household surveys, parents saying that their children ‘never’ leave school early during the day increased from 20% to 100%. This was reported as much less commonplace in Programme impact stage focus groups, with a male teacher at Finish Primary saying: “Previously, they used to run during the break time. When it’s break around 10, they normally went home without coming back. But now with the porridge, when we ask them to break, we know that at break they will go to get their porridge. After the porridge, they have the courage to go back in to class until knocking off time.”

In Control impact stage focus groups teachers said that children were still leaving early, with a male teacher at Thava saying: “The learners sometimes openly say we are hungry, let us knock off, let us go.”

Mary’s Meals impact
Children saying they want to leave school early during the day due to hunger changed from 32.5% to 2.3%.
Children who had left school early due to hunger in the past two weeks changed from 28.8% to 0.0%.
Teachers saying that the reason children leave school early is hunger changed from 35.5% to 2.0%.
95.2% of teachers said that children leave school early less often since Mary’s Meals started.

41 At baseline, 15.2% of total number of Programme children surveyed said they left school early in the last two weeks.

42 19 children.

43 14 children.

Concentration, attention and attainment

Evidence of need

At baseline, 60.1% of Programme group children stated that they found it hard to concentrate in class due to hunger at least sometimes.

At baseline, 59.5% of Programme group children stated that they found it difficult to join in lessons and answer questions due to hunger at least sometimes.

Almost every teacher said that it is harder or dramatically harder to teach children who are hungry⁴⁴ and that the presence of hungry children in the classroom has a negative or very negative effect on the learning of other children.

Difficulty concentrating

A key regularly identified impact in focus group discussions with children, teachers and volunteers was improved concentration and attention span in class and survey results supported this. Children identified concentration as a problem in focus groups at both baseline stages and this continued for the Control group at stage two. Many children identified a clear link between being hungry and their inability to concentrate while in class, while others expressed reasons linked to hunger such as feeling sleepy or sick, or that their friends are disruptive in class, making it difficult to concentrate. A 14 year-old-boy in Standard 7 at Kasupe Primary (CB) said: “Because of hunger I can’t concentrate and I leave school due to having an empty stomach.”

A 10-year-old girl in Standard 3 at Thava Primary (CB) said: “When I am hungry I cannot concentrate and think of stealing food to eat.”⁴⁵

While this was a strong theme at these three stages of focus groups, focus group facilitators also had an impression that this was a sensitive topic which children admitted to reluctantly. At Phanda Primary School, one facilitator observed of a Standard 4 focus group: “With this group, there was a definite reluctance to admit to losing concentration or being distracted, even when probed. There seemed to be a sense of fear to admit they are not concentrating and a fear of what the consequence may be. However, we could see that being distracted does happen. We carried out some role play to demonstrate the meaning of concentration to the children. Children understood better what was being asked and showed they can lose concentration quite easily, but still did not admit that this happens in their classroom.”⁴⁶

Surveys with children found an impact on concentration in class for Programme group children which showed a clear change from Control group data. At baseline, 39.9% of Programme group children stated that they never found it hard to concentrate in class due to being hungry at school. By the end of the academic year, this had increased to 99.4%. At baseline, 52.6% of control group children reported that they never found it hard to concentrate, by the end of the academic year, this had reduced slightly to 43.2%, suggesting that the increase in the programme group figures is attributable

44 PB 99.4%, CB 96.3%, CI 100%.

45 Interestingly, the theme of crime was raised across several children’s focus groups, with children saying that they thought both hunger and not attending school can make their fellow pupils more likely to commit crimes or become criminals in future.

46 Becky Evans, Mary’s Meals Malawi Programme Officer.

to the introduction of Mary’s Meals’ school feeding programme. Statistical analysis of this outcome showed significant differences with large effect sizes, when comparing the change in the Programme group between baseline and impact, and when comparing the Programme with the Control group at impact.⁴⁷

At both Programme impact stages, children in focus groups were able to identify a noticeable change in both themselves and their peers in their ability to concentrate and to link this to the introduction of porridge. Generally children mentioned ‘hunger’ with noticeably less frequency and several children identified a difference between how they feel before and after having porridge, saying that they were more attentive after eating. When asked about the change in his school, a 16-year-old male pupil in Standard 4 at Mayela Primary school said: “You see the progress of students, more students are making it, more are able to pass the exams, because they are having more concentration when they have porridge.”



Paying attention in class

This was supported by teachers with 97.7% of Programme teachers at stage two saying that children now pay more or much more attention in class since before Mary’s Meals started feeding at their school. Teachers in focus groups at Programme baseline, Control baseline and Control stage two consistently said that children in their classes struggle to concentrate because they come to school hungry and frequently do not have anything to eat during the school day. Some teachers mentioned that children who leave early without having breakfast and who have a long distance to walk to school particularly struggle to concentrate in class and several said that concentration is worse in the late morning/afternoon. A male teacher at Fumbi (Control stage two) said: “Concentration of learners drop in afternoon hours. If during break they don’t take [eat] anything. They get hungry and then concentration drops.”

At impact stage two a female teacher at Mikombo Primary said: “[The programme has] turned them to have good behaviour, be good listeners in class, concentrating, also they are able to read. Now because of this porridge, because they are full, they are putting more effort into their education. We are so thankful for this. – previously, a lot of them would dodge the classes.”

47 Statistical testing on all outcomes apart from “teachers citing hunger as one of the main reasons for children not attending school” found negligible or insignificant effects when comparing the change in the Control group between baseline and impact, and when comparing the Programme and Control group at baseline.

Participating in lessons

Children and teachers also reported that participation in class had improved. At baseline, 40.5% of Programme group children stated that they never found it difficult to join in lessons and answer questions due to being hungry at school. By the end of the academic year, this had increased to 97.7%. At baseline, 55.7% of Control group children reported that they never found it difficult to join in lessons and answer questions, at the end of the academic year this remained constant at 50.8%, suggesting that this change is attributable to the introduction of Mary's Meals' school feeding programme. Statistical analysis of this outcome showed significant differences with large effect sizes, when comparing the change in the Programme group between baseline and impact, and when comparing the Programme with the Control group at impact stage.

