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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 the 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, currently providing breakfast or lunch to approximately 300,000 pre-and primary school children in areas with high food insecurity and lower educational outcomes. The school feeding programme is currently in transition, moving fully to a 'home-grown school feeding' (HGSF) model that sources food from local farmers and is gradually merging into a government managed and funded school feeding programme.

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, 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. The process of making WFP Cambodia's school meals nutrition sensitive was conducted in close collaboration with development partners and build upon 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). The data complemented other studies conducted by WFP in collaboration with development partners, UN agencies, research institutes and international NGOs as 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.

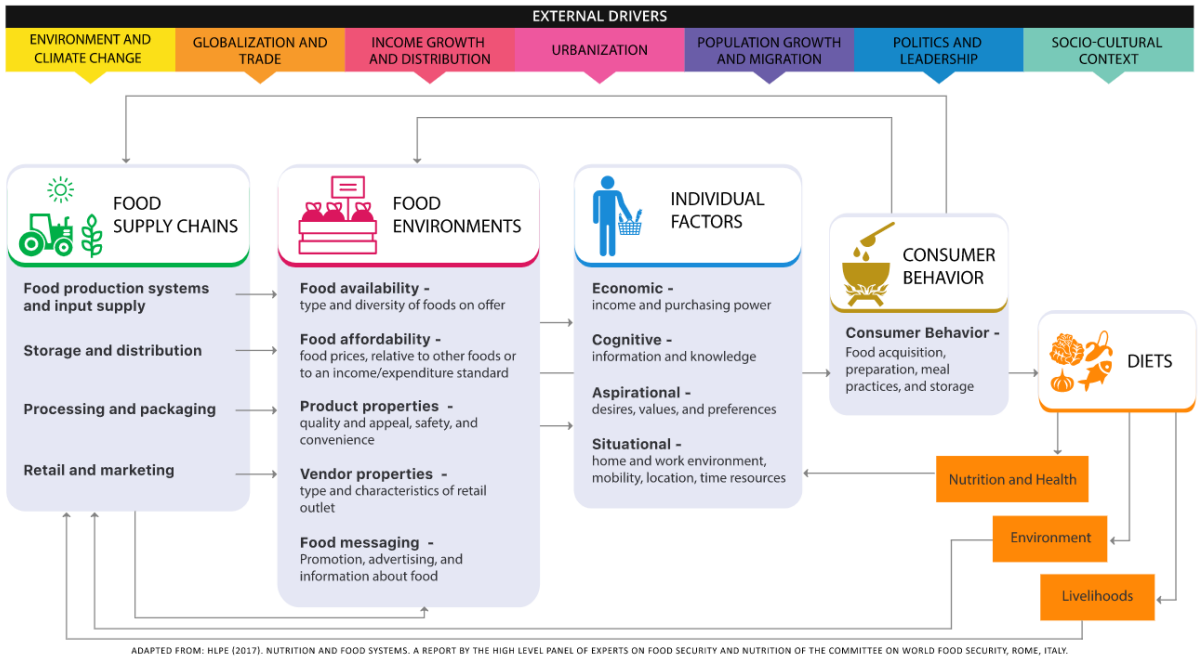
Table 1: Studies and situational analyses (2014-2021)

Study	Sc
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, FAO, UNICEF and Helen Keller International, in progress)	Ongoing research to understand unhealthy snacking behaviours among primary school children. Phase I mapped out the influencing factors for school children, while phase II will seek to understand underlying determinants of behaviour for snack-consumption amongst school aged children.

What was done: Action across the food system

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, WFP Cambodia, though the generous support of the U.S. Department of Agriculture (USDA) McGovern-Dole Food for Education Program has been including fortified rice in school meals. This has been the starting point for a broader engagement to advocate 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.
Long-term sustainability of rice fortification requires thinking beyond schools and explaining into the national market, so producers can scale up and produce at cost.

Home-grown school feeding

WFP's 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 in Cambodia prioritized the sourcing of nutritious animal-source foods such as eggs, fish, and pork, and green leafy 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 2022.

Food environments

Working with vendors around the school grounds

Snack food vendors are 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.

WFP Cambodia, together 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 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, FAO 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 WFP Cambodia for this case study 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 behaviour change communication (SBCC) interventions (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
to conduct a pilot of the campaigns in a small number of schools.

Photo: WFP/ Christopher Rompre

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