



Healthier Children and Communities – One Garden at a Time

The impact of community gardens on improving nutrition

A focus on nutrition and healthy eating comes alive when classroom instruction is tied to preparing fruits and vegetables that students and their communities grow themselves. That's the effective strategy behind a series of high-quality, school-based programs to promote healthy lifestyles, supported by The Mondelēz International Foundation (MIF) in Brazil, China, Germany, India, Indonesia, Mexico, South Africa and the United Kingdom.

The successful strategies among each program are similar – an empowered lead partner agency in each country, deeply engaged community and government partners, and clear, measurable goals. But achieving success depends on adaptability, as each participating country faces different operational and climate-related challenges. Here's how the eight programs have successfully used the gardens and educational tools to improve student and family health.

“Healthy citizens are the greatest asset any country can have.”
- ***Winston Churchill***

BRAZIL – Ação Saudável



Training students and families in nutrition and making good dietary choices, and maintaining school and home gardens to provide fresh produce, are extremely important elements to Brazil's Ação Saudável (Health in Action) program. Nutrition-specific education allows for continuity and sustainability of activities, according to Marianita Masiero, Program Coordinator.¹

Ação Saudável is a partnership of INMED Partnerships for Children, INMED Brasil, Mondelēz International Foundation, and the Instituto Esporte e Educação (IEE), an organization promoting sports and physical activity in low-income communities. The program operates in the states of Pernambuco, São Paulo and Paraná - states in the northeast and southeast regions of the nation identified as areas with strong potential to impact children in need.² In these three states, the program has engaged with more than 1,000 schools and is projected to reach more than 400,000 students in 14 communities.³

Since 2010, the program has established 300 school gardens in partnership with local government agriculture departments (plus some form of plant production, including containers, in every school). According to Director Gabriela Pen, sensitivity to both local soil conditions and diets is essential. "In the beginning, we have local coordinators analyze soil conditions and if there is water available to irrigate," Pen says. "The local people decide what to plant. Soil conditions vary. There are climate differences – the south more cold, northeast we get lots of sun." Crops under cultivation include lettuce, squash, corn, and cabbage.⁴

Ação Saudável provides seeds and training for the teachers about the kinds of fruits and vegetables that can be grown. Students help plant, maintain, and harvest the gardens while getting exercise and learning about cultivation and responsibility. Thanks to the gardens, children have increased access to healthy foods for school lunches, and the program also encourages home and community gardens.⁵

¹ Telephone interview with MIF consultant Sept. 5, 2016

² *Food and Nutrition Bulletin*, vol. 35, no. 3 2014, Health in Action Program, Brazil. Emily Slater, Mary-Lynn Lasco, Joyce Capelli and Gabriela Pen

³ Telephone interview with consultant for MIF on Sept. 5, 2016

⁴ Ibid.

⁵ Ibid.

In June 2016, the Dario Paes elementary school, in the town of Glória do Goitá in Pernambuco State, completed a project called “Eating Well” with a week-long series of events. In one activity, students discussed the benefits of organic fruits and vegetables, presented ways to clean the vegetables, and prepared a salad. “I really enjoyed it because it was nice to talk about healthy eating,” says one third-grader. “At home, my mom plants cilantro and uses it in our meals. I bring fruits to school. Each day I bring something different.”⁶ A first-grader at another school in the town of Bauru in São Paulo State says, “I like to work with the land. I love it when the teacher says it’s time to visit the garden.”

