

Public Health Nutrition Implications of the 2024 Global School Meals Survey Data on School Meals in 26 Selected African Countries

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Abstract *It is argued that more could be achieved if African countries utilise the evidence from the 2024 Global School Meals Survey Report and other data sources to inform their practices, decision making and strategic resource allocation towards the prevention of nutrition-related noncommunicable diseases. If evidence is not consistently translated into decision making, strategic planning and implementation practice, all developmental efforts are unlikely to yield the intended results. Therefore, the incorporation of quantified targets and performance indicators for tracking and reporting is recognised as a major improvement in the transition from the Millenium Development Goals to the Sustainable Development Goals and the 2023 adoption of the school meals indicator 4.a.4 on the proportion of school attending children receiving school meals. This study examines the profiles of 26 African countries from out of the total 142 countries across all the continents whose data was captured in the 2024 Global School Meals Report. Data is extracted and analysed to establish the pattern from the 2024 Global Child Nutrition Survey indicators on school meal coverage, sources of funding, infrastructure, nutrition, complementary school health activities and employment. Based on observed trends among the selected 26 countries, recommendations are proposed towards the accelerated achievement of desired school meals targets and realisation of African Union objectives of using the home-grown school feeding approach.*

Keywords *Malnutrition, Micronutrient - Deficiency, Obesity, School-Meals.*

Introduction

The increase in nutrition related challenges affecting the 5 to 19 year age range, predominantly composed of school going children and adolescents is of global concern as cost-benefit analysis studies have shown the urgency required to mediate against the likely consequences of malnutrition and its associated disease burden.

There is inadequate evidence on the prevalence and consequences of malnutrition among the 5 to 19 year old population, nearly 90% of whom live in low and middle income countries and constitute 27% of their national populations. Adequate evidence would inform efforts to improve the nutrition of children and adolescents in developing countries [1, 2].

Evidence shows a worrying prevalence of diet-related conditions that affect significant numbers of the world's population, with the realistic likelihood of developing noncommunicable diseases because everyone is at risk of either eating too little, for survival or too much. Prior to the COVID 19 pandemic, it was noted that most countries were not prepared to manage Type 2 diabetes and heart diseases despite evidence that estimated that 700 million people did not have enough food to eat every day, while 2 billion were overweight or obese [3].

Overweight and obesity are caused by excessive consumption of carbohydrates and, in most cases, inadequate intakes of essential fatty acids, vitamins and minerals due to poor quality diets [4].

With 391 million school-aged children affected worldwide, the significance of childhood and adolescent overweight and obesity is due the established association with the higher risk of developing life-threatening diseases in later life, hence the need for effective health promotion interventions to prevent and reverse the observed nutritional risk factors. It has therefore been argued that if no action is taken, the global impact of obesity-

related health issues will be felt by the year 2035 as observed risk indicators could potentially impact health systems with serious economic impacts [4].

Accelerated progress can be achieved by providing health promotion, prevention and healthcare services among children and adolescents and transforming education systems into health promoting entities with systems for evidence generation through the Global School Health Standards [5].

Public health nutrition was declared as the promotion and maintenance of nutrition related health and well-being of populations through organized efforts and informed societal choices [6], leading to targeted global multisectoral and multidisciplinary actions towards eliminating iron, iodine, vitamin A and zinc deficiency, with evidence of positive impacts, hence the continuing efforts under the current Sustainable Development Goals [7].

Policy interventions have been recommended for low and middle income countries to urgently prevent and reverse observed trends in current evidence of the levels of malnutrition, pattern of overweight and obesity and significant levels of micronutrient deficiency (iodine vitamin A vitamin D folate and zinc) among their populations. Malnutrition has been linked to the eventual manifestation of hypertension, cardiometabolic disorders, diabetes mellitus, dementia and cancers. On the other hand, it has been predicted that micronutrient deficiencies may lead to poor pregnancy outcomes, poor child and adolescent growth and development as well as goitre, poor vision, skin lesions and some mental conditions [8]. Undernutrition and anemia have been shown to have adverse effects during the first 1000 days of human life and are associated with increased risk of having short stature, ill health, cognitive impairment and reduced productivity at work as well as individual income throughout one's life [2].

The provision of state-funded school meals followed earlier voluntary charity organisation

responses to child hunger and undernutrition in Europe since the 1740s. Examples include the 1948 policy measures on the provision of free nutritious and warm school meals in Finland and the 1997 statutory universal school meals coverage in Sweden [9, 10].

