



Implemented by



School meals as a strategy to address school age malnutrition

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Peer-to-peer exchange

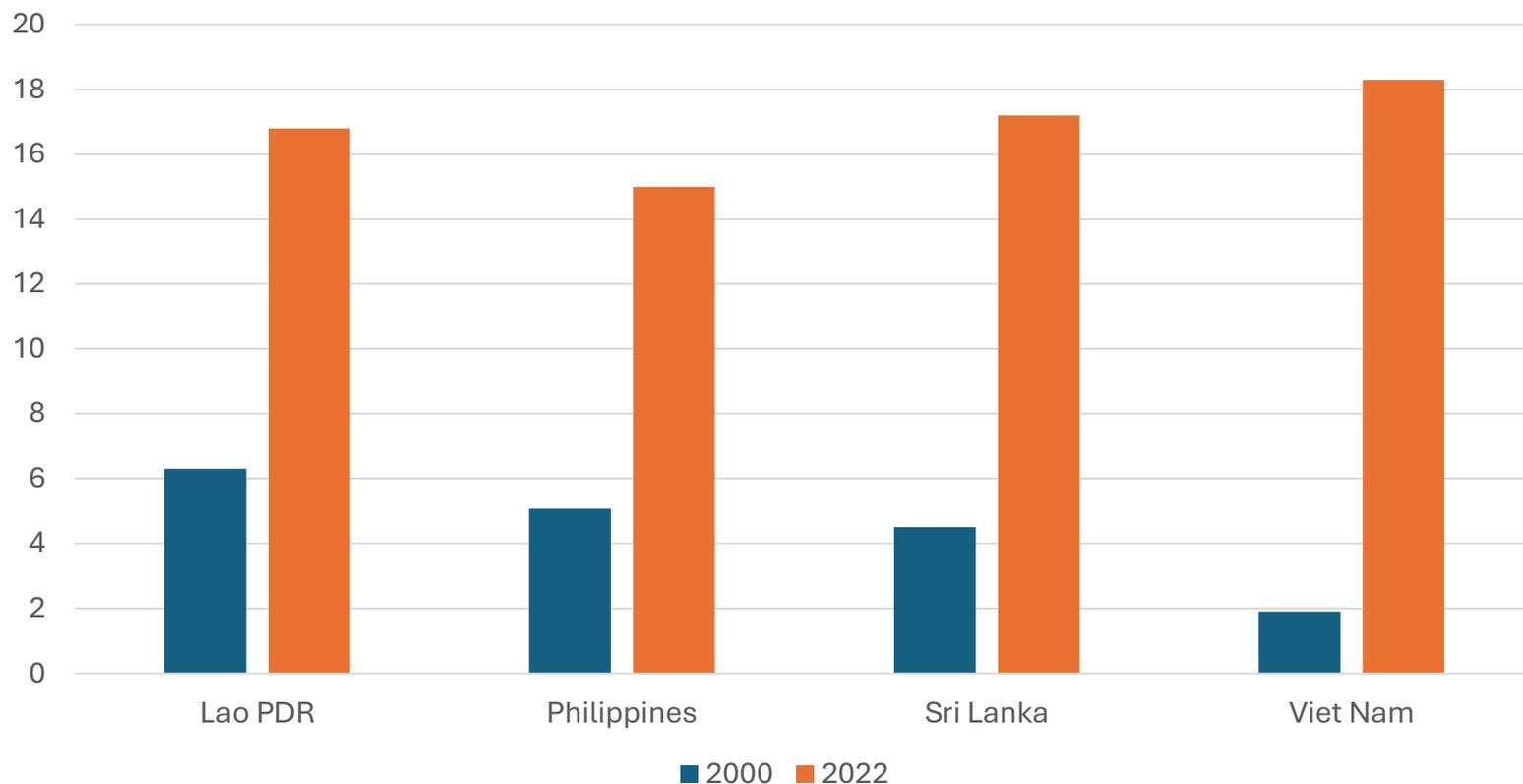
Tagaytay, The Philippines, 30 September 2025



Outline

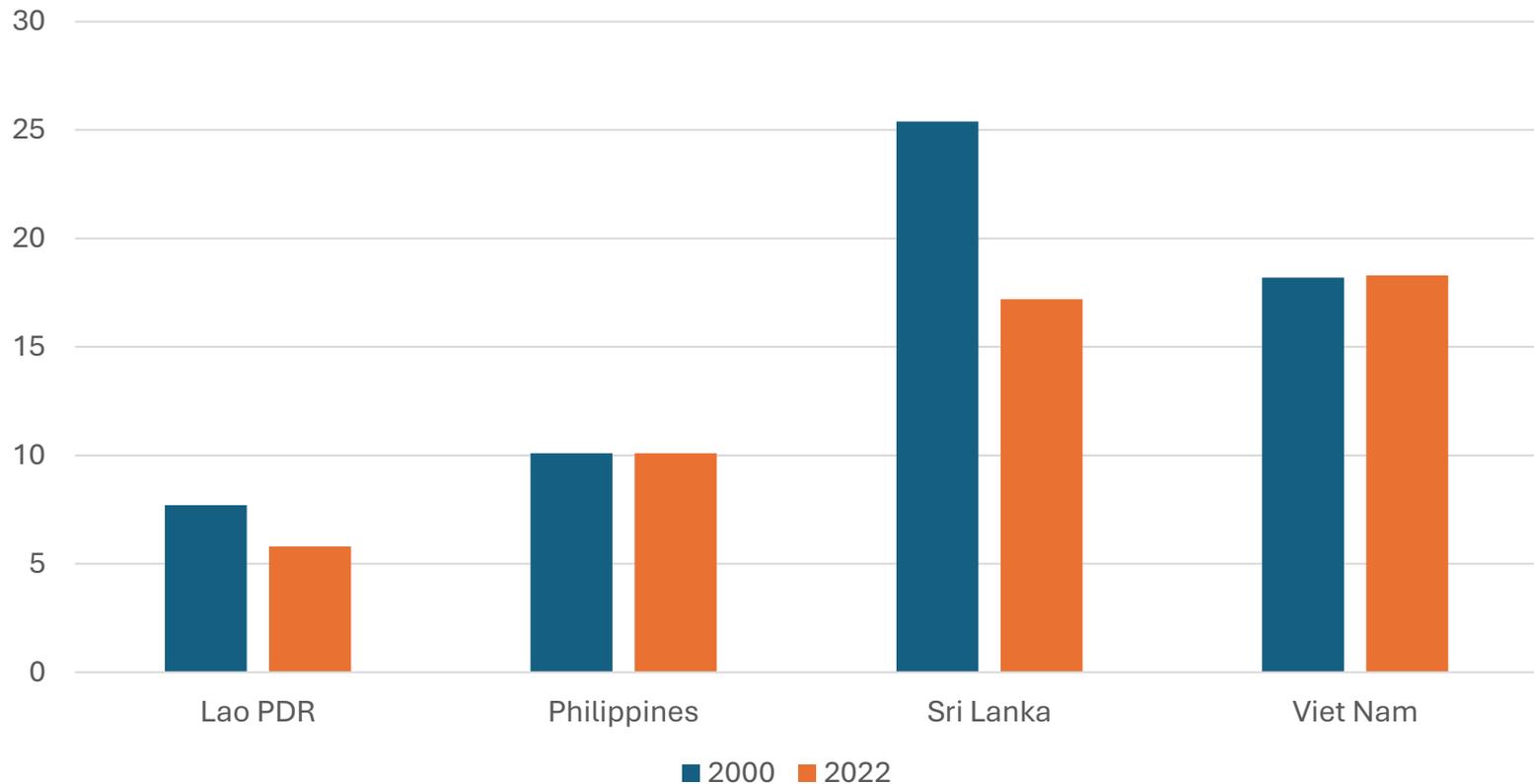
- Overview of the nutrition situation in selected countries
- School feeding programme around the world: current status
- Making the case for school feeding programme
 - Impact on health and nutrition
 - Impact on education
 - Safety net and support to local agriculture
 - Gender equality
 - Returns on investments
- Challenges
- Recommendations for success

Prevalence of overweight/obesity (BMI-for-age > +1 SD) among children and adolescents (5-19 years) in Lao, PDR, Philippines, Sri Lanka & Viet Nam



