



Looking to 2030 – a projection of school participation profiles for school feeding programme: Technical background paper for the Sustainable Finance Initiative (February 2024)

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## Technical background paper for Sustainable Finance Initiative (February 2024)

### 1. Projections of school-age population between now and 2030

The latest data based on 2022 population data estimates that the school-age population of pre-primary (5 years of age), primary (6-11 years of age), lower-secondary school (12-14 years of age) and upper-secondary school (15-17 years of age) in low-income countries (LIC) and lower-middle income countries (LMIC) equals approximately to **1.07 billion**. Projections collated by the United Nations Population Division estimate that this school-age population aged 5-to-17 years of age is projected to increase to **1.13 billion** by 2030, with the majority (47%) concentrated within the primary 6-to 11-year age range, followed by lower-secondary school aged adolescents (23%) and upper-secondary school aged youth (22%)

The largest increases in the school-aged population between 2022 and 2030 in absolute terms are primary-aged school-age children in low-income countries. This sub-set of the population is expected to increase from 113 million to 132 million (a 17% increase). The school-aged population for 2022 used for this report is sourced from the United Nations Population Division database rather than the school-aged population reported by UNESCO Institute for Statistics for the same year. This is because United Nations Population Division school-aged population data is the only source which provides population projections by age up until 2030.<sup>1</sup>

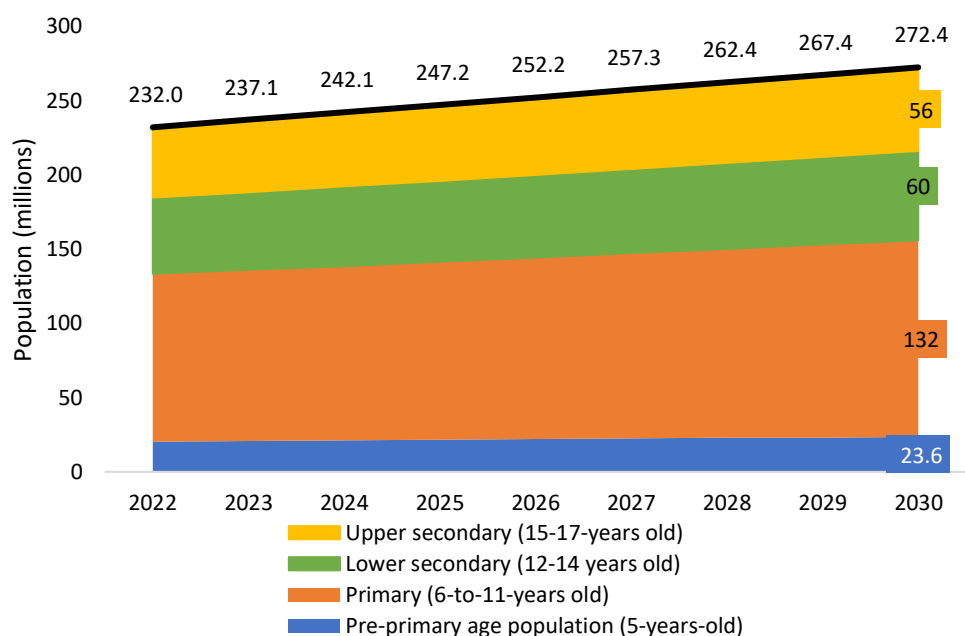
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<sup>1</sup> When compared to what UNESCO Institute of Statistics reports, there is a variation in the figures which should be taken into consideration. For example, the population numbers reported under the United Nations Population Division database estimates that in 2022 there were 87 million children of pre-primary school age, compared to 218 million reported by the UNESCO Institute for Statistics. This could be explained partly by the narrow definition we take for this report for pre-primary aged children which is 5-years old. Elsewhere, United Nations Population Division estimates that the primary school-aged population in LIC and LMICs equals 509 million (versus 467 million as reported under UNESCO Institute for Statistics). For lower secondary the equivalent is 231 million (versus 250 million as reported under UNESCO Institute for Statistics). These differences are mainly accounted for by LMICs.

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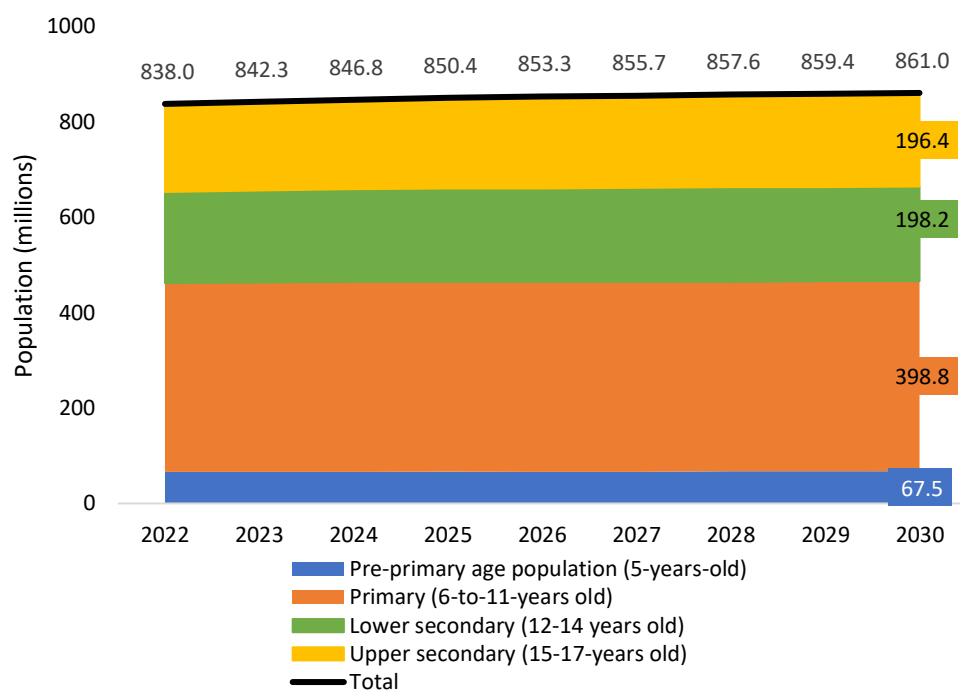
**Figure 1: School-aged population trends (2022-2023)**

*a. Low-income countries*



*b. Lower-middle income countries*

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Source: UN World Population Prospects 2022, found [here](#).

## 2. Projections of children, adolescents, and youth in and out of school by 2030

This section considers projections of the in- and out-of-school population by 2030. It does this by using data which gives trend-level data to approximate out-of-school rates reported under the UNESCO Institute for Statistics database according to the following four indicators:

- **Pre-primary:** Out-of-school rates for children one year younger than official primary entry age (both sexes, %).<sup>2</sup>
- **Primary:** Out-of-school rate for children of primary school age, both sexes (%).
- **Lower secondary:** Out-of-school rate for adolescents of lower secondary school age, both sexes (%)
- **Upper secondary:** Out-of-school rate for youth of upper secondary school age, both sexes (%).

### 2.1 Most recent data on out-of-school rates for primary and lower-secondary school-aged children and adolescents

Using school-age population from the 2022 United Nations Population Division and annual rates of change in the out-of-school rates using data from the UNESCO Institute for Statistics

<sup>2</sup> World Bank income averages were not available for this indicator, meaning it was calculated using averages of countries with available data in each of these income groups.