By 2012, the school feeding programme had reached 45 million children, adolescents and young adults at day care centres, kindergarten, elementary, high schools and colleges [11].

Recognising evidence of the multiple benefits, the African Union incorporated school meals in its Maputo Declaration on Agriculture and Food Security in 2003 and the Comprehensive Africa Agriculture Development Programme in 2014 [12], and its decision for all its member states to implement the home-grown school feeding programme as part of the Education Strategy for Africa [13].

The latter decision was inspired by the Brazilian experience of a sustainable government funded school feeding and nutrition programme that integrates multiple sectors in linking local food production to supply schools. That strategy integrated implementation with policy, regulatory frameworks and the overall multisectoral food and nutrition strategy, linking smallholder agriculture supplies to the food requirements for school meals, using the curriculum to promote healthy lifestyles through the curriculum, and creating employment opportunities within communities.

However the actual school meal coverage in low and lower middle income countries was far too low to impact on the reduction of inequalities affecting global targets on the elimination of hunger, education, child health and nutrition and poverty eradication [14].

Several high level decisions calling for accelerated health and nutrition interventions through schools have been buttressed by convincing evidence on the benefits and cost of non-implementation.

For example, the United States adopted detailed implementation guidelines for the

realisation of national investment returns from the eight components of the Comprehensive School Health Framework [15].

At the turn of the 21st century, an evidence-based approach was adopted for the cost-effective achievement of the Education for All was the Focusing Resources on Effective School Health (FRESH) through four prioritised core health-related components (i) school policies, (ii) safe water/sanitation (WASH), (iii) skills-based health education, and (iv) school-based health/nutrition services such as deworming, micronutrients [16, 17].

Between 2003 and 2024, periodic Global School Health Surveys (GSHS) have been conducted on 13 to 17 year old students. Such surveys help In order to identify country level behavioral risk and protective factors in countries and inform public health policy [18].

More recently, the 2024 Global School Meals Survey Report acknowledges the current limitations affecting the public availability of data on national school feeding programmes.

In an attempt to assess how effectively the health, wellbeing and academic achievement of students had been improved through the holistic Health Promoting School Framework approach, which includes school nutrition interventions, one study analysed data from 1443 sources (1345 schools and 98 districts). However, due to the inadequacy of data for meta-analysis, no conclusions could be drawn from the results [19].

While the Langford study highlighted data gaps, such challenges continue to affect the Health Promoting Schools Initiative due to limited coordination between the education and health sectors and the lack of monitoring and evaluation [20].

Standardised data is required for the school meals indicator, a multipronged intervention to impact on inequalities, social safety nets, food systems, zero hunger, nutritional, health and learning outcomes [21].

The scarcity of reliable school meals data includes the outdated, fragmented nature of the

available information. challenges in determining the actual coverage, quality and real impact of school meals over time. An integrated single platform for the harmonisation and standardisation of multiple data sources would better enable policy makers on key social protection decisions [22].

Building on the Global School Health Policies and Practices Survey (G-SHPPS) and the Assessment of National Educational Systems for Health (ANESH) Given the slow progress in reaching the health promoting school targets and, four United Nations agencies recognised the slow implementation progress and jointly developed the Global School Health Standards platform for monitoring and benchmark national performance against the global standards for health-promoting schools and supporting evidence-based decisions [23, 24].

The 2024 Global School Meals Survey report advised that the published data should be used for general information only due to the challenge of limited availability of data in the public domain. Furthermore, the reports indicated that 94% of the countries relied on school visits while 68% of the programs utilized paper-based electronic records for the monitoring of their school meal programmes with challenges inadequate resources including insufficient specialization among the assigned officers, weak monitoring protocols, coordination among the multiple, multisectoral implementers and complex designing of effective food delivery systems across each country [25].

Leveraging on digitally-enabled systems for tracking how the results are affecting the lives of intended beneficiaries, would improve decisions in planning resources for desired programme performance [26].

Automated School Management Systems could solve several identified challenges in the implementation of National Strategic Health Plans 2019-2028 (NHSP).

It is argued that the systematic data collection, analysis and utilisation can be enabled through the inclusion of real-time digital solutions under the Student Health Management module of School Management Systems [26]. One example for possible adaptation and upscaling is the School Feeding Monitoring System in Senegal (SASSE) which captures daily data entries from school canteens [27].

