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From the canteen to the corner shop: How WFP is using schools as a platform to enable healthy diets in Cambodia

A case study on nutrition-sensitive school-based programmes

2021

The context: Poor diets and a triple burden of malnutrition

Photo: WFP/ Nick Sells

Over the past three decades, Cambodia has experienced significant social, economic and political change. Like many middle-income countries, economic growth, urbanization and related lifestyle changes have brought the country to a nutritional junction: While overweight and obesity are on the rise, undernutrition, including micronutrient deficiencies, is a lingering burden.

Although Cambodia's obesity prevalence – at 8.7% for women and 6.0% for men – is lower than the regional average, it almost tripled between 2000 and 2015 along with a rise in noncommunicable diseases such as diabetes. One third (32.4%) of children under 5 are stunted while one in ten (9.7%) suffer from wasting (DHS 2014), and diets overall are low in fruits, vegetables, legumes and fibre compared to optimal intake (IHME 2020).

The nutrition of school-aged children (5-19 years) is of particular concern. Micronutrient deficiencies are high in this group: a 2014 assessment of over 2,000 Cambodian schoolchildren aged 6–16 from 20 primary schools estimated the prevalence of iron, zinc and iodine deficiency to be 51.2%, 92.8% and 17.3% respectively (Perignon *et al.* 2014). Like national prevalence, overweight and obesity are also rising in this group, with 13.6% of boys and 8.5% of girls overweight, while a third of their peers (37.9% of boys and 31.6% girls) are still underweight, although this is slowly declining (GNR 2021).

The risk of overweight and obesity tends to increase as children grow older. A systematic review of Asian countries found that while 5.8% of 5-11 year-olds were obese, this increased to 8.6% by the time children were 12-19 years (Mazidi *et al.* 2018). This underlines the pivotal phase of the school years, a pivotal phase to promote healthy diets that both prevent undernutrition and overnutrition simultaneously.

While historically, malnutrition has been met with a government focus on food insecurity and undernutrition in recent years the focus has responded to the evolving landscape with increased attention to the growing issue of overweight and obesity and diet-related diseases.

Figure 1: Underweight, overweight and obesity in children and adolescents in Cambodia (GNR 2021).[1]

A nutrition-sensitive approach

In the context of an evolving nutritional landscape and in recognition of importance of childhood and adolescent years, WFP in Cambodia saw schools as one platform where it could support improvement in diets.

WFP has been supporting the government's school feeding programme for 20 years, providing breakfast or lunch to 150,000 pre-and primary school children in areas with high food insecurity and lower educational outcomes. The school feeding programme is currently in transition, moving to a 'home-grown school meals' model that sources food from local farmers and is gradually being handed over to the government.

While the school meals contribute to the day's nutrient intake, meals only represent a portion of the entire diet. In order to have a greater impact on children's diets, the CO recognized it must extend its focus, looking beyond the meal itself to using schools as platforms to influence entire diets. Furthermore, schoolchildren could be seen not just as an end point, but as a potential entry point to influence dietary habits of their families and communities.

A nutrition-sensitive approach was therefore applied to WFP's school-based programmes (SBP) in Cambodia. The approach is based on the premise that programmes in other sectors – if designed with a nutrition lens – can ultimately improve nutrition even though this is not their primary objective. To make Cambodia's SBPs nutrition sensitive, the CO drew direction from WFP's nutrition sensitive guidance, Unlocking WFP's Potential: Guidance for nutrition-sensitive programming (WFP 2017).

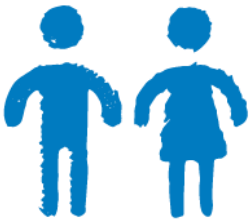


Photo: WFP/ Christopher Rompre

Taking stock: Research and Situation Analyses

Understanding is the first step in the nutrition-sensitive process, where qualitative and quantitative data is collected and analysed in order to understand the nutrition landscape, including the drivers of malnutrition and poor diets.

