ABSTRACT

The ‘last mile’ for the nutrition community is the distance to achieving the 2030 target of ending malnutrition in all its forms (target 2.2. of the Sustainable Development Goals). In low- and middle-income countries, reaching the last mile remains an immensely challenging endeavour due to the nature of food environments, which are complex, dynamic and heavily influenced by the private sector. The food industry has long been criticized for making food environments unhealthy – its contribution to reducing malnutrition has been insufficient, with countless missed opportunities and damaging actions that have stained public and private engagement. Yet, the private sector’s role in shaping local and global food systems in ways that have significant potential to influence the availability, accessibility and affordability of and demand for nutritious foods should not be ignored. With the majority of food being acquired from markets in low- and middle-income countries, it has become essential to work collaboratively with the private sector to implement innovative, market-based solutions that will contribute to improving the food environments of nutritionally vulnerable populations around the world. This article shares insights and lessons learned from four innovative partnerships in different countries, which aim to make nutritious foods more accessible, affordable, convenient and desirable. Through these case studies, we aim to highlight the potential of private-sector investment in nutrition, showcase innovative strategies for private-sector engagement and draw attention to the catalytic role non-profits can play by brokering partnerships between governments and the private sector to holistically nourish the last-mile consumer.

INTRODUCTION: WHAT IS THE “LAST MILE” IN NUTRITION?

The “last mile” refers to the “distance between where we are today, and where we aim to go for any given health indicator” (UNICEF, 2017: 2) and encompasses elements of the food environment, including affordability, accessibility and availability, which hinder or enable access to healthy diets. For the nutrition community, this distance is the current gap to achieving the Global Nutrition Targets (WHO, 2014).

Political commitment to ending malnutrition has never been greater, but despite the progress made over the past few decades, malnutrition remains a leading global challenge and a major obstacle to achieving the Sustainable Development Goals (SDGs). The recently published Global Nutrition Report (GNR) 2018 highlights the persistence, enormity and pervasiveness of malnutrition and its multiple burdens to human health and development: 88 percent of countries face a serious burden, with at least two of the three forms of malnutrition – undernutrition, micronutrient deficiencies, and overweight and obesity – while 29 percent have high levels of all three (Development Initiatives, 2018). Worldwide, 151 million children are stunted and 51 million are wasted (UNICEF, WHO and World Bank, 2018). Two billion people are micronutrient-deficient, while another 2 billion adults and 41 million children are overweight or obese (UNICEF, WHO and World Bank, 2018). Although goals and targets are clearly elucidated, the world is not on track to achieve SDG target 2.2 of ending malnutrition in all its forms. The 2018 GNR describes the recent progress to tackle all forms of malnutrition as “unacceptably slow” (Development Initiatives, 2018: 11).
It is undeniable that lifestyles, consumer choices and the food and beverage sector have contributed significantly to this growing burden. With rising incomes, urbanization and ever-increasing demand for processed foods in low- and middle-income countries (LMICs), products from the food and beverage industry account for a growing share of local diets, and this transition is progressively reaching rural areas. The ATNI Global Index 2018 reveals that less than a third of the 23,000-plus products marketed by the world’s top food and beverage companies can be classified as healthy (ATNI, 2018). The industry’s contribution to reducing malnutrition has simply been insufficient, with countless missed opportunities and damaging actions that have stained public and private engagement and made it harder to engage to achieve better nutrition (Milani, 2018).

Various actors have differing roles in providing solutions to the burden of malnutrition and the private sector is one key player. In LMICs, these efforts have focused on food safety or the fortification of staple foods (flour, rice, oil) and condiments with micronutrients (Milani, 2018). However, governments must remain in the driver’s seat as the legislative and standard-setting body, while convening and pooling together the resources, knowledge and expertise of different stakeholders. At Sight and Life, we have explored various models to productively engage private sector in reaching the last mile in nutrition. One of our focus areas is to create and support successful public-private partnerships (PPPs) that lead to sustainable nutrition improvements.

**WHY ARE WE LAGGING?**

Central to the challenge of malnutrition are food systems – or all elements and activities that relate to the production, processing, distribution, preparation and consumption of food (Willett et al., 2019). In recent decades, the ways that food and beverages are produced, processed, distributed, marketed and consumed have changed drastically.