Since all countries already have education management, health information Management Information Systems and food security information systems, among other databases, it would be more cost-effective to emphasize integration and information sharing than investing in a dedicated school meals data management platform.

A multilevel social determinant approach is required for focused multisectoral, multidisciplinary collaborative actions towards the desired broader scale elimination of health disparities [28].

One study found that the barriers to the translation of evidence into practice are predominantly due to issues at the individual level including lack of knowledge and skills on how to conduct, organise, utilise and appraise research literature whilst organisational barriers were limited access to research evidence and lack of equipment [29].

Its however not clear how such barriers apply to the translation of school meals evidence into national and subnational decisions as well as implementation strategies at individual school levels.

Methodology

Data was extracted from 26 randomly selected African l country reports under the Global School Meals Survey that was conducted between November 2023 and July 2024 using data from the year beginning in January beginning 2022. Figure 1 shows the geographical distribution of the sampled countries.



Figure 1. Map showing Location of the 26 Selected Countries

Source: United Nations, 2025

For this study, selective data was extracted from the published Global School Meals Survey report as summarised in Table1.

Table1. Data Extracted from the 2024 Global School Meals Survey Report

Extracted Data	Description	Measurement/Indicator
Total coverage	Share of primary and secondary school-aged children that received food through their school	Percentage
	Primary school enrolled children received school food,	Percentage
	Share of school-aged children not enrolled	Percentage
	Enrolled in school but not fed	
Total national school feeding budget	Government	
	International Donors	
	Private sector	
	Domestic NGOs	
	Other Donors, including family and community contributions	
Infrastructure	Electricity	All
		Most
		Some
		Very few

		None
	Piped water	
	Clean water	
	Flush toilets	
	Dedicated eating spaces	
	Kitchens	
	Sport or physical play areas	
	Solar panels/solar power	
Nutrition	Nutritionists involved	Yes/No
	Objective to meet nutritional goals	
	Objective to reduce obesity	
	Limitation on food and beverage marketing	
Complementary Activities	Height measurement	
	Weight measurement	
Employment	Total number of cooks/caterers	

Results

The proportion of school-aged children fed through schools is calculated using the total number of children who are eligible for enrolment at primary and secondary school level in the country's population [25] and represented in Figure 2.

The highest coverage among the countries was recorded in Eswathini (98%), Rwanda (86%) Namibia (78%) and South Africa (72%), followed by Botswana (56%) and Sao Tome Principe (52%).

- Tanzania (41%) Ghana (36%), Zambia

(35), Malawi (34%) and Benin (30%).

- In Benin (30%) and Zimbabwe (27%) the coverage was slightly above a quarter of school-aged children.
- Coverage rates below 20% were reported in Kenya, Angola, Madagascar, Nigeria, Uganda, South Sudan, Niger, Morocco, Tunisia, Nigeria and Congo.
- Cameroon (2%) Mozambique (5%), Niger (5%) and Congo (9%) had the lowest coverage.
- No school meal coverage figure was recorded for Somalia.

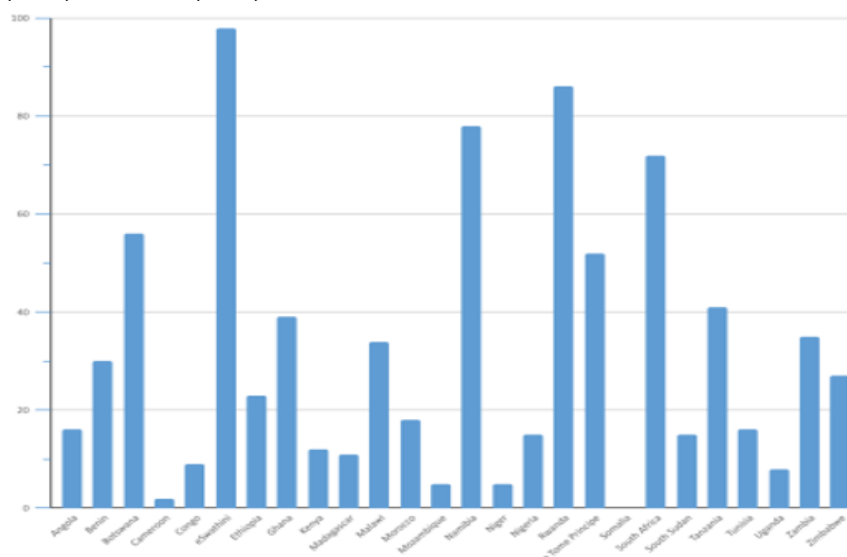


Figure 2. Graph showing the Proportion of Children Fed through School Meals

b. *Primary school enrolled children received school food* 4 out of the 26 countries reported 100% coverage, 3 reported feeding above 75% and 7 fed between 52% and 67% of their primary level enrolled children at school.