Reaction from parents has been similarly favorable. In the city of Moreno in Pernambuco, one mother says after a Health in Action workshop that the program “taught my daughter the advantages of eating healthier and to be more careful with hygiene and disease prevention.” Another mother added, “Health in Action helped and continues to help my community to eat better, because we are aware of the benefits of eating a healthy diet and instructing us to plant our own garden at home.”⁷



In the town of Piracicaba in São Paulo State, more than 40 sixth-graders collected recycled tires and other materials to house a garden. The Dom Aniger and Honorato Faustino schools had a special celebration for Mother’s Day, creating small container gardens that they decorated and took home as gifts. The Dom Aniger school also built larger container gardens with recycled tires and plastic bottles, and used toilet paper rolls as receptacles for seedlings.⁸

⁶ INMED Partnerships for Children/INMED Brasil (INMED) Health in Action Program Quarterly Progress Report to MIF, July 2016

⁷ INMED Brazil Health in Action Three-Year Program Report, January 2013

⁸ Ibid.

CHINA – Hope Kitchens



More than 300 Mondelez Hope Kitchens have dramatically improved the diets of rural students suffering from lack of nutrition – helping them to form good hygiene habits, reducing students’ risks of gastrointestinal ailments, and increasing meal satisfaction. Gu Lan, Director of the Chinese Youth Development Foundation (CYDF), says the kitchens have a fundamental goal: improve kitchen equipment and train teacher and kitchen staffs to provide warm, cooked meals. This helps rural students access safe, nutritious food, and improve their

nutritional intake and health.⁹

Mondelēz Hope Kitchen - Nutrition & Healthy Lifestyles Program (MHK) is a partnership of the CYDF, the Chinese Centers for Disease Control and Prevention (CDC), and MIF. Established in 2014 to promote healthy lifestyles, the program operates in 21 provinces and cities, benefiting 80 pilot schools and approximately 150,000 rural students.

Two of the core goals of the program are “nutrition and education — to raise awareness of nutrition among children — [and] the gardens, which enable children to have healthy and clean vegetables and fruit,” Lan says. MHK nutrition classes are integrated with the school gardens in 80 schools, including training rural teachers once per semester. Another benefit, Lan adds, is that by encouraging children to tend the gardens, they get exercise and “can observe and cherish nature.”¹⁰

“The nutrition and health course has been one of the most popular classes in the pilot schools because it is closely related with everyday life, quenches the thirst of students and teachers for nutrition knowledge, and mobilizes their enthusiasm,” according to the MHK quarterly progress report. To reinforce lessons learned in the nutrition and health course, MHK sponsors competitions for student essays and speeches about nutrition and health.¹¹

Yang Shuqiao, the principal of one of the pilot schools, says the program has made students more aware of nutrition and health and resulted in better snack choices. “The students are paying more attention to nutrition in daily diet and always talking about

⁹ Telephone interview with MIF consultant Sept. 28, 2016

¹⁰ *Ibid.*

¹¹ Mondelēz Hope Kitchen - Nutrition & Healthy Lifestyles Program, February-July 2016 (August 2016)

nutrition during daily conversations,” she says. “Moreover, the students even bring home their nutrition and health concepts, making a positive influence on communities and expanding the influence of the program.” And by tending their own vegetables, the students learn more about nutrients and the growth process of the various plants.¹²

Data collected by MHK, CYDF and CDC demonstrates substantial improvement. Before the program’s launch, baseline surveys showed that only 50% of the rural schools had kitchen facilities, many of which were substandard. Of the students, approximately 70% felt hungry during classes, and more than 30% were food-insecure.

Sample endline surveys, conducted in 2016, of more than 5,100 elementary-school children showed significant progress over baseline results from 2014:¹³



- Overall, the MHK program has played a positive role in heightening awareness of nutrition and health, improving eating behaviors and nutrition, and increasing physical activity.
- Compared with baseline and midpoint surveys, students in the endline surveys demonstrated much stronger grasp of core nutrition points, with 88.2% showing improvement in the rate of correct responses to questions.
- The percentage of students eating a balanced diet, essential for children’s physical and intellectual development, has gone up. The percentage of students who eat three kinds of vegetables or more each day, up 5.9 percentage points; and fruit every day, up 4.5 percentage points.
- Students with normal Body Mass Index (BMI) are up 6.3 percentage points in 2016 from 2014, while students suffering from malnutrition are down 10 percentage points.