The food environment is part of the food system and refers to the physical, economic, policy and sociocultural surroundings, opportunities and conditions that influence consumer food choices and nutritional status (HLPE, 2017).

It also relates to the policies that influence the availability and accessibility of healthy foods. In simpler terms, the food environment influences how people access, prepare and consume food.

Dietary changes around the world are the result of changes in the global, national and local food environments, which are constantly challenged to support consumer choices consistent with healthy diets and good nutrition. In recent years, multiple conceptual frameworks have been put forward to demonstrate the pathways by which dietary and eating habits are influenced by food environments and their relationships with the wider food system.

An example is the Agriculture, Nutrition and Health Academy’s Food Environment Working Group (ANH-FEWG) conceptual framework (Figure 1), which defines the food environment as the interface that mediates the acquisition of foods by people within the wider food system (Turner et al., 2017). Under this framework, the food environment consists of two domains, the personal and the external, which share an interrelated set of physical, economic and sociocultural dimensions.

The personal domain includes a set of individual-level dimensions, including food accessibility, affordability, convenience and desirability, that determine the consumption of certain foods and nutrition status (Caspi et al., 2017). For example, wealth and socioeconomic status are important in determining the ability to purchase certain foods, including packaged and processed foods, while proximity to retail outlets and/or supermarkets can determine one’s access to those foods. The external domain refers to the myriad opportunities and constraints that exist in a given context and includes exogenous dimensions, such as food availability, prices, vendor and product properties, and food promotion, advertising, marketing and regulation in a given context. Within this domain, political, economic and sociocultural factors influence the food environment and wider food system (Caspi et al., 2017).
HOW DO WE REACH THE LAST MILE?

In LMICs, reaching the last mile remains an immensely challenging endeavour due to the nature of food environments in these countries. Not only do they tend to be complex and dynamic, but they also have limitations in terms of data availability, resources and infrastructure, and consist of co-existing differing markets that include formal and informal food markets, as well as non-market-based food sources (Caspi et al., 2017). Most consumers live in obesogenic environments – environments that are rich in tasty and energy-dense, but micronutrient- and fibre-poor foods. These surroundings make it difficult to buy and eat healthier foods, because the foods that are easily accessible are highly processed from cheap agricultural inputs, containing high amounts of salt, sugar, fat and flavour additives, engineered to increase consumption.

Further fuelling the prevalence of obesogenic environments is irresponsible marketing. Foods and beverages that are usually classified in the ‘eat least’ category in dietary guidelines are among the most heavily marketed products. It is in the interest of the private sector to make its food desirable using sensory science and clever marketing, because this leads to repeat consumption, sales, profits and a sustainable business (Hall, 2018).

Despite these obstacles, there are innovative triple-duty solutions (whereby food-based interventions are addressing undernutrition, overnutrition and micronutrient deficiencies) to address last-mile nutrition in LMICs. This article shares four case studies in this area, with a special focus on the role of the private sector in fulfilling societal needs.

While the potential risks of engagement with the private sector are valid, there are ways to manage and mitigate them. Choosing the appropriate governance structures or forms of engagement is crucial in this regard. Due diligence, risk assessments and applying principles of engagement are essential when it comes to deciding whether to engage or not. In some cases, it may be that a more formal partnership with a certain governance structure is warranted, while in others, a looser partnership may suffice to mitigate risk. In other cases, there should be no engagement at all (Hawkes and Buse, 2011; WHO, 2016).
WHAT ARE SOME INNOVATIVE STRATEGIES FOR PRIVATE-SECTOR ENGAGEMENT FOR LAST-MILE NUTRITION?

Through a food-environment lens and with a focus on the personal and external domains, we share insights and lessons learned from four innovative partnerships, which aim to make nutritious foods more accessible, affordable, convenient and desirable. The case studies presented in this section are neither exhaustive nor prescriptive.

CASE STUDY 1: SIZANANI MZANZI

Sizanani Mzanzi (Zulu for “help each other South Africa”) is a social business founded in South Africa. A social business is a non-dividend company created to address and solve a social problem (Yunus and Weber, 2009). In line with this, Sizanani Mzanzi’s primary objective is to bring affordable, nutritious foods to vulnerable South African households.

