Annex II
Methodology and sources used for estimating children receiving school meals, coverage and investment

A2.1 Sources

Similar to the *State of School Feeding Worldwide 2022*, this publication draws on a combination of primary and secondary sources. Each source was selected based on the following criteria:

1. Relevance: sources that contain standard indicators on school feeding.
2. Credibility: sources published by official and academic institutions.
3. Availability: sources in open and public access.
4. Timeliness: sources published recently.

Primary data for the 2024 edition were drawn from two main sources:

- Official sources, including official statistics from government reports and members of the School Meals Coalition.

- The USDA-sponsored GCNF *Global Survey of School Meal Programs* ©, published in 2024. The Global Survey of School Meal Programs © is the property of GCNF and is protected by copyright, all rights reserved. It may not be reproduced or distributed without prior written consent. Funding for the most recent survey in 2023 and previous surveys in 2021 and 2019 is provided, in part, by USDA under agreement number FX18TA-10960G002.

When data were not available from the sources above, data were drawn from sources employed in previous editions of the *State of School Feeding Worldwide* 2020 and 2022. These secondary sources include reports, publications and case studies. As in 2022, when selecting secondary sources, the overarching principle was to use only sources published by official institutions: governments, international organizations and academic institutions (peer-reviewed academic papers).

The full list of secondary sources used for this publication are:

1. WFP's Annual Country Reports

2. WFP estimations from country offices and regional bureaux

3. The World Bank's State of Social Safety Nets 2018 (World Bank, 2018)

4. WFP's report on Smart School Meals in Latin America and the Caribbean (WFP, 2017)

Several countries appeared in more than one of these secondary sources. In this case, only one data point was used for each country based on the following criteria:

1. If more than one source cites data for the same country, primary data sources were used, prioritizing official sources based on the most recent reference year.

2. If more than one source of information is available for the same country and the same reference year, the most comprehensive source was used – for instance, one source may cover a particular programme while the other source covers all existing programmes in the same country.

As a result of this selection criteria, Table A2.1 illustrates the number of countries from each source used in this publication.

Figure A2.1

Breakdown of countries by data sources (n=176)