The father of a student from the Bawan Elementary School, says, “After my kid worked in the school’s vegetable garden ... she frequently told us which foods we should eat and which are nutritious. She also spent less and less pocket money. She understood that the money made by her parents through growing vegetables was hard earned and should be treasured. We are very pleased to see that.”¹⁴

¹² *Ibid.*

¹³ Mondelez Hope Kitchen - Nutrition & Healthy Lifestyles Program, Phase I Impact Evaluation Report, December 2016

¹⁴ Email from Nana Zhao to MIF on Feb. 7, 2017

GERMANY – Klasse2000



Klasse2000, which began in 1991, operates in all 16 German states and serves 480,000 students (over the 25 years, the total is more than 1.3 million children). It is the largest program for primary-school students (grades 1-4, ages 6-10) in the nation, and MIF currently is one of its biggest donors. Unlike its counterparts in other nations, the program – which originally began as an anti-smoking

initiative – does not sponsor gardens. Today, nutrition education and health and life skills, such as violence prevention and dealing with stress, are important components.¹⁵ While children in Germany are generally healthy, 15% of all children of primary school age are overweight and 6.4% are obese.¹⁶

Klasse2000's goals include¹⁷:

- Motivate children to be healthy – understand they can contribute to their own health
- Teach children about their bodies – what they can do to stay healthy and feel good
- Help teach children critical thinking – empower them to say 'no' to harmful behaviors such as alcohol and tobacco use.

In addition to the teachers, there are 1,300 external health promoters who go to classes two to three times a year and work with the students as part of Klasse2000. Recruiting external promoters is not always easy, so potential candidates are identified with the help of German education and health authorities, and then trained by Klasse2000. All of the external promoters must have a health-related background, such as nutritionists or physical therapists, as well as experience working with children. Parents are invited to parents' evenings and written materials are sent home on health- and nutrition-related topics. Homework assignments encourage family discussions.¹⁸

¹⁵ Telephone interview by Brigitte Horst and Angela Dokter of Klasse2000 with MIF consultant Sept. 22, 2016

¹⁶ Ravens Sieberer, U., Wille, N., bed frames, S. & Erhart, M. (2007): Mental health of children and adolescents in Germany: results of the BELLA study in Child and Adolescent Health Survey (KiGGS). Bundesgesundheitsblatt - Health Research - Health, 50 (5-6), 871-878

¹⁷ Klasse 2000 report to MIF, June 30, 2016

¹⁸ <http://www.Mondelēzinternational.com/well-being/the-voice/interview-with-thomas-dupree>

“Our daughter never talked much about school,” said the mother of one participating girl. “Only when they started the Klasse2000 programme she started to tell us about it enthusiastically. We studied the nutrition pyramid over and over again. She thinks it’s very important to eat fruit and vegetables five times a day.”



Another mother and member of a parents’ association says, “Isn’t it important for all parents to see their children grow up healthy? That is why I am engaged in the parent’s association, to ensure that our school participates in the program.”¹⁹

According to surveys conducted from 2013-5, the latest group of participants – including 828 parents and 1,177 children – showed progress in achieving these goals²⁰:

- According to parents’ responses, children in the intervention group exhibited more positive nutrition behaviors than did children in the control group.
 - The intake of fast food, sweets, and soft drinks increased to a greater extent in the control group than in the intervention group.
- The responses given by the children were generally positive as well. For example:
 - In the intervention group, a larger percentage of the children increased their water intake (three or more glasses of water per day).
 - In the control group, a larger percentage of children decreased their intake of water per day over the course of the study.