At stage two, 94.7% of teachers also said that children ask more or much more questions in class since before Mary's Meals started feeding at their school. This was strongly supported in focus groups, with a male teacher at Finish Primary School saying: "Concentration now has gone up, because previously when the teacher teaches and asks a question it was hard for the children to raise their voice, but now they are able to give a high voice, whereby other children are able to understand what that child is saying."

Interestingly, at baseline, 68.4% of Programme group children stated that they are confident in putting their hands up and answering questions in class always or most of the time. By the end of the academic year, this had increased to 91.7%. For Control group children, the percentage decreased slightly,⁴⁸ suggesting there may also be a link between children's ability to concentrate and their self-confidence in participating in lessons. A female pupil in Standard 7 at Ng'onga (Programme school), said at stage two: "When the teacher was teaching, I wouldn't raise my hand to give an answer, but now I am one of the brilliant students and raise my hand to give the correct answer."

Harder to teach hungry children

At Programme baseline, Control baseline and Control impact stages in focus groups and surveys, almost every teacher said that it is harder or dramatically harder to teach children who are hungry⁴⁹ and that the presence of hungry children in the classroom has a negative or very negative effect on the learning of other children.⁵⁰ At the end of the academic year, 98.9% of children then said that they find it easier or much easier to learn at school since they started receiving Mary's Meals, 1.1% said 'no change'. 100% of Programme teachers (impact stages one and two) and 97.3% of Existing group teachers said that children find it easier or much easier to learn now that they receive Mary's Meals.

While the research chose not to look at national exam results because of other causal factors affecting their reliability, results around reported improvements in attainment were positive. At stage two, 93.1% of children said that their grades have improved since Mary's Meals started feeding at their school (5.7% no change) and 97.7% of teachers said that their pupils grades had improved (0.8% 'no change').

48 78.9% CB, 73.3% CI.
49 PB 99.4%, CB 96.3%, CI 100%.
50 PB 97.5%, CB 94.4%, CI 96.3%.

Mary's Meals' impact
Children saying they never find it hard to concentrate at school changed from 39.9% to 99.4%.
97.7% of teachers said that children pay more attention in class since Mary's Meals started feeding at their school.
94.7% of teachers said that children ask more questions in class since Mary's Meals started feeding.
Children saying that they never find it difficult to join in lessons changed from 40.5% to 97.7%.
98.9% of children said they find it easier to learn at school.
100% of teachers said children in their class find it easier to learn.
93.1% of children said their grades have improved.
97.7% of teachers said their pupils' grades have improved.



Mary's Meals key outcome: Increased progression within primary education by children living in poverty

The research found that:

- **Drop-out decreased. The decrease was higher for boys than girls.**
- **Existing teachers reported improved repetition and completion rates.**

Drop out

Evidence of need

High levels of drop-out at baseline.

Alongside enrolment increases, the number of children dropping out of school during the academic year also decreased. The table below shows the average number of children who dropped out per class during the previous school year, as reported by teachers. Average class size at baseline for the Programme group was 80 children and for the Control group was 106 children. The table shows that while drop-out for the Control group decreased by 11.2%, Programme group drop-out decreased by 51.3%.

Table: Average number of children per class dropping out during academic year.

	Baseline: reporting on 2013/14	Impact: reporting on 2014/15
Programme	5.71	2.78
Control	8.13	7.22

Reasons for dropping out

At Programme baseline, Control baseline and Control impact the most common reasons cited by teachers and volunteers for children dropping out in focus groups were lack of clothes or school materials, early marriage, pregnancy, needing to work for money to support the household, needing to help at home with housework or younger siblings, lack of parental encouragement or support for education, distance to school, poverty and hunger. Some volunteers also talked about lack of clothing being an issue, saying that children often drop out when they have been consistently missing school because their clothes are dirty.

One teacher at a Programme baseline focus group said: "I had one student who complained to me. She had lost her parents, so it was hard for the people who were keeping her to take care of her. She found it hard to go to school and yet they are telling her to do other work at home. She was sorry to leave school. She was 13, I don't know what her parents died from. Now she has left."

While all of the reasons mentioned are challenging to mitigate against, at baseline 11.5% of Programme group teachers and 10.4% of Control group teachers chose to cite 'hunger' as one of

the main reasons for children's drop-out. By stage two this had reduced to 0.9% for Programme group teachers and increased to 16.3% for Control group teachers, suggesting that one reason for the reduction in drop-out could be the introduction of feeding. At Programme impact stage one, teachers in focus groups cited similar reasons for drop-out as at baseline, however some said that they felt the number of children dropping out had reduced, saying that the introduction of feeding had helped this. At Programme impact stage two, the trend was that many more teachers said that drop-out had decreased; however some still cited the issues of early marriages, lack of materials and lack of parental encouragement as reasons for continued drop-out. In focus groups, Existing programme teachers also talked about early marriages and pregnancies in the communities as a key reason for children dropping out of school while it was mentioned that hunger was now less of an issue.

Notably, the number of male drop-outs reported by teachers was slightly higher than female drop-out for the Programme group and the percentage decrease was more significant for boys (see table below). Teachers at all stages in focus groups stressed that early marriage was as much an issue for boys as girls, with boys expected to leave school and gain an income once they married.⁵¹ A male teacher from Katete Primary School said at impact stage two: "The number of drop-outs has decreased, for example a Standard 8 girl, who had dropped out to get married, has come back to write her exams."

Table: Average number of male and female drop-outs as reported by teachers.

	Programme		Control	
	Girls	Boys	Girls	Boys
Baseline: reporting on 2013/14	2.66	3.05	4.93	3.20
Impact: reporting on 2014/15	1.65	1.12	3.68	3.54

Finally, when surveyed directly on this subject at impact stage, 94.0% of Programme teachers said that fewer or much fewer children in the local community have dropped out of school since Mary's Meals started feeding. Importantly, 92.9% of teachers in schools where Mary's Meals has been feeding for at least three years said that fewer or much fewer children in the local community have dropped out of school since Mary's Meals started feeding, suggesting that this impact is consistent and long-term.