The burden of malnutrition in South Africa is significant: it is a major underlying cause of death in 64 percent of children under five years of age, and one-third of women of reproductive age are anaemic (UNICEF, 2015).

It is estimated that South Africa loses more than USD 1.1 billion in GDP annually to vitamin and mineral deficiencies (World Bank, 2011). There are several factors contributing to this grim scenario. Low-income communities lack access to the goods and services they require in order to enjoy healthy and productive lives, while humanitarian and community projects, funded solely by grants, have limited reach and intervention periods. Hence, there is a need for continuity, sustainability and scale to effectively address malnutrition in South Africa. It is in this context that Sizanani Mzanzi was founded, to concurrently strengthen both the external and personal domains of the food environment in urban South Africa.

Sizanani Mzanzi then recruited community-based entrepreneurs from low-income areas and equipped these microfranchisees with basic training in nutrition and sales techniques to allow them to engage in door-to-door sales. The microfranchisees bought the products at a specified price and sold them at an agreed price that allowed them to make a small profit. Selling MixMe™ products door to door was a starting point for Sizanani Mzanzi, which needed to get a more personal feel for the market and to be able to control the products’ pricing and selling methods.

Nonetheless, in 2018, this model evolved into an indirect distribution model comprising a two-level channel, consisting of a wholesaler and retailer. In response to consumer insights, the MixMe™ products are now being phased out and a new highly nutritious instant cereal product, endorsed by the South African Heart and Stroke Foundation, called Level Up™, has recently been launched (van Zutphen and Bajoria, 2018). Sizanani Mzanzi approached retailers to encourage them to carry Level Up™. It started with a few stores, but has now been introduced into 20 urban retail outlets, both corporate and franchised stores, of which one is the big retailer, SPAR Group.
Affordability and price

Low-income consumers are ready to pay more for nutritious products they value and there are two key contextual insights from South Africa that are important to pricing decisions: luxury brands are more expensive than traditional non-fortified foods and people are ready to spend up to seven times the price of local non-fortified foods on affordable fortified products. Benchmarking analysis suggested the ideal pricing for Sizanani Mzanzi’s Mix Me™ instant porridges was between one and five times the cost of local non-fortified equivalents, at a point below the customer’s perceived value and above the producer’s cost of goods sold.

The guiding principles for price-setting that a marketer needs to follow are summarized in Figure 2. Consumer research revealed that price is a key driver of consumer purchases. This means that the health and nutritional benefits of Sizanani Mzanzi products had to be accentuated in the pricing communication for the pricing premium to be maintained. For the price-conscious consumer, Sizanani Mzanzi products have been positioned as an investment in the family’s health.

Impact

In total, it is estimated that 150 000 consumers in Johannesburg have benefited from improved health, nutrition and productivity. Furthermore, the results of consumer research show that consumers like the product despite the ‘health’ tag, which has helped reduce the barriers that prohibit uptake to ensure that more families include nutrient-dense products in their diets and/or purchases.

Lessons learned

As an emerging social business, Sizanani Mzanzi’s aim is to be grounded in consumer research and to offer products that actively improve nutrient intakes and restrict unhealthy ingredients (sugar, salt, trans and saturated fats) of last-mile consumers. Investing in consumer research also helped this business to keep close tabs on the factors shaping the personal domain of the consumer food environment, so that it could respond appropriately with tweaks to the external domain, be it switching from a door-to-door model to a traditional retail model for accessibility, or changing the product format, formulation and branding entirely for desirability and convenience. Sizanani Mzanzi demonstrates that being responsive to changing consumer needs is key to shaping healthy food environments.

Figure 2. PRICE-SETTING GUIDELINES FOR MARKETERS

Source: van Zutphen and Bajoria (2018)
CASE STUDY 2: MAKING A NUTRITION DIFFERENCE IN INDIA (MANDI)

India has 500-600 million nutrient-deficient people spread across the various income segments. Within these segments, the “aspiring” class has household income of USD 3 200 to USD 7 100 per year (Brar et al., 2014). The aspirers make up the largest income segment of the Indian population (54 percent) and nutritional deficiencies are rampant among them (IIPS, 2017). MANDI is a disruptive business-to-consumer (B2C) social enterprise, launched by Dutch life- and material-sciences multinational company DSM, with the potential to address nutrition among India’s 500 million-strong aspiring class using locally relevant solutions.\(^1\)

Which elements of the food environment does this case study address?