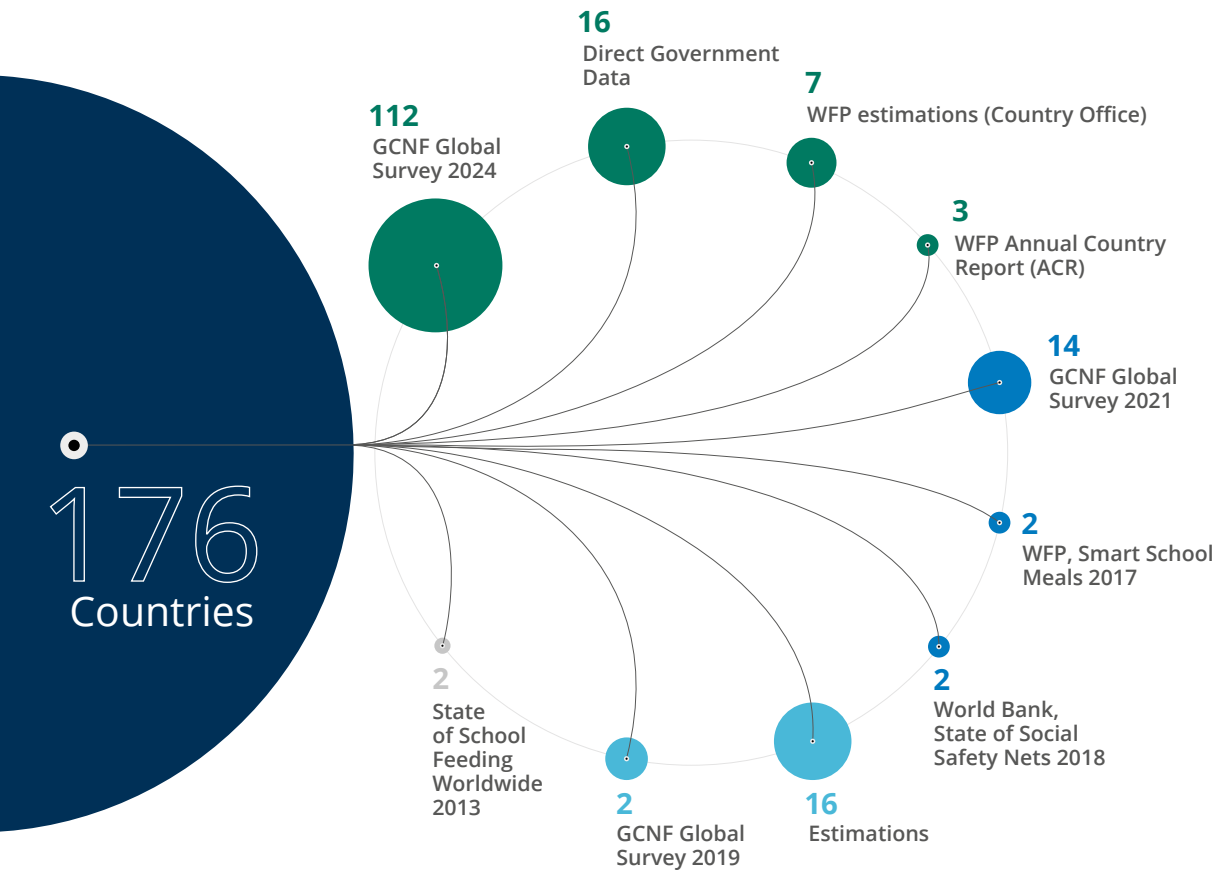

Table A2.1

Sources used for school meal data

Source	Symbol	Number of countries used in this report	Country names
Direct government data	OS	16	Belize, Brazil, China, Colombia, Cuba, Ecuador, Iceland, India, Kenya, Mauritius, Mexico, Russian Federation, Rwanda, Ukraine, United Kingdom of Great Britain and Northern Ireland, Uruguay.
USDA-sponsored, GCNF Global School Feeding Survey 2024	GCNF 2024	112	Afghanistan, Andorra, Angola, Armenia, Austria, Bahamas, Bangladesh, Belgium, Benin, Bhutan, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Burundi, Cabo Verde, Cambodia, Cameroon, Canada, Central African Republic, Chile, Congo, Costa Rica, Côte d'Ivoire, Croatia, Cyprus, Czechia, Democratic Republic of the Congo, Djibouti, Dominica, Dominican Republic, Estonia, Eswatini, Ethiopia, Finland, France, The Gambia, Ghana, Greece, Guatemala, Guinea, Guinea-Bissau, Haiti, Honduras, Iraq, Ireland, Israel, Jamaica, Japan, Jordan, Kazakhstan, Kyrgyzstan, Lao People's Democratic Republic, Latvia, Lesotho, Liberia, Lithuania, Luxembourg, Madagascar, Malawi, Malaysia, Mali, Malta, Marshall Islands, Mauritania, Monaco, Mongolia, Morocco, Mozambique, Myanmar, Namibia, Nepal, Netherlands (Kingdom of the), New Zealand, Niger, Nigeria, North Macedonia, Palau, Peru, Poland, Republic of Korea, Republic of Moldova, Romania, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, San Marino, Sao Tome and Principe, Senegal, Sierra Leone, Slovakia, Slovenia, South Africa, South Sudan, Spain, Sri Lanka, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Timor-Leste, Togo, Trinidad and Tobago, Tunisia, Uganda, United Republic of Tanzania, United States of America, Uzbekistan, Viet Nam, Yemen, Zambia, Zimbabwe.
USDA-sponsored, GCNF Global School Feeding Survey 2021	GCNF 2021	14	Antigua and Barbuda, Argentina, Barbados, Brunei Darussalam, Grenada, Guyana, Hungary, Italy, Kiribati, Panama, Portugal, Sudan, Thailand, United Arab Emirates.

USDA-sponsored, GCNF Global School Feeding Survey 2019	GCNF 2019	2	Comoros, Indonesia.
Estimations	Est.	16	Albania, Bahrain, Belarus, Bermuda, Democratic People's Republic of Korea, Fiji, Kuwait, Nauru, Puerto Rico, Qatar, Saudi Arabia, Serbia, Seychelles, Singapore, Tonga, Venezuela (Bolivarian Republic of).
WFP Estimations	WFP Est.	7	Bolivia (Plurinational State of), Egypt, Iran (Islamic Republic of), Lebanon, Pakistan, Philippines, Somalia.
State of School Feeding Worldwide 2013	SOSF 2013	2	Australia, Hong Kong (China Special Administrative Region).
World Bank, State of Social Safety Nets 2018	SSSN	2	State of Palestine, Türkiye.
WFP, Smart School Meals 2017	SSM	2	Nicaragua, Paraguay.
WFP, Annual Country Reports 2024	WFP ACR	3	Algeria, Chad, Libya.