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for LICs and LMICs (based on July 2023 World Bank classifications), this background note calculates that in 2022:

- The estimated out of school rate for pre-primary-school aged children in 2022 equalled 45% – equivalent to approximately **40 million** pre-primary school-aged children in low and lower-middle income countries who were out of school, and **47 million** in school.
- the estimated out of school rate for primary-school aged children in 2022<sup>3</sup> equalled 12% - equivalent to approximately **60 million** primary school-aged children in low and lower-middle income countries who were out of school and **449 million** were in school
- the out-of-school rate for lower-secondary school-aged adolescents (12-14 years of age) in low and lower-middle income countries was 20% – equivalent to approximately **48 million** lower secondary school-aged youth who were out of school and **194 million** in school.
- The out-of-school rate for upper-secondary aged youth (15-17 years of age) in low and lower-middle income countries was 37%

**Table 1: School-aged population in and out of school (2022)**

*a. Out-of-school*

	Share of school-age population (%)				Millions			
	Pre-primary school age	Primary-school age	Lower secondary school age	Upper secondary school age	Pre-primary school age	Primary-school age	Lower secondary school age	Upper secondary school age
LIC	59%	20%	33%	33%	11.9	22.5	16.9	15.6
LMIC	41%	9%	16%	38%	27.7	37.2	31.5	70.2
<b>Total</b>	<b>45%</b>	<b>12%</b>	<b>20%</b>	<b>37%</b>	<b>39.6</b>	<b>59.7</b>	<b>48.4</b>	<b>85.8</b>

*b. In-school*

	Share of school-age population (%)				Millions			
	Pre-primary school age	Primary-school age	Lower secondary school age	Upper secondary school age	Pre-primary school age	Primary-school age	Lower secondary school age	Upper secondary school age
LIC	41%	80%	67%	67%	8.4	90.6	34.4	31.7
LMIC	59%	91%	84%	62%	39.1	358.3	159.6	114.4
<b>Total</b>	<b>55%</b>	<b>88%</b>	<b>80%</b>	<b>63%</b>	<b>47.5</b>	<b>448.9</b>	<b>194.0</b>	<b>146.1</b>

<sup>3</sup> UNESCO Institute for Statistics only provides regional, and income averages up until 2021. This report has used these proportions to estimate out-of-school numbers against 2022 population data.

## 2.2 Most recent data on out-of-school rates for primary and lower-secondary school children and adolescents

The projections took the out-of-school rate data from 2022 and then applied four different scenarios to project what these rates of out-of-school would be between now and 2030. Once these estimates were developed, the report was able to project what this would translate into when considering the rates of children **in school** by 2030. This could then be translated into what the expected numbers in school would be using United Nations Population Division data.

**Table 2** and **Figure 2** summarise this by level of education and the scenarios used (see **Box 1** for a full definition of these).

**Table 2: Number of children, adolescents, and youth in school by 2030 (Scenarios 1-4)**

### a. Low-income countries

Scenario #	School-aged population				Share of school-age population in school (%)				Millions (in-school)			
	Pre-primary age	Primary age	L. Sec age	U. Sec age	Pre-primary age	Primary age	L. Sec age	U. Sec age	Pre-primary age	Primary age	L. Sec age	U. Sec age
1	24	132	60	56	47%	83%	69%	69%	13	110	41	39
2					34%	86%	70%	70%	15	113	42	40
3					50%	82%	73%	73%	12	108	44	41
4					54%	81%	68%	68%	11	107	41	38

### b. Lower middle-income countries

Scenario #	School-aged population				Share of school-age population in school (%)				Millions (in-school)			
	Pre-primary age	Primary age	L. Sec age	U. Sec age	Pre-primary age	Primary age	L. Sec age	U. Sec age	Pre-primary age	Primary age	L. Sec age	U. Sec age
1	68	399	198	196	38%	94%	85%	64%	42	374	169	125
2					34%	97%	87%	65%	45	387	172	128
3					46%	93%	85%	68%	36	372	169	133
4					52%	92%	84%	63%	33	366	167	123

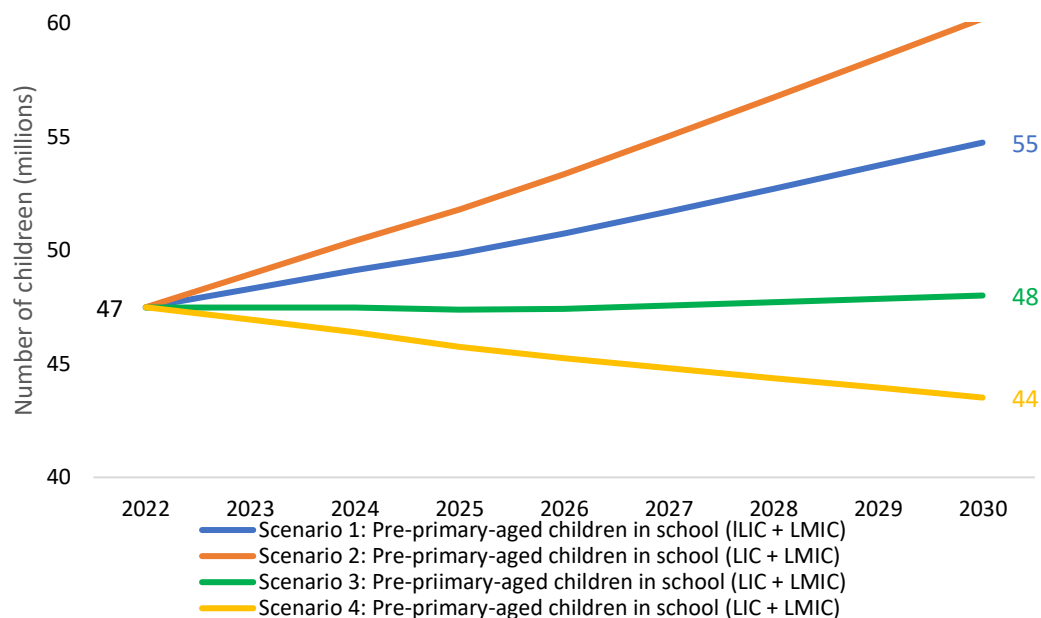
### c. Low and lower middle-income countries

Scenario #	School-aged population				Share of school-age population in school (%)				Millions (in-school)			
	Pre-primary age	Primary age	L. Sec age	U. Sec age	Pre-primary age	Primary age	L. Sec age	U. Sec age	Pre-primary age	Primary age	L. Sec age	U. Sec age
1	91	531	258	253		91%	81%	65%	55	484	210	164
2						94%	83%	67%	60	500	214	168
3						90%	82%	69%	48	480	212	175
4						89%	82%	64%	44	473	208	162

