

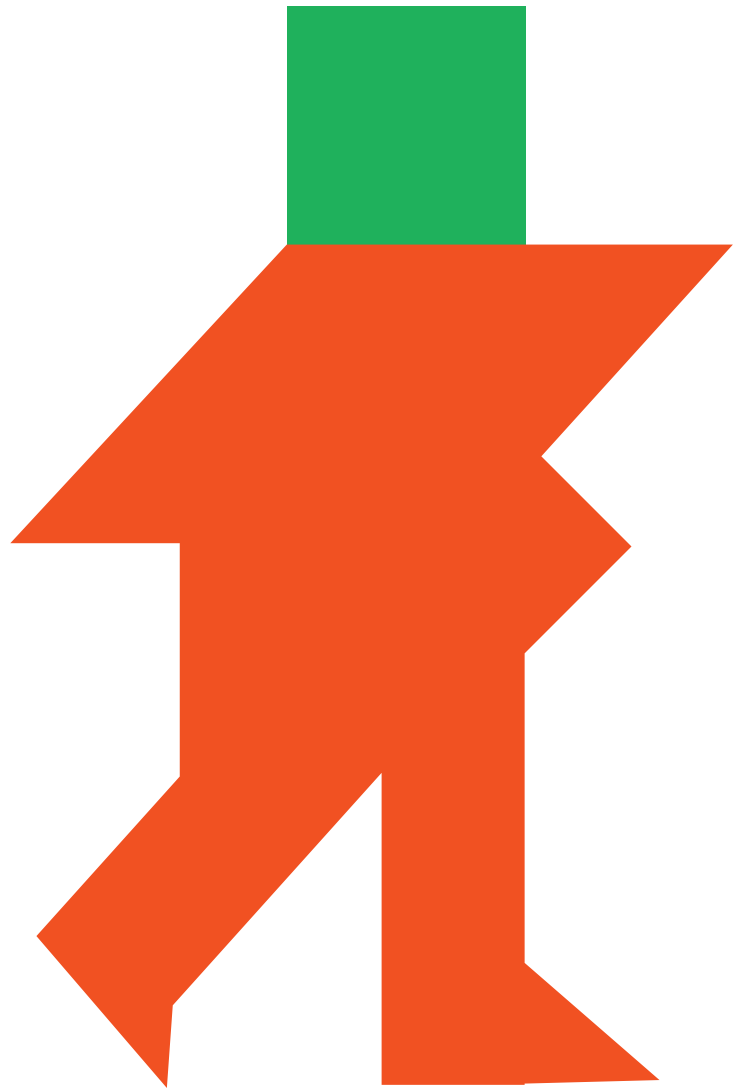


nourishing  
schools

# CHANGEMAKING FOR IMPROVING NUTRITION

HEALTH AND NUTRITION INITIATIVE

ASHOKA INDIA





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# EXECUTIVE SUMMARY



The Nourishing Schools programme initiated by Ashoka in India aims to create young change makers who are in charge of their nutrition. Essentially, the programme addresses a nutrition gap and focuses on inculcating healthy habits among children in the age-group of 9-14 years, thereby targeting “future parents”. It has already influenced lives of 25896 schoolchildren who are being directly addressed by this programme. It is based on the belief that any behavioural change brought about in these early years of one's life cycle would have a long-standing effect on these children's personalities as well as the communities they live in. The Nourishing Schools programme uses a 6-component toolkit that has been developed with several partners, encompassing quantitative and qualitative parameters of the programme. The toolkit is designed to build awareness and influence habits through games and other fun-based interactive activities in school, as opposed to traditional classroom learning.

The Nourishing Schools programme was piloted in the state of Maharashtra in 14 schools and has now spread to 114 schools across 4 States and 1 Union Territory of India. Though still in a nascent stage, the programme has already demonstrated very encouraging results. Midline data collected post intervention revealed that more than 16% reduction in the percentage of thin and severely thin schoolchildren based on their Body Mass Index. Within a year, there has been a 13% increase in number of schoolchildren using soap to wash their hands before eating and after answering nature's call.

The confidence exhibited by the children participating in the Nourishing Schools programme reinforces that children can take charge of their nutritional health and influence their communities more effectively than even adults and thereby lay the foundation for a healthier India.