National data such as a 24-hour diet recall carried out on 2,000 students in 2014-2015 shed light on the nutrition situation of this age group (Perignon et al. 2014) and complemented WFP's and partners' studies detailed in table 1. The collective findings from this research revealed high levels of unhealthy snacking and micronutrient deficiencies, the feasibility of using fortified rice in school meals, and qualitative insights into the motivators of choice of schoolchildren and vendors in the school food environment.

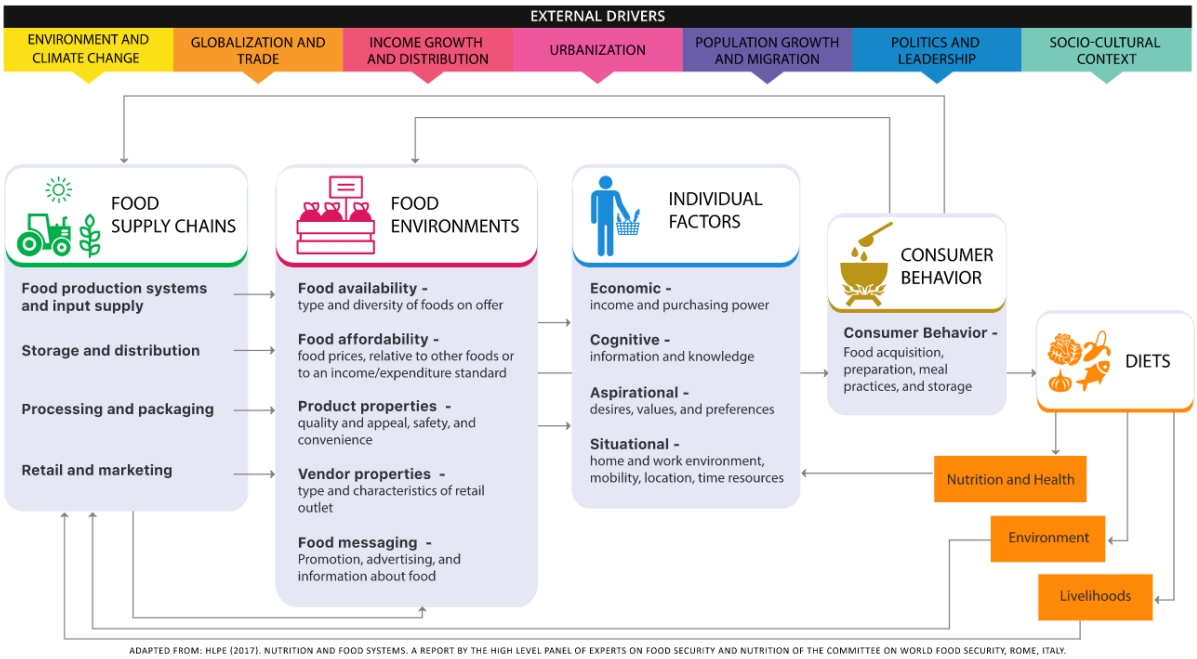
Table 1: Studies and situational analyses (2014-2021)

Study	Description
Fill the Nutrient Gap (WFP 2017)	Analyzed barriers to accessing nutritious diets. Found increasing double burden of malnutrition, exacerbated by snack food consumption in children, and that one fifth of households would not be able to afford a nutritious diet.
Formative research to inform adolescent programming in Cambodia (WFP and Anthrologica 2018)	Qualitative findings on the experiences, needs, preferences and priorities of adolescents regarding food systems and nutrition.
Rice fortification landscape analysis (WFP 2018)	Analysis of opportunities and constraints in the Cambodian rice value chain with a view to establishing in-country rice fortification. Social safety nets were identified as the most feasible pathway to introduce fortified rice into diets.
Fortified Rice for Schoolchildren in Cambodia (FORISCA) UltraRice+NutriRice study (WFP & the Institute of Research for Development, 2014) (Perignon *et al.* 2014)	Randomized controlled trial in 16 primary schools to quantify the impact of fortified rice in school meals on micronutrient status, health and cognition of schoolchildren. Showed that zinc and folate deficiency could be reduced through rice fortification (Kuong et al 2019).
Nutrition behaviour change communication strategy for primary school age children in Cambodia (WFP, SNV and 17 Triggers 2020)	Formative research on nutrition behaviours of school-aged children and vendors around schools. Findings were used to create a behaviour change campaign to inspire healthy snack choices among school-aged children and encourage vendors to sell healthier products.
Study on children's snack consumption behaviour (WFP and Helen Keller International, in progress)	Ongoing research to understand unhealthy snacking behaviours among primary school children. Will inform the development of a social behaviour change communication strategy to promote healthy eating practices.