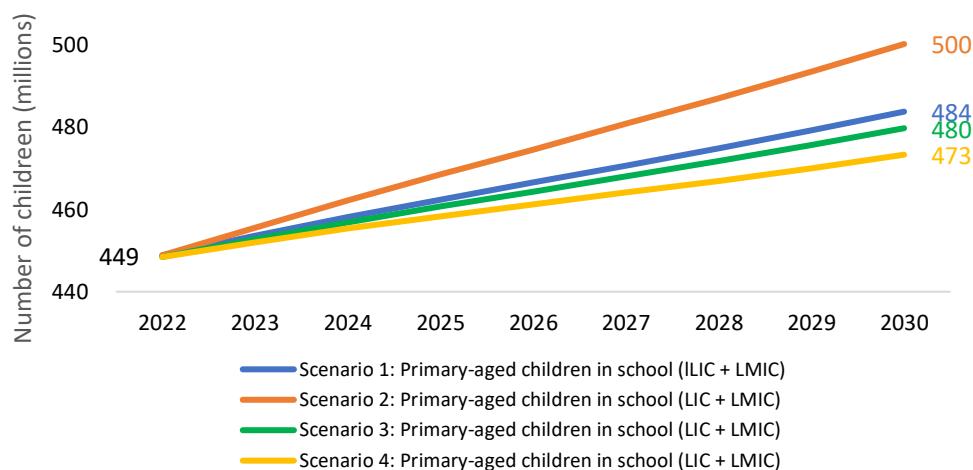
**Figure 2: Projection for children, adolescents, and youth in school according to age, 2030**

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**a. Pre-primary school age (5-years-old)**

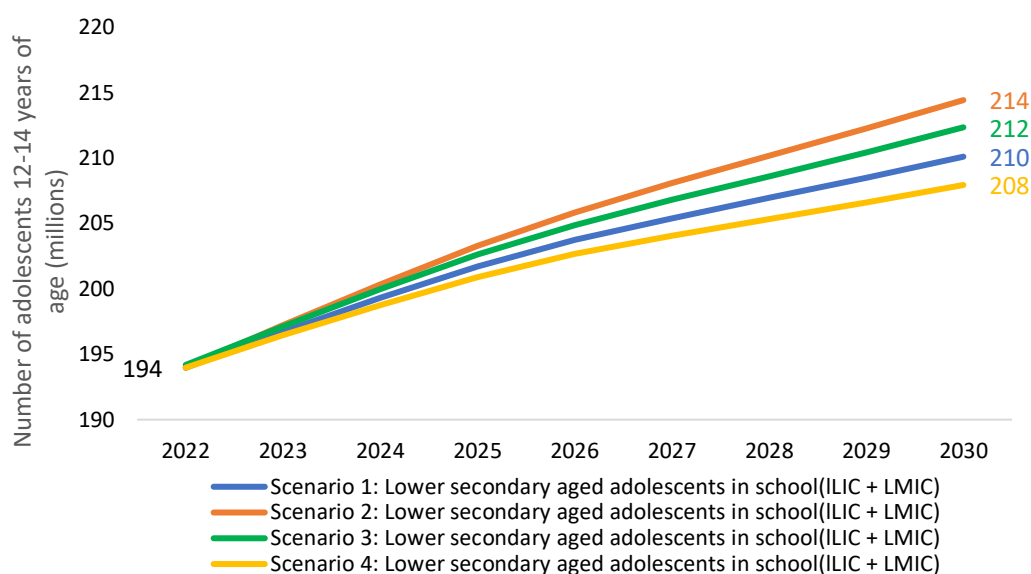


**b. Primary-school age (6-11 years old)**

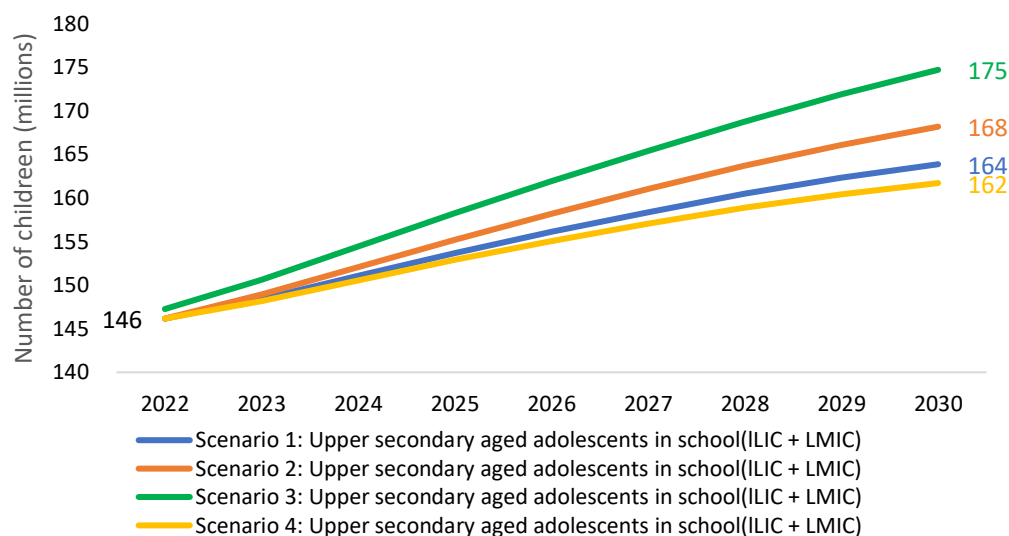


**c. Lower-secondary school age (12-14 years old)**

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d. Upper-secondary school age (15-17 years old)



**Box 1: Scenarios estimating out-of-school numbers by 2030**

These scenarios have been developed drawing on data from education indicators reported in the UNESCO Institute for Statistics database. Data from these indicators have been used to project of primary and secondary aged children and adolescents who are either in school and out of school.

These have been developed using the following indicators:

- Out-of-school rate for children one year younger than the official primary entry age (%)



- Out-of-school rate for children of primary school age, both sexes (%).
- Out-of-school rate for adolescents of lower secondary school age, both sexes (%).
- Out-of-school rate for youth of upper secondary school age, both sexes (%).

#### **Scenario 1 (Business as usual)**

This scenario assumes that the out-of-school rates between 2022 and 2030 will grow or contract by the same annual rates (by income group). It takes the 2015-2021 period and calculates average annual change in out-of-school rates for this period to project what the out-of-school rates will be for i. Children of primary school age, ii. Adolescents of lower secondary school age and iii. Youth of upper-secondary school age in the year 2030.

#### **Scenario 2 (Optimistic scenario)**

This scenario assumes that governments will – in the run-up to the SDG target date of 2030 – invest more resources to reduce the out-of-school rates to be closer to reaching SDG Target 4.1. It assumes a doubling the annual average rates at which out-of-school rates fell between 2015 and 2021. *E.g., if annual out-of-school rates fell by 0.3% between 2015 and 2021, it assumes that between 2022 and 2030 these will fall by 0.6%.*

#### **Scenario 3 (Covid-19 scenario)**

This scenario assumes that rates of children and adolescents out-of-school would contract at the same annual rate of growth between 2022 and 2030 as it did over the Covid-19 period (2020-2021).

#### **Scenario 4 (Pessimistic scenario)**

This scenario assumes that rates in the contraction of out-of-school rates will slow down and will be half those over the Covid-19 period. *E.g., if annual out-of-school rates fell by 0.3% between 2020 and 2021, it assumes between 2022 and 2030 out-of-school rates will fall by 0.15%.*

### 2.3 Projections of children and adolescents in school by level

**Section 2.2** projected the number of children, adolescents and youth of school going age who are likely to be **in-school** by 2030 based on the four scenarios presented in **Box 1**. It however, does not distinguish this by level of education. However, as is the case for many school systems in LICs and LMICs, school-age children, youth, and adolescents will not necessarily be in the grade or level of education that is age-appropriate for them e.g., many adolescents of school-going age who should be in lower secondary will in fact be in primary. **The projections assume there are no pupils enrolled in the system who are under-age for that level of the system and if there are these are minimal.**

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To calculate the number of children, adolescents and youth who will be in school – by level – the calculations have factored in those attending primary and lower-secondary education who **might be overage** using the following indicators:

- Percentage of pupils enrolled in primary education who are at least 2 years over-age for their current grade, both sexes (%).
- Percentage of pupils enrolled in lower secondary general education who are at least 2 years over-age for their current grade, both sexes (%).