¹⁹ Email from Brigitte Horst to MIF consultant Nov. 16, 2016

²⁰ Klasse 2000 report to MIF, June 30, 2016

INDIA – Shubh Aarambh



Shubh Aarambh (Auspicious Beginning) has established more than three times the number of kitchen gardens originally projected. To date, a total of 113 kitchen gardens have been established at schools and other locations.²¹

Shubh Aarambh is a joint program of Save the Children India, Magic Bus, and MIF, serves 48 largely low-income villages in four Indian states: Himachal Pradesh in the north, Madhya Pradesh and Maharashtra in central India, and Tamil Nadu in the south. The target population includes almost 40,000 children and adolescents and more than 27,000 women (mothers/pregnant women). Key stakeholders and partners, including local government health, education and agriculture departments, have played an important role in developing the nutrition curricula and gardening programs.²² Echoing a theme heard in many of the participating nations, ensuring that information taught in the classroom is brought home helps leverage the program's impact. "We're investing in young children who can be ambassadors," says Mohini Venkatesh, Technical Advisor on School Health and Nutrition to Shubh Aarambh.²³

Shubh Aarambh identifies appropriate garden locations and, in partnership with schools, local communities and agricultural experts, procures and supplies the seeds, fertilizers and equipment that are right for that area's climate and growing conditions. The program also sponsors cooking demonstrations on how to use fresh produce in healthy meals.²⁴ Shubh Aarambh uses many strategies to bring key messages about nutrition to all stakeholders – teachers, parents, children and others:²⁵

- The entire nutrition and health curriculum for parents was compiled into one training module covering the various themes of nutrition, health, child rights, sanitation and hygiene, to guide project staff, government implementers and local stakeholders.
- The health and nutrition curriculum is augmented by 12 animation videos on nutrition, health and hygiene, aimed at viewers ages 7-14.

²¹ Telephone interview with MIF consultant Sept. 9, 2016

²² Shubh Aarambh Program Impact Pathway presentation to MIF, May 2016

²³ *Ibid.*

²⁴ Shubh Aarambh Program Impact Pathway presentation to MIF, May 2016

²⁵ Shubh Aarambh Six-Month Progress Report Jan-June 2016 submitted to MIF July 2016

- A kit to interest children in learning about nutrition and create topics for discussion contains a drawing, a card game, name stickers, comic books and a hat with nutrition and healthy lifestyle messages.
- Posters and jigsaw puzzles create ways to involve children in learning through games.
- Height charts and weighing machines (scales) support schools in routinely monitoring students' growth.
- A vegetable calendar tracks the weekly intake of vegetables at the Himachal Pradesh, Maharashtra, and Pollachi sites for distribution to mothers and children.
- Community-based fruit and vegetable camps, as well as health camps and sanitation drives, influence the practice of a healthy lifestyle.

Starting a garden at the Wadala Sewri School - the only urban location in the Shubh Aarambh project - presented challenges. Most of the urban residents were not familiar with gardening and farming practices, and the school also had to contend with space constraints and a severe rodent/pest problem. Pointing to the benefits of the Private-Public Partnership (PPP) approach, the government initiated training sessions in partnership with a university, the Agricultural Science Institute, and the Maharashtra Seeds Corporation.²⁶



“We have always been interested in starting a kitchen garden on the school premises. It is a brilliant way of teaching children about the importance of good nutrition and appreciating the hard work that is required for putting food on our table,” says Shri Sunil Bhangre, principal of the Wadala Sewri School.²⁷

Evidence supports the benefits of the program. Overall, a 20-percentage-point improvement was observed regarding children’s awareness of two or more healthy foods in the intervention groups from baseline to midline. Respondents reported increases in consumption of fresh fruits and vegetables as well as protein foods.²⁸

²⁶ *Ibid.*

²⁷ *Ibid.*

²⁸ *Ibid.*

The Case for Improving Homestead Food Production - Indonesia

In 2011, MIF teamed up with Helen Keller International (HKI) to bring homestead farming to women in Indonesia. The partnership evolved from MIF's support of Project Laser Beam, a public-private partnership with the UN World Food Programme to tackle malnutrition.