# BACKGROUND

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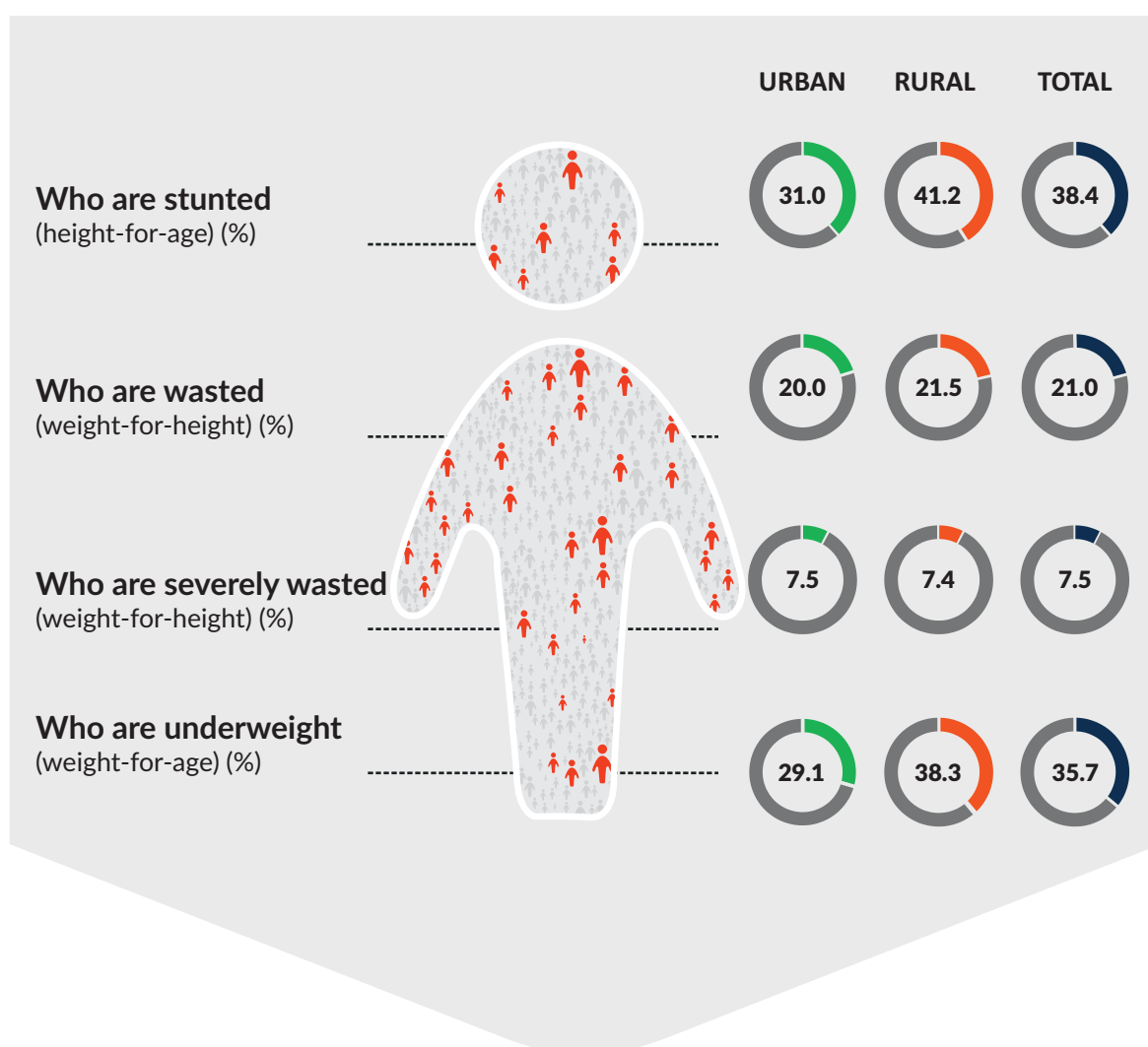
Lack of proper nutrition in childhood results in profound impediment to the advancement of both individuals and societies and slows down progress towards development goals. Malnutrition is the most important risk factor for illness and death globally and is associated with more than one third of all deaths in young children. Malnourished children have increased risk of infection, death, and delayed cognitive development. Chronic undernourishment in childhood has long standing impact on one's life. It is associated with an under-developed brain, diminished mental ability and learning capacity, poor school performance in childhood, reduced earnings and increased risks of nutrition-related diseases such as diabetes, hypertension and obesity<sup>1</sup>.

According to National Family and Health Survey (2015-16) by the Government of India, 38.4% of children under 5 years in India are stunted (low height for age) and this is primarily caused by under-nutrition in the first 1000 days<sup>2</sup> of life. Consequently, almost all nutrition programmes run by various agencies in India primarily focus on providing services and awareness during the 1000-day window e.g. giving pregnant women supplements and educating them about the importance of breastfeeding or providing supplements and school meals to adolescents.