Between 20% and 49% school meal

coverage was recorded in 7 of the countries and the remaining 5 countries reported coverage below 20%, with the lowest two having fed 9% and 3 % of their primary level enrolled children. The overall percentage of primary school enrolled children is shown in Figure 3.

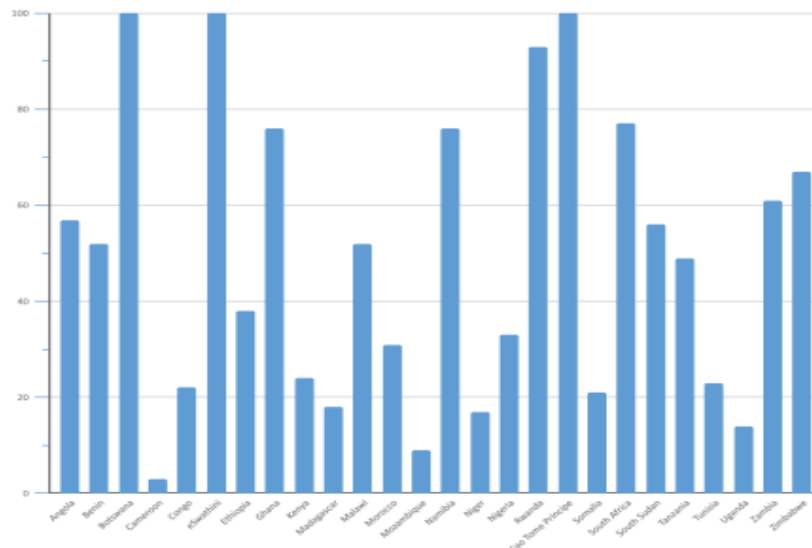


Figure 3. Graph showing the Percentage of Primary Enrolled Children Fed at Schools

The proportion of enrolled children who did not receive school meals in the selected 26 countries ranged from 1% to 88% as shown in Figure 4. 11 of the countries reported that between 50% and 88% of enrolled children did not receive any school meals Less than half the enrolled learners were left out in 15 countries.

In 7 countries the school meals exclusion rate ranged between 31% and 49%. Approximately a quarter did not receive school meals in 4 countries. Less than 10% of enrolled children were not fed in 3 countries, which reflects almost universal coverage.