While not part of the original cohort, the HKI program has demonstrated remarkable success, improving the nutritional status of, and build sustainable access to food for, more than 4,000 people in eastern Indonesia.

Through HKI's Enhanced Homestead Food Production (EHFP) program—designed to sustainably reduce malnutrition among women and young children²⁹ — women have learned how to diversify their crops, resulting in better nutrition for their families. The women have become so successful that they can sell their surplus crops to earn income, which they invest back into their families and communities.³⁰

Nusa Tenggara Timur (NTT) province in eastern Indonesia has been plagued by chronic malnutrition, in part because of the limited range of food crops that constitute most of the diet. Levels of stunting among children under the age of five are the highest in Indonesia—reaching nearly 60%. Only 58% of children 6 to 23 months had consumed vitamin A-rich fruits and vegetables—critical for growth and development—within the previous 24 hours.



One success story is that of Margarita (Rita) Manes, a 41-year-old mother of four who was unable to complete high school because of her family's poverty. In December 2013, Rita joined the EHFP program. At training sessions, she studied how to produce organic fertilizers and bio-pesticides—“I have learned so much new knowledge in nutrition and agriculture”—and she shared her knowledge with other members in her community, who elected her to be head of a demonstration farm group.

“(EHFP) has improved my family's life because we now plant organic vegetables and raise poultry as well as catfish in our yard,” she said. “Production of those vegetables and chicken is so good that I can sell some to the market and it has improved our economic condition while fulfilling the basic needs of my family. I am sure the result of this activity will help me to provide enough money to pay for my children's school fees.”³¹

²⁹ Final Report, Rapid Action on Nutrition and Agriculture Initiative (RANTAI), Central South Timor District, East Nusa Tenggara - Indonesia, 2012-2016

³⁰ Email from Helen Keller International to MIF Nov. 18, 2016

³¹ Final Report, Rapid Action on Nutrition and Agriculture Initiative (RANTAI), Central South Timor District, East Nusa Tenggara - Indonesia, 2012-2016

MEXICO – Alianza por el Bienestar de la Niñez



Alianza por el Bienestar de la Niñez (Partnership for Child Wellbeing), led by Save the Children-Mexico with support from MIF, emphasizes the Mexican culinary history and customs, healthy eating, smart food choices, and eating locally-produced and -grown foods. It is designed to lay a foundation for healthy lifestyles, ultimately improving the nutrition and physical activity of children ages 2-13, in the States of México and Puebla and Mexico City. The program just completed its first full academic year, involving 20 primary schools serving 9,099 children and 84 early childhood development (ECD) community centers with an enrollment of 4126 children.³²

Initial findings show progress in addressing obesity issues and strong engagement from stakeholders, including corporate volunteers. In the first academic school year, the program developed and implemented six nutrition workshops for more than 13,000 children in the states of Mexico and Puebla and in Mexico City.³³ The interactive workshops teach students about specific themes such as how to identify the amount of added sugars, sodium, and saturated fat in foods and beverages.

Grade 1-3 workshop topics:

- Ancestral Eating - Children identify the historic origin of the foods that make up their current diet.
- Foods from My Country - Children recognize the role and importance of local foods as they learn to identify foods that are part of their daily diet and locally grown and cultivated in Mexico.
- All-star Nutrition/The Nutrition Traffic Light - Children are introduced to an alternative way to classify and select healthier foods based on the number of calories, fat, and sugar.
- Eat Real - Children learn how to identify a processed food and why choosing fresh foods, like fruits and vegetables, is healthier.

³² Telephone interview with MIF consultant Sept. 5, 2016

³³ STCM Six-Month Report: February-July 2016

- Five a Day - Children learn about the recommendation of five servings of fruits and vegetables a day through the concept of art.
- Hidden Sugar - Children learn about the physical effects of sugar on the body and why it is important to reduce their daily sugar consumption.