According to World Bank, 57% of children under age 5, 50% of pregnant women and 52% of non-pregnant women were anaemic in India in 2016<sup>3</sup>. Micronutrient deficiencies are often referred to as 'hidden hunger' because they develop gradually over time, their devastating impact is not seen until irreversible damage has been done. While a child may go to sleep each night with a full belly, micronutrient deficiencies mean that his or her body is still hungry for good nutrition. According to National Family and Health Survey (2015-16), amongst adults (15-49 years), 22.9% of women and 20.2% of men are undernourished.

Micronutrient deficiencies are caused primarily by inadequate intake of nutritious foods and unhealthy environments. Addressing this gap is challenging since micronutrient-rich foods are often expensive and beyond the means of many families, but several studies<sup>4</sup> have shown that a concerted effort to develop healthier eating habits and a behaviour change around nutrition among children and young and expectant mothers can go a long way in reducing risk of chronic disease, and building healthier communities.

## NUTRITIONAL STATUS OF CHILDREN (UNDER 5 YEARS)



Source :  
National Family Health Survey,  
Government of India (2015-16)



# ABOUT THE PROGRAMME

Nourishing Schools is an innovative programme that aims to develop young changemakers who can take charge of their own nutrition and that of their communities. It has been developed by Ashoka India's Health and Nutrition Initiative in partnership with Swiss Re Foundation and various stakeholders such as Ashoka Fellows. The programme focuses on building behavioural change towards nutrition and health among children in the impressionable pre- and early-teen years, a critical “missing middle” that is not addressed by most health initiatives. These years (9-14) offer a key window for shaping their lifetime habits and can impact their behavior as “future parents”, when young girls become mothers.

By transforming children from being passive participants to changemakers and active advocates of their own lives and their families' nutrition, the Nourishing Schools programme aims to prevent the vicious cycle of undernutrition from reinforcing itself, generation after generation.

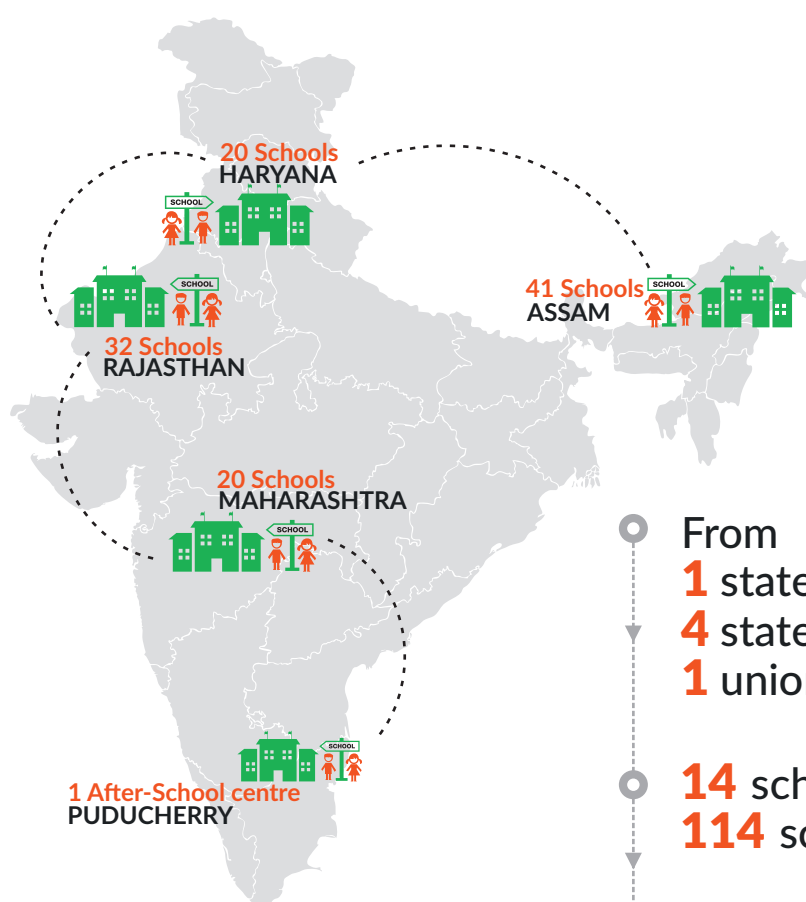
The programme leverages schools as a hub to improve the nutrition of families and communities by focusing on various dimensions such as improving the quality of Mid Day Meal, improving hygiene and communicating nutrition messages through a hands-on curriculum.