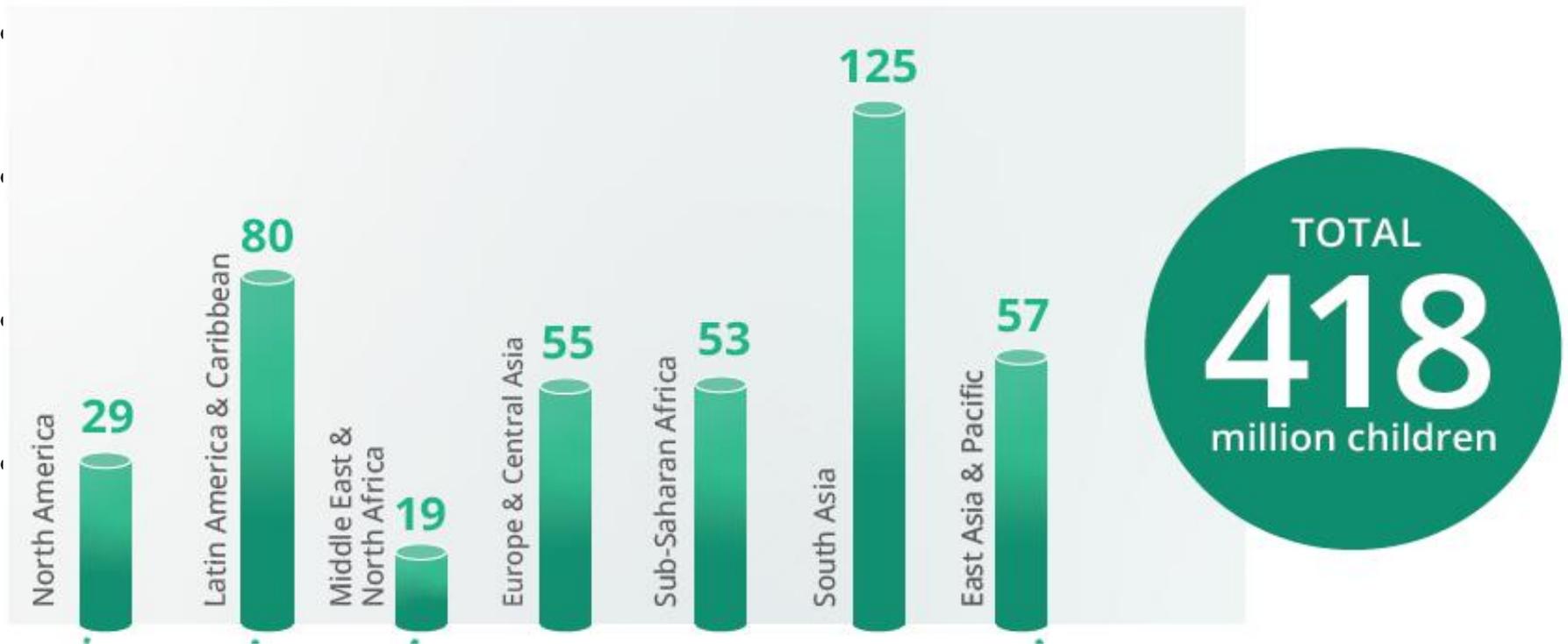
<https://data.unicef.org/resources/dataset/nutrition-school-children-adolescents/>

Prevalence of thinness (BMI-for-age < -2 SD) among children and adolescents (5-19 years) in Lao, PDR, Philippines, Sri Lanka & Viet Nam



<https://data.unicef.org/resources/dataset/nutrition-school-children-adolescents/>

School-feeding programmes



Common objectives of school-meal programs (SMP)

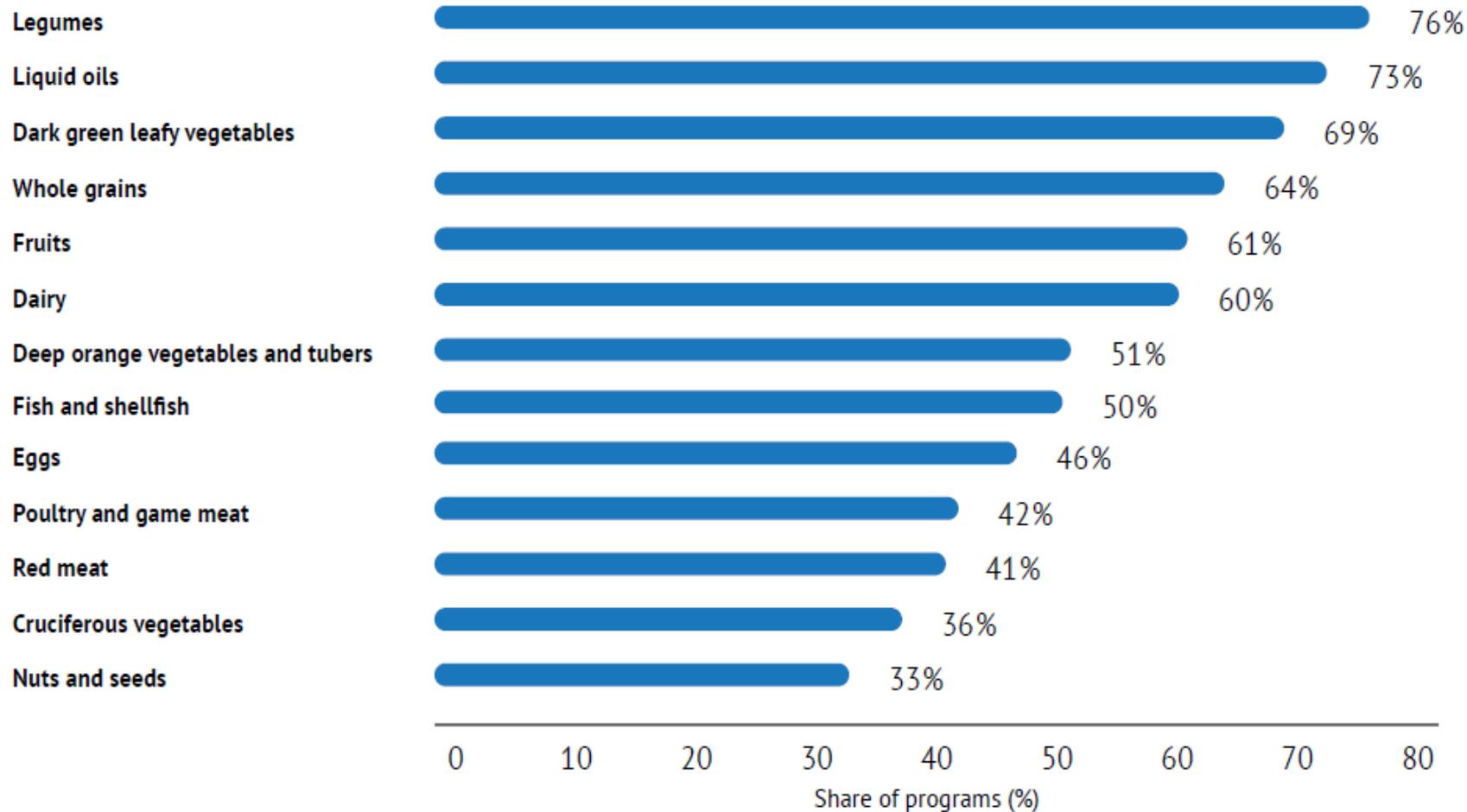
- Meet nutritional and/or health goals (92%)
- Meet educational goals (85%)
- Reduce hunger (70%)
- Provide a social safety net (65%)
- Enable smallholder farmers (61%)
- Meet agricultural goals (44%)
- Address gender-specific challenges (41%)
- Prevent or mitigate obesity: 37%



Foods offered in SMP

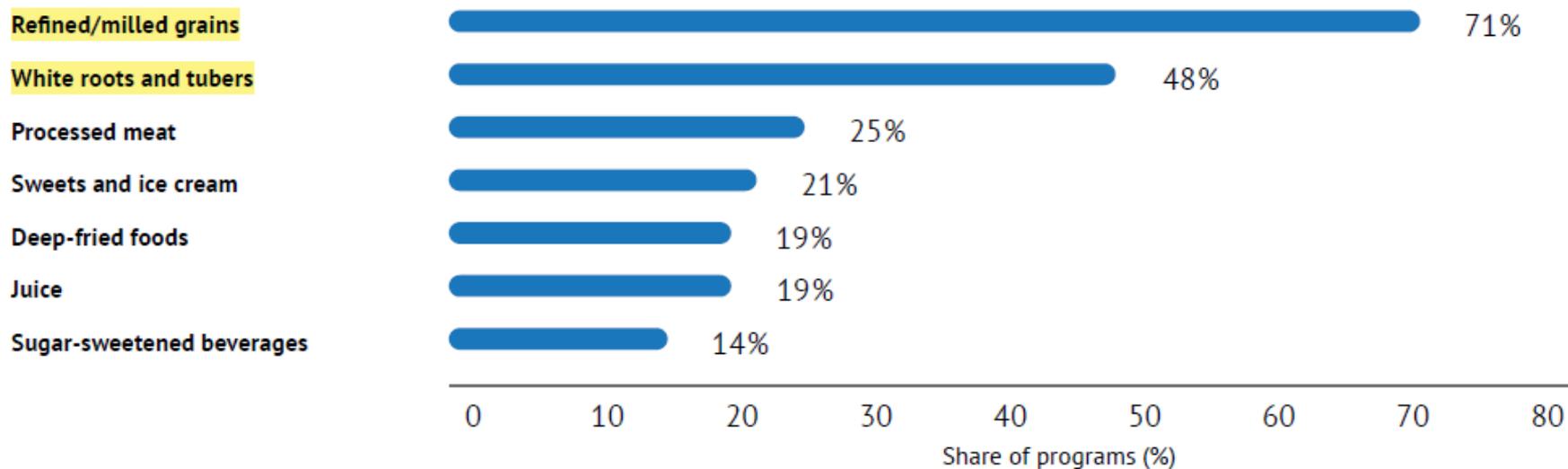
On average:
6.8 different healthy food
2.1 unhealthy food

