

# Integration for stunting impact

## the Healthy Village approach

### Key insights about our success

- The Healthy Village approach combines WASH with food & nutrition security and care to improve child health
- Stunting rates halved from 51% to 25% in Healthy Village programme areas in Southern Coastal Bangladesh
- Our approach has 25% to 100% more impact per euro spent than sector benchmarks

### Background

**Undernutrition is still affecting far too many children in Bangladesh, affecting their life potential. Tackling it is complex as stunting is impacted by many different factors and across generations.**

In Bangladesh, 28% of children under five are still stunted, with large regional differences<sup>i</sup> and around 50% in our programme areas. Stunting has been declining, but at a slower rate, even before the COVID-19 pandemic likely made things worse.

The world is not on track to end all forms of malnutrition by 2030 (SDG2.2).<sup>ii</sup>

Children who suffer from stunting are too short for their age. Their brains do not receive nutrition at the most critical stages of growth, linked to poor diet and recurring infections most significantly from faecal-oral contamination<sup>iii</sup>, resulting in impaired cognitive and physical development and an increased susceptibility to illness.<sup>iv</sup> It also has an intergenerational component, and the first 1,000 days of life is a unique period of opportunity when the foundations of optimum health, growth and neurodevelopment across the lifespan are established.<sup>v</sup>

While there is a body of evidence on root causes of stunting, large-scale research studies in recent years have failed to provide conclusive proof on how to best tackle the multiple elements that contribute to child undernutrition. Despite achieving significant behaviour change and reduction in infection prevalence for some pathogens, it did not sufficiently reduce faecal contamination in the domestic environment, and the conclusion was

that more effort is needed to develop and evaluate interventions that can do so.<sup>vi</sup> It is also important to note that the potential and realised impact of interventions are highly context-specific,<sup>vii</sup> and small differences can significantly improve impact.<sup>viii</sup>



### The Healthy Village approach

**Max Foundation's Healthy Village approach focuses on the impact: healthy child growth, and combines key elements necessary to tackle the root causes of undernutrition.**

The Healthy Village approach stands out by combining WASH (water, sanitation and hygiene) with food & nutrition security and essential mother & child care to tackle stunting and improve child health.

Max Foundation's evidence-based Healthy Village approach mobilizes the whole community around child health. This is done by changing household and community behaviour for better health with a strong emphasis on peer learning. We focus on both caregivers and communities, regularly measuring child growth as a key trigger for change. Local entrepreneurs are trained to sell WASH, nutrition and health products and services and drive demand. Government tracks and supports Healthy Villages in the process. This makes long-lasting results possible.

A village is officially declared 'Healthy' once everyone (90%+) meets and maintains 18 key indicators covering WASH, nutrition and care,<sup>ix</sup> examples of which are shown in Image 1.

- ✓ Handwashing with soap at 5 critical times
- ✓ Clean compounds
- ✓ Regular growth monitoring for children
- ✓ Sufficient, nutritious diet particularly for mothers and children
- ✓ Pre- and post-natal care
- ✓ Menstrual hygiene
- ✓ Access to improved sanitation and safe water

Image 1: key Healthy Village criteria

We have created a Healthy Village Tracker to collect and evaluate data. This tracker makes data that is verified by our call centre available on the Healthy Village Tracker Dashboard. This dashboard can be accessed by our communities and local government so they can track progress and zoom in on what matters most to them.

The integration of multiple aspects, the involvement of local communities, entrepreneurs and governments, and the collection and evaluation of progress make our Healthy Village sustainable and impactful.



Image 2: A declared Healthy Village sign

Starting in 2020 all 1,665 villages set up Community Support Groups. In these quarterly meetings community members come together and discuss and quantify their community's progress on 18 Healthy Village Indicators covering WASH, nutrition and health, which were defined by Max Foundation in consultation with local government. These data are entered into an Android app and after submission 5% of the data is verified by Max's in-house call centre or in-person checks. Democratizing the data means that it can be used as a tool for change by community protagonists. Once the data is verified it is made available to community leaders and government officials through our Healthy Village Tracker. In it they can visually inspect the progress made on the Indicators over time, and compare their community to neighbouring ones.