A2.2 Limitations

While the data set presented in this publication is only based on reliable sources, it has some limitations. The multiplicity of sources translates into differences of methodology: some sources report on all children receiving school meals in a particular country, but in other countries, only primary schoolchildren are reported.

Another limitation is the quantity of indicators provided by each source: the number of children is provided in all sources, but coverage data, funding data and other indicators were only available for a more limited set of countries. The analytics presented in this publication systematically specify the sample size available for each indicator.

Further, the data available do not allow for accurate confirmation of how many meals per day or per week children received, nor the exact type of meal (i.e. whether a snack or a proper meal).

The discrepancy in reference years is a third limitation of the data set presented in this publication. While some sources were published less than a year before this report was published, other sources are older and/or present data pertaining to earlier school years.

As for the *State of School Feeding Worldwide 2022*, in order to provide a comprehensive picture of school meal programmes globally, this publication combines country data spanning almost a decade. This approach has been used in similar reports, such as the World Bank's State of Social Safety Nets 2018 and provides a good level of confidence for a majority of countries and for cross-country analytics and trends. The main advantage of this approach is its comprehensiveness, as it maximizes the number of countries for which a data point is available, but the potential lack of accuracy of some older data points remains an important limitation.

Finally, in addition to data spanning almost a decade, the reference year for the numerator and denominator to compute coverage sometimes does not match (i.e. data could be available for the number of children fed in primary schools, but the most recent data about number of children enrolled in primary school for that country could date back to one year before).

A2.3 Children receiving school meals

The number of children receiving school meals presented in this publication represents the total number of children benefiting from school meals in a given country.

While the majority of the children receiving school meals are supported by a government-funded and government-led school meal programme, some countries have opted for locally managed school meal programmes and/or collect contributions from parents to finance their school meal programmes. In keeping with the approach in the *State of School Feeding Worldwide 2022*, beneficiaries of school meals should be understood as "children receiving meals, or another form of food, in schools" (not as "children benefiting from free and government-funded school meals").

When more than one school meal programme exists in a given country, the number presented in this publication is the total number of individual beneficiaries, net of overlaps if any. This operation is generally made by the individual data providers listed in section A2.1 and the net total corresponds to the number reported by each of these sources, but was verified as part of the data consolidation process. As for the 2022 edition, even in this report three possible configurations were found, as described in Table A2.2 below.

Table A2.2

Possible configurations of school meal programmes for the purpose of calculating net total number of children receiving school meals

Situation			Calculation of net total number of children receiving school meals
1	The country has only one school meal programme		The total number of children receiving school meals corresponds to the number of children receiving school meals as part of this programme.
2	The country has two or more school meal programmes	The programmes overlap: some (or all) children benefit from both programmes.	The number of beneficiaries does not add up. Depending on the situation, the size of the larger programme may correspond to the net total.
3		The programmes do not overlap: each programme benefits a distinct group of children.	The numbers of children receiving school meals add up: the net total corresponds to the sum of children of the different programmes.

A2.4 Coverage

School meals coverage in a country i (C_i) is defined as the number of children receiving school meals in primary schools in a given year (B_i) divided by the total number of children enrolled in primary schools in the same year (P_i). The result is multiplied by 100 to express the coverage as a percentage:

$$C_i = \frac{B_i}{P_i} * 100$$

Description of variables:
B_i: number of children receiving school meals in primary schools in country i, for a given year.
P_i: Total number of children enrolled in primary schools of country i, for the same year.
C_i: School meals coverage rate in primary schools in country i.

Formula for aggregation:
The following formula can be applied to calculate aggregate coverage for a group of countries x, such as income groups. The result is multiplied by 100 to express the coverage as a percentage:

$$C_x = \frac{\sum B_{i,x}}{\sum P_{i,x}} * 100$$

For each group of countries x, the total number of children receiving school meals $\sum B_{i,\,x}$ is divided by the total number of children enrolled $\sum P_{i,x.}$

Interpretation:

- Coverage estimates range between 0 and 100 percent.
- A higher value for the indicator denotes a higher number of children enrolled in primary education receiving school meals at school.