Figure 12. Healthy food categories served in school meal programs



Unhealthy food categories offered in SMP

Figure 14. Unhealthy food categories served in school meal programs



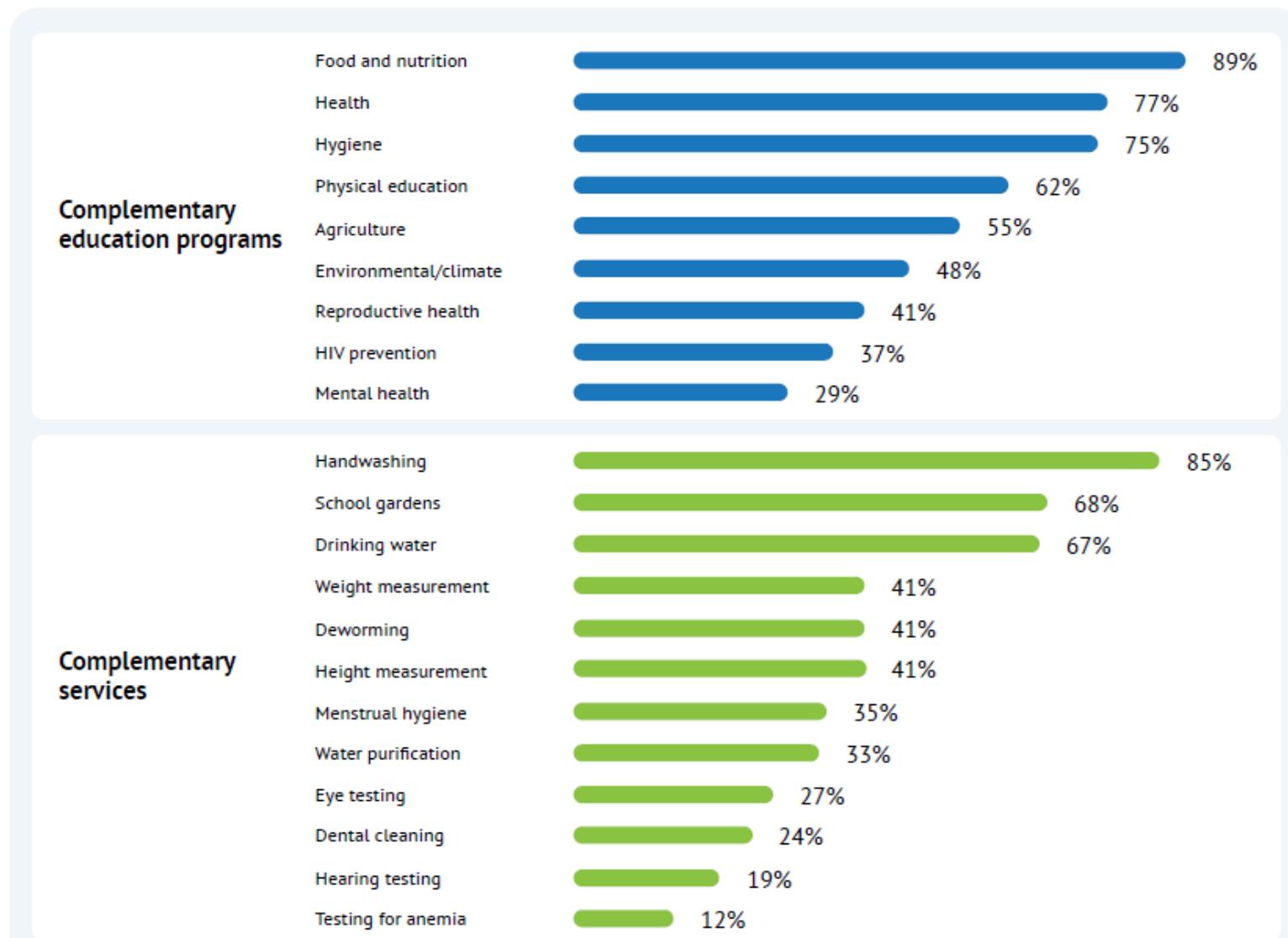
Notes: Sugar-sweetened beverages include soda, fruit drink, and sugared energy drinks. If other beverages, such as milk or tea, were served with sugar, this sugar was treated here as the “sweets” category, following the guidance of Bromage et al. (2021). Blended grain products, such as corn-soy blend, were assumed to contain refined/milled grains.

Fortification, biofortification and micronutrient supplementation

- 58% of SMP serve fortified foods (oil, salt, maize, wheat flour) essentially with vitamin A (78% of programs), iron (60%) and iodine (50%)
- 14% offer biofortified foods (iron beans, vit A rich maize and cassava)
- 19% offer micronutrient supplements