At primary level, the latest data from the UNESCO Institute for Statistics finds that for LICs the percentage of pupils attending school who are at least 2 years over-age for their current grade was **25%** for LICs and **9%** for LMICs. At lower secondary level, the equivalent is **28%** for LICs and **11%** for LMICs.

To project the numbers of children and adolescents who will be in primary and lower secondary school by 2030 (disaggregated by those who are the correct age and over-age for that level) we have assumed the same annual change in the percentage of pupils who are enrolled but overage between 2015 and 2022, and applied this to project what these rates would be for 2030. Using this approach:

- The % of pupils attending primary school who are at least 2 years over-age for their current grade is projected to be **19%** for LICs by 2030.
- The % of pupils attending primary school who are at least 2 years over-age for their current grade is projected to be **7%** for LMICs by 2030.
- The % of pupils attending lower secondary school who are at least 2 years over-age for their current grade is projected to be **26%** for LICs by 2030.
- The % of pupils attending primary school who are at least 2 years over-age for their current grade is projected to be **6%** for LMICs by 2030.

Translated into numbers (using Scenario 2 projects):

- At pre-primary level there will be **60 million** in school by 2030, of which 15 million are from LICs and **45 million** from LMICs (unchanged from **Table 4**).
- At primary level there will be **556 million pupils** enrolled in primary school by 2030, of which **141 million** are from LICs and **416 million** are from LMICs.
  - Of these **56 million** will be over-age (10% of the total), and **500 million** (90%) the right age.
- At the lower secondary level there will be **237 million** pupils enrolled in lower secondary school by 2030, of which **181 million** are from LICs and **57 million** are from LMICs.
  - Of these **26 million** will be over-age (11%), and **211 million** (89%) the right age.

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**Table 3: Projections of children and adolescents in school by level, 2030**

*a. 2022*

Income level	Primary			Lower secondary		
	Right age (millions)	Over-age (millions)	% who are over-age	Right age (millions)	Over-age (millions)	% who are over-age
LIC	91	29	24%	34	13	28%
LMIC	358	37	9%	160	17	10%
<b>All</b>	<b>449</b>	<b>67</b>	<b>13%</b>	<b>194</b>	<b>30</b>	<b>13%</b>

*b. 2030*

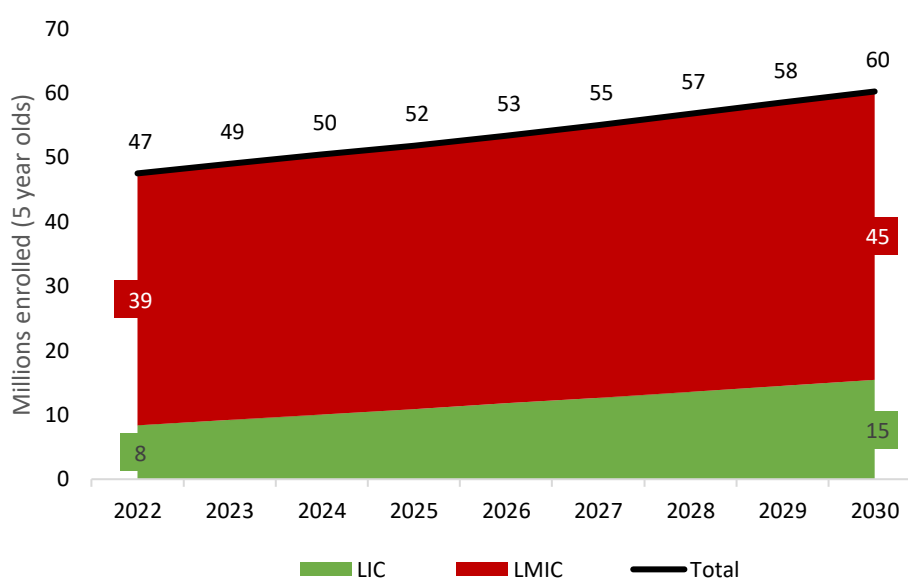
Income level	Primary			Lower secondary		
	Right age (millions)	Over-age (millions)	% who are over-age	Right age (millions)	Over-age (millions)	% who are over-age
LIC	113	27	19%	42	15	26%
LMIC	387	29	7%	169	12	6%
<b>All</b>	<b>500</b>	<b>56</b>	<b>10%</b>	<b>211</b>	<b>26</b>	<b>11%</b>

**Table 4: Numbers of children in school, 2022 and 2030**

	2022 (millions)				2030 (millions)			
	Pre-primary	Primary	L. Secondary	Total	Pre-primary	Primary	L. Secondary	Total
LIC	8	120	48	176	15	141	57	213
LMIC	15	396	176	611	45	416	181	641
<b>All</b>	<b>47</b>	<b>449</b>	<b>194</b>	<b>787</b>	<b>60</b>	<b>500</b>	<b>214</b>	<b>854</b>

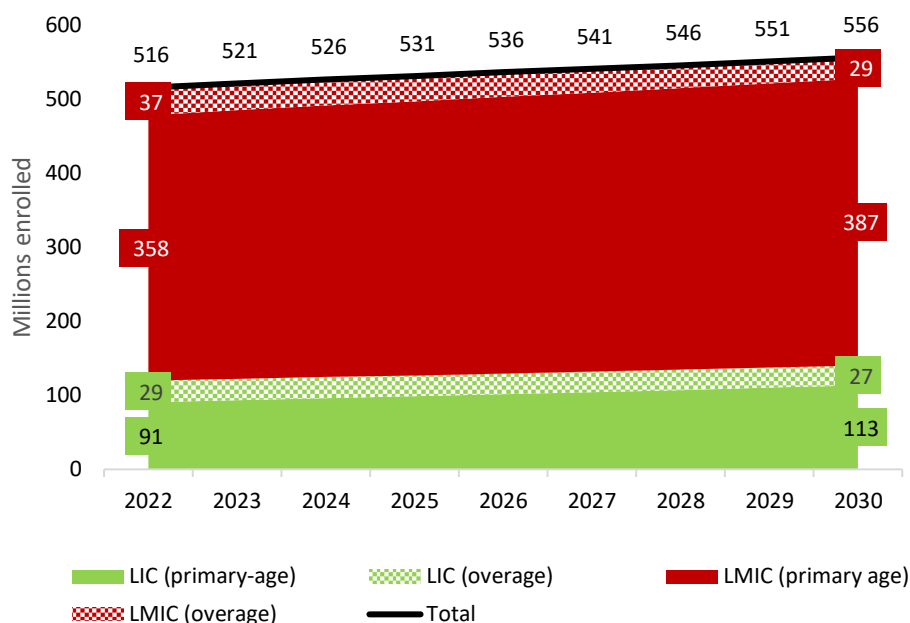
**Figure 3: Projected numbers of children, adolescents, and youth by level of education, 2030**