Source: The Nourishing Schools Programme

# MILESTONES

2014 - 2017



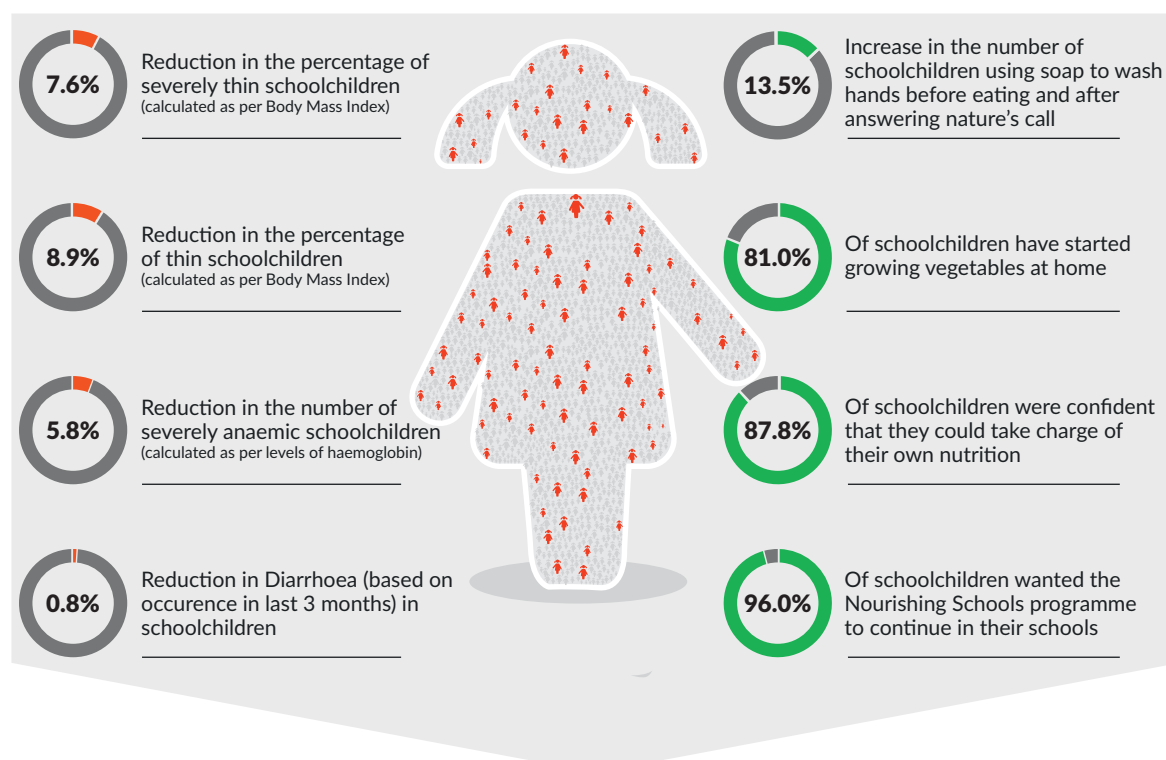
- From **1** state to **4** states and **1** union territory
- 14** schools to **114** schools
- 4946** children to **25896** children aged between 9-14 years



The impact of the programme can be gauged from the behaviour changes in the schools it covers. Several teachers today lead their own initiatives such as selling only nutritious snacks in school canteens. Many parents come forward seeking diet counselling on their own initiative, and several cooks in schools have been seen collecting wholesome food recipes from communities. In addition, to statistically gauge the success of the programme and ascertain its progress after a year of rolling out the Nourishing Schools toolkit, primary data was collected through baseline surveys (2014-15) and midline surveys (2016). Several encouraging results were observed through this assessment of the Nourishing Schools programme.