### Analysis

Child measurements were converted to z-scores using their age in days in the WHO's anthro package in R. Though the data is observational, because the same children are observed over time, logit regressions with random effects at the child and village level can overcome much of the bias. The graphs below are simplified representations of the data, but their general findings hold in more robust statistical models.

### Results

#### Stunting rates have dropped dramatically

Figure 1 shows the incredible impact the Healthy Village approach has had, halving the stunting rate from 51% to 25% in 3 years.

The numbers on top of the bars show the number of children measured each quarter, showing the robustness of the data. The drop in stunting means that 19,000 fewer children are stunted in Q4 2021 than there were in 2018.

## Data



### Child measurements

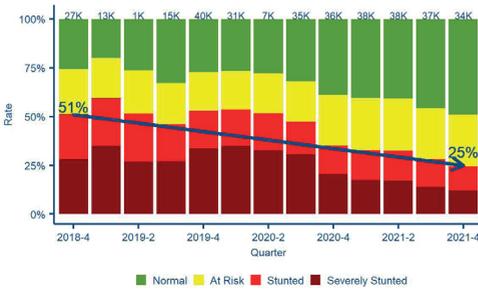
**Regular tracking of child growth by caregivers as well as community outreach workers (a combination of volunteers, entrepreneurs and health workers) are a key tool used to trigger behaviour change but which also have provided a wealth of data on a large number of children.**

The Healthy Village approach was implemented in 1,665 village in 62 unions across Southern Bangladesh, after a successful pilot in 2017. Over the 4-year period, over 355,397 measurements were taken on 74,928 children.<sup>x</sup>

Starting in 2018 entrepreneurs and local volunteers were trained by Max Foundation to take anthropometric measurements of children. They also received access to a customized Android app where they can enter a child's measurements and compare measurements for time and across their community. Parents were encouraged to bring their child to quarterly courtyard sessions to have their children measured, where they would also be provided with nutrition and care advice by professionals and other parents if their children were malnourished. This last element is critical because even though seeing their child's growth is stunted on a growth chart is an impetus for parents to support their child's growth and health, they also need to receive concrete and easy to implement actions and changes to realise these benefits.

### Healthy Village indicators: data from the people, for the people

**The Healthy Village approach goes beyond the life of a project, and from the beginning we have enhanced and transferred ownership to communities and local government, and to do that effectively they need to be able to track progress themselves.**



**Figure 1: Decrease in stunting rates from 51% to 25%**

More impressively, stunting reduced more for children from poorer households than for richer ones, nearly closing the stunting gap. The average height-for-age z-score increased from -1.93 to -1.19, an increase of 0.74 standard deviations. This indicates that this approach goes beyond easy wins, and can be an equalizer, addressing and upending disadvantages stemming from poverty.

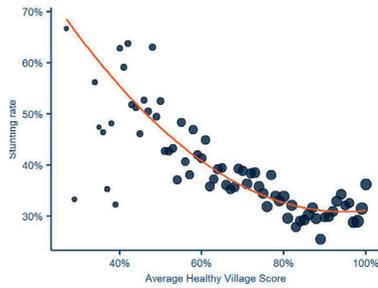
Other measures of malnourishment decreased as well, with underweight halving from 28 to 12% and wasting decreasing from 14 to 9%. This is significant because it shows that using child measurements to refer cases of acute malnutrition to health centres and supporting communities to overcoming obstacles to receiving care could help in tackling undernutrition in all its forms.

### Drivers of change

**Our evidence validates our community-wide, systems approach to child health. Child stunting decreases as the community becomes more healthy.**

It indicates that decreasing vectors for faecal-oral contamination (through WASH and safe play places) may be more significant than nutrition in improving child growth outcomes, at least in the southern Bangladeshi context.

The difficulty in assessing how these changes occurred is that all our data is observational and there is strong correlation between the indicators. However, considering the average score across the 18 Healthy Village Indicators, a clear relation emerges where higher average scores are associated with lower stunting rates. Positively, this confirms one of the core ideas behind the approach: it takes a village to help children get a healthy start in life.