*a. Pre-primary level*

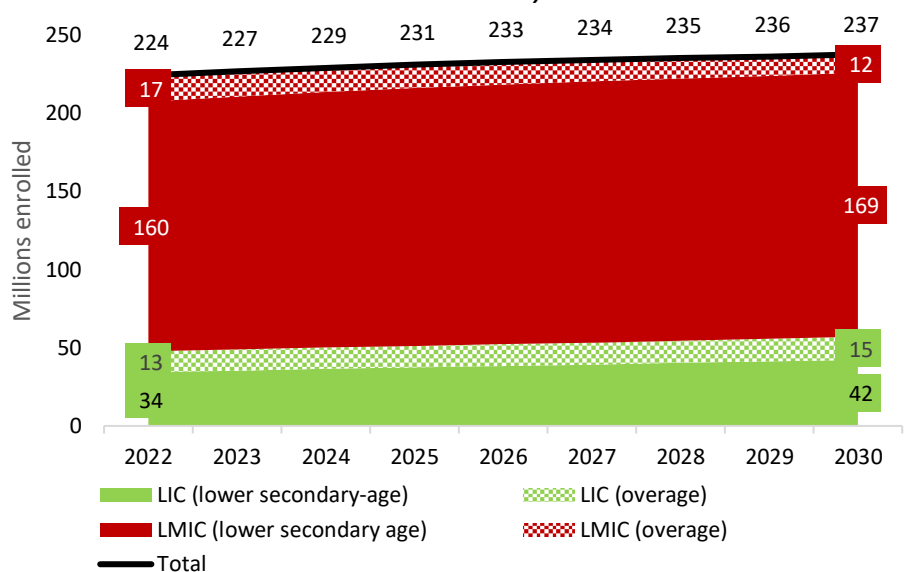


*b. Primary level*

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c. Lower secondary level



### 3. Targets for who school feeding programmes will reach by 2030

Based on 2021 enrolment data taken from UNESCO Institute for Statistics, the World Food Programme projected that school feeding programmes reached **19%** and **43%** of children at the primary level in LICs and LMICs respectively. This translated to **19.3 million** in LICs and **137.8 million** in LMICs at primary-school level.<sup>4</sup>

<sup>4</sup> If one were to apply these statistics using the school-aged population estimates for 2021 using the United Nations Population Division data for 2021 and applying the same approach we have taken for this paper, the

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For 2030 we assume two targets for how many children can be reached by school feeding programmes at pre-primary, primary and lower secondary level. These are based on the following assumptions:

- **Scenario A:** Reach 60% of pupils enrolled at pre-primary and primary level and 10% at lower secondary level.
- **Scenario B:** Double the 2021 share of pupils enrolled at primary level who have access to school meals by 2030 for LICs; increase the share of pupils enrolled at primary level who have access to school meals by 1% a year for LMICs; assume the same proportions for the pre-primary level; and 10% of pupils enrolled at lower secondary level.

Based on **Scenario A**, these targets would reach **99.3 million** pupils in LICs and **294.3 million** pupils in LMICs who are enrolled in school by 2030. This is equal to **47%** of total pupils enrolled in pre-primary, primary and lower secondary school in LICs and **39%** in LMICs.

Based on the assumptions of **Scenario B**, **64.0 million** pupils and **255.4 million** pupils would be reached in LICs and LMICs respectively. This is equal to **30%** of total pupils enrolled in pre-primary, primary and lower secondary school in low-income countries and **33%** in lower middle-income countries.

**Table 5a: School feeding targets in 2030 based on Scenario A and Scenario B**

	Scenario A				Scenario B			
	LIC		LMIC		LIC		LMIC	
	%	Mns	%	Mns	%	Mns	%	Mns
Pre-primary	60%	9.3	60%	26.9	37%	5.7	52%	23.1
Primary	60%	84.4	60%	249.3	37%	52.6	52%	214.3
Lower secondary	10%	5.7	10%	18.1	10%	5.7	10%	18.1
<b>All levels</b>	<b>47%</b>	<b>99.3</b>	<b>39%</b>	<b>294.3</b>	<b>30%</b>	<b>64.0</b>	<b>33%</b>	<b>255.4</b>

**Table 5b: Changes in numbers reached through school feeding programmes, 2022-2030**

	Scenario A				Scenario B			
	LIC		LMIC		LIC		LMIC	
	Increase (Mns)	Avg. annual rate of	Increase (Mns)	Avg. annual rate of	Increase (Mns)	Avg. annual rate of	Increase (Mns)	Avg. annual rate of

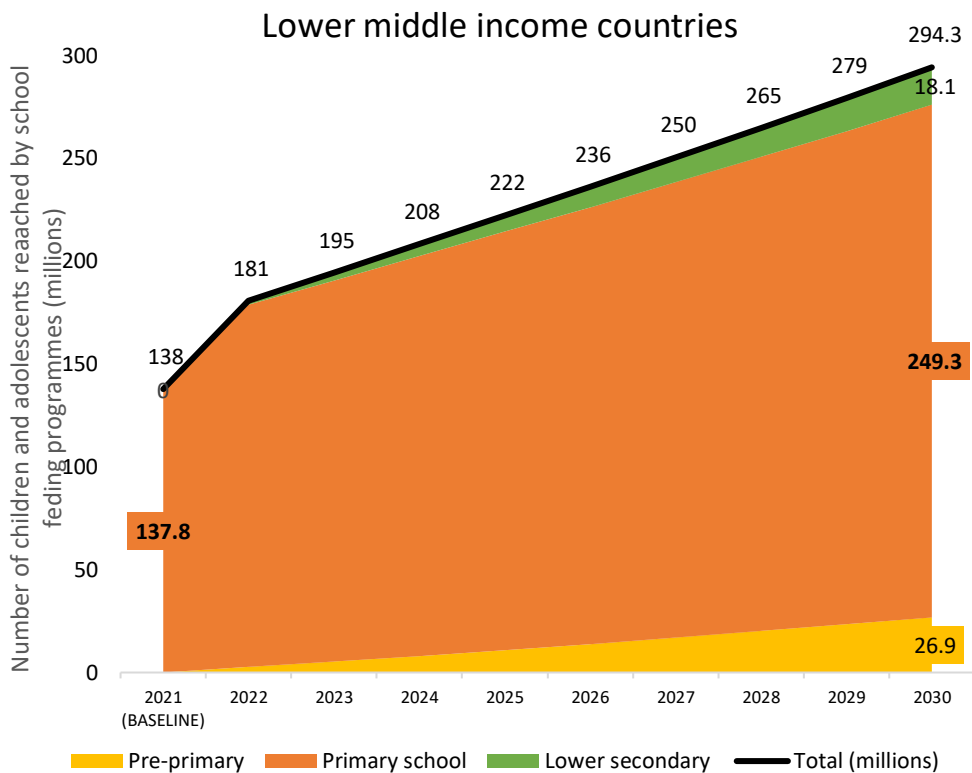
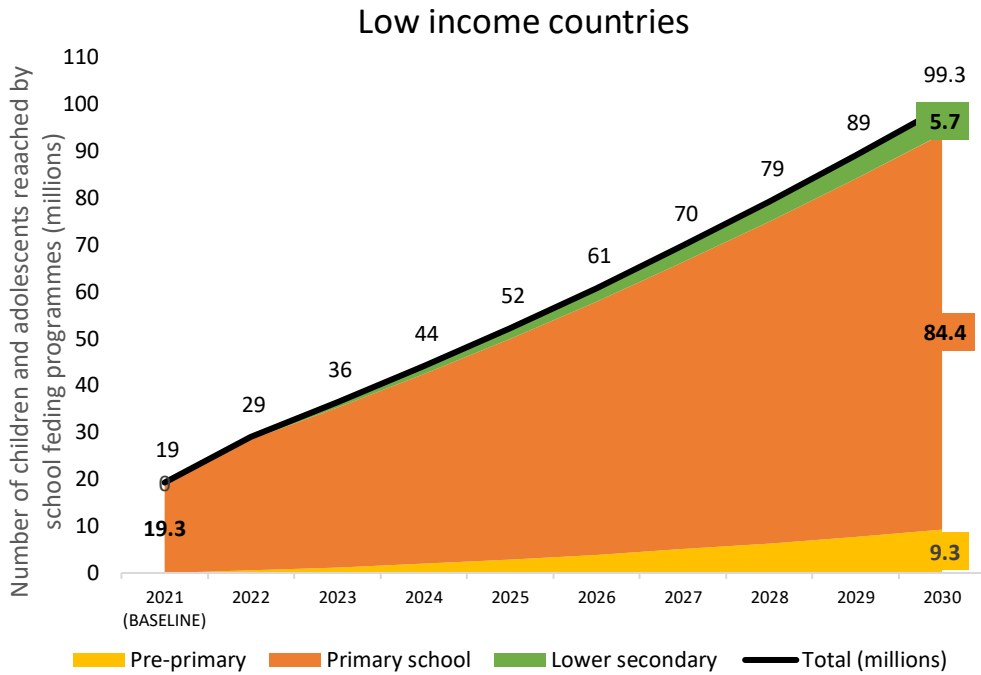
equivalent numbers reached by school feeding programmes would be slightly higher. These would be equivalent to 22.1 million for LICs and 158.4 million for LMICs.