MANDI is built on five key principles, which specifically address both the external and personal domains of the food environment for the Indian aspirers.

**Personal domain:**
- MANDI started by mapping the Indian nutrition landscape and then arrived at solutions, to make sure the products were desirable to the Indian aspirer.
- MANDI kept people and their needs at the heart of thinking around a feasible portfolio of affordable products and then looked for science to solve it.
- The consumer research for MANDI looked at people holistically as a combination of socioeconomic-cultural-food-lifestyle attributes.
- The MANDI brand was built on trends and insights that are not only true today, but also relevant for the future.

**External domain:**
- In designing its pricing strategy, MANDI aimed to make a difference in society, while balancing DSM’s commercial ambition.

With these principles in mind, MANDI launched a pure-play consumer nutrition brand called Nu-Shakti (Hindi for ‘power of nutrition’), with a range of affordable, locally relevant products. The products include staple-food fortifiers, biscuits for pregnant mothers, a micronutrient powder and a fortified beverage, each costing between USD 0.03 and USD 0.14. Analysed through a food-environment lens, MANDI goes the extra mile by strengthening the components of the personal domain with strong, insight-driven communication to establish consumer connection and desirability. It has deployed direct marketing tools to build consumer awareness and retention.

To strengthen the components of the external domain, there has been a focused launch of the products in two states in India, with an extra layer of innovation to maximize availability in both urban and rural markets. In urban markets, the product is carried by a health e-tailer, coupled with retail activation, while in rural markets, MANDI has tapped into a pan-India rural women entrepreneurs’ network, which also organizes community-level awareness programmes. In both rural and urban markets, more than 200 000 consumers received samples and feedback has been excellent, with indications of high product acceptance and product high relevance. As next steps, MANDI aims to build awareness at scale, track and review, and also expand to other states in India.

**Impact**

Through the rural women’s network alone, nearly 320 000 sachets of MANDI products have been sold in two pilot Indian states. In addition, 650 women entrepreneurs have been trained to sell and generate community-level awareness of the products, generating incomes for themselves and their families.

**Lessons learned**

The main lesson from this case study is that simply making affordable nutritious products available with generic public-health messaging is often not enough of a trigger for consumers to purchase it. Private-sector initiatives, such as MANDI, have marketing budgets to invest in creating product desirability among consumers by employing innovative, peer-driven marketing tactics.

---

\(^1\) For more, please see Bajoria (2018).
CASE STUDY 3: THE MALAWI EGG HUB

In Malawi, malnutrition is a serious challenge and contributes to a significant proportion of preventable child deaths — 37 percent of children in Malawi are affected by stunting and 23 percent of all child deaths are related to undernutrition (UNICEF, 2018; SPRING, 2017). Eggs are a relatively inexpensive source of essential micronutrients and high-quality protein and an excellent food for improving nutrition. A recent trial in Ecuador has concluded that eating an egg a day for six months can reduce stunting by 47 percent and underweight by 74 percent (Iannotti, 2017). This is further substantiated by intake data, suggesting that eating one egg in addition to the recommended daily intake of breast milk will help to achieve the essential nutrient requirements of infants (Iannotti, 2014; USDA, 2018). However, eggs are scarce and rarely consumed by children in much of Africa and Asia, including Malawi, owing to unfavourable external domains of the food environment, notably high cost (8-10 times the price of cereals) and low availability.

Which elements of the food environment does this case study address?

Charles Stewart Day Old Chicks (CSDOC) is Malawi’s leading private input supplier of poultry. It works to strengthen the food environment for egg consumption by ensuring the availability and affordability of eggs in the country. It helps poultry farmers to achieve commercial-scale productivity by providing them with input packages, credit, training and access to markets, as shown in Figure 3.

CSDOC organizes farmers into groups of five and assists them in setting up and developing an enterprise with a three-year breakeven period. Farmers are encouraged to buy improved feed at wholesale rates and to sell eggs primarily in their communities, thus improving local consumption. The trucks that deliver feed also buy poultry input materials, such as maize and soya, and any excess eggs from farmers, thereby creating a holistic cycle (Figure 4).