Photo: WFP/ Nick Sells

The food systems framework by the High-Level Panel of Experts on Food Security and Nutrition (HLPE) provides a visual representation of how actions in different domains of the food system can ultimately affect diets. The activities covered in this case study are organized according to the food system domain that represents their main entry point.

Figure 1: Food systems framework (HLPE). Source: foodsystemsdashboard.org



Food supply chains

Scaling up fortified rice in school meals

For several years now, WFP has been including fortified rice in the school meals it provides, advocating for fortified rice in national policy, and carrying out sensitization campaigns to raise awareness of fortification as a solution to widespread micronutrient deficiencies. By introducing additional vitamins and minerals in rice – a national staple and base of every school meal – children receive additional micronutrients without having to change eating behaviour. As a cost-effective strategy, it also helps nutritious diets become more affordable. By addressing micronutrient deficiencies immediately, fortification acts as a complementary strategy to other long-term interventions for healthy diets.

To ensure sustainability of this programme, WFP conducted a landscape analysis and local blending pilot to explore the possibility of local production, with the view of sustaining the availability of fortified rice, which has historically been supplied by the USA. Long-term sustainability of rice fortification requires thinking beyond schools and expanding into the national market, so producers can scale up and produce at cost.

Home-grown school feeding

WFP's home-grown school feeding (HGSF) model links local supply and demand, sourcing ingredients for school meals from local supply chains. Therefore, it has the potential to deliver a dual benefit, providing fresh kilometre-zero ingredients for children's meals, while supporting the livelihoods of local producers.
Unlike the more common focus on staple ingredients as seen in other countries, transition to the HGSF model in Cambodia prioritized the

sourcing of nutritious animal-source foods such as eggs, fish, and pork, and green leafy or orange fleshed vegetables. The CO is also looking at integrating locally produced nutrient-rich foods such as crickets and fish powder and is planning a study with FAO to investigate this in 2021.

Food environments

Working with vendors around the school grounds

Snack food vendors ubiquitous around schools in Cambodia, mostly selling snack food of poor nutritional value. Initial research by WFP, SNV and 17 Triggers (unpublished) found that 95% of students were given pocket money to buy snacks from these vendors, making unhealthy snack foods available and affordable in the school food environment.

The CO with SNV and 17 Triggers therefore carried out a research project to understand the willingness of vendors to carry a healthier range of options. They developed and tested an intervention that explored how school vendors could change their offerings to include more nutritious snacks while remaining profitable and developed a margin calculation tool that assists vendors in calculating potential profits from healthy options. The project will be piloted in 2021-2022.

Individual factors

Outdoor classrooms: Gardens for education

In 2015 WFP expanded its support to school gardens to transform gardens into opportunities for learning and developing life skills. WFP and partners delivered trainings to teachers and students on vegetable growing techniques and how to coordinate the use of fresh garden produce as ingredients in school meals, distributed manuals on using gardens and have supported the launch of a 'learning garden' programme, where children learn Khmer, mathematics, science and social studies through tangible application in a garden context.

Hands-on education nourishes a positive relationship with fruit and vegetables and encourage the development of healthy behaviours, while garden produce improves the diversity of school meals. The school gardens are already demonstrating positive results. Children interviewed by the CO for case studies reported understanding theoretical concepts better after practical application in the garden, and enjoying the meals prepared with fresh vegetables from the garden.