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		Increase (%)		Increase (%)		Increase (%)		Increase (%)
Pre-primary	9.3	208%	26.9	129%	5.7	208%	23.1	129%
Primary	65.1	38%	111.5	18%	33.3	26%	76.5	16%
Lower secondary	5.7	134%	18.1	115%	5.7	134%	18.1	115%
All levels	80.0	43%	156.5	20%	44.7	31%	117.6	18%

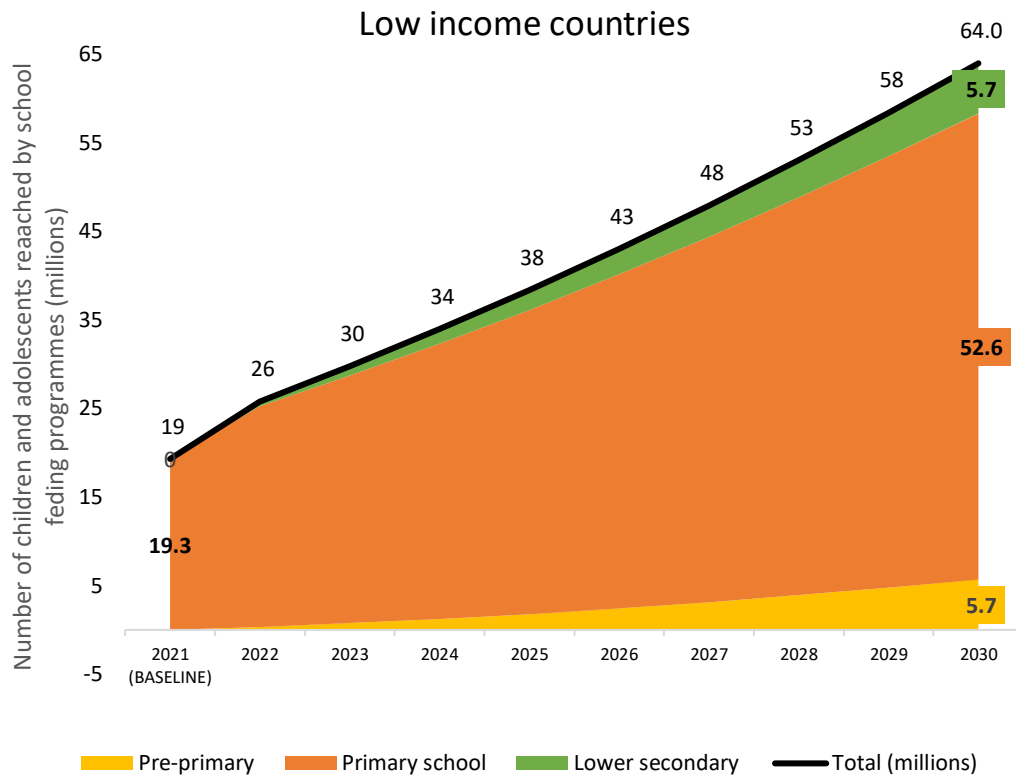
**Figure 4: Projections of numbers reached by school feeding programmes, millions**  
a. *Scenario A*

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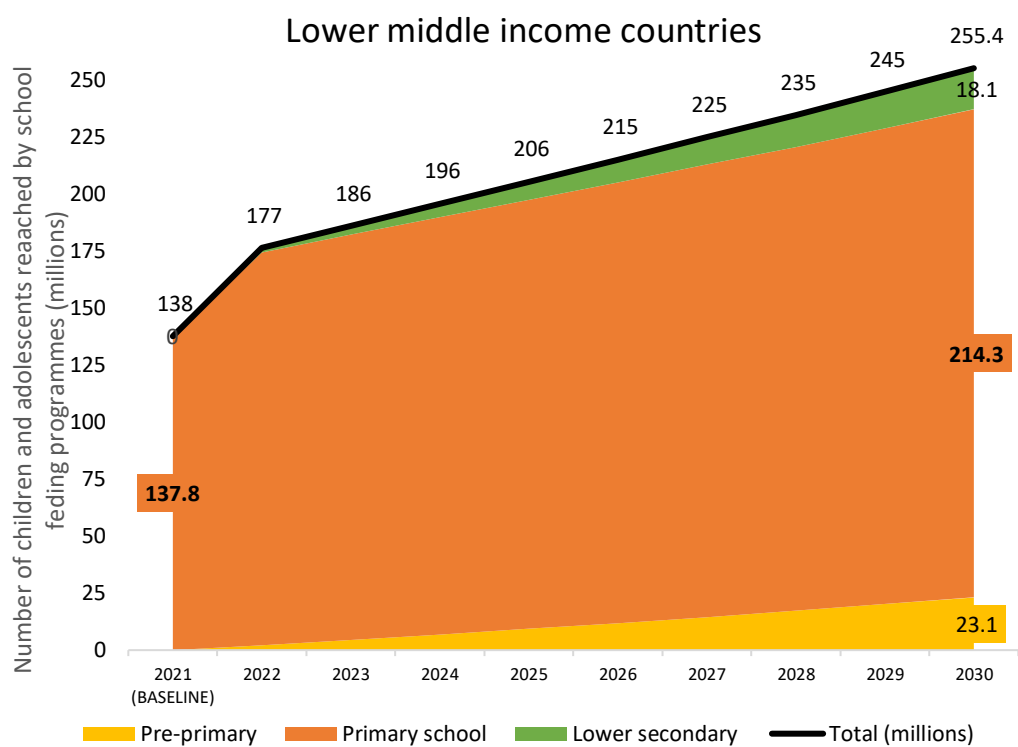
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b. Scenario B