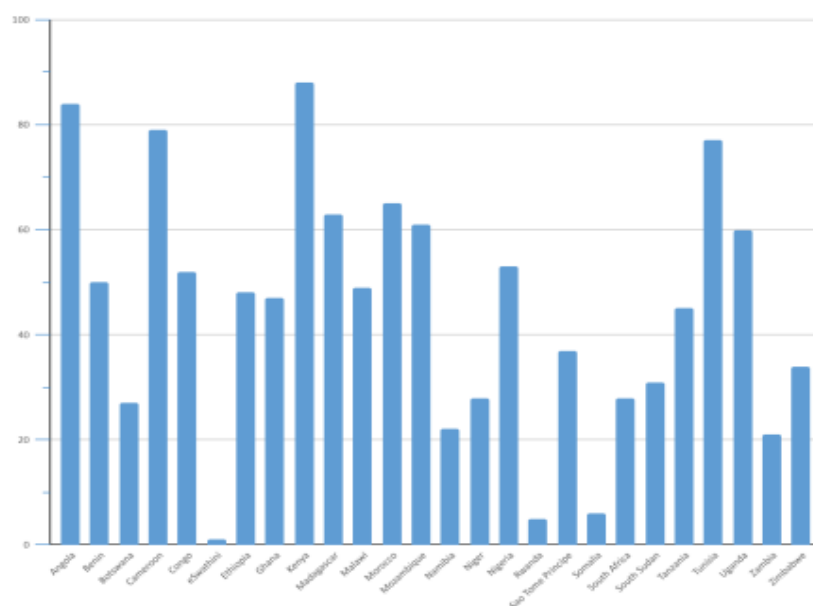


Figure 4. Graph showing Percentage of Enrolled Children not Fed at School

The proportion of school aged children who were excluded from school meals because they were not enrolled in school is shown in Figure 5. Among the 26 countries in Sub-Saharan Africa, less than 10% of school-aged children were not enrolled in school, namely, Eswatini (1%), Tunisia (7%) and Rwanda (9%). In some of the countries over half of the children were not attending school. 93% of school-aged children in Somalia, 76% in Niger and 54%

were not enrolled in. Less than half of the school-going aged population were excluded, significant proportions of children who were not enrolled during the year 2022 were recorded in Zambia (43%) Zimbabwe (39%) Congo (39%) Uganda, Nigeria (33%) Mozambique (34%) and Madagascar (28%) Benin (20%) and Cameroon 19 (%). No data on school-aged children who were not enrolled was provided for Angola, Kenya, Namibia and South Africa.

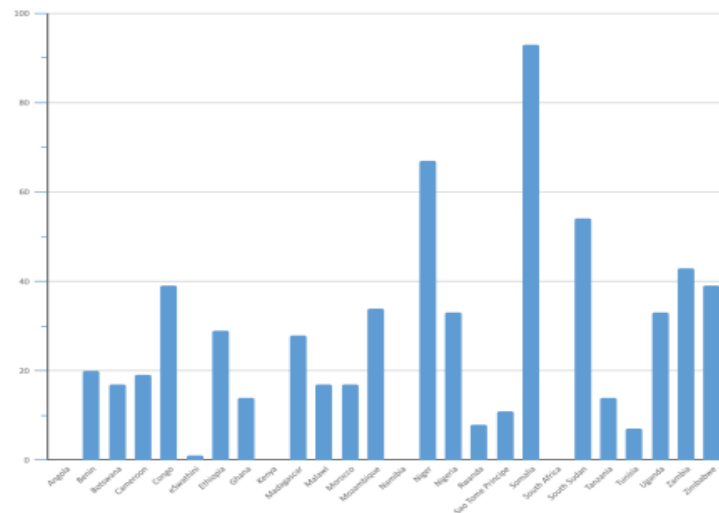


Figure 5. Graph showing the proportion of school-aged children who were not enrolled

Figure 6 shows the sources of funding for school meals among the sampled countries.

Out of the 26 selected African countries 8 (30.77%) of the national school meal programmes are 100% funded by governments. In 5 (19.2%) countries, International donors

covered above 95% of the budget. 22 (84.62%) of the countries recorded no private sector contribution at all. One country, Uganda, stood out with the highest level of contributions (76%) from other donors, including parents toward national school meals.

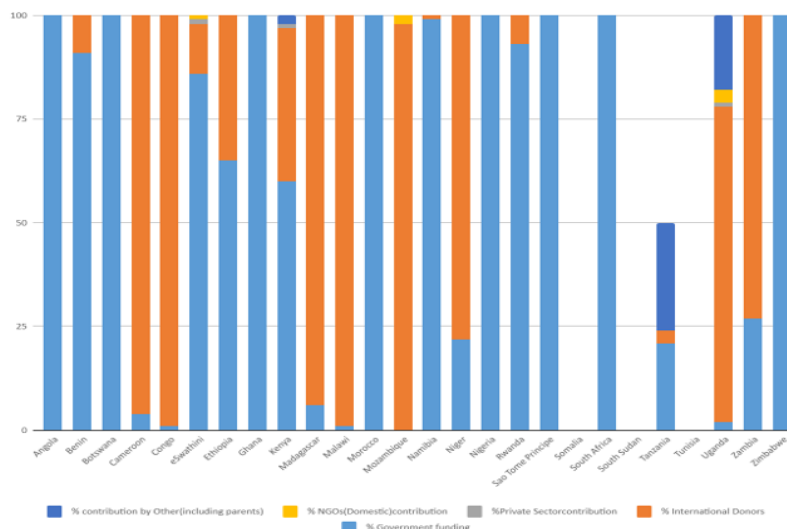


Figure 6. Graph showing Pattern of Contributions to National School Feeding Budgets

8% (2) out of the 26 countries reported that all their schools have electricity whilst 7 (27%) indicated that very few of theirs had electricity. 31% (8) of the sampled countries reported that their schools had electricity and 34% (9)

recorded that some of their schools had electricity.