A2.4.1 School meals coverage in public schools

The inclusion of a school meals coverage indicator in the SDG 4 framework marks a significant milestone, filling a long-standing gap in global monitoring systems by enabling the tracking of school meal programme reach worldwide. For the first time, the international community can rely on a standardized and globally comparable estimate of the proportion of primary school-aged children receiving school meals. While this approach ensures consistency across countries, additional analyses can help provide a more nuanced understanding of coverage and policy implications.

In this annex we offer an initial complementary analysis for a sample of countries, which will be expanded in future publications. This annex presents a recalculation of coverage to estimate the scale of government programmes within the public education system only. This additional analysis is motivated by the fact that in a significant number of countries school meals policies, programmes and allocated resources only target public schools. Furthermore, it is important to note the existing data gap on school meals provision in private schools.

The analysis draws on data from the UNESCO Institute for Statistics on the proportion of primary school enrolment in private institutions. These figures are used to estimate enrolment in public schools and calculate an adjusted public coverage estimate using the following formula:

$$\text{Public school coverage (\%)} = \frac{\text{Number of primary schoolchildren receiving meals}}{\text{Enrolment in primary education x (1- Share of enrolment in primary education in private institutions)}} *100$$

Table A2.3 presents estimated public school meals coverage for selected countries in the Latin America and Caribbean region for which relevant data was available. This complementary analysis is based on the understanding that government reported figures for school meals for the sample of countries in Table A2.3 only include public schools, while enrolment data includes both public and private institutions.

Table A2.3

Public coverage estimates (selected countries in the Latin America and Caribbean region)

	Total number of children receiving school meals (all levels)	Total number of children receiving school meals (primary)	Enrolment (primary) - UNESCO	Share of enrolment in primary educations in private institutions	Enrolment (primary) - public	Coverage (primary) SDG methodo-logy	Public coverage (primary)
Bolivia (Plurinational State of)	2,619,090	1,233,764	1,394,417	9.83%	1,257,346	88%	98%
Chile	1,568,394	977,820	1,545,104	62.94%	572,616	63%	100%
Colombia	5,904,785	2,826,401	4,140,463	19.32%	3,340,526	68%	85%
Dominican Republic	1,648,304	873,601	1,155,182	19.38%	931,308	76%	94%
Guatemala	2,654,521	2,079,759	2,414,945	11.21%	2,144,230	86%	97%
Honduras	1,218,072	1,039,026	1,074,043	11.69%	948,487	97%	100%
Peru	4,243,054	2,708,077	3,819,011	25.56%	2,842,872	71%	95%

This method complements the SDG 4 indicator by offering governments and partners an additional lens through which to assess national progress towards universal school meals coverage. While this analysis currently focuses on selected countries in the Latin America and Caribbean region, it is intended as a first step, with the aim of extending it to other regions globally as data availability improves.

Box A2.1

Income classification of countries

This publication follows the World Bank's classification of countries by income groups. The classification of countries used in this publication is the "2025 fiscal year", which is based on 2023 gross national income (GNI) per capita (*Atlas method*), and calculated as follows:

Income category	GNI per capita thresholds
Low-income countries	US$1,145 or less
Lower-middle-income countries	between US$1,146 and US$4,515
Upper-middle-income countries	between US$4,516 and US$14,005
High-income countries	above US$14,005

The full list of countries included in each of these income groups is available on the *World Bank's website* and is reproduced in Annex III of the present publication.

PLEASE NOTE: Several countries have changed their income level classification compared to the previous edition. These countries include:

- American Samoa –› from Upper-middle to High
- Benin –› from Low to Lower-middle
- Bulgaria –› from Upper-middle to High
- Guinea –› from Low to Lower-middle
- Guyana –› from Upper-middle to High
- Haiti –› from Low to Lower-middle
- Indonesia –› from Lower-middle to Upper-middle
- Jordan –› from Upper-middle to Lower-middle
- Lebanon –› from Upper-middle to Lower-middle
- Mongolia –› from Lower-middle to Upper-middle
- Nauru –› from Upper-middle to High
- Nepal –› from Low to Lower-middle
- Republic of Moldova –› from Lower-middle to Upper-middle
- Romania –› from Upper-middle to High
- Russian Federation –› from Upper-middle to High
- Samoa –› from Upper-middle to Lower-middle
- Sri Lanka –› from Upper-middle to Lower-middle

- Sudan –› from Lower-middle to Low
- Tajikistan –› from Low to Lower-middle
- Ukraine –› from Lower-middle to Upper-middle
- United Republic of Tanzania –› from Low to Lower-middle
- Venezuela –› from Upper-middle to No Classification.