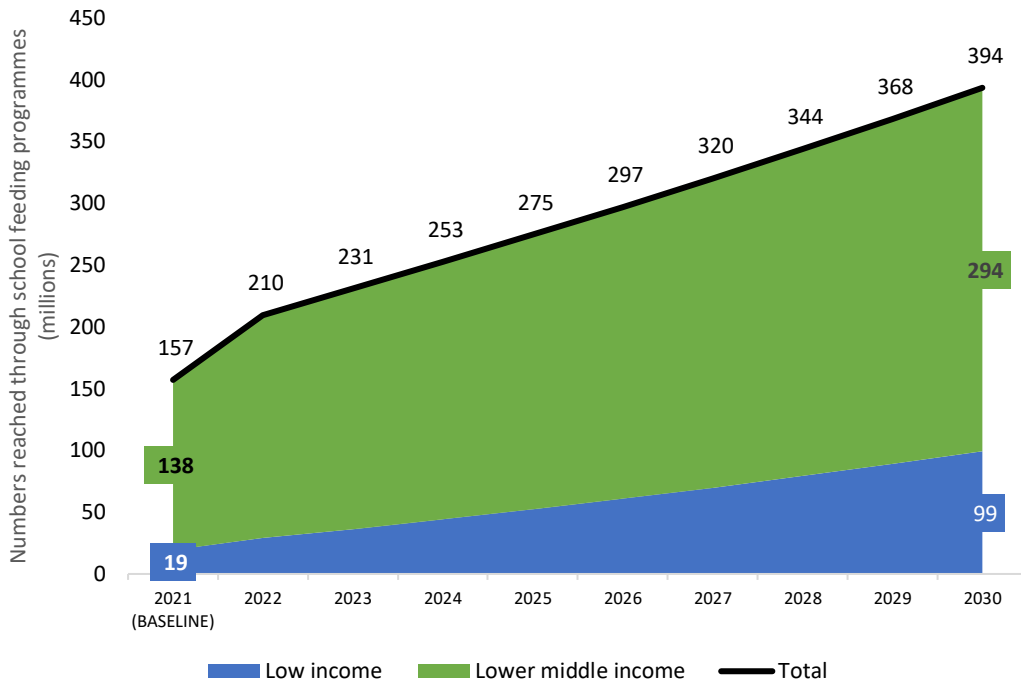


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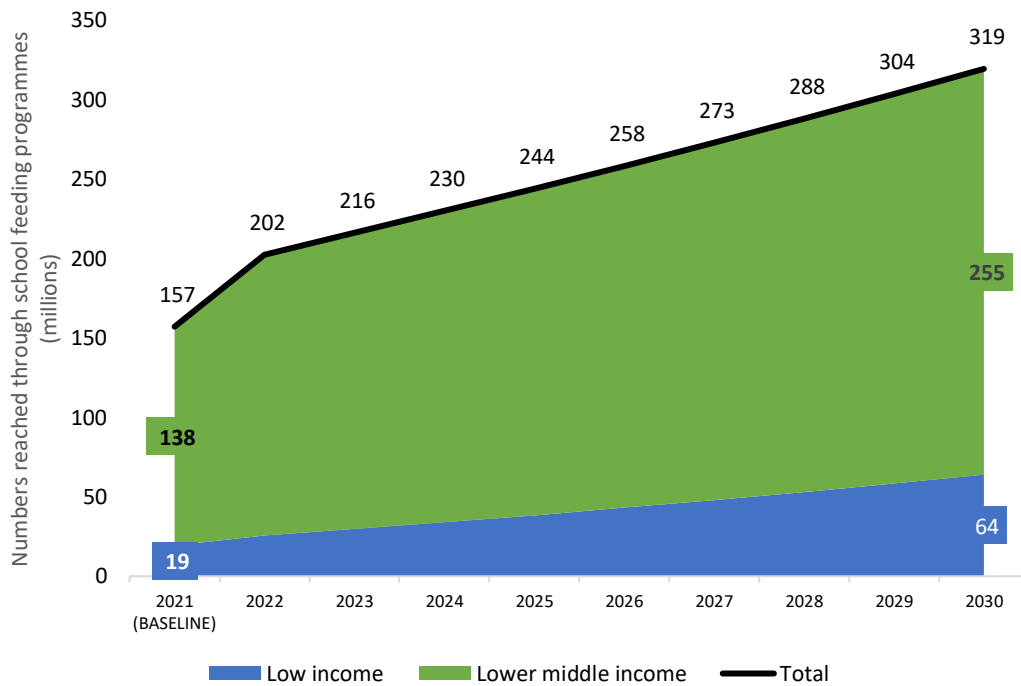


**Figure 5: Projections of numbers reached by school feeding programmes, millions**  
*a. Scenario A*

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*b. Scenario B*



## 4. Equity considerations

**Section 3** presented the assumptions behind Scenario A and Scenario B and the accompanying targets for what percentage of children and adolescents to be reached through school feeding programmes by 2030. However, these targets have not accounted for the differences which define many education systems in LICs and LMICs when it comes to inequity whether that be related to gender, household income, region, disability status or location.

To effectively target school feeding programmes so they reach those most in need, the scenarios that have been presented above would need to be also consider country characteristics. Amongst LICs and LMICs there is huge variation when it comes to, for instance, the progression through the education system of different groups, and where in the system the gaps between marginalised groups and their non-marginalised counterparts become more evident. To underlie this point the technical note takes four country examples (Chad, Malawi, Bangladesh and Bolivia) to illustrate how – from a progressive universalism perspective – policy decisions would need to determine where school feeding efforts would best be suited to reach the most marginalised.

- Typology 1 – Poor primary completion for all children across the system (Chad):** Only **33** out of every 100 students who enrol into primary school complete a whole cycle. While the number is better for students coming from the richest households (**65** out of every 100 students) compared to those coming from the poorest households (**13** out of every 100 students). Most children regardless of household income in the system do not transition to lower secondary education.

*If a country sits within Typology 1, there is a case for directing all of school feeding resources to the primary level and at earlier grades.*
- Typology 2 – Unequal primary completion rates between poorest and richest (Malawi):** In Malawi, for every 100 students from the poorest households who enrolled in primary education only **25** students completed primary education (compared to **77** out of every 100 students from the richest households). For every 100 students from the poorest households who enrolled in primary education, only **15** ends up transitioning into lower secondary education (compared to **67** of their counterparts coming from the richest households).