Consumer behaviour

Encouraging healthy snacking through SBCC

WFP and 17 Triggers carried out a research project to understand what social and behavior change communication (SBCC) inter ventions (messages, channels, tools, etc) could best resonate with school-aged children to encourage them to choose healthy snacks. They employed the *elephant-rider-path* behavior analysis model which posits that emotions dominate rational logic. Results were used to develop a prototype SBCC campaign to stimulate demand for healthy foods, using colors and the energy-giving potential of fruit and vegetables for sport and play as messaging. The next step is to use the results to conduct a pilot of the campaigns in a small number of schools.

Photo: WFP/ Christopher Rompre

Success Factors and Lessons Learned

Reflections from country office staff were able to pinpoint key drivers of success and lesson learnt from the experience. Quotes from CO staff are reported anonymously.

1. Recognition of school-aged children as a target group for nutrition is the first step

The historical global focus on nutrition in the first 1,000 days from conception to age 2 has meant that the nutrition of older children has often been deprioritised. In Cambodia, the gradual recognition of the importance of nutrition in this lifecycle phase can be seen in national policies, such as a the most recent national strategy for food security and nutrition (2019-2023) which explicitly highlights need for a broader lifecycle approach, and was the first necessary step to gaining traction.

Government buy-in was essential to prioritizing this issue and a critical success factor in rolling out activities. Part of the shift to prioritizing school-aged children was driven by the collective and sustained advocacy on the part of several organizations including WFP. A significant milestone was achieved when Cambodia hosted the Global Child Nutrition Forum in 2019, giving the country a sense of pride and international recognition as a leader in school nutrition.

2. School-based programmes require cross-sector compromise and collaboration

A nutrition-oriented school-based approach requires the collaboration of a larger range of partners than single-sector initiatives. Education, social protection and nutrition sectors are often involved, each with their own perspectives and objectives for SBPs. This presented challenges in terms of bringing all actors together for a common goal, but also created opportunities for engaging with non-traditional actors, and bringing together private and public sectors, with the school becoming a central platform for positive change in the community.

Internally, the use of fortified rice in school meals requires coordination between nutrition, school feeding and supply chain units. This work sometimes required compromise between programme objectives and priorities, such as the case where fortified rice kernels were not produced locally.

"We struggled internally with the definition of 'home-grown'. Should it be exclusively food from the municipality, or could it be from the country? We could produce fortified rice in Cambodia, even in the same province, but producing it in the specific communes of the schools was next to impossible. So, we had an internal conflict: We could increase the nutrient profile of meals, but we were taking away a big-ticket item from local farmers and centralizing it."

The CO is trialling different solutions, such as blending fortified kernels with different levels of locally produced rice to meet these multiple objectives.

3. Have a clear vision and story

The Cambodia CO greatly benefited from a clear objectives and theory of change of how they intended to use schools to achieve wider objectives in Cambodia, such as through investing in complementary activities such as SBCC. Having a coherent storyline and vision during country strategic planning consultations and proposal writing helped foster universal understanding.

Strong monitoring and evaluation were also recognized as an essential. While many nutrition-related indicators are being collected, the global lack of diet-related indicators for school-aged children represents a gap in measuring success in this area and telling the story of an integrated programme.

4. Hiring specific expertise can accelerate progress

Recognizing that internal teams have many competing priorities, the CO found that hiring specific

professional expertise as vendors or consultants could greatly accelerate progress in certain areas.

The CO hired a social marketing company to design an SBCC strategy, which was able to focus efforts and use its niche expertise to quickly design an effective strategy. Similarly, hiring a rice fortification consultant who could advise what would work and what wouldn't help the supply chain team fast-track progress in scaling up fortified rice provision.

"We put pressure on ourselves to know all these answers. But if you're sitting around a table and not coming to the right answer, maybe you need someone else to advise you. Identify the expertise you need and how long you need it for."

5. Don't assume what messaging will resonate: Do the research

Behaviours are complex, barriers differ and approaches that work in one context or target group may not work in another.