Grades 4-6 workshop topics:

- The Fat Passes by My House - In this workshop, the children will learn to identify good fat versus bad fat to make a conscious choice of the foods they eat.
- Eat and Grow - This workshop talks about the importance of consuming protein, whether legumes or meat.
- Read What I Eat - Children learn to read the label in three parts, similar to the traffic light explanation, to better understand what is in their food.
- Healthy Life - This workshop is aimed at improving nutrition and understanding the causes and effect of being overweight on immediate and long-term health.
- From the Field to the Table - With this workshop, the children understand the process of food production.
- The Best Option - In this workshop, children are taught to choose healthy options when they are outside of school and the home.

Save the Children also worked directly with parents, teachers, and cooks in ECDs to support them to improve the diets of young children. Teachers receive technical sheets with information they can use inside the classroom to reinforce key messages, and parents get flyers about healthy cooking and diets to emphasize the importance of fresh vegetables and fruit consistent with Mexican dietary traditions, says nutritionist Fatima Andraca, Save the Children senior program manager.³⁴

³⁴ Telephone interview with MIF consultant Sept. 5, 2016

The program aims to use school gardens as a tool for child-focused, participatory nutrition education to promote vegetable consumption and demonstrate the cost-benefit of food production. In the spring of 2016, 10 school gardens were built in eight ECD centers and two elementary schools (one per state), and 10 more are scheduled to be developed this school year.

Each school and ECD center received a school nutrition garden manual that explained how to maintain the gardens properly. Save the Children hired two new promoters for school gardens to launch “green clubs” consisting of three parents, one teacher and eight children. The promoters conduct one lesson per month.³⁵ The school nutrition gardens in ECD centers have begun producing food, used to complement meals prepared in ECD centers.³⁶



Comparing an endline survey for year one with the baseline showed encouraging results. Almost twice the number of children reported eating three or more vegetables the previous day (52.3% versus 27.2% respectively).³⁷

³⁵ Email to MIF consultant Dec. 2, 2016

³⁶ STCM Six-Month Report: February-July 2016

³⁷ *Ibid.*

SOUTH AFRICA – Health in Action



Health In Action South Africa's goal of improving children's health and nutrition faces many challenges from the context where it works - poverty, undernourishment, obesity, and drought - but the team is encouraged by the initial results of the program.

A partnership of INMED and MIF, the program began in 2016 in the cities of Johannesburg and Port Elizabeth. A total of 116 schools in lower-income areas - 46 in Johannesburg and 70 in Port Elizabeth -

serve approximately 100,000 students, ages 6-12.³⁸

As in other nations, intersectoral partnerships are critically important. Careful planning and engagement with multiple stakeholders - including government health, education and agriculture officials and school governing boards - builds a platform for sustainable success, according to Unathi Sihlahla, Program Director.³⁹

Baseline surveys indicated student consumption of fresh fruits and vegetables "was below guidelines - definitely room for improvement," says Sandra Pretorius-Rivalland, PhD, Program Coordinator.⁴⁰

The program's goals include increasing knowledge, attitudes and behaviors about nutrition and health, improving nutritional intake via access to fresh foods (gardens, aquaponics) and improving Body Mass Index (BMI).⁴¹

While enthusiasm for the gardens is high, currently fewer than half of the participating schools have one. A major challenge is lack of water for irrigation due to South Africa's severe drought. The program provides water tanks to some schools and encouraging the planting of crops such as the orange fleshed sweet potato, which is high in vitamin A but does not require a lot of water.⁴²

³⁸ Ibid.

³⁹ Ibid.