*If a country sits within Typology 2, there is a case for directing the majority of school feeding resources to the primary level and targeting the poorest students.*
- Typology 3 – Most of the students from the poorest households do transition to lower secondary education (Bangladesh):** For every 100 students from the poorest households who enrolled into primary school, **70** completed primary education and

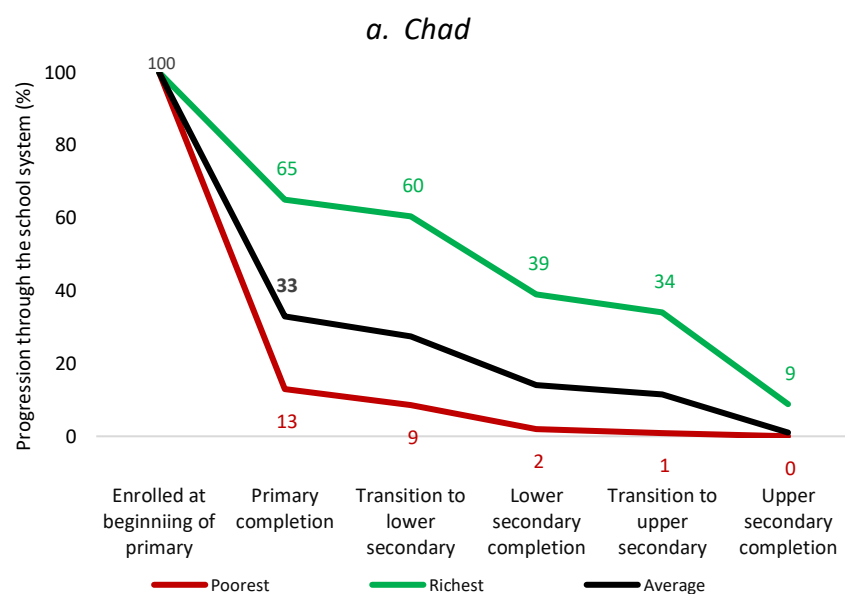
**54** transitioned to lower secondary education (the equivalent for students from the richest households was **92** students completing primary education and **86** transitioning to lower secondary education). However, when it comes to completing lower secondary education only **33** of the 100 students originally enrolled at primary level manage to do so (compared to **77** for students from the richest households).

*If a country sits within Typology 3, there is a case for targeting school feeding resources to the poorest students at both primary and lower secondary level.*

- **Typology 4 – Most pupils complete primary and lower secondary education (Bolivia):** For every 100 pupils from the poorest households who enrol in primary school, **81** end up completing lower secondary education and **70** transition to upper secondary education. The gaps between students from the poorest and richest backgrounds really starts to emerge at the upper secondary level.

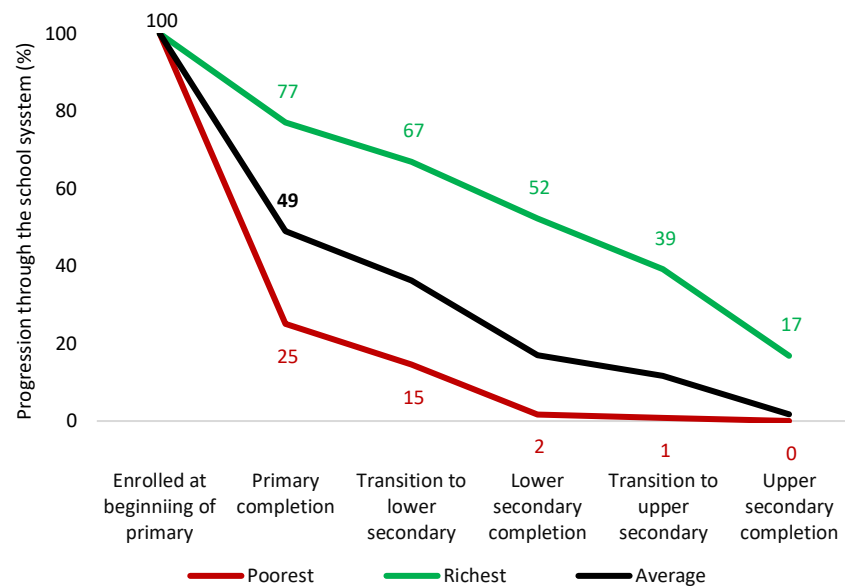
*If a country sits within Typology 4, there is a case for targeting school feeding resources to the poorest students at both primary and lower secondary level.*

**Figure 6: Progression throughout the education system for poorest and richest, latest year**

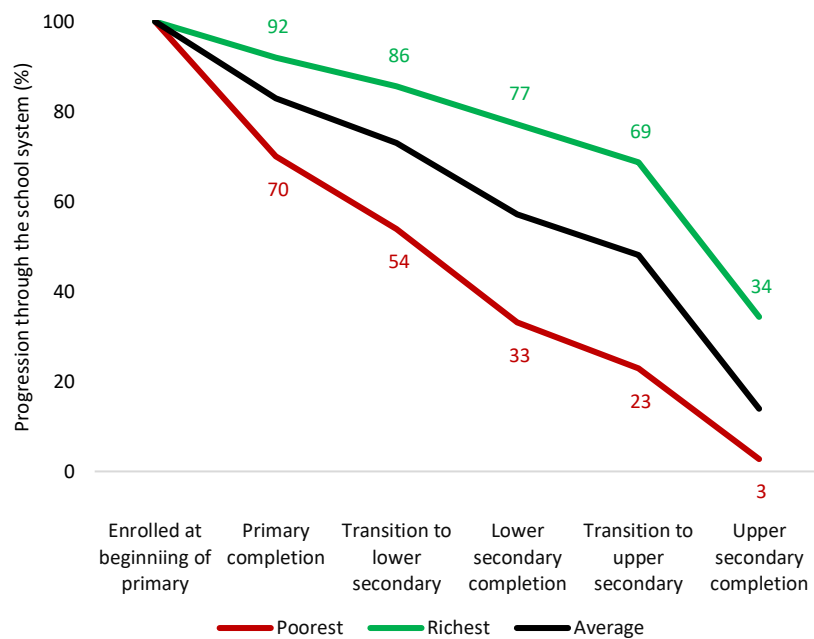


*b. Malawi*

Looking to 2030 – a projection of school participation profiles for school feeding programme: Technical background paper for the Sustainable Finance Initiative (February 2024)

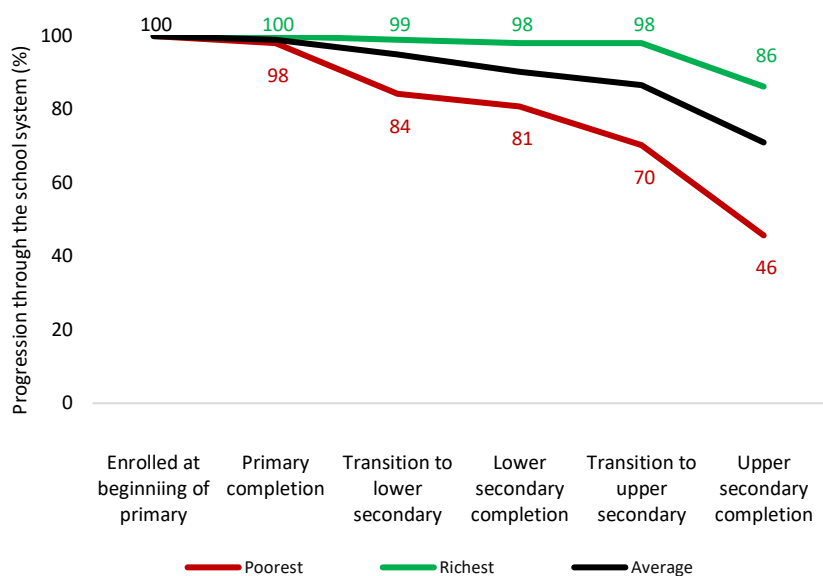


*c. Bangladesh*



*d. Bolivia*

Looking to 2030 – a projection of school participation profiles for school feeding programme: Technical background paper for the Sustainable Finance Initiative (February 2024)



Note: Data has been sourced from the most recent household data for all four countries. However, transition data is not available from the latest household data surveys meaning the report has taken this data from the latest report for which it was available.