"We tested two SBCC campaigns on children. One about the energy-giving superpower of fruit and vegetables, which I preferred, and another on yellow fruit and vegetables, which I personally thought was too simplistic. But when we tested it, the simpler campaign was more successful with children and their caregivers."

It was also important for the team to address their own preconceptions about what children liked, wanted and knew.

"What surprised me was that the kids really do like fruit when it's available. They love the little mandarins! But whether they buy them or not is a product of the way they see them, the price, and how they are sold."

The research also revealed that many kids already knew what was healthy, underlining the importance of formative research to inform interventions that can help to overcome the behavioural gap. Working with an organization that had an expertise in social marketing, researching, and testing messages was instrumental to understanding this.

The SBCC research brought to light how the wants, needs and incentives of children change as they grow.

"We can sometimes be simplistic in how we think about it, but the way a 5-year-old thinks, the choices they make and what motivates them is quite different to an 8 year-old, which is quite different to a 10-year-old. We printed storybooks about good nutrition. The older kids thought they were fine, but the younger kids loved them."

7. Sourcing nutritious foods for school meals present different challenges to staples

Shifting from a school feeding model that sources predominantly staples to one that sources perishable nutritious foods such as fruit, vegetables and animal-source foods enables more nutritious meals but also presents different food safety risks. The CO responded with food safety training for canteen staff, guidance and monitoring to ensure proper handling and storage of high-risk items.

8. Scepticism about fortified rice can be managed with a robust communications strategy

A key challenge in scaling up fortified rice was scepticism from some members of government and the general public on social media, with concerns about safety, taste and cost.

WFP responded through sensitization campaigns including FAQs, posters, flyers, video, and distributing samples during public events. The CO communication unit monitored the situation, regularly reached out to key stakeholders to understand their position, and pre-prepared press releases or statement ready to be released as needed. The public conversation has shifted in recent years, with people generally expressing a more positive opinion and awareness of the benefits of fortified rice.

9. Working with local vendors represents untapped potential

Given the pervasive presence of snack food stalls in and around school grounds in many countries, vendors can be key allies in improving

schoolchildren's diets. In the formative research, vendors expressed that they would be willing to change their offerings if they knew children would buy them.

"The most eye-opening findings from the research was that we could work with vendors. We focus so much on the children themselves, but changing the environment does a lot to improve behaviours."

While banning vendors in the vicinity of schools is an approach used in other countries, the CO was cognisant of potential rebounds in this context. Children may choose to go down the road to buy snacks instead, exposing themselves to traffic incidents, or the livelihoods of local vendors may be destroyed.
"We didn't want to ruin their businesses. We wanted to show them that they can sell healthy things and contribute to the community as well."

Working directly with vendors can complement other strategies to improve food environments such as government guidelines or regulations on what can be sold around schools and working with communities and households of school-aged children.

Photo: WFP/ Christopher Rompre

10. Community and faculty involvement: the secret ingredient

Teachers, school directors and school supporting committees (consisting of commune councils, parents, health centres, etc) were found to be highly respected and influential in rural areas. These figures are highly knowledgeable and trusted by the community. When children are instructed to do something these authority figures, these instructions were followed. These authority figures can be considered as key allies in school-based programmes.

Parents and community members were highly engaged in many activities. They often donated ingredients and cooking utensils and volunteered their time to help in construct or rehabilitate school infrastructure. Their involvement and buy-in led to them spreading the messages of hygiene and nutrition to the wider community.

The CO used community events such as School Nutrition Days to help raise awareness about healthy diets and rice fortification to broaden the impact beyond school children and influence the entire community. The social aspect meant that these events were well attended and enjoyed by communities.

The CO took the approach of enabling the community to self-organize, presenting a suite of options and providing materials that the community could use to organize the events as they wished. A challenge was finding the balance between community empowerment and asking too much of teachers, school directors and school cooks who are often community volunteers.

Find out more:

WFP and nutrition-sensitive programming
WFP in Cambodia

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