Mary's Meals' impact

The number of children dropping out of school during the academic year, as reported by teachers, decreased by 11.2% for the Control group and 51.3% for the Programme group.

Programme teachers saying that hunger was one of the main reasons for children dropping out changed from 11.5% to 0.9%.

94.0% of teachers said fewer children have dropped out of school during the school year.

92.9% of Existing teachers said that fewer or much fewer children in the local community have dropped out of school since Mary's Meals started feeding.

⁵¹ Thetula (CB, female teacher): "Early marriage, for both boys and girls, starting from age 14."

Repetition and completion

Evidence of need

High levels of repetition reported in focus groups.

Reasons for children repeating standards and not completing school were explored via focus groups with children, teachers and volunteers as well as in surveys with Existing teachers. The most commonly cited reason for repetition cited in focus groups at Programme and Control baselines and Control impact was regular absence. Several teachers added that the reasons for an individual student being held back depended on their individual circumstances, often highlighting problems at home or lack of parental support. Some teachers also said that children struggled to progress if they had not achieved sufficient levels of English, which is the language of instruction in higher standards.

While it was too early in the study to explore repetition rates within the Programme and Control groups, 89.8% of Existing group teachers said that the numbers of children repeating standards had decreased or decreased significantly since Mary's Meals started feeding at their school. 91.6% of these teachers felt that this change was caused by Mary's Meals' programme and 84.6% said that this change had begun when Mary's Meals started feeding and continued throughout the period. Existing group teachers said that lack of resources and encouragement mean that children repeat standards, however several felt there had been a reduction in those repeating since Mary's Meals' programme began. For example, a female teacher at Chigwaja (PE) said: "The parents do not encourage them to participate in school and to do well. There are less repeating now than before Mary's Meals."

96.8% of Existing group teachers also said that the numbers of children completing Primary education had increased or increased significantly since Mary's Meals started feeding at their school. Many cited the introduction of feeding as affecting this, talking of decreased hunger levels and drop-out, increased attendance and concentration, some talked of increased encouragement through school feeding committees, mothers' groups and village chiefs, as well as older pupils acting as role models. 86.6% said that this change had begun when Mary's Meals started feeding and continued throughout the period.

Mary's Meals' impact

89.8% of Existing group teachers said fewer children are repeating their year since Mary's Meals began.

96.8% of Existing teachers said more children are completing Primary school since Mary's Meals began.



Mary's Meals key outcome: Improved health and well-being of children living in poverty

The research found that:

- Levels of children feeling ill at school because they are hungry decreased for Programme schools – a statistically significant result.
- Levels of children feeling ill at school because they are hungry reported by teachers also decreased for Programme schools.
- Children reported that eating the meal at school increased their energy levels, however the programme impact on levels of play reported by children were inconclusive.
- More children in Programme group schools reported feeling happy at school following the introduction of feeding – a statistically significant result.
- While surveys with children didn't show any significant change in levels of play following the introduction of feeding, surveys with teachers suggested that this had increased.

Health and energy levels

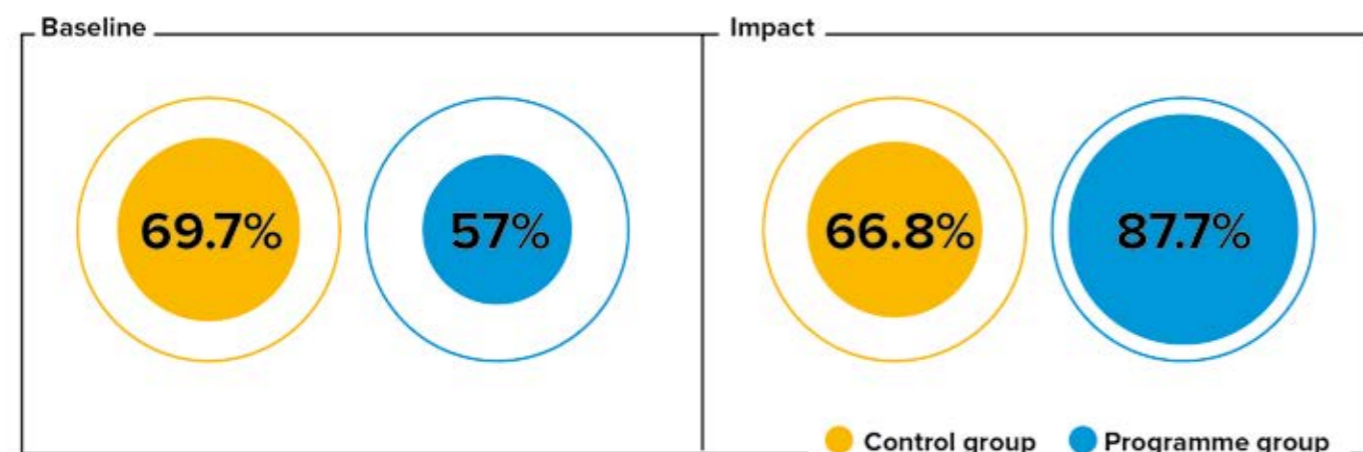
Evidence of need

High levels of children feeling ill due to hunger at both Programme and Control schools before feeding. This continued for Control schools.

Absence due to illness

At stage two, children, teachers and volunteers in focus groups repeatedly stated that absence due to illness had decreased following the introduction of feeding. At baseline, 57.0% of Programme group children stated that they never feel ill at school because they are hungry. By the end of the academic year, this had increased to 87.7%. For control group children, the percentage stayed constant (69.7% CB, 66.8% CI), suggesting that this change is attributable to the introduction of Mary's Meals' programme.

Percentage of children saying they never feel ill at school because they are hungry.