**Figure 2: Community-wide sanitation coverage correlates strongly with reduced stunting**

Figure 2 shows that as the average score on the 18 Healthy Village indicators increases, the stunting rate in communities falls. The line also has a decreasing slope, as the positive spill-overs at the community level decrease for higher scores. As an example, when coverage of sanitation is 50%, additional latrines in a community significantly reduce the likelihood of faecal-oral transmission, but when coverage is 90% already, this likelihood is already so low that additional latrines have little effect and thus cause a lower decrease in stunting.

This general behaviour also holds when considering the effects of last year's score on child growth today. We still find an impact one year later.

The Healthy Village Indicators which most closely correlate with stunting are:

- Access to sanitation
- Access to handwashing devices near the latrine and/or dininplace
- Having a dedicated, clean place for young children to play in

Nutrition indicators for example related to breastfeeding had little impact, but that could be because the practice was already commonplace. Essential nutrition actions did have a large impact, particularly for severely undernourished children.

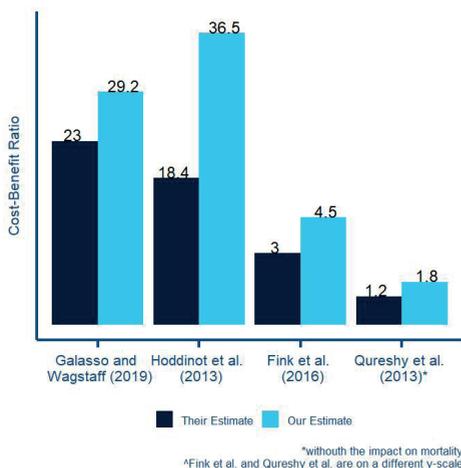
### Cost-effectiveness

**Our integrated approach is cost-effective and impactful, with every euro spent leading to an increase in lifetime income of €5.30 for every child. Comparing against benchmarks in the literature, we create between 25 to 100% more impact for every euro spent!**

Stunting has been proven to decrease the lifetime earning potential of a child: on average, children with healthy growth earn 24% more over their lifetime than their stunted counterparts. As children in poorer families have a higher probability of being stunted, this creates a negative feedback loop with poverty and stunting reinforcing each other across generations. Escaping stunting helps break this intergenerational loop.

This 24% increase translates to around €2,700 in present value if we assume a stunted child's future wage will be at the poverty line. As 19,000 fewer children are stunted, total lifetime earnings across the intervention area will increase by €51 million. Compared to the cost of implementation, this means that for every euro spent, lifetime income per child in the programme area increases by €5.30, a rate of return of 11.2%!

Comparing this figure to others in the literature is difficult as different authors assume different baseline wages.<sup>xi</sup> However, if we use their assumptions on income, and add that 19,000 fewer children are stunted, the Healthy Village Approach creates between 25 and 100% more impact for every euro spent than four benchmarks in the literature. This shows that an integrated approach can be cost-effective when you take the impact into account, even if it is more expensive to implement



**Figure 3: Our approach has 25 to 100% more impact per euro than sector benchmarks**

### Next steps

**More impact-focused action is needed if we are to achieve SDG2 (end hunger), and specifically 2.2 to end all forms of malnutrition by 2030.**

Though individual elements and approaches have been proven to tackle stunting effectively, much of the evidence on how to combine these approaches in a holistic manner remains inconclusive. Our data points to one potential way forward, with successful results in tackling undernutrition in children under five.

The integrated Healthy Village approach has halved the stunting rate in intervention areas and this paper discusses the evidence that highlights the approach's effectiveness. With these results we are confident that the Healthy Village approach can help to end stunting in children under 5 at scale and minimal cost.

However, many important questions cannot be answered yet and pilots in different countries and contexts are needed to strengthen the approach's evidence base. We are already implementing programmes together with partners to adapt and test the approach in Ethiopia and in secondary cities and peri-urban areas of Bangladesh. We need to learn from those experiences and welcome others joining us in adopting and adapting this approach for other contexts, to learn and to replicate what we think has the potential to be a gamechanger in providing a healthy start in life for children.

### Contact

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### About Max Foundation

Safe water, sanitation and hygiene, nutrition and care. Key components for a healthy start in life. Max Foundation combines these components for long-lasting impact on child health. Local leaders (entrepreneurs, communities and government) drive the change.