Figure 3. CSDOC’S EXPERTISE

<table>
<thead>
<tr>
<th>High quality input support</th>
<th>Extension services</th>
<th>Consistent market support</th>
</tr>
</thead>
<tbody>
<tr>
<td>• High performing point-of-lay birds</td>
<td>• Theory + practical lessons</td>
<td>• Buy back at wholesale rates</td>
</tr>
<tr>
<td>• Feed, vaccines &amp; medicines as per specifications</td>
<td>• Weekly + emergency extension services</td>
<td>• Demand creation</td>
</tr>
<tr>
<td>• Poultry equipment</td>
<td>• Progress monitoring</td>
<td></td>
</tr>
</tbody>
</table>

Source: CSDOC.

Figure 4. OPERATING MODEL OF CSDOC’S INTERVENTION TO INCREASE EGG SUPPLY IN MALAWI

Source: Beesabathuni et al. (2018).
Impact

CSDOC is currently supporting 70 farms with high-quality inputs, training, credit facilities and market support, helping them to produce around 25 million eggs per year collectively. Farmers are also encouraged to sell eggs at their village markets, close to the site of production, thus improving the availability of eggs in rural Malawi. In addition to providing cheaper and more accessible eggs, CSDOC is also improving farmers’ ability to acquire and consume more nutritious foods by increasing their incomes: on average, farmers make a net profit of USD 1 135 per year, nearly 2.3 times more than the minimum wage.

Lessons learned

By leveraging its market access, technical know-how and on-the-ground presence, CSDOC is able to support smallholder farmers in making nutrient-dense foods, such as eggs, more widely available. What this case study demonstrates is that the private sector can shape food environments not just through packaged foods, but also whole foods, by working collaboratively with farmers to build their capacity.

CASE STUDY 4: OBAASIMA

In Ghana, despite two decades of sustained economic growth and reductions in some forms of malnutrition, progress on minimizing micronutrient deficiencies has been slow. A recent micronutrient survey conducted by the Ghana Health Service revealed deficiencies in key micronutrients, including vitamin A, iron and folate, particularly in pregnant women, concurrent with high levels of overweight and obesity (University of Ghana, 2017). While micronutrient deficiencies persist, more than 40 percent of women in Ghana are overweight or obese (University of Ghana, 2017).

In 2013, a partnership was launched between Sight and Life, DSM, the German Federal Ministry for Economic Cooperation and Development, the Children’s Investment Fund Foundation, the Bill and Melinda Gates Foundation, the Association of Ghanaian Industries and the Ghana Standards Authority. Driven by the common objective of improving the micronutrient intake of women of reproductive age, the OBAASIMA scheme and seal were developed as a market-based approach to addressing micronutrient deficiencies across the food chain, from production to supply and demand creation.

Which elements of the food environment does this case study address?

The programme is a demand-driven approach to addressing micronutrient malnutrition, aimed at increasing the number of fortified food products available in Ghana for women of reproductive age and to make them more recognizable. Using a distinctive trademark or front-of-package seal, the OBAASIMA symbol guarantees nutrition quality, while easily identifying fortified food products that provide a source or good source of 18 vitamins and minerals designed for women of reproductive age, such as iron, folic acid, calcium, iodine and zinc, as well as vitamins A, C, B12 and D.

The OBAASIMA seal not only serves double duty by providing clear assurance to consumers of a high-quality, safe and nutritious food that adheres to the minimum fortification content and restriction of sugar, salt and trans and saturated fat, but it also encourages entrepreneurial opportunities for food companies that want to capitalize on consumer growth in the area of affordable nutritious food. In this way, OBAASIMA has created demand for nutritious foods in Ghana by making products easily identifiable and recognizable, thereby reshaping the marketing and regulatory component of the food environment. It also serves as a very good model for engaging the private sector in LMICs to alleviate micronutrient deficiencies and improve food environments for the last-mile consumer.
ENABLING ACTIONS TO IMPROVE THE FOOD ENVIRONMENT

Impact

As of May 2019, three food companies were making products with the OBAASIMA label, and an additional four new products will be launched in fourth quarter of 2019. Many of these products will be part of the World Food Programme’s voucher programmes in Ghana.