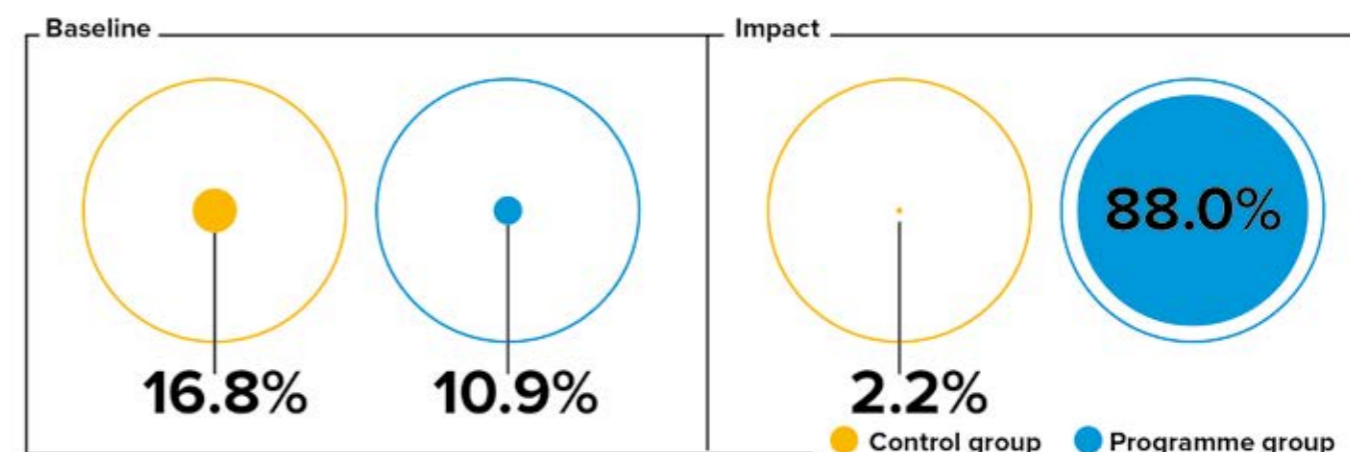


Teachers in Control baseline focus groups felt that students may suffer more from illness because of their poor nutrition, while several teachers in both groups said that they thought that often when their pupils said they were sick, they were actually hungry. When probed, most thought that in some cases this was a deliberate excuse to leave class and look for food, while others – particularly younger children – simply didn't understand the difference. At Programme stages one and two, teachers repeatedly said that the children looked healthier as a result of the introduction of Mary's Meals.

Feeling ill due to hunger

At baseline, the percentage of Programme teachers who said that children in their class 'never' feel ill due to hunger was 10.9%, by stage one this had increased to 91.4% and by stage two it was 88.0%. 77.5% of Existing group teachers also gave this response. At baseline, 16.8% of Control teachers said that children in their class 'never' feel ill due to hunger, by impact this had decreased to a worrying 2.2%, suggesting that this change is attributable to the introduction of Mary's Meals' school feeding programme. The change for Control teachers again highlights the worsening situation for their pupils and the net impact of the programme.

Percentage of teachers saying children in their class never feel ill at school due to hunger.



Mary's Meals' impact

Programme children saying they never feel ill due to hunger changed from 57.0% to 87.7%.

Programme teachers saying children in their class never feel ill due to hunger changed from 10.9% to 88.0%.

77.5% of Existing group teachers also said that children in their class never feel ill due to hunger.

Play

The research around levels of play in relation to energy levels produced complex results. While the results from children, teachers and volunteers suggested that the children have more energy after eating their likuni phala (see table below), survey results showed increased levels of play at impact stage for both groups, suggesting that there may be a seasonal variation. At every stage, including baseline, children talked about play and what games they enjoy. Almost all said at every stage that they play during school breaks.

Where children reported at Programme and Control baselines and Control impact, that their play was restricted, this was primarily because they either had to work for cash and help at home or because of lack of energy due to hunger. A male Standard 1 pupil at Mchenga Primary (PB) said: "We play at break. When we knock off we normally rush home to take part in other activities." At Programme impact stages one and two, most children in focus groups said they regularly play games and sports, but also that they had to work or do chores. While the need to fulfil these duties hadn't changed, several children linked their ability to play to their levels of energy as a result of having a meal at school. A 16-year-old male Standard 8 student at Katete for example said: "We play more now, we have more energy."

Table: Energy levels after eating likuni phala as reported by Programme children, teachers and volunteers.

	No energy	A little energy	Lots of energy
Children – Programme impact 2	0.3%	18.6%	81.1%
Teachers – Programme impact 2	1.5%	39.1%	59.4%
Existing teachers	0.4%	33.5%	66.1%
Volunteers – Programme impact 2	0.0%	19.4%	80.6%

The difference in energy and levels of play was more strongly felt and associated with the Programme by teachers and volunteers. At baseline, the percentage of Programme teachers who said that on average children in their class 'always' or 'most of the time' play active games or sports after school was 71.0%, by stage one this had increased to 99.3% and at stage two it was 99.2%. At baseline, the percentage of Control teachers who said that on average children in their class 'always' or 'most of the time' play active games or sports after school was 86.8%, by impact this had remained constant at 86.7% suggesting that this change in Programme figures is attributable to the introduction of Mary's Meals' school feeding programme. In addition, 99.6% of Existing group teachers also gave this response.

The trend in focus groups with Existing group teachers was consistently that children are regularly playing sports and games at school, with some saying that this had increased with the presence of Mary's Meals at the school. In both impact stages of the Programme groups, teachers felt that children were playing frequently while at school and added that they seemed to have more energy. At the first impact stage for example, a female teacher at Makalanga said: "In the past we would not see these children playing outside. Now they have the phala and lots of energy."

At impact stage two, a male teacher at Ng'onga commented: "With the porridge, now once they go get their porridge and have their break, they are now active children, their energy has increased. They are able to play football, running around, jumping. But previously, before porridge, they couldn't do that."