## HIGHLIGHTS

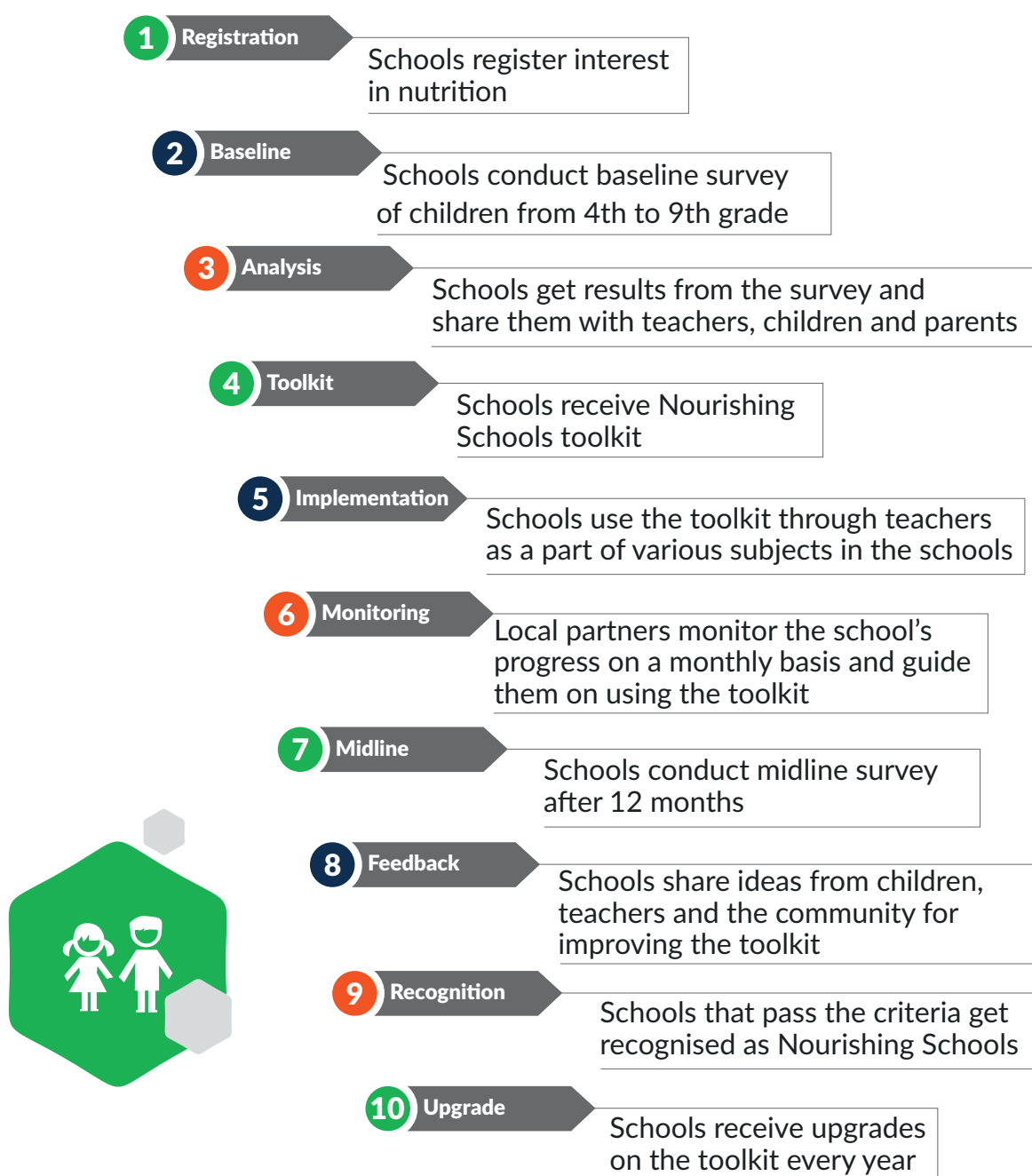
Based on comparison of 2014-2015 baseline and 2016 midline survey of 14 schools in Maharashtra



During the assessment, we found that games, the vegetable garden calendar and home remedies for day to day health problems were very popular among children and the most used elements of the toolkit.

Archana Sinha, Nourishing Schools, Ashoka India

# THE APPROACH



# THE TOOLKIT

The Nourishing Schools programme is delivered through a six component toolkit (Data for Nutrition; Curriculum for Nutrition; Design for Nutrition; Content for Nutrition; Mid Day Meal for Nutrition; Community for Nutrition) that engages school-going children between 9 and 14 years in order to create lifelong nutrition-seeking habits. The various components have been developed in consultation with various stakeholders and experts using design thinking methodologies. Some of the key activities included in the toolkit to fulfill the objective of the programme are as follows -

- Children are taught about nutrients, how to cook food optimally, and a range of topics that can help them make more informed choices
- To show rather than tell, a range of activities are conducted, which include tending to a school garden, association games, and storytelling, to name a few
- Partnerships are fostered with Mid Day Meal programmes to improve the nutritional value, hygiene and food safety norms of food served in schools
- Community participation is encouraged through farmer groups, around changing negative food habits and collaborating to restore positive ones



## Data for Nutrition

Data is collected through a tablet during both baseline and midline surveys that have been executed in the school regarding nutrition, hand washing, sanitation, diseases, academics, toolkit use and school attributes. This data provides inputs for the programme.