Figure 7 shows the geographical pattern of access to electricity in schools among the 26 selected African countries.

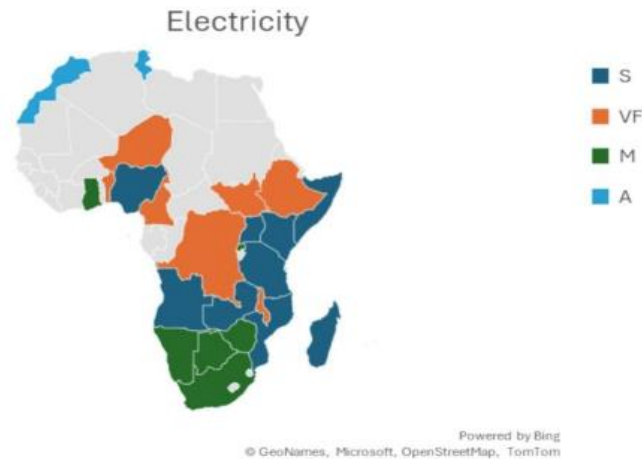


Figure 7. Map showing Geographical Pattern of Access to Electricity in Schools among 26 Selected Countries

In 3 (11.54%) of the selected 26 countries, it was reported that none of the schools had any form of solar energy, 19 (73.08%) countries reported that very few of their schools had solar panels/power, 3 (11.54%) indicated its availability at some of their schools. Only 1 country, Angola, recorded that solar panels/power was available in most of its schools.

In 2 of the 26 countries, all schools had piped water. Most schools had it in 10 other countries and some in 8 of the countries were reported to have piped water. The remaining 6 countries recorded having very few schools accessing piped water.

In 2 (8%) countries, all the schools had clean water in contrast to 1 country out of the selected 26, South Sudan, that indicated that none of its schools had clean water while very few schools had clean water in 4 (15%) of the countries. 10 (38%) of the countries reported that most of their schools, and 9 (35%) recorded that some of their schools had access to clean water.

In 11 of the 26 countries the proportion of schools with flush toilets was reportedly very few, while 8 countries indicated that such toilets were in some of their schools. 2 countries reported that all their schools had flush toilets

and the remaining 5 countries recorded most of their schools having them.

In 15 (57.69%) of the countries, some of the schools had dedicated eating spaces while 3 (11.54%) reported most of their schools as having these. Very few schools were recorded as having dedicated eating spaces in 8 (30.77%) of the sampled 26 Sub-Saharan African countries.

All the schools in 5 (19.24%) countries had kitchens, most of the schools in 8 (30.77%) and some of the schools in 15 (57.69%) were reported to have kitchens for their school meals programmes. 5 (19.24%) countries indicated that very few of their schools had kitchens.

In 6 (23.08%) out of the 26 selected African countries, all the schools had sport or physical play areas. Most schools were recorded as having sport and physical play areas in 10 (38.46%) of the countries. 6 (23.08%) of the countries indicated that sport and physical play areas were available in some of their schools while very few schools had such facilities in 3 (11.54%) of the countries. Data from one country, Congo, indicated that none of the schools had any sport or physical play areas.

Nutrition

Nutritionists were reported to be involved in 23 (88.46%) of the national school feeding programmes. Out of the 26 countries, 12 (46%) reported having provided training for the cooks/caterers engaged in the preparation of school meals. Among the sampled countries, 22 (85%) responded that their school meals were aimed at meeting nutritional goals. Half of the countries indicated that their national school meals programmes were designed to reduce the challenge of overweight/obesity among children. 21 of the 26 countries (81%) reported having limited the marketing of certain foods and beverages on school grounds and/or to children. 15 (57.69%) of the countries reported data on the number of paid cooks/caterer jobs employed through school meals programmes. Half (50%) of the sampled countries reported conducting height and weight measurements on their enrolled children. In 22 (87%) of the countries were providing Physical Education.

Discussion

This paper examines and describes patterns from the extracted data on 26 out of 42 countries from the Africa region that participated in the 2024 Global School Meals Survey.