Volunteers supported this position, with a female volunteer at Finish saying: "There is a difference. Before the children were passive, but now because of the porridge eventually they go home and the parents give them nsima and they say 'ah, I'm ok, I will eat it later' and they go and play."

Mary's Meals' impact

Programme teachers saying children in their class play active games or sports after school 'always' or 'most of the time' changed from 71.0% to 99.2%.

99.6% of Existing group teachers also said that children in their class play active games or sports after school 'always' or 'most of the time'.

Happiness

Evidence of need

At baseline 39.9% of children reported feeling very unhappy, unhappy or 'okay' at school, frequently linking this to hunger in focus groups.

Unhappiness linked to hunger

The expression of Mary's Meals as something which improves how happy children feel at school was reiterated throughout focus groups at impact stages. At Programme and Control baselines and Control stage two, the numbers of children linking their happiness to eating food or levels of hunger were very high. Unhappiness was consistently linked to when there is no food to eat. Again and again, the response from children, particularly smaller children, to 'what makes you feel happy?' were 'when I eat', often followed by a description of their favourite food, predominantly nsima (maize) or phala (porridge). Other common responses were around playing with friends or learning in class. Reasons for feeling unhappy related to being punished at home or in school, or when fighting with other children.

Happiness was also consistently mentioned by children when talking about other indicators such as concentration or attendance. For example, at stage two an 11 year-old, Standard 5 girl in a Fumbi, a Control group school said: "Mostly in the afternoon, if the lesson is continuous, one teacher comes straight after another then we need a break but don't always get one. This makes us tired and lose concentration. We don't feel happy – it's hard to interact with friends, it's hard to concentrate and it makes me want to go home and eat, but even when you go home you're not sure if there will be something to eat."

At Programme stages one and two, the number of responses given by children linking their happiness or sadness to eating food or levels of hunger remained high and many specifically said that receiving Mary's Meals porridge made them happy or they were happy when eating it. This often provoked laughter and smiling in focus groups. Some children said that they felt sad when porridge was not able to be prepared due to a programme delivery issue.

Survey responses supported these findings. While complex external factors and individual circumstances affect children’s happiness, the trend showed that overall happiness at school reported by children improved for the Programme group while staying the same for the Control group. At baseline, the percentage of Programme children who said that they feel happy or very happy at school was 60.1%, by stage one this had increased to 92.5% and by stage two it was 80.9%. At baseline, the percentage of Control children who said that they feel happy or very happy at school was 68.0%, by impact it had remained constant at 68.0%. Statistical analysis of this outcome showed significant differences with small effect sizes, when comparing the change in the programme group between baseline and impact.⁵²

Discussions and surveys with teachers and volunteers strongly supported this finding from children. At baseline, the percentage of Programme teachers who said that they think that children in their class are happy at school at least sometimes was 89.8%, by stage one this had increased to 96.4% and by stage two it was 97.7%. For Existing group teachers it was 96.0%. At baseline, the percentage of Control teachers who said that they think that children in their class are happy at school at least sometimes was 82.1%; by impact this had increased to 90.4%. When asked directly, 78.2% of teachers also said that the children in their class are happier or much happier since receiving Mary’s Meals at school. At baseline a male teacher at Chigubudu (Programme school) said: “Food is the main reason to make the child to be happy. Because when they leave their houses, they may be hungry but when their friends share something with them [food] they will be happy about it.” At impact stage a teacher at Mikombo said: “When they hear there is porridge cooked, they are happy, when they come and know that there is no cooking, they tend to be sad.”

At baseline, the percentage of Programme volunteers who said that their children are happy at school ‘always’ or ‘most of the time’ was 48.6%; by impact stage one this had increased to 79.2% and by stage two it was 90.2%. At baseline, the percentage of Control community members who said that their children are happy at school ‘always’ or ‘most of the time’ was 52.5%; by impact this had increased to 67.9%, suggesting that this has been influenced by the introduction of Mary’s Meals’ school feeding programme. Statistical analysis of this outcome showed significant differences with medium effect sizes, when comparing the change in the Programme group between baseline and impact and small effect sizes when comparing the Programme with the Control group at impact.

In addition, in household surveys, the percentage of Programme parents saying that their children are happy at school ‘always’ or ‘most of the time’ changed from 20% to 100%. Volunteers in focus groups spoke consistently of their children’s happiness due to the introduction of the programme. One woman at Mazala (Programme school) said: “Children are happy since the introduction of the feeding programme, as they always have something to eat.” Volunteers also tended to add that they felt happy that their children were not hungry at school.

The difference Mary’s Meals makes

Almost every child in a Programme school (97.4%) said that they felt that having Mary’s Meals likuni phala at school has made a difference to their life and almost every teacher (99.2%) in a Programme school said that having Mary’s Meals likuni phala at school has made a difference to their class. The vast majority of teachers (90.7%) where Mary’s Meals has been feeding for a minimum of three years also felt that having Mary’s Meals likuni phala at school has made a difference to their class.

At both impact stages, Programme group children consistently cited as the biggest difference which having a meal makes to their classroom as 'children in my class pay more attention to the teacher',⁵³

⁵² Significant differences with negligible effect sizes were observed when comparing the Programme with the Control group (at impact).
⁵³ P11 33.1%, P12 34.2%

the second biggest difference cited was 'children in my class are happier'.⁵⁴ At both impact stages, the main differences cited by teachers were children pay more attention in class,⁵⁵ the third most common difference was that the children are happier.⁵⁶ Teachers in schools where Mary’s Meals has been feeding for at least three years chose these two options equally, suggesting that these impacts are consistent and long-term.⁵⁷

Mary’s Meals' impact
Children saying ‘I feel happy at school’ changed from 60.1% to 80.9%.
Teachers saying that children in their class are happy at school at least ‘sometimes’ changed from 89.8% to 97.7%.
78.2% of teachers think that children in their class are happier at school since Mary’s Meals began.
Volunteers saying that their children are happy at school at least ‘most of the time’ changed from 48.6% to 90.2%.
97.4% of children said having Mary’s Meals likuni phala had made a difference to their lives.
99.2% of teachers said having Mary’s Meals likuni phala had made a difference to their class.