### Curriculum for Nutrition

An interactive and fun-based curriculum that integrates strategies for improving nutrition and practical knowledge around the nutritional value of the plants grown locally and the food children eat. Teachers are trained on rolling out this curriculum through a manual.



### Design for Nutrition

Elements of design have been applied to communicate nutrition messages. Based on insights captured from Ashoka Fellows and the nutrition surveys, Nourishing Schools programme have developed concepts such as games that make nutritious food more appealing and a do-it-yourself soap kit to ensure better hygiene.



### Mid Day Meal for Nutrition

In partnership with the Government, a training module has been developed for Mid Day Meal cooks who work in school kitchens. The module focuses on providing insights for improving food safety, hygiene and the nutritional value of Mid Day Meal. Recipes of tasty, low cost and nutritious Mid Day Meal resulting from a 48-hour Cookathon co-hosted by Ashoka in April 2015 have also been included in the toolkit.



### Content for Nutrition

Content for nutrition has been developed by illustrators and writers from various countries, and presented as a comic book for children. This book has minimal text and communicates messages about nutrition primarily through illustrations.



### Community for Nutrition

To fulfill a long-term goal of getting schools to reach out to community members and engage them to improve nutrition, collaborations have been established with community-based organizations to develop a crop guide to encourage cultivation of nutritious foods for local consumption, document nutritious recipes and traditional remedies for various diseases.



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2



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4



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पदार्थाचे नाव	खुराक (ग्रॅम)	प्रथिने (ग्रॅम)	चर्बिते (ग्रॅम)	तंतुमय पदार्थ (ग्रॅम)	इंधन (कॅलोरी)	व्हिटॅमिन (ग्रॅम)	मिनेरल (ग्रॅम)
इंडली	10 (१००)	2.53	4.1	0.31	26	56.7	9
दोळकळ	100 (१००)	3	1	0.053	21	98	12
फुटाणे	10 (१००)	7	1	0.33	34	177	22
खजूर	10 (१००)	2.25	0.25	0.1	5.81	36	5
चिवकी	10 (१००)	0.12	0.04	0.37	3.38	14	2
चिवकी	10 (१००)	1.4	2.22	0.72	6.99	5	5

6

From top left to right

- Teachers playing the Guess Who game from the upgraded toolkit with schoolchildren in a Pune school
- A teacher testing an early prototype of the Guess Who game from the toolkit with schoolchildren in a Pune school
- Lend-A-Hand India staff introducing the upgraded Nourishing Schools toolkit to teachers in Satara
- A teacher in a Satara school in the canteen that she set up for serving healthy snacks to schoolchildren
- A teacher introduces the Vegetable Garden Calendar from the upgraded Nourishing Schools toolkit to schoolchildren in a Pune school
- Nutritional information chart for snacks served in the canteen in the Satara school
- A teacher introduces the Friends and Foes game from the upgraded Nourishing Schools toolkit to schoolchildren in a Satara school



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8-10. Lend-A-Hand India staff introducing the upgraded Nourishing Schools toolkit to schoolchildren in Satara

11. Schoolchildren and a teacher view the recipe book from the toolkit at the pilot launch in Satara














We have been learning through the IBT initiative until now but the nutritional toolkit has given us a lot of information about having a healthy diet. My favourite game from the nutrition toolkit has been 'Pehchaan Kaun' because we have a lot of fun playing it.

Sonal J., Student, Grade 8, Maharashtra



# PARTNERS

Ashoka pioneered the programme with Lend-A-Hand in Maharashtra in 2015. Today it has steadily grown to 4 States and 1 Union Territory of India where 13 partners are collaborating with Ashoka towards addressing the nutritional challenges. The early successes seen in this initiative in India has encouraged Ashoka to pilot the Nourishing Schools programme in 6 schools in Zimbabwe with Ashoka Fellow Dumisani Nyoni's ORAP.