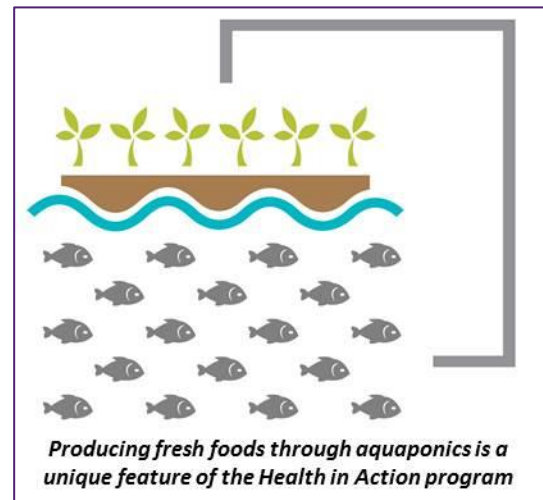
⁴⁰ Ibid.

⁴¹ INMED Health In Action Program Quarterly Progress Report to MIF, August 2016

⁴² Skype interview with MIF consultant Sept. 16, 2016

Another strategy to deal with the water shortage is aquaponic systems – one in the Johannesburg area, another in the Port Elizabeth area – that will serve as an additional source of abundant fresh vegetables and nutritious fish protein and also provide training opportunities for students in urban agriculture, says Kristin Callahan, Director of International Programs.⁴³ “Garden champions” selected by school governing boards from among local unemployed youth will lead garden caretaking activities, including organizing other volunteers to help.⁴⁴

Sihlahla says the results in terms of gardening and improving access to fresh foods have been “really encouraging,” spurred in part by existing government policy encouraging all schools to establish food gardens, not only to improve access to fresh produce but for learning purposes. The program first trains schools, since most initiatives are led by educators who may not have any knowledge of agriculture, then provides resources such as seeds and gardening equipment.⁴⁵



As some of the equipment is too large for younger children to handle, the program has recruited and trained out-of-work area youth to assist in cultivating the gardens. In some areas, parents have shown an interest as well, and as such they also provide assistance in establishment of school gardens.

Pretorius-Rivalland teaches food preparation and hygiene classes that “incorporate vegetables from the gardens into the cooking. It’s very practical and hands-on. We discuss food hygiene and healthy diet guidelines, do a short cooking demo to bring all the elements together in a practical way, and everyone can taste the food prepared. It’s really positive,” she said.⁴⁶

“It’s the first time ever that we received training on meal planning and healthy lifestyles,” says Belinda Moonsammy, a food preparer at Malabar Primary School. “We’ll make sure that we impart knowledge gained as we prepare meals for learners both in schools and at our homes.”⁴⁷

⁴³ *Ibid.*

⁴⁴ <http://inmed.org/what-we-do/health-and-nutrition/health-in-action-south-africa/>

⁴⁵ Skype interview with INMED Sept. 16, 2016

⁴⁶ Skype interview with INMED Sept. 16, 2016

⁴⁷ INMED Health in Action Program Quarterly Progress Report to MIF, August 2016

UNITED KINGDOM – Health for Life



Health for Life focuses on long-term, sustainable behaviors that will improve children's health, "We want to make changes around healthy eating, practical food cooking, growing food, physical activity, parental involvement," says Dr. Sandra Passmore, Education Advisor, Health Education Services, UK-Life Education. "We are very keen about that. Equally important is bringing the change home after the school day ends because, "you don't expect schools to do this and then go home and eat unhealthily and just sit down watching the television."⁴⁸ The program

operates in 107 primary schools in the south Birmingham, UK region, impacting more than 80,000 students since its launch five years ago. It serves a diverse socioeconomic range of communities, targeted at primary school children ages 4-11, and special schools which serve pupils ages 4-18. The program is a partnership between the UK Health Education Service, Life Education Centres West Midlands and MIF.⁴⁹

All participating schools have to develop gardens with vegetables and fruits (and sometimes chickens), and practical cooking. In some schools, this has involved dedicating an area in the building for cooking and food storage. As in other nations, a key element was training staff at the schools on practical cooking, healthy eating, and growing gardens. Passmore – "a very keen gardener myself" – visits schools in the spring to check on their progress. In June and July schools join for a celebration event, including a "big show-and-tell marketplace" and a horticultural show, where prizes are awarded for the biggest or most of a particular fruit or vegetable – such as potatoes, tomatoes and courgettes (zucchini). An eco-garden award is also given for growing a variety of fruits and vegetables.⁵⁰