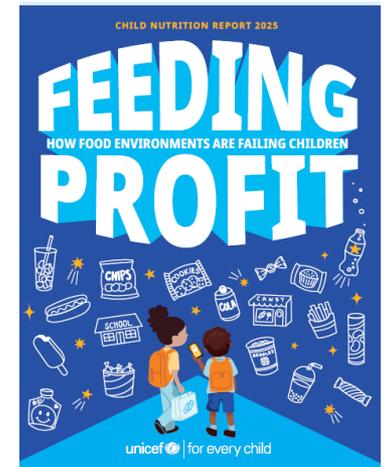
Complementary programs and services

Figure 30. Prevalence of complementary services and education programs



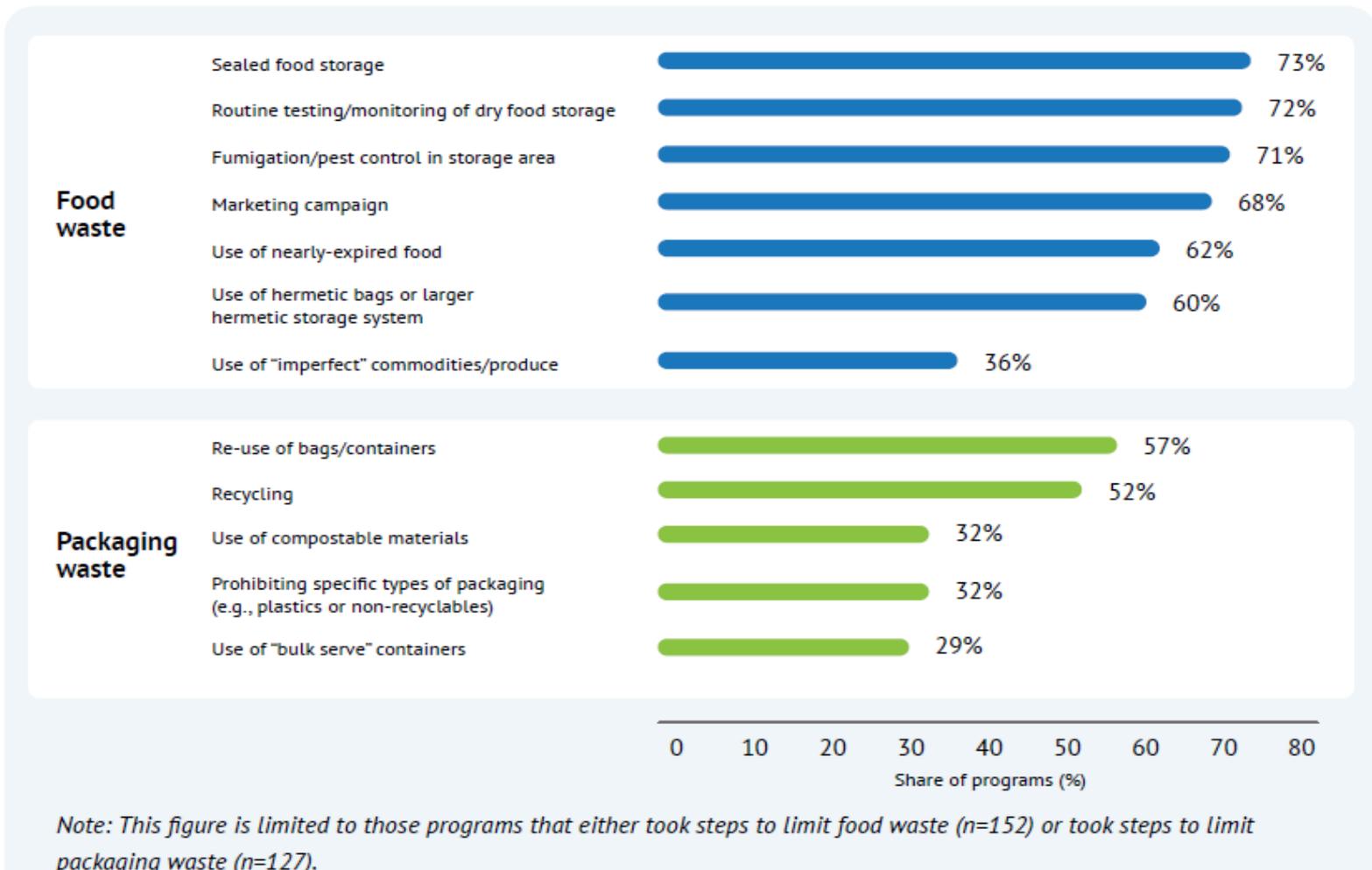
School-food environment

- 81% of countries with a SMP have other food available for purchase on school grounds in their country (89% for the SAEAP region)
- 52% have some national-level prohibitions on foods on school grounds (53% SAEAP region)
- Few countries have a policy restricting the presence of food and beverages in SMP that can harm health (Busey et al., 2024)
- Few countries (28%) have a national policy restricting food marketing or competitive food sales in schools (Perry et al., 2024)



Food and packaging waste in SMP

Figure 31. Practices to limit food waste or packaging waste

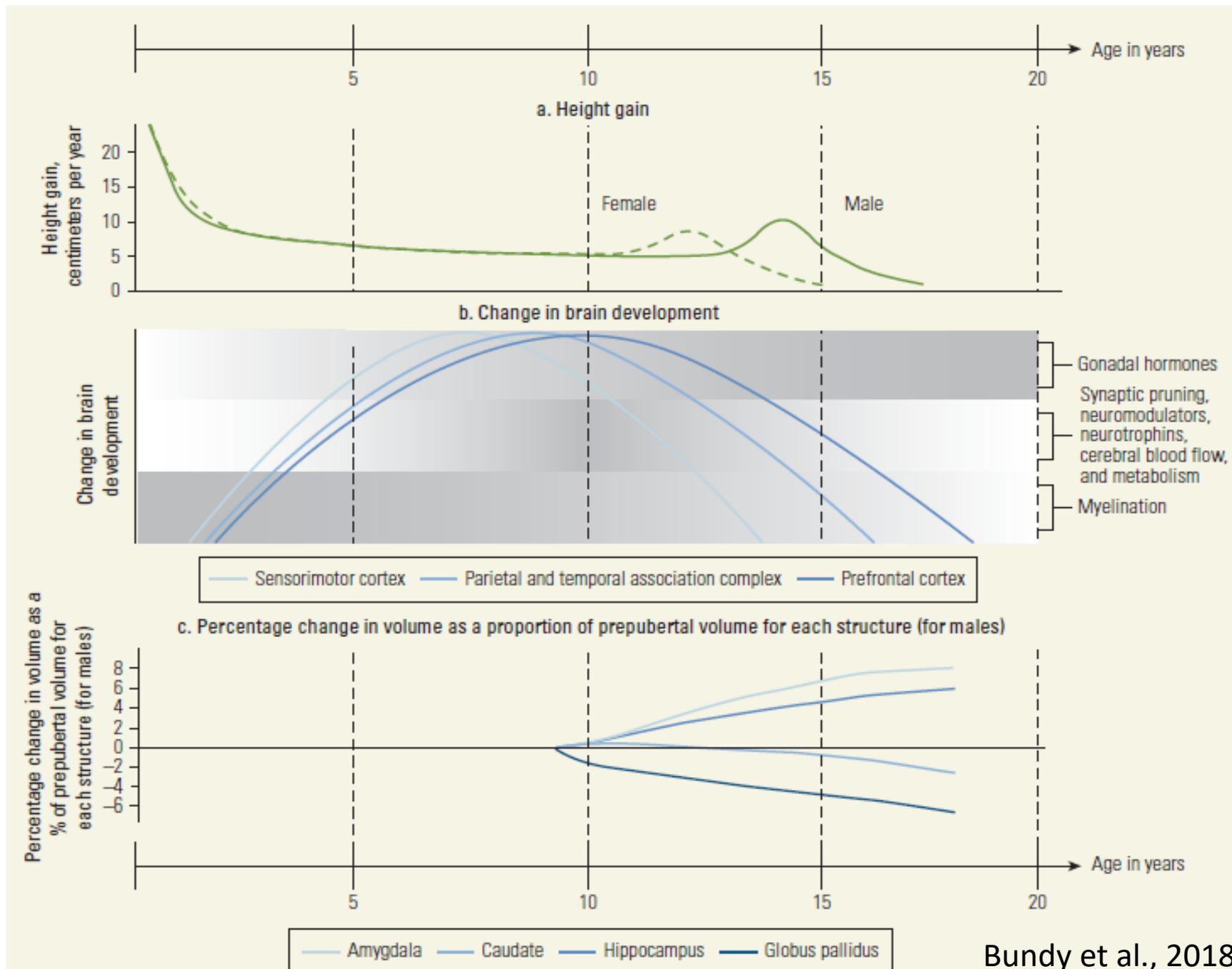


Home-grown school feeding importance in SMP

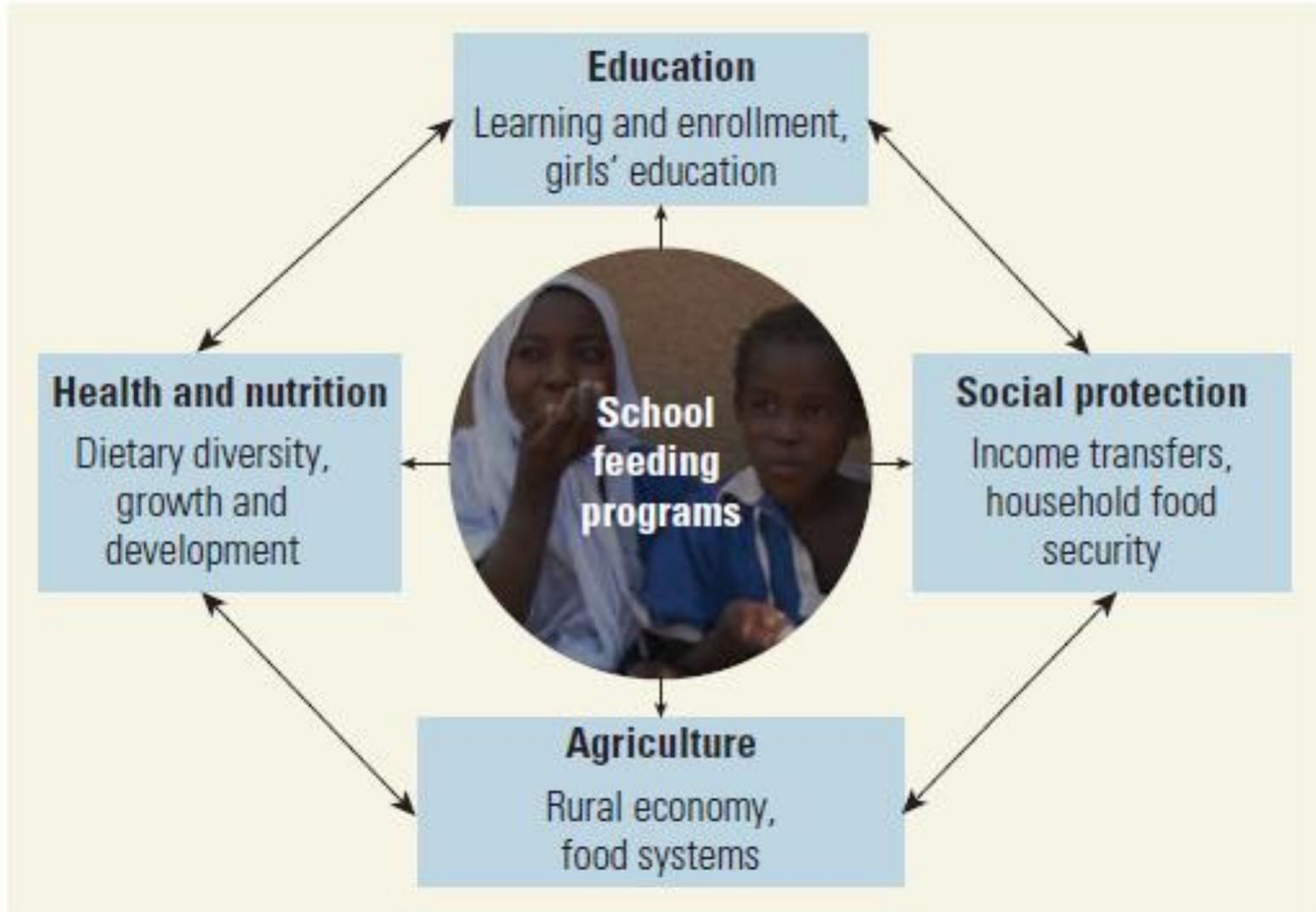
Table 14. Indicators of home-grown school feeding (% of programs)