Of concern is the evidence that in some of the countries over half of the children were not attending school. This trend raises questions on why so many children and adolescents are not attracted to attend school when school meals are intended to incentivise school attendance.

On the other hand, evidence shows that in most of the countries, some of the enrolled children did not receive the school meals that some of them benefited from.

It is possible that such an incomplete coverage pattern may actually work against the goal of attracting all eligible children to attend school.

Moreover, school meals cannot be meaningfully implemented without incorporating actions to address documented

evidence of common barriers to equitable access to education which include inadequate resources, competency gaps in teacher training, societal attitudes, and the low prioritisation of inclusive education in systemic policies [30].

The sustainability of school meal programmes requires predictable budgetary support. It is noted that although most school meal programmes in Europe were initiated by non-state players, governments later adopted policies and incorporated them into national budgets.

It is argued that the actual level of contribution by parents and communities could have been significantly underestimated in most of the countries as in-kind inputs are usually difficult to cost. A more detailed investigation may upscale such community resilient contributions towards sustainable school meals.

One of the capital investment requirements for the success of the multisectorally designed national school meals is the infrastructure requirements. The available data shows wide variations in the availability of electricity, solar power, kitchens, potable water, piped water and dedicated eating areas/cafeteria in African countries.

In view of the documented contribution of malnutrition, obesity/ overweight and micronutrient deficiency to the global disease burden, more research is recommended on measures to mainstream standardised training for food handlers and caterers in school meals programmes. Examples of training content for food handlers include topics on the nutrients necessary for humans' physical and mental growth and well-being, emphasis on food safety measures in order to guard against any risk of contamination or transmission of foodborne diseases throughout all the stages from food production, selection, handling, transportation, storage, preparation and consumption of the food [31], and a detailed fifty-two activity manual used in Brazilian schools [32] example and a training framework for food handlers in South Africa [33].

Among the sampled countries, 22 (85%) responded that their school meals were aimed at meeting nutritional goals, with half of them indicating that their national school meals programmes were designed to reduce the challenge of overweight/obesity among children.

In view of the known public health risk of poor nutritional habits, the urgency of nutritionists involvement at subnational implementation levels, closer to schools is indisputable.

One of the transformative education curriculum interventions is through the Sustainable Development Goal indicator 4.7, which is measured through the extent to which education for sustainable development has been mainstreamed into national education policies, curriculum, teacher education and learning assessment. Notably, a quarter or more of the greenhouse gas emissions that affect the health of all people and the entire planet are generated by the food system, consisting of food production, distribution, consumption and disposal [3].

Recognising the transformative impact of this indicator, recommendations have been made for strengthening ESD&GCED in teacher education, student assessment and monitoring and evaluation systems [34].

It is observed that the role of teachers could accelerate the goal of school meals programmes, thereby significantly impact on interrelated SDG indicators as school health and nutrition are implicitly part of the ESD&GCED framework. Several curriculum subjects could incorporate health promotion, physical education, sustainable food systems, sustainable consumption, environmental conservation and climate resilience and reforms in teacher education curriculum and approaches [3].

Conclusion and Recommendations

In summary, the analysis of data from selected African countries on school meal

coverage, budgets, infrastructure, nutrition, complementary services and employment identified several trends that suggest the need for further research and review of current practices in the provision of school meals on the continent.

There is scope for incorporating realtime data into the decentralised, interlinked education, health, food security ,social protection management information systems and alignment of continuous professional development for all school meal implementers.

As learning does not only occur in schools, the increased participation of teachers, learners and communities is critical for achieving the Education for Sustainable Development and Global Citizenship Education (ESD&GCED) goals [35]. More research is therefore required into practical measures to accelerate the ESD&GCED thrust.

This paper supports the recommendation on strengthening collaboration among various stakeholders in inclusive education [30], with the addition that school meals should be part of the inclusive education thrust in order to achieve the intended impact.

Conflicts of Interest

The author declares no conflict of interest.

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Ethical Approval

Secondary data from a published source was used. No human participants were involved in the study, hence ethical approval was required.

Author Contribution

The author conceptualised the paper and extracted data from randomly selected country reports from the Africa region. wrote the

original draft and worked on the visualisation of the manuscript. The author has read and agreed to the published version of the manuscript.

Informed Consent

Not applicable.

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Data Availability

Data was extracted from the 2024 School Meals Programs around the World Report. <https://gcnf.org/global-survey/>.

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