STATE	PARTNER	
Maharashtra	Lend-A-Hand India	 Lend-A-Hand India
	Swayam Shikshan Prayog	 SWAYAM SHIKSHAN PRAYOG
Assam	Farm2Food Foundation	 Farm2Food Foundation
Haryana	Karnal Vikas Nidhi	 KARNAL VIKAS NIDHI कर्नाल विकास निधि
Rajasthan	CHETNA	 CHETNA
	CUTS International	 CUTS International
	Gramin Shiksha Kendra	 Gramin Shiksha Kendra
	URMUL	 Urmul
	Vaagdhara	 VAAGDHARA
	Jatan Sansthan	 Jatan
	Shrushti Seva Samiti	 SHRUSHTI Seva Samiti
	Navachar Sansthan	
Puducherry	Sri Aurobindo Society	 SRI AUROBINDO SOCIETY

# SURVEY METHODOLOGY

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The study sample consisted of 1016 children aged 9-14 years from 14 schools across three districts (Pune, Sangli and Satara) in Maharashtra. Children studying in standards IV to IX were selected using methods of random sampling that ensure equal probability of selection. 10 girls and 10 boys were selected from each standard in co-education schools and 20 girls or 20 boys were selected from each standard in case of schools with all-girl or all-boy students. If any standard in a co-educational school had less than 10 girls, then all the girls were surveyed. If a school did not have all the standards (IV-IX) that were being surveyed, then 20 students each from those standards that existed (within IV-IX) were surveyed. The survey was conducted individually in a room with maximum privacy.

*Data was thus collected on quantitative indicators of health outcomes like Body Mass Index, haemoglobin levels, visual inspection for goitre, occurrence of diarrhoea in last 3 months, diagnosis of malaria and qualitative indicators of behaviour change in children.*

The midline survey was conducted with the same sample as the baseline survey.



We shared the (baseline survey) results with the community by organising special meetings in schools and a lot of mothers came to them. This led to discussions on what they could do for their children.

Sunanda Mane,  
Ashoka Fellow, Co Founder and President, Lend-A-Hand India



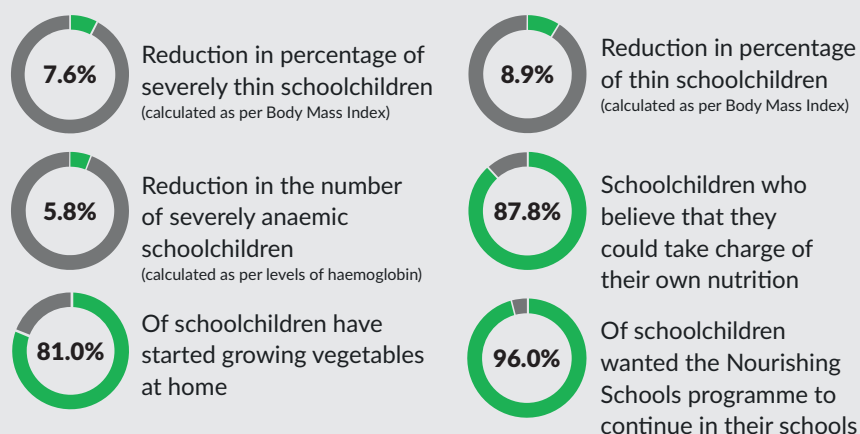
# RESULTS

The results are drawn from a comparison of data collected in the baseline (2014-15) and midline (2016) surveys conducted. The latter was conducted 1 year after the toolkit was rolled out in the 14 schools

## HEALTH



### Nutritional Status

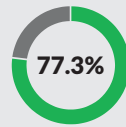


### Disease Incidence

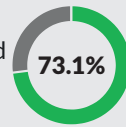


In line with the National Family and Health Survey data (2015-16) that shows a marked increase in overweight percentage of persons between the ages 15 and 49 years, the results analysed from the Nourishing Schools midline survey also revealed an increase in the number of overweight and obese schoolchildren. There was an 8.1% increase in percentage of overweight schoolchildren and a 1.9% increase in the number of obese schoolchildren, highlighting the need to include components to address this issue through the toolkit.

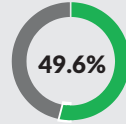
## DIET



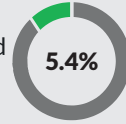
Of schoolchildren increased consumption of vegetables



Of schoolchildren increased consumption of fruits

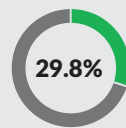


Of schoolchildren increased consumption of milk

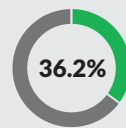


Of schoolchildren reduced consumption (5-6 times a week) of snacks outside school

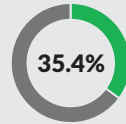
## HYGIENE



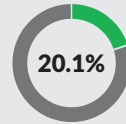
Increase in schoolchildren reporting the usage of soap in school



Increase in schoolchildren using soap to wash their hands

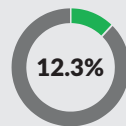


Increase in schoolchildren using soap for washing hands before eating

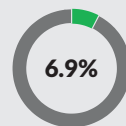


Increase in schoolchildren using soap for washing hands before cooking

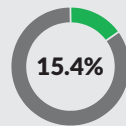
## WATER AND SANITATION



Decrease in number of households practicing open defecation



Increase in number of households making some effort to purify water



Increase in number of households using water filters



We have started a canteen in our school which does not serve fast food to the children. We serve food which is rich in nutrients that are essential for schoolchildren.