Anxiety

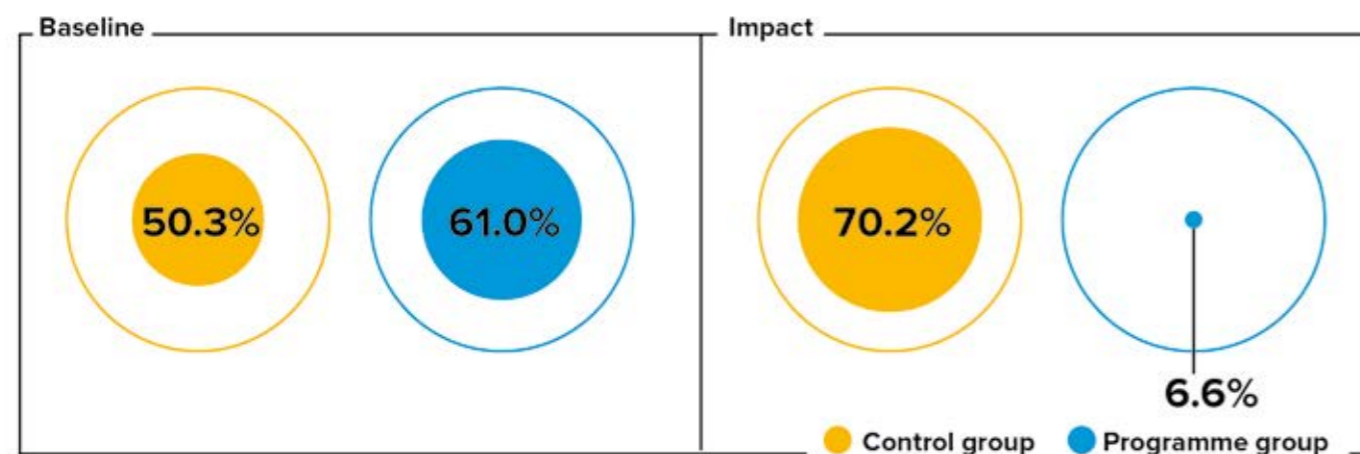
Evidence of need
At baseline 39.9% of children reported feeling very unhappy, unhappy or ‘ok’ at school, frequently linking this to hunger in focus groups.
At baseline, 50.0% of Programme group children stated that they worry about when they are next going to eat at least sometimes when they are in class.
At baseline 96.8% of Programme group teachers stated that the children in their class worry about being hungry at school at least sometimes.
At baseline, 97.2% of programme volunteers said that they worry about their children being hungry at school at least sometimes.
At baseline, the percentage of programme volunteers who said that their children worry about being hungry at school at least sometimes was 90.1%

⁵⁴ P11 26.5%, P12 27.4%.
⁵⁵ P11 41.0%, P12 35.0%.
⁵⁶ P11 22.2%, P12 25.8%.
⁵⁷ 37.7%.

Feeling anxious because of hunger

The findings on happiness were strongly supported by related findings on levels of anxiety due to hunger. At baseline, 61.0% of Programme group children stated that they worry about being hungry at school at least sometimes, by the end of the academic year this had decreased to 6.6%. During this period the percentage of control group children who said that they worry about being hungry at school at least sometimes increased from 50.3% to 70.2%, with 30.0% saying that they ‘always’ worry about being hungry at school, suggesting that the difference in these figures (63.6%) is attributable to the introduction of Mary’s Meals’ school feeding programme and highlighting the worsening conditions for Control group children. At the end of the first academic year, 93.4% of children within Mary’s Meals’ programme said that they ‘never’ worry about being hungry at school.

Percentage of children saying they worry about being hungry at school at least sometimes



At Programme and Control baselines and Control impact stage, many children consistently expressed that they worry about being hungry at school. How they expressed this or coped with the feeling varied between age groups, with younger children being more unhappy or distressed by hunger at school while, sadly, several older children explained that they have learned to live with the feeling. At baseline a child in Standard 8 at Futsa, a Control group school, explained: “We have been hungry for many years and accept the situation.” By impact stage, most Programme children said they did not worry about being hungry at school, several directly attributing this to Mary’s Meals. One child said that if he anticipates an issue or delay in the preparation of the likuni phala his anxiety returns: “When they don’t cook porridge, I worry.”⁵⁸

The effect of anxiety

The most commonly cited effect of this anxiety was distraction, affecting children’s concentration. A pupil in Mayela, a programme school for example, said at baseline: “I worry about hunger and then I fail to concentrate on what the teacher is saying.”⁵⁹ At baseline, 50.0% of Programme group children stated that they worry about when they are next going to eat at least sometimes when they are in class. By the end of the academic year, this had decreased to 5.4%. The results for the Control group remained constant at around 25%, suggesting that the difference in these figures is attributable to the introduction of Mary’s Meals’ school feeding programme.

⁵⁸ Mazala, Programme Impact, Standard 4 male, 14.

⁵⁹ Mayela Standard 7 male, 14.

Surveys with teachers supported this with almost all Programme teachers moving from feeling that children in their class worry about being hungry to feeling that the children never worry. At baseline, 3.2% of Programme group teachers stated that the children in their class ‘never’ worry about being hungry at school, by the end of the academic year this had increased to 97.0%. At the same point at the end of the academic year, 3.7% of Control group teachers reported that the children in their class ‘never’ worry about being hungry at school, suggesting that the difference in these figures is attributable to the introduction of Mary’s Meals’ school feeding programme. 77.1% of teachers who have been teaching in Mary’s Meals schools since before the programme began at their school at least three years ago, also stated that children in their class ‘never’ worry about being hungry at school.