All income-based comparisons in this report use the fiscal year 2025 World Bank classification. This means that if a country's income group has changed since the previous edition, it is analysed here according to its fiscal year 2025 World Bank income classification.

Finally, Venezuela is excluded from all analyses disaggregated by income level, as it has lacked an official classification since fiscal year 2022.

A2.5 Annual financial investment in school meals

Calculations for the annual financial investment in school meals are presented in Table A2.4. Investment is defined as the total budget allocated to school meals, or an estimation of that budget. Information on country investments in school meals is not available in all countries, but available data are presented in this present publication. Only countries which have a school meal programme were included in the investment estimation.

Table A2.4

Four estimates of the total yearly investment in school meals

Source	Number of countries	Number of children	Investment value	Estimated global investment (US$)
Actual reported cost only	116	289.5 million	Budget allocated	65.6 billion
Estimations derived from reported costs	116	289.5 million	Average cost per income group	65.6 billion
Actual reported cost + estimations for remaining countries	173	463.5 million	Budget allocated for 117 countries which have data; average cost per income group for remaining 57 countries	84 billion
Estimations (all countries)	173	463.5 million	Average cost per income group	84 billion

The following methods used to estimate the global investment in school meal programmes as reported in Table A2.4 are as follows:

(1) Reported global investment: **US$65.6 billion**
Sample: **116 countries**

The first approach, which resulted in a figure of US$65.6 billion, is based on reported national budgets. According to this approach, the global investment $M_{(1)}$ is the sum of all reported national budgets (G_i) across these 116 countries for which data were available:

$$M_{(1)} = \sum_{i=1}^{116} G_i$$

(2) Estimated global investment: **US$65.6 billion**
Sample: **116 countries**

The second approach, which resulted in a figure of US$65.6 billion, is an alternative estimation for the same sample of countries as the first estimation. Instead of using reported budget figures, total investment $M_{(2)}$ was estimated as the total average cost (AC) from income group (x) multiplied by the number of beneficiaries (B) in country (i) across the 116 countries:

$$M_{(2)} = \sum_{x=1}^{116} (AC_x \times B_i)$$

Presents the average cost per income group as used for this calculation.

Table A2.5
Average cost per income group used for estimating global investment

Income category	Average cost used for estimations
Low-income countries	US$22.09
Lower-middle-income countries	US$23.89
Upper-middle-income countries	US$84.18
High-income countries	US$665.76

(3) Estimated global investment: **US$84 billion**
Sample: **173 countries**

The third approach, which resulted in a figure of US$84 billion, was calculated using the two previously discussed methods, applied to a broader sample to include not only countries with reported investment data (n=116) but also countries with no data, based on reported beneficiaries.

To the US$65.6 billion figure estimated using approach (1), it adds an estimation using approach (2) for an additional 57 countries which are known to have a national school meal programme, and for which no reported investment data were available. The number of children receiving school meals, as reported in this publication, was multiplied for each country by the total average cost corresponding to the income group of that country (Table A2.5). The resulting values were summed up across the set of 57 countries and to the estimation obtained using Method 1 ($M_{(1)}$). The full calculation for Method 3 ($M_{(3)}$) is described as follows:

$$M_{(3)} = M_{(1)} + \sum_{i=1}^{57} (AC_x \times B_i)$$

(4) Estimated global investment: **US$84 billion**
Sample: **173 countries**

The fourth method ($M_{(4)}$), which resulted in a figure of US$84 billion, was calculated using method 2, applied to the full sample of countries where data on the number of children receiving school meals were available. As described above, the number of children as reported in the present publication was multiplied by the total average cost per income group of the country, and these values were summed up across the full set of 173 countries. This calculation can be summarized by the equation below:

$$M_{(4)} = \sum_{i=1}^{173} (AC_x \times B_i)$$