Mr Deshpande,  
Secretary, Gyansanvardhini Vidyalaya, Satara, Maharashtra



# CONCLUSION AND NEXT STEPS

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The Nourishing Schools programme is pivoted around the premise of addressing malnutrition by empowering children, i.e. “Future Parents”. The programme focuses on developing them as changemakers with a mindset that actively promotes healthy living amongst themselves and their communities.

Many thought leaders believe that primary schools have the potential to serve as a strategic place to foster healthy habits during childhood - a formative phase of an individual's life. Considering that India's primary education system encompasses 8,40,546 primary and 1,47,544 upper primary schools in 2015-16<sup>5</sup>, the promotion of healthy life styles combined with a basic knowledge of water use, sanitation, hygiene, and nutrition amongst schoolchildren can have an enormous impact on the overall health and disease burden. The pilot programme of the Nourishing Schools focuses on this “Missing Middle” that is not addressed adequately by existing programmes to address malnutrition. The early results from the pilot programme have been very encouraging and provide proof points to demonstrate that -

- Children who learn about nutrition do show improvements in their own nutritional and health status
- Interactive activities and active engagement help children take charge of their health and empower them to be changemakers in their communities
- Leveraging primary and secondary schools as an avenue to inform children about nutrition is effective and should be employed more regularly for addressing nutrition related challenges

Our results have also shown a significant increase in the percentage of obese and overweight children. We are working on adding solutions to address this in our toolkit.



# ACKNOWLEDGEMENTS

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Our work at Nourishing Schools is the outcome of the contribution of several Ashoka Fellows and partners. We would like to take this opportunity to thank them for their contributions:

Brijesh Jani (Analyst, University of Chicago), Dr Anant Jani (Research Fellow, University of Oxford) and Dr Giovanna Adamo (Medical Resident, Sapienza University) for working with us to analyse the Nourishing Schools survey data.

Niiti Consulting for co-authoring this report with us.

Ashoka Fellows Dr. H. Sudarshan and Bibhu Mohanty, who partnered with Ashoka for our rural household surveys on nutrition in Karnataka and Odisha. The insights from these surveys formed the development of the Nourishing Schools programme.

Ashoka Fellow Dr. Armida Fernandez for giving her inputs on our rural household survey on nutrition.

Ashoka Fellow Sunanda Mane, who piloted the Nourishing Schools programme with us in Maharashtra and has been an immense source of support.

Ashoka Fellow Prema Gopalan for working with us to cover schools in drought-prone regions of Maharashtra.

Ashoka Fellow Deep Jyoti Sonu Brahma who has partnered with us in Assam for the largest number of schools in our network.

Ashoka Fellow Indu Capoor for her invaluable guidance and reaching out to her network to identify NGOs for our partnership with the Government of Rajasthan.

Partners Karnal Vikas Nidhi, CUTS International, Gramin Shiksha Kendra, URMUL, Vaagdhara, Jatan Sansthan, Shrushti Seva Samiti, Navachar Sansthan and Sri Aurobindo Society that have partnered with us for rolling out the programme in various states.

Ashoka Fellows Dr. Partap Chauhan and Kabir Vajpeyi, Sunetra Roday, Srishti School of Design, Department of Public Instruction of the Government of Karnataka, UNICEF, Akshaya Patra, for working with us to develop the Nourishing Schools toolkit.

Several Ashoka Fellows that attended our workshops on nutrition with their team members and helped us develop the programme – Dr. Prasanta Tripathy, Ved Arya, Kaushlendra Kumar, N. Muthu Velayutham, Pranjal Baruah, Seema and Michael Prakash and Krishna Prasad.

Headless Hippies, for designing our toolkit and the programme's logo.

Our team at Ashoka India, including South Asia Leader Vishnu Swaminathan and Consultant Deepa Amarnath that steered the development of the Nourishing Schools programme.

Susanne Wittig, Ashoka Switzerland, who continues to be a patient sounding board and guide.

The late Angela Marti, former CEO of the Swiss Re Foundation who was more a friend than a funder, helping us set ambitious goals while being a strong champion of Ashoka's work on developing young changemakers for nutrition. We would like to dedicate this report to her.

**Archana Sinha**

Director

Health and Nutrition Initiative  
Ashoka



**ASHOKA**

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