Volunteers, in particular those who were parents, frequently raised their concern and anxiety about their children’s hunger. At baseline, the percentage of Programme volunteers who said that they worry about their children being hungry at school at least sometimes was 97.2%; by stage one this had decreased to 9.6% and by stage two it was 3.2%. At baseline, the percentage of Control community members who said that they worry about their children being hungry at school at least sometimes was 77.8%; by impact this had increased to 88.9%.

Volunteers’ opinion on the level of their children’s anxiety due to hunger also changed following the introduction of feeding. At baseline, the percentage of programme volunteers who said that their children worry about being hungry at school at least sometimes was 90.1%; by stage one this had decreased to 12.5% and by stage two it was 6.5%. At baseline, the percentage of Control community members who said that their children worry about being hungry at school at least sometimes was 81.0%; by impact this had increased to 93.8%, suggesting that this has been influenced by the introduction of Mary’s Meals’ school feeding programme. The level of concern amongst Control group community members for both questions again highlights increasing food insecurity in this area and the resulting larger effect of the programme in the difference between these two figures.

Mary’s Meals’ impact

Children saying ‘I worry about being hungry at school’ at least ‘sometimes’ changed from 61.0% to 6.6%.

Children saying ‘I worry about when I’m next going to eat’ at least ‘sometimes’ changed from 50.0% to 5.4%.

Teachers saying ‘Children in my class never worry about being hungry at school’ changed from 3.2% to 97.0%.

Volunteers saying ‘I worry about my children being hungry at school’ at least ‘sometimes’ changed from 97.2% to 3.2%.

Volunteers saying ‘My children worry about being hungry at school’ at least ‘sometimes’ changed from 90.1% to 6.5%.

Work

Children working for money is very common in Malawi and this was reflected across both groups, with around one third of all children having worked for money in each group. While almost all children routinely work to support their parents with subsistence farming, many children said they work on land belonging to other members of their community, often carrying hoes to school with them so that they can work after school. All work was referred to as piece work, where a child, for example, would be paid 20 kwacha (2 pence) for tiling a row of soil in a field. In all focus groups children, teachers and volunteers said that the levels of work the children do varies according to the season, however the evidence was that the incidence of missing school in order to work had decreased following the introduction of the programme.

At baseline, the percentage of Programme volunteers who said that their children miss school to work to help pay for the family's food at least sometimes was 29.2%; by impact stage one this was 9.7%, by stage two it had decreased to 3.2%. At baseline, the percentage of Control group community members who said that their children miss school to work to help pay for the family's food at least sometimes was 27.4%, by impact this had remained relatively constant at 25.9%, suggesting that this has been influenced by the introduction of Mary's Meals' school feeding programme. In addition, in household surveys, parents saying that their children 'never' miss school to work changed from 40% to 86%.

Mary's Meals' impact

Volunteers saying 'My children miss school to work to help pay for the family's food' at least 'sometimes' changed from 29.2% to 3.2%.

Hope and the future

At every stage, almost all children thought it was important or very important to get an education,⁶⁰ and at every stage the most common reason given was 'to learn'. Evidence from focus groups strongly supported this with children saying for example:

- **"I want to have a job, to have a better life."**⁶¹
- **"I want to have an independent life and support my parents."**⁶²
- **"It is very important to learn with others. We don't want to miss what others learn."**⁶³
- **"School helps me to help my mother and my family"**⁶⁴

When talking about their future, children across both groups talked about their desire to gain employment, with many talking about getting married. The most commonly cited jobs which Programme volunteers and Control community members would like their children to do when they leave school were teaching or healthcare, perhaps indicative of the most influential role models in their communities. These were also most common amongst children. A 14-year-old boy at Chigubudu (Programme baseline) said that all he wanted was 'to be able to fulfil my life needs.' A 14-year-old female pupil at Mayela said: "I would like to have a successful trade business, take things from outside Malawi

60 PB 99.5%, P11 99.7%, P12 99.4%, CB 99.7%, CI 99.8%.

61 P12 Mikombo Standard 4 (female).

62 P12 Mayela Standard 7 (female).

63 CB Namisi Standard 4 (female), 11.

64 P11 - Mazala Standard 5 (no gender data).



and carry them here. I just do farming to meet basic needs, but the dream is to do that business." In general, older children in focus groups found it easier to talk about the future than younger children, who seemed not to have had discussions on this subject before.

Progressing to secondary school

Unfortunately, secondary school places in Malawi are limited and the cost of going to secondary school can be prohibitive. However at every stage, in focus groups and surveys the vast majority of Programme and Control children hope to go to secondary school⁶⁵ and stated that going to secondary school was either important or very important.⁶⁶ At every stage, 100% of Programme volunteers and Control community members also said that they hoped to send their children to secondary school. Teachers consistently talked of the chances of most of their pupils of going to secondary school as being limited and of drop-out before Standard 8 as very common. Often teachers said that the few children in the higher school grades were more likely to progress to secondary school as they had managed to remain committed to their studies despite multiple barriers including hunger.

In surveys 98.7% of teachers where Mary's Meals has been feeding for more than three years said that children in their class are more or much more hopeful for the future. A teacher at Milo Primary school said: "A high number of learners go to secondary school [at this school]. The phala encourages them to do well."

Mary's Meals' impact

98.7% of teachers said that children in their class are more hopeful for the future.

65 (PB 98.1%, P11 100.0%, P12 100.0%, CB 98.6%, CI 99.8%).

66 (PB 98.4%, P11 99.4%, P12 99.7%, CB 98.3%, CI 100%).

Mary's Meals key outcome: Increased support for education within vulnerable communities

The research found that:

- **At Programme impact stage two, some teachers drew a link between the introduction of the programme and the involvement of the parents at the school.**
- **At stage one, 94.5% of volunteers had started volunteering at the school within the past six months and there were an average of 10 committed volunteers per programme school by the end of the year.**
- **Almost 90% of Existing teachers described parents/guardians of the children in their class as having 'strong' or 'some' involvement in school parent activities, such as the parent teacher association (PTA).**

A key aim of Mary's Meals' programme is to increase community support for education. While this is a nuanced area of research, surveys with volunteers and community members suggested a minor increase in community support for education. Focus groups within Programme schools suggested a much stronger trend and findings within schools where Mary's Meals has been teaching for more than three years were compelling.