Teams of up to 10 people, including volunteers from Mondelēz International, help schools clear areas for planting and establish the gardens, filling the lot with topsoil and compost. This usually takes a day, after which the teachers and students can begin planting. In the case of urban schools where there is no available land to cultivate, creative solutions are found, such as roof gardens, large planters, or stacking old tires and filling them with soil and compost to grow potatoes and carrots.

⁴⁸ Telephone interview with MIF consultant Sept. 16, 2016

⁴⁹ Health for Life in primary schools, Birmingham - report to MIF February 2016

⁵⁰ Ibid.

Some schools have established polytunnels - a polyethylene semi-circular elongated structure - as a cheaper and bigger alternative to greenhouses to enable more pupils to grow plants even if the weather is wet⁵¹. “There’s quite a lot of ingenuity, quite imaginative people in primary schools - they’ll come up with ideas,” she says.⁵²

One important change involves practical cooking, “they convert a classroom or part of a classroom into a dedicated cooking area, instead of cooking in a classroom, where you have to put books away and it makes a mess.”⁵³

In addition to converting classrooms into a kitchen to accommodate more children, some schools have been buying cooking equipment (mixing bowls, scales, aprons, wooden spoons, portable cookers), running cooking clubs, and increasing the number of cooking lessons.⁵⁴



Data collected by the program points to the effectiveness of the classroom training and hands-on gardening and cooking activities⁵⁵. All schools (100%) have reported improved knowledge and student attitudes relating to fruit and vegetables and its links to healthy lifestyles. And, pupils’ data shows further improvement:

- An increase in self-reported knowledge from 44% to 46% regarding the need for five portions of fruit and vegetables per day; an increase from 41% to 47% of pupils knowing portion size for fruit and vegetables; a decrease from 10% to 7% of pupils not eating any fruit or vegetables; and an increase in pupils eating five portions of fruit and vegetables from 29% to 32%.
- An increase from 85% to 91% of pupils saying they made changes to become healthier.
- An increase from 35% to 53% of students cooking at school, and an increase in pupils cooking at home from 45% to 49%.

⁵¹ Health for Life in primary schools, Birmingham - report to MIF February 2016

⁵² *Ibid.*

⁵³ *Ibid.*

⁵⁴ Health for Life in primary schools, Birmingham - report to MIF February 2016

⁵⁵ *Ibid.*

CONCLUSION

Consumption of whole grains, fresh fruits and vegetables, healthy protein and fat sources – and avoiding excess intake of calories, saturated and trans fats, salt, starches and sugar – are fully recognized as fundamental to healthy diets around the world. In addition to strong collaborations at the local level aimed at achieving these important goals, the MIF program offers a platform through which partners in different nations can learn from each other, via workshops, published articles and other online materials, and ongoing dialogue. For example, when the Health in Action program in South Africa was launched, organizers drew on the successful Brazilian experience, and colleagues in both nations have continuing exchanges of information.⁵⁶ With strategic investment, sensitivity to local conditions, and regular information-sharing and evaluation of key metrics, MIF and its partners believe the programs in place for teaching children to grow fresh fruits and vegetables and make good dietary choices will lead to generations of healthier young people in the targeted nations.

UN Sustainable Development Goals

The Mondelēz International Foundation and its partners are empowering communities to lead healthier lives through programs that offer nutrition education, promote active play and provide access to nutritious fresh foods to help address nutrient needs for at-risk populations – all of which help support of the following [UN Sustainable Development Goals \(SDGs\)](#).



⁵⁶ Email from South African Program Director Unathi Sihlahla to MIF consultant Nov. 18, 2016