	Purchases from domestic market	Effort made to reduce food miles/kilometers	Objective for small-scale farmers to benefit from access to a stable market	Small-scale farmers sold directly to the program or schools	Additional support provided to small-scale farmers	Preferential treatment for small-scale farmers/small firms in tendering procedures	Law/policy/standard related to small-scale farmers and school feeding programs	
Region	Sub-Saharan Africa	79	89	78	71	60	45	8
	South Asia, East Asia & Pacific	92	67	79	65	39	28	15
	Middle East & North Africa	85	67	33	25	17	13	8
	Latin America & Caribbean	74	68	61	53	42	14	25
	Europe, Central Asia & North America	71	76	29	45	23	10	7
Income Group	Low Income	80	87	80	70	67	53	6
	Lower Middle Income	80	88	75	59	44	29	11
	Upper Middle Income	81	60	46	55	38	14	18
	High Income	73	74	34	48	21	14	9
All	78	79	61	59	43	29	10	

Figure 1.2 Human Development to Age 20 Years



Importance of SFP in addressing school age malnutrition



SF pathways impacting children and adolescents

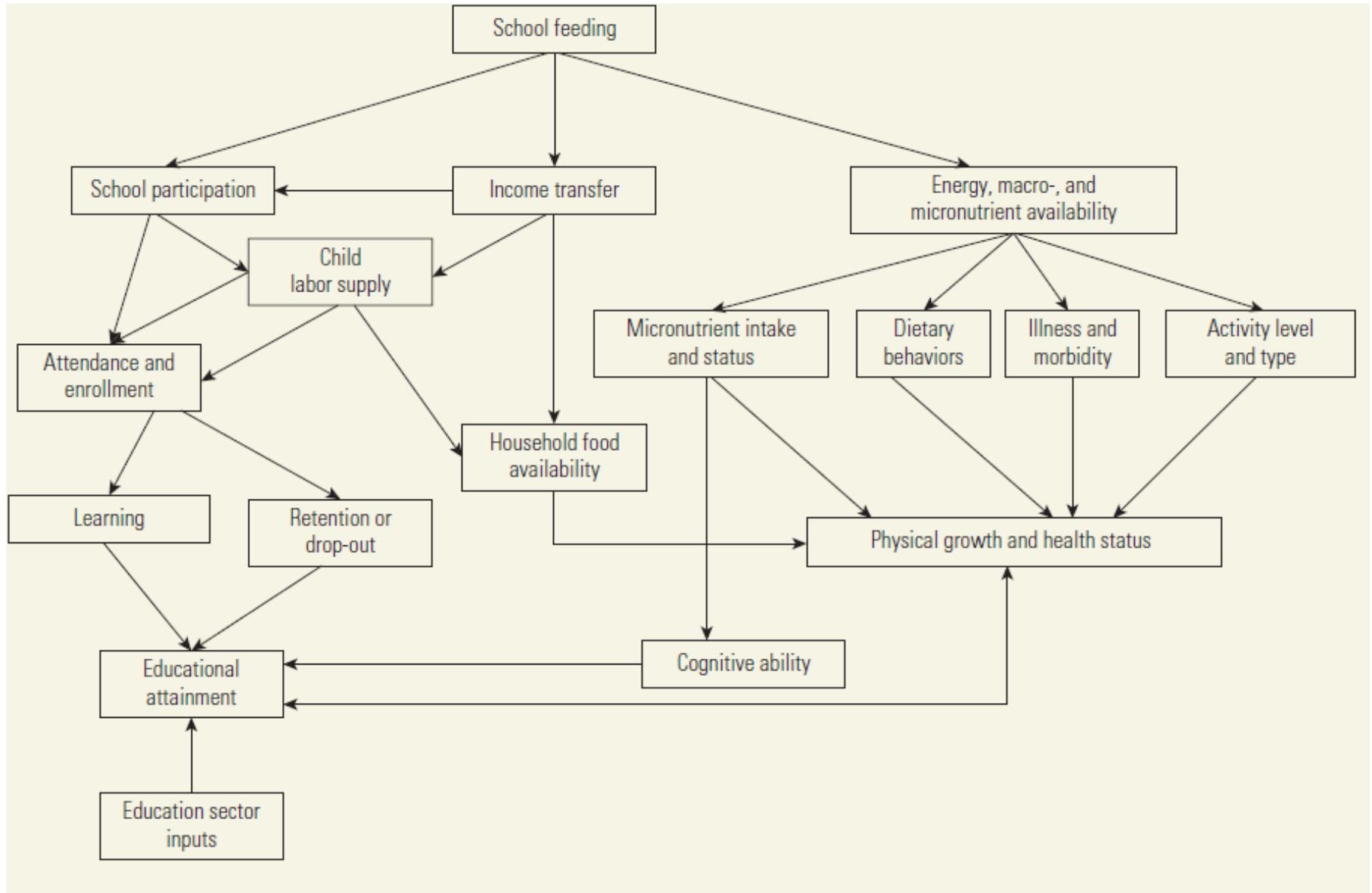


Table 4.1. Level of Current Evidence for Impact of School Meals on Four Sectors

Outcome area	Level of current evidence
Agriculture/local development	<ul style="list-style-type: none">- Very limited causal evidence on the effect of homegrown school feeding on local agricultural production and farmers' incomes in low-income countries.- Relatively strong evidence of commercial returns to the agriculture sector in middle- and high-income countries.
Education	<ul style="list-style-type: none">- Relatively strong evidence on impact on school participation, particularly attendance (31).- Limited but emerging evidence on learning outcomes particularly among specific subgroups such as poor students and girls (32).
Health and nutrition	<ul style="list-style-type: none">- Limited and mixed evidence on impact on nutritional outcomes, such as Height-for-Age Z-score (33).- Very narrow evidence base on other aspects of nutrition, such as dietary quality- Emerging research on the potential for nutritionally appropriate school meals to moderate the risk of obesity in childhood and of diet-related non-communicable diseases in adulthood (34,35)
Social protection	<ul style="list-style-type: none">- Emerging evidence on the role of school meals for building the human capital of the poor (32).- Limited but promising evidence on the role of school meals as an insurance against covariate shocks (36).

Bundy et al., 2024; Snilstveit et al., 2016; Aurino et al., 2023; Wang et al., 2021; Vik et al., 2019; Holford et al., 2022; Singh et al., 2014

Impacts of health and nutrition interventions on access and learning

Table 22.2 Impact of Health Interventions on Access and Learning

Type of health intervention	Access to schooling				Learning outcomes		
	Enrollment	Attendance	Dropout	Progression	Math	Language	Global
School feeding	0.24* (4)	0.26* (4)	—	0.69* (1)	0.40 (1)	0.19 (2)	0.02 (1)
Nutrition	0.04* (1)	0.27* (2)	0.33 (1)	—	0.65* (2)	0.66* (2)	—
Malaria prevention	—	0.59* (1)	0.24* (1)	0.38* (1)	0.62* (1)	0.56* (1)	—
Deworming	0.29 (1)	0.09 (1)	—	—	0.04 (1)	0.02 (1)	-0.03 (1)

Source: Based on data from Krishnaratne, White, and Carpenter 2013.

Note: Numbers in parentheses indicate the number of studies; — = not available. Table reflects a weighted sum of Cohen's *d* (differences in mean between control and treatment groups, normalized by the study's standard deviation) from the individual studies. The weighted sum is calculated using random effects estimation.

* $p < 0.05$.