The business and technical know-how provided through OBAASIMA have enticed traditional business-to-business companies to shift to a business-to-consumer focus, learning the importance of effective ways of marketing and distributing new consumer products in the marketplace. This newly learned expertise provides further opportunities for companies to expand their portfolio of affordable nutritious and safe foods. Expert guidance on the appropriate nutrients and levels necessary for women of reproductive age has resulted in companies with or without fortification experience to optimally fortify their products for this target group. Furthermore, criteria on safety, quality and nutrition, which are necessary for products to qualify for the OBAASIMA seal, have led to additional investment for two OBAASIMA-affiliated small and medium-sized enterprises, enabling them to increase production capacity, resulting in additional local employment as well as an increase in the availability and affordability of nutritious and safe foods.

Lessons learned

As much as fortified foods have been proven to help alleviate micronutrient deficiencies, they are not a panacea. In light of the double burden of malnutrition emerging in LMICs, innovative business models, such as OBAASIMA, and the development of a trademark seal, in particular, are encouraging examples of how two challenges can be addressed at once (micronutrient deficiencies and the risk of overweight and obesity). Perhaps most importantly, they are the result of thought being given to an essential nutrition intervention and redesigning it in a way that it is tailored to tackling the double burden of malnutrition.

WHAT CAN WE LEARN FROM THE CASE STUDIES ON PRIVATE-SECTOR ENGAGEMENT IN LAST-MILE NUTRITION?

Sight and Life carefully chose this set of case studies to showcase innovative models that address and strengthen all of those elements of the food environment that are required to holistically nourish the last-mile consumer. Sizanani Mzanzi is a social enterprise that bolsters the food environment by making locally desirable, nutritious and affordable products available through traditional retail channels, while MANDI is a purely commercial undertaking that is innovating in methods of delivering and marketing affordable nutritious foods to last-mile consumers. The Malawi Egg Hub highlights the catalytic role the private sector can play in supporting smallholder farmers that have the potential to address the nutrition gap with a highly nutritious product, such as eggs, while OBAASIMA is a positive model for PPPs to improve food environments through a demand-driven approach.

The four case studies underscore that aligning the private sector with better nutrition outcomes can allow us to draw on their nutritional expertise, research and development capacities and deep consumer insights to strengthen vendor and product properties, leading to greater convenience. They also show that building demand for nutritious foods by making products easily identifiable and recognizable (for example, through quality seals) can help to reshape the marketing and regulatory component of the food environment and can serve as a model for engaging the private sector in LMICs to address the double burden of malnutrition and improve food environments for the last-mile consumer. Lastly, the private sector’s role in ensuring availability and accessibility is undeniable; it has the networks and supply chains not only to bring its own affordable nutritious foods to consumers, but also to empower smallholder farmers with access to markets for essential nutritious foods.
LIMITATIONS

While these initiatives show an encouraging trend, many hurdles remain to reaching the last mile, including linking agricultural policy to better nutrition and developing better metrics and incentives. Public-private engagement can remain difficult due to a lack of trust between the public sector, civil society and the private sector, conflicts of interest, different goals, objectives, working cultures, timelines and expectations. There is an urgent need to improve dialogue between all stakeholders and for learnings to be captured along the partnering process, to inform jurisdictions and encourage them to undertake an evidence-based approach to assessing partnerships. Lastly, there is a huge gap that needs to be addressed in measuring the impact of PPPs on nutrition outcomes.

CONCLUSION

There are enough statistics to highlight how the burdens of malnutrition, brought on by poor food environments, are robbing millions of people of opportunities to reach their full potential and limiting economic growth in their countries. ‘Business as usual’ is not an option; there is an urgent need for disruptive solutions and innovative new collaborations to facilitate cutting-edge research and development, sustainable investments and improved networks, leading to partnerships that meet the nutritional needs of marginalized communities at the last mile. The four case studies presented in this paper are neither exhaustive nor prescriptive, but they attempt to shine a light on private-sector initiatives to help guide key influencers and stakeholders towards principles of better engagement to deliver healthier diets for all.
References