At every stage, almost all volunteers and parents stated that they think it is important that children get an education⁶⁷ and that children go to school every day.⁶⁸ A volunteer at Katete for example, said: "School is very important. We didn't go further with school and we know our children must learn to go further. If they leave it they won't go further in life."

At Programme and Control baseline and Control impact, most schools had PTAs and findings on levels of community support for education varied from school to school and community to community. Teachers often cited lack of suitable role models as a barrier to community support for education. Some teachers said that while parents' values are supportive of education, their actions may be different, in not encouraging their children to regularly attend school for example. A teacher at Thetula (Control group school) said for example: "It varies. The parents who went to school, they do value it, but for those who never went up to a certain standard they don't value education."⁶⁹ And at Mayela (Programme school) a teacher said: "It depends on the parent's background. Some are educated a bit and so maybe their force their children to go, but others didn't go to school, so they let their children stay home because they don't know the value of education."

At Programme impact stage two, some teachers drew a link between the introduction of the programme and the involvement of the parents at the school. At stage one, 94.5% of volunteers had started volunteering at the school within the past six months and there were an average of 10 committed volunteers per programme school by the end of the year. In surveys, the percentage of teachers who would describe the parents/guardians of the children in their class as having 'strong' or 'some' involvement in school parent activities, such as the PTA, was highest for the Existing group teachers (89.9%), where Mary's Meals have been working with communities for several years. Within the Programme schools, this percentage had increased by 6.7% between baseline and impact stages.⁷⁰ When programme volunteers were asked about their motivations for volunteering their time at school,

67 PB 100.0%, P11 100.0%, P12 98.4%, CB 84.4%, CI 100%. Household surveys 100%.

68 PB 100.0%, P11 98.6%, P12 98.4%, CB 100.0%, CI 98.8%

69 CI – Thetula (male, Standard 2 teacher).

70 PB 79.0%, P12 85.7%, ET 89.9%, CB 84.4%, CI 87.4%

many explained that they felt that Mary's Meals was crucial for both their community's development as well as the education of their own children. A volunteer at Chigubudu (Programme school) said: "It is for the development of the community, we know that the coming of this [Mary's Meals] has developed the community and saved the long distance walk so that they will come to a near school."

Another volunteer at Finish Primary School, said: "I thought it good to volunteer, because we are doing good things for our children. Because we cannot say these things have come for our kids at school, so let them do it on their own. That's why we know that we have to come here and help to cook for our children, because this has saved us a lot. As of now, the children have something to eat, they used to come with an empty stomach and they go back home without food, they could stay morning, afternoon, up to evening without anything. The only food they survive with was nsima, maybe once a day. So now it is saving them, now they are adding an extra meal."

At Programme stage two, 20.2% of volunteers said that the main reason they send their children to school every day was to get a meal, with the most commonly selected reason being to get an education. Again in focus groups volunteers said that the messages coming from Mary's Meals community sensitisation, ongoing project support (two visits by school feeding officers per week) and feeding was helping increase how communities value education. A volunteer at Finish Primary School (Programme) for example, said: "The community have really put it at their heart. If a child has not gone to school, most parents will question the child." A volunteer at Mazala said: "There are rules in the villages, they ask all the children to go to school. All the children are coming now because there is porridge. The chief makes this rule."

94.3% of Existing teachers reported that parents are more, or much more involved in school parent activities, such as the PTA, since Mary's Meals began feeding. 80.5% said that this change had begun when Mary's Meals started feeding and continued throughout the period. Teachers at all schools generally said that they think that people in the local community think education is important; however this was higher for the Existing group teachers at 93%.⁷¹



Mary's Meals' impact

94.3% of Existing teachers said that parents are more involved in school parent activities since feeding began.

89.9% of Existing teachers described parents/guardians of the children in their class as having 'strong' or 'some' involvement in school parent activities, such as the PTA.

71 PB 83.4%, P11 86.3%, P12 82.7%, ET 93.0%, CB 78.3%, CI 85.9%.



RECOMMENDATIONS AND LEARNING

Recommendations and learning

Mary's Meals is greatly encouraged by the findings in this report and will continue to develop the scope and depth of the impact assessment over future years, both in Malawi and in Mary's Meals' other programme countries. A similar process has already begun in Zambia in 2015 and in Liberia in 2016, also externally verified by INTRAC.

The research is contributing greatly to Mary's Meals' learning on its programmes and has already had an impact on current programme design. The impact assessment will also continue to further explore findings in all areas, assessing longer term results and causality. Future potential areas of research include further work at household levels, contribution analysis and more in-depth work with individual children. Thankfully, the children in the Control group, whose needs have been so clearly demonstrated by the research, began to be supported by Mary's Meals in May 2016.



CONCLUSION



Conclusion

This report provides findings from the first year of a five-year study, which is part of Mary's Meals' wider monitoring, evaluation and learning strategy in assessing the impact of its global programmes. The research shows that the introduction of Mary's Meals' school feeding programme has had a significant impact on the lives of children and their families, improving hunger levels, educational indicators and overall well-being. Importantly, the research suggests that the changes experienced by children increase throughout the first year of feeding. Findings from teachers where Mary's Meals has been feeding for several years also suggest that these changes are consistent and long-term.

Mary's Meals' work assessing its impact in Malawi and other programme countries will continue to grow and develop, as it examines specific elements in further detail. However the message from this research is clear. School feeding, and particularly Mary's Meals' model of school feeding, is highly effective in improving children's educational outcomes. More than this, it helps children feel less hungry, less worried about hunger and happier at school. In this way, school feeding meets children's essential immediate needs – a moral imperative – while simultaneously working towards long-term improvements in the educational attainment of children and the future development of their country as a whole.