Gender equality and equity

- Gender parity in secondary education enrollment only in 63% of countries
- All programs in South Asia show that they contribute to positive gender outcomes (increase attendance, retention of female students) (Bundy et al., 2024) and improve dietary intake of iron (and reduce the prevalence of anaemia)
- Impact on gender to the school feeding supply chain as women farmers and traders are engaged in the provision of school meals as cooks and caterers

Returns on investments



- Benefit-cost: 7-35 for every 1 US \$ invested in SMP (Bundy et al., 2024; Verguet et al., 2020)
- Gains higher in poor households and among girls (Bundy et al., 2024)

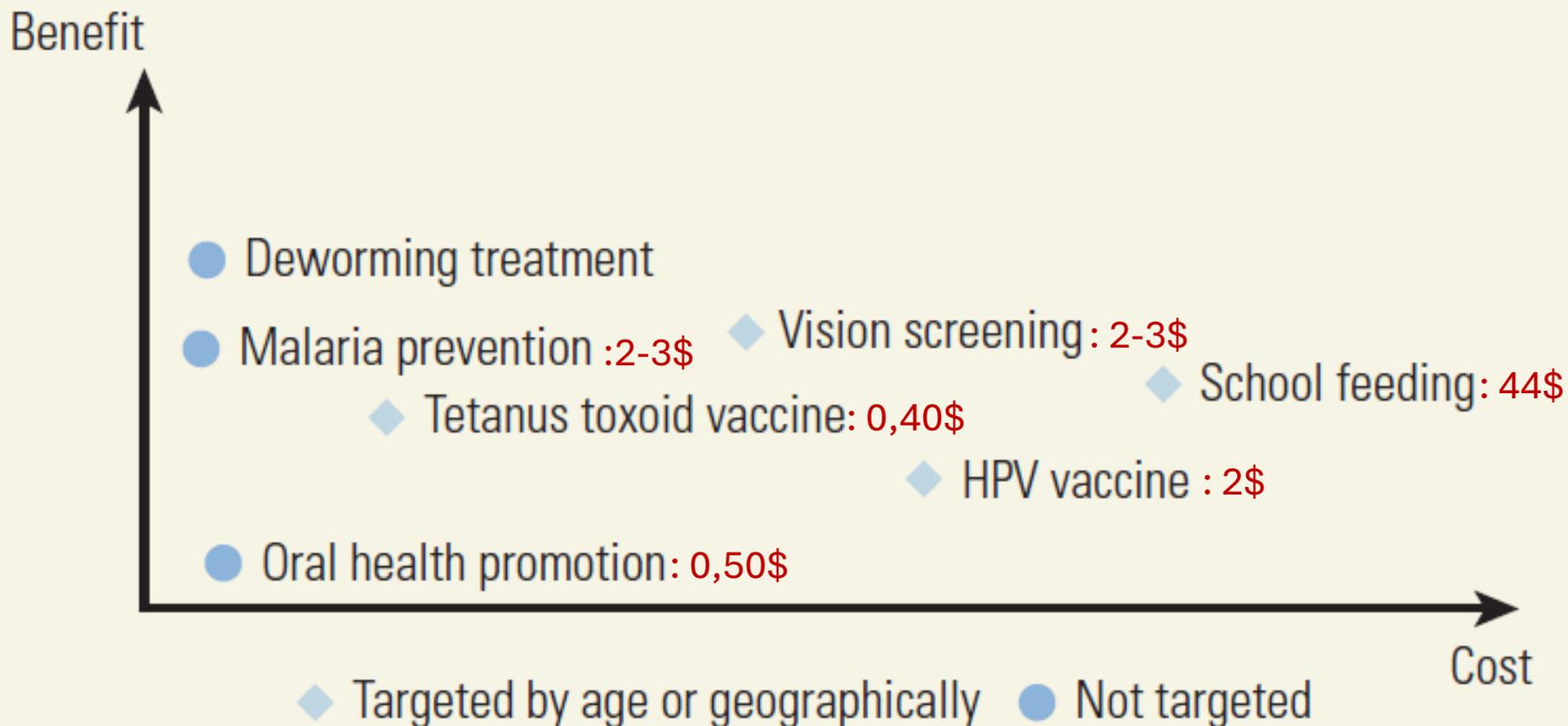
Table 20.1 Essential Health Services Appropriate for Children and Adolescents as Proposed by DCP3

	Primary health center	School	Benefits of intervention delivery in schools
Physical health			
Deworming	Deworming	Deworming	In endemic areas, regular deworming (following WHO guidelines) can be done inexpensively in schools since most deworming drugs are donated; benefits in school attendance have been reported as a result
Insecticide-treated net promotion	Insecticide-treated net promotion	Insecticide-treated net promotion	Education about the use of insecticide-treated nets in endemic areas is important because schoolchildren tend to use nets less often than mothers and small children
Tetanus toxoid and HPV vaccination	Tetanus toxoid and HPV vaccination	Tetanus toxoid and HPV vaccination	Schools can be a good venue for administration of tetanus boosters, which benefit young people and babies born to those young women
Oral health promotion	Oral health promotion and treatment	Oral health promotion	Education on oral health is important; poor households generally cannot afford dental treatment
Correcting refractive error	Vision screening and provision of glasses	Vision screening and provision of glasses	Vision screening and provision of inexpensive ready-made glasses boost school performance
Diet			
Micronutrient supplementation	n.a.	Micronutrient supplementation	Supports learning
Multifortified foods	n.a.	Multifortified foods	Supports learning
Food provision	n.a.	School feeding	School meals promote attendance and education outcomes

Source: Bundy et al. 2018c.

Note: DCP3 = *Disease Control Priorities*, third edition; HPV = human papillomavirus; WHO = World Health Organization; n.a. = not applicable.

Indicative mapping of benefits and costs (in US 2012 \$, per child/year) of essential package interventions



Note: HPV = human papillomavirus.

Challenges (1)

- Inclusion of out-of school children and adolescents, disabled children
- Budget allocation inadequate (Bundy 2024) & not responsive to food price increases
- Poor food management (e.g. lack of storage, cooking facilities) (Bundy et al., 2024)
- Lack of formal linkages with local agriculture&farm production (Bundy et al., 2024)
- Lack of standards for the procurement of local foods which may be more costly, in insufficient quantity, not having sufficient space for storage, food safety issue, seasonality (Galloway et al., 2023)

Challenges (2)

- Meal quality in terms of nutritional adequacy, food diversity and portion sizes not always optimal (Bundy et al., 2024)
- Limited countries with policies restricting the presence of food and beverages in SMP that can harm health (Busey et al., 2024) and food marketing or competitive food sales in schools and surrounding areas (Perry et al., 2024)
- Some view implementation standards as too restrictive and burdensome (WHO, 2021)
- Few SMP underpinned by evaluation framework and logic models that explicate their potential role in child, family, and community health and wellbeing (Gallegos et al., 2025)
- Acceptability of school menus (Santana et al., 2023; Angeles-Agdeppa et al., 2014) and limited tool for their evaluation (nutrient composition, consumption, Cupertino et al. 2021)

Conclusion

- Can be effective for multiple goals including health and nutrition improvement
- Knowledge gaps in cost-effectiveness



WFP, 2024

Recommendations for success (1)



Policies and standards:

- Being supported by (simple, clear, short) national food and nutrition policies (FAO, 2019)
- Implement and enforce comprehensive mandatory measures (policies, standards) for school meals and for the food available in school premise and surrounding (FAO, 2025) so as to create healthy and transformative food environment
- Restriction of marketing and promotion of highly processed foods (UNICEF, 2025; FAO, 2019) in schools and surrounding areas
- Food security and school-meal program to be enshrined in the constitution and having a particular status (being recognized as a legal right) (Bundy et al., 2024)
- Have guidelines aligned with local food systems, and responsive to local needs: use local procurement, have formal agreement and help transform food systems (training to contextualize menu dev)

Recommendations for success (2)

Meal provision:

- Quality, adequacy (1/3 of requirements) and quantity of meals: micronutrient-dense /fortified, affordable and fresh local (homegrown SFP), seasonal and sustainable foods (FAO, 2019)
 - The healthy diet from a sustainable food system
- Timing of the meal: breakfast/lunch/snacks
- Modality (meal, snack, take-home rations)
- Take into account preferences
- Maximize the use of school gardens
- Building on local food culture

Recommendations for success (3)

Provision of other services:

- Linked to curriculum to build food literacy (e.g. nutrition education) among children (Gallegos et al., 2025) but also families and communities
- Provide menu labeling (traffic lights)
- Existence of supportive health and hygiene services (including referral, treatment) (FAO, 2019): essential health&nutrition package
- Adequate spaces for physical activity (FAO, 2019)

Targeting:

- Targeting: clear criteria and appropriate identification of beneficiaries
- Be an incentive to bring out-of school children and girls to schools
- Equitable and stigma-free

Recommendations for success (4)

Management:

- Each sector aware about its respective roles/responsibilities and present a coordinated plan of action
- Having appropriate investments (\$\$) including infrastructures and ensuring their maintenance
- Being efficient with menu planning and procurement to enhance the value of the money (Bundy et al., 2024)
- Involve students, teachers, families and communities in co-design (Gallegos et al., 2025): be participatory!

Monitoring and evaluation:

- Have a strong but realistic framework to monitor and evaluate the impact
- Conduct research as relevant so as to improve effectiveness

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References (3)

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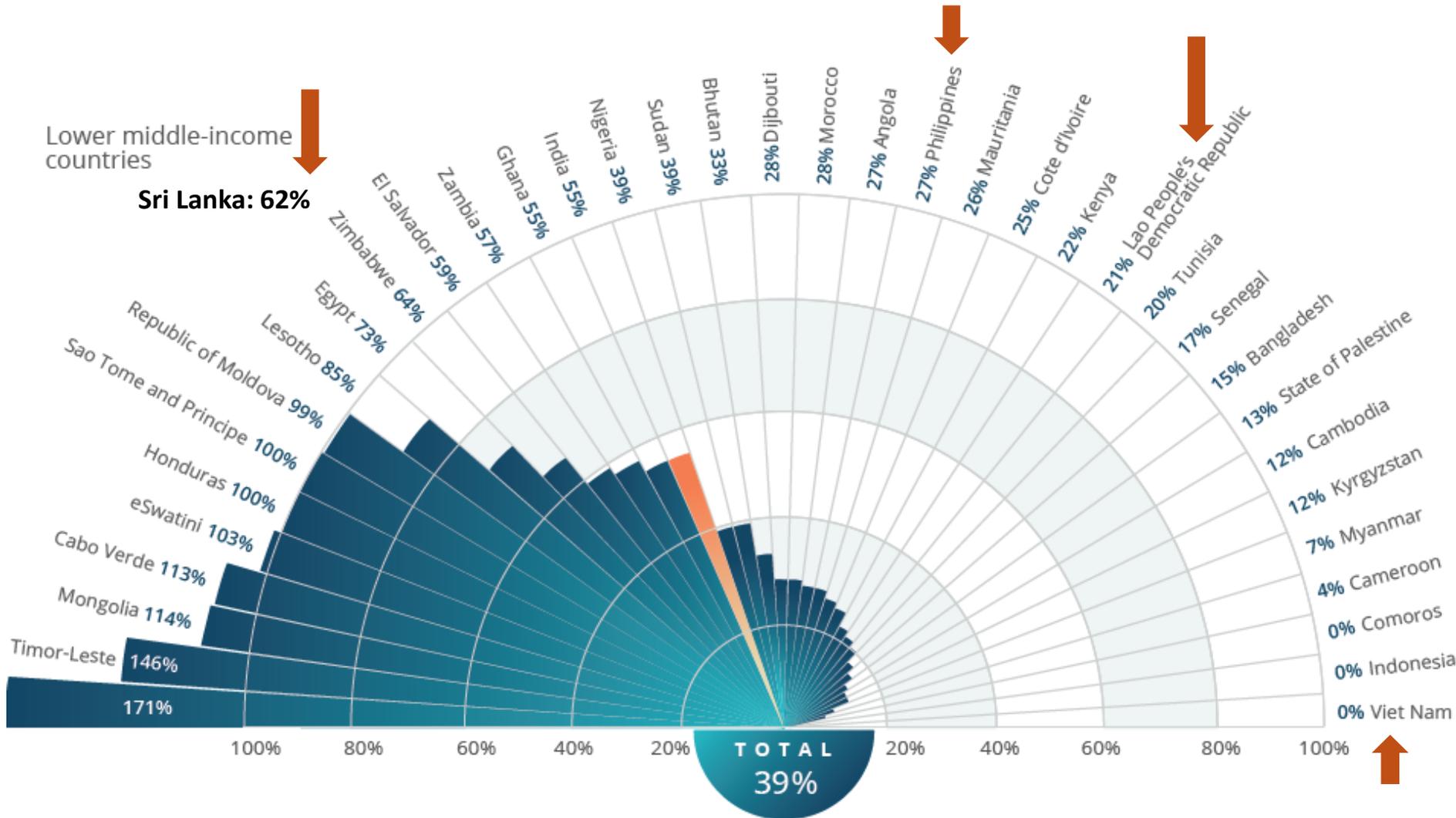
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Coverage of school-meal programmes (SMP) in Lao PDR, Sri Lanka, The Philippines & Vietnam, 2022



WFP. 2022. *State of School Feeding Worldwide 2022*. Rome, WFP & Global Child Nutrition Foundation. 2024. *School meal programs around the world – Results from the 2024 Global Survey of School Meal Programs*

Engagement of non-farm private sector

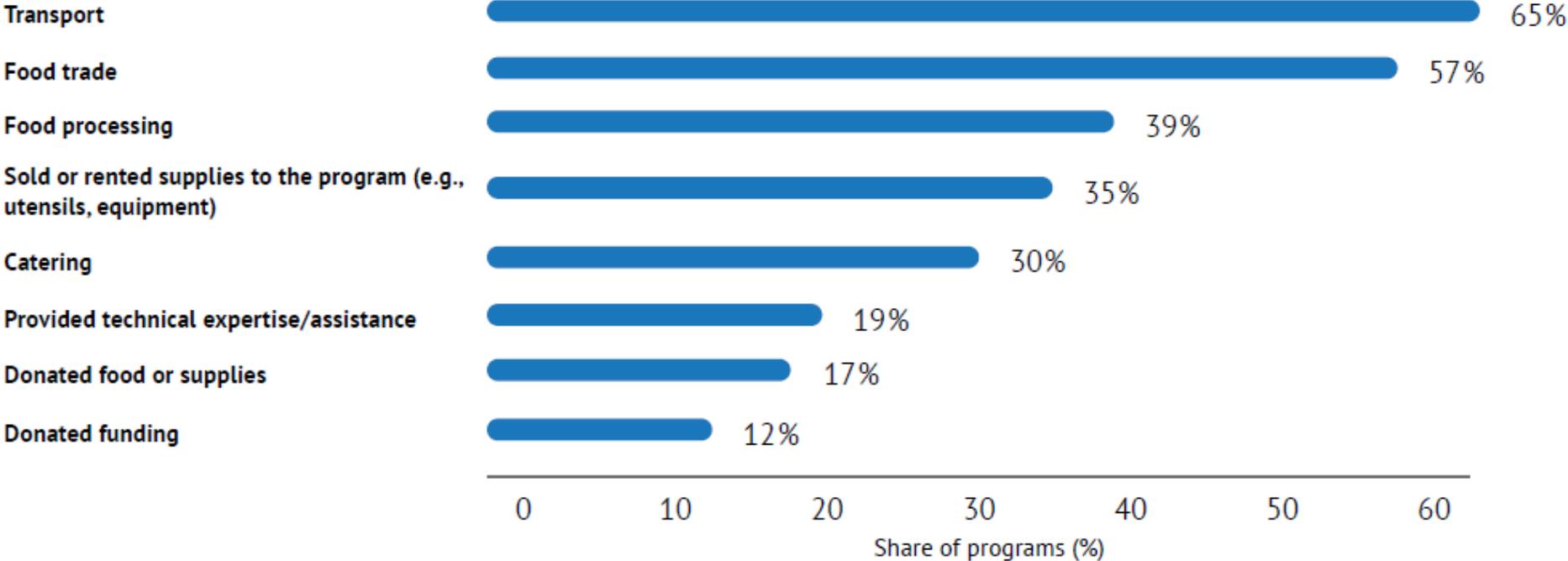


Table 25.4 Costs of the Essential Package of Health Interventions for School-Age Children

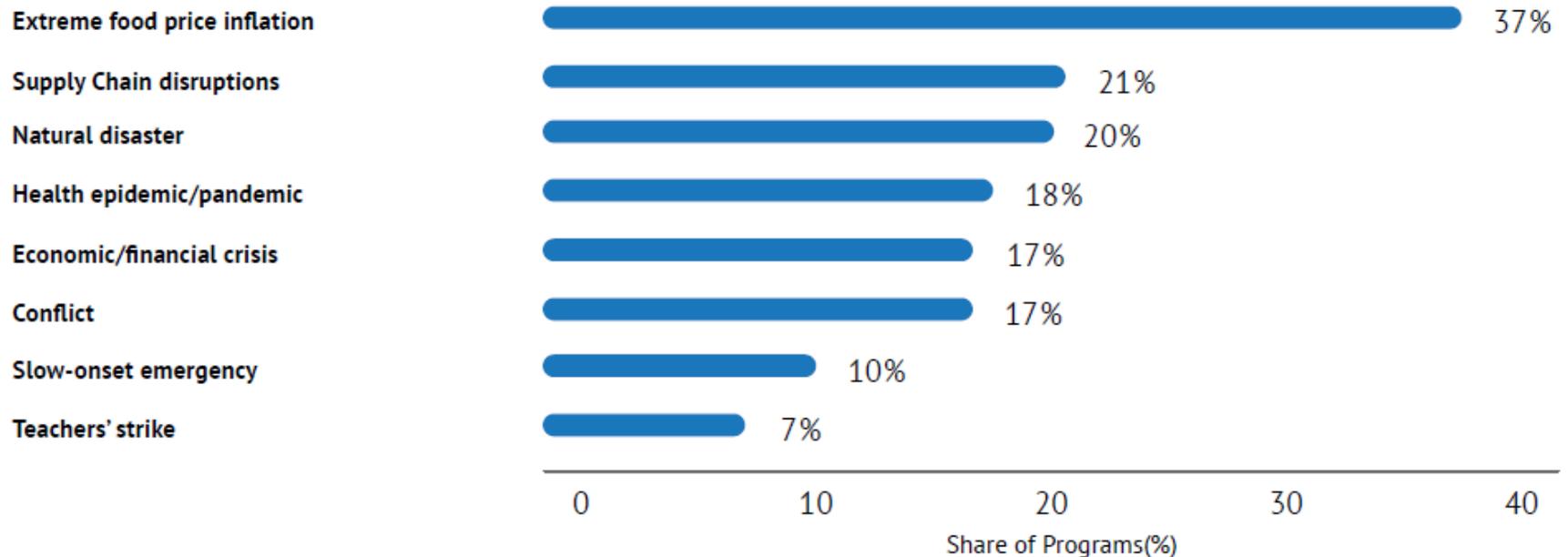
Domain	Low-Income Countries			Lower-Middle-Income Countries		
	Intervention	Target	Average annual cost per child (US\$)	Intervention	Target	Average annual cost per child (US\$)
School feeding	Daily snacks or meals with micronutrient fortification	All children in at least 20% of schools in regions with the highest levels of poverty and food insecurity	8.20	Daily meals with micronutrient fortification	All children in at least 40% of schools in regions with the highest level of poverty and food insecurity	16.40
Deworming	Deworming treatment	All children attending schools in areas endemic for STHs and schistosomiasis ^a	0.35	Deworming treatment	All children attending schools in areas endemic for STHs and schistosomiasis ^a	0.35
Vision screening	Screening and provision of ready-made glasses	All children in a select grade	0.60	Screening and provision of custom or ready-made glasses	All children in a select grade	0.60
Oral health and malaria	Health education about prevention of tooth decay and usage of ITNs	All children for oral health promotion and all children attending schools in endemic areas for malaria ^a	0.75	Health education about prevention of tooth decay and usage of ITNs	All children for oral health promotion and all children attending schools in endemic areas for malaria ^a	0.75
Vaccines	Tetanus toxoid vaccine	Children in a select grade in all schools	0.40	Tetanus toxoid vaccine	Children in a select grade in all schools	0.40
	HPV vaccine			HPV vaccine	Girls from a select grade in all schools (two doses)	5

Note: HPV = human papillomavirus; ITNs = insecticide-treated bednets; STHs = soil transmitted helminths.

a. Assuming 50 percent of child population at risk.

School-feeding programs and emergencies

Figure 47. Share (%) of programs affected by emergencies



Note: This figure is inclusive of all programs that responded to the relevant survey question, including those that did not report that they were affected by any emergency (n=186).

Surveys, guidelines, standards and tools in support to SFP

- Surveys: Health Behavior in SAC (HBSC), Global School-Based Student Health Survey (GSHS), School health policies and practices survey, DHS
- SABER: Systems Assessment for Better Education Results
- School meals planner
- FRESH framework
- Nutrition guidelines
- WFP state of school feeding

Figure B12.2.1 The School Meals Planner



Table 28.2 Impact of Increasing Mean Years of Female Education by One Year in Niger

Outcome	Total	Income quintile I	Income quintile II	Income quintile III	Income quintile IV	Income quintile V
Adolescent maternal deaths averted	164	40 (24%)	40 (25%)	34 (22%)	30 (19%)	20 (11%)
Adolescent OOP expenditures averted (2014 U.S. dollars)	152,000	13,000 (9%)	27,000 (18%)	29,000 (19%)	31,000 (20%)	52,000 (34%)
Adolescent cases of catastrophic health expenditures averted ^a	1,100	130 (12%)	200 (18%)	200 (18%)	240 (22%)	330 (30%)

Note: OOP = out-of-pocket.

a. Cases of catastrophic health expenditures are defined as OOP expenses greater than 10 percent of income.

Table 28.3 Impact of Increasing Mean Years of Female Education by One Year in India

Outcome	Total	Income quintile I	Income quintile II	Income quintile III	Income quintile IV	Income quintile V
Adolescent maternal deaths averted	1,260	400 (32%)	360 (29%)	260 (21%)	170 (14%)	70 (6%)
Adolescent OOP expenditures averted (2014 U.S. dollars)	3,050,000	430,000 (14%)	610,000 (20%)	730,000 (24%)	740,000 (24%)	540,000 (18%)
Adolescent cases of catastrophic health expenditures averted ^a	5,160	5,160 (100%)	0	0	0	0

Note: OOP = out-of-pocket.

a. Cases of catastrophic health expenditures are defined as OOP expenses greater than 10 percent of income.

Monitoring and evaluation of SMP

Table 17. Achievement of targets in school feeding (% of programs)

		Number of students receiving food	Number of schools receiving food	Number of school levels receiving food	Feeding frequency	Level of food basket variety	Ration size
Region	Sub-Saharan Africa	91	88	89	89	76	88
	South Asia, East Asia & Pacific	96	95	96	92	74	92
	Middle East & North Africa	85	77	69	92	85	77
	Latin America & Caribbean	100	89	95	100	83	100
	Europe, Central Asia & North America	100	98	100	100	95	100
Income Group	Low Income	93	85	87	87	81	81
	Lower Middle Income	92	92	89	90	70	90
	Upper Middle Income	97	89	93	100	86	100
	High Income	98	96	100	100	96	100
All	94	90	92	93	82	91	



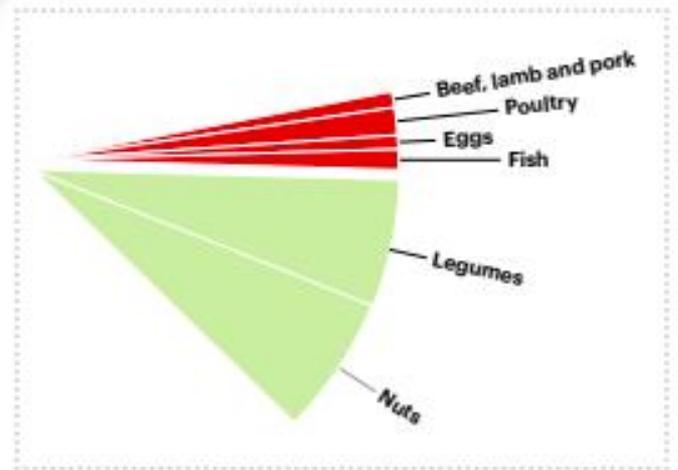
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HEALTH & NUTRITION INSIGHT

The Planetary Health Diet

11. FEBRUARY 2019





	Macronutrient intake grams per day (possible range)	Caloric intake kcal per day
 Whole grains Rice, wheat, corn and other	232	811
 Tubers or starchy vegetables Potatoes and cassava	50 (0–100)	39
 Vegetables All vegetables	300 (200–600)	78
 Fruits All fruits	200 (100–300)	126
 Dairy foods Whole milk or equivalent	250 (0–500)	153
Protein sources		
 Beef, lamb and pork	14 (0–28)	30
 Chicken and other poultry	29 (0–58)	62
 Eggs	13 (0–25)	19
 Fish	28 (0–100)	40
 Legumes	75 (0–100)	284
 Nuts	50 (0–75)	291
Added fats		
 Unsaturated oils	40 (20–80)	354
 Saturated oils	11.8 (0–11.8)	96
Added sugars		
 All sugars	31 (0–31)	120

Table 1
Scientific targets for a planetary health diet, with possible ranges, for an intake of 2500 kcal/day.

https://eatforum.org/wp-content/uploads/2025/09/EAT-Lancet_Commission_Summary_Report.pdf