EDUCATION CANNOT WAIT

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Global Estimates:
Number of crisis-affected children and adolescents in need of education support

About This Publication

This methodological note was prepared between March and May 2022 by Matteo Valenza (ECW), Christian Stoff (ECW) and Haogen Yao (UNICEF), with extensive feedback from the INEE reference group on Education in Emergencies (EiE) data, specifically (in alphabetical order) by: Benoit d'Ansembourg (UNHCR), Artur Borkowski (UNESCO), Christelle Cazabat (IDMC), Cirenia Chavez Villegas (UNHCR), Marie-Amandine Grand (Global Education Cluster), Sébastien Hine (UNESCO-IIEP), Yuki Murakami (GEM report), Nicolas Servas (Global Education Cluster), and Bindu Sunny (UNESCO).Valuable comments and feedback were received from additional partners and colleagues including Ameer Dharamshi (GEM Report), Amélie A. Gagnon (UNESCO-IIEP), and Suguru Mizunoya (UNICEF).

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About Education Cannot Wait

Education Cannot Wait (ECW) is the United Nations global fund for education in emergencies and protracted crises. We support and protect holistic learning outcomes – so no one is left behind.

ECW works through the multilateral system to both increase the speed of responses in crises and connect immediate relief and longer-term interventions through multi-year programming. ECW works in close partnership with governments, public and private donors, UN agencies, civil society organizations, and other humanitarian and development aid actors to increase efficiencies and end siloed responses. We urgently appeal to public and private sector donors for additional funding to reach even more crisis-affected girls and boys.

ECW is administered under UNICEF's financial, human resources and administrative rules and regulations; operations are run by the Fund's own independent governance structure.

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Abstract

Estimating the number of out-of-school children (OOSC) and the number of children in need of education support in humanitarian crises poses several methodological challenges. Definitions of what constitutes a "crisis" are often not consistently or clearly defined; OOSC rates often do not capture crisis-affected areas at the subnational level; populations such as forcibly displaced refugees, IDPs or asylum seekers are ignored in OOSC estimates, and even when OOSC rates may be disaggregated to include hard-to-reach groups, the fast-changing conditions in humanitarian theaters are such that estimates can become outdated quickly, and of little practical use. In addition, data on learning outcomes specific to humanitarian emergencies are rarely available.

This note proposes a new methodology that leverages the latest, most granular available data on crisis severity [based on ACAPS' INFORM severity index], children with functional difficulties [UNICEF], forcibly displaced children [IDMC and UNHCR], out-of-school rates [UNESCO Institute of Statistics / UNICEF] and data from learning outcomes from UNICEF MICS surveys, PISA-D and TIMSS databases to estimate of the number of out-of-school children in emergencies and the number of crisis-affected children who may not be learning, and hence need urgent educational support.

We find that about 222 million school-aged children are affected by crises globally. These 222 million children are on a spectrum of educational needs: about 78.2 million (54% females, 17% with functional difficulties, 16% forcibly displaced) are out of school, while 119.6 million are not achieving minimum proficiency in reading or mathematics by the early grades, despite attending school. Another 24.2 million are in pre-primary school or in primary or secondary school achieving minimum proficiency in mathematics or reading but still affected by crises and in need of support. Pre-COVID, only 9% of crisis-affected children achieved minimum proficiency n mathematics and only 15% of crisis-affected children achieved minimum proficiency in reading in the early grades. These are lower bounds estimates: initial analyses suggest that COVID-induced learning losses are more pronounced amongst the poorest and amongst those who were already lagging in terms of learning prior to the pandemic, two categories that typically include children in crises.

This innovative methodology can provide consistent cross-country measurement of education outcomes for children in crises, relying on high levels of granularity and disaggregation, while allowing flexible integration of new research and new data as it becomes available in fast-moving crises. The estimates can be updated at a high frequency (as frequently as monthly) with crisis-specific data, and estimates can be adjusted accordingly to reflect the evolution of crises at subnational level.

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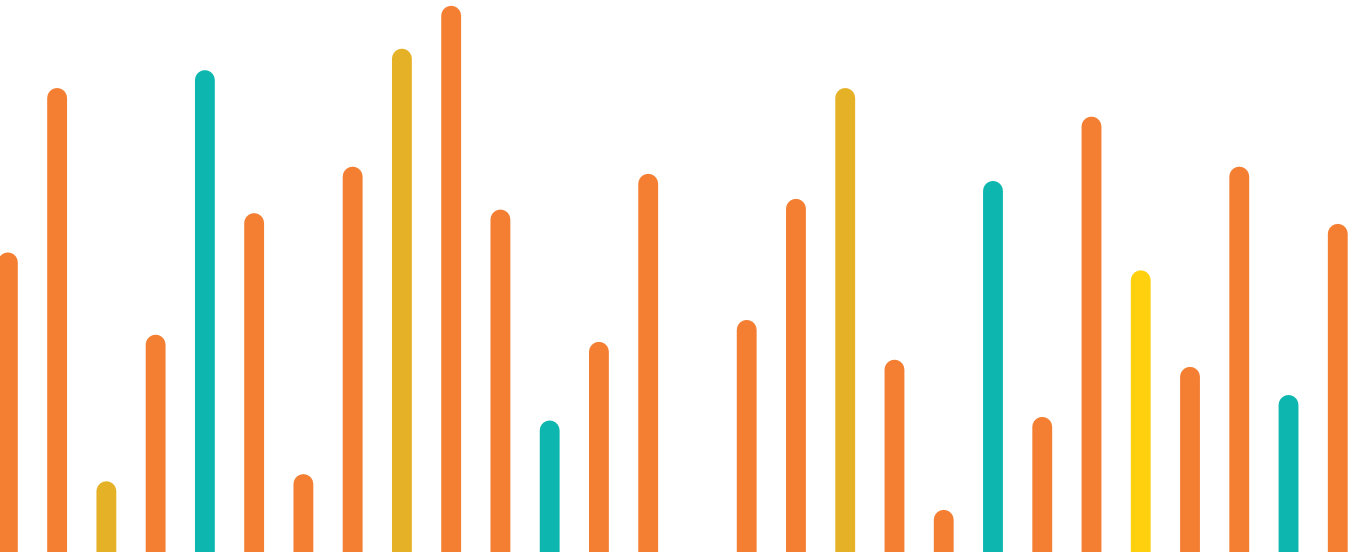


1. Introduction

Global data on the scale and severity of the impact of crises on the education needs of affected children and adolescents is key to inform advocacy and guide programming. In recent years, several estimates and statements were released on both the number and the learning needs of crisis-affected children as well as on the type of educational support they require. However, these estimates and statements have not always been consistent since they reflected different methodologies and data sources. As a result, ambiguity remained amongst EiE actors on how many children were to be considered as crisis-affected globally, how many were out of school, and what their respective education needs were. This ambiguity rendered the needs of crisis-affected children and adolescents less visible and harder to monitor, and hindered advocacy and programming efforts to address children's educational needs.

Against this backdrop, ECW and its partners in the INEE reference group on Education in Emergencies (EiE) data developed a new methodology to estimate:

a) the number of out-of-school children in emergencies (OOSCiE) from one year before the theoretical age of entry in primary school to the end of the secondary cycle;
b) the number of school-age, crisis-affected children and adolescents in need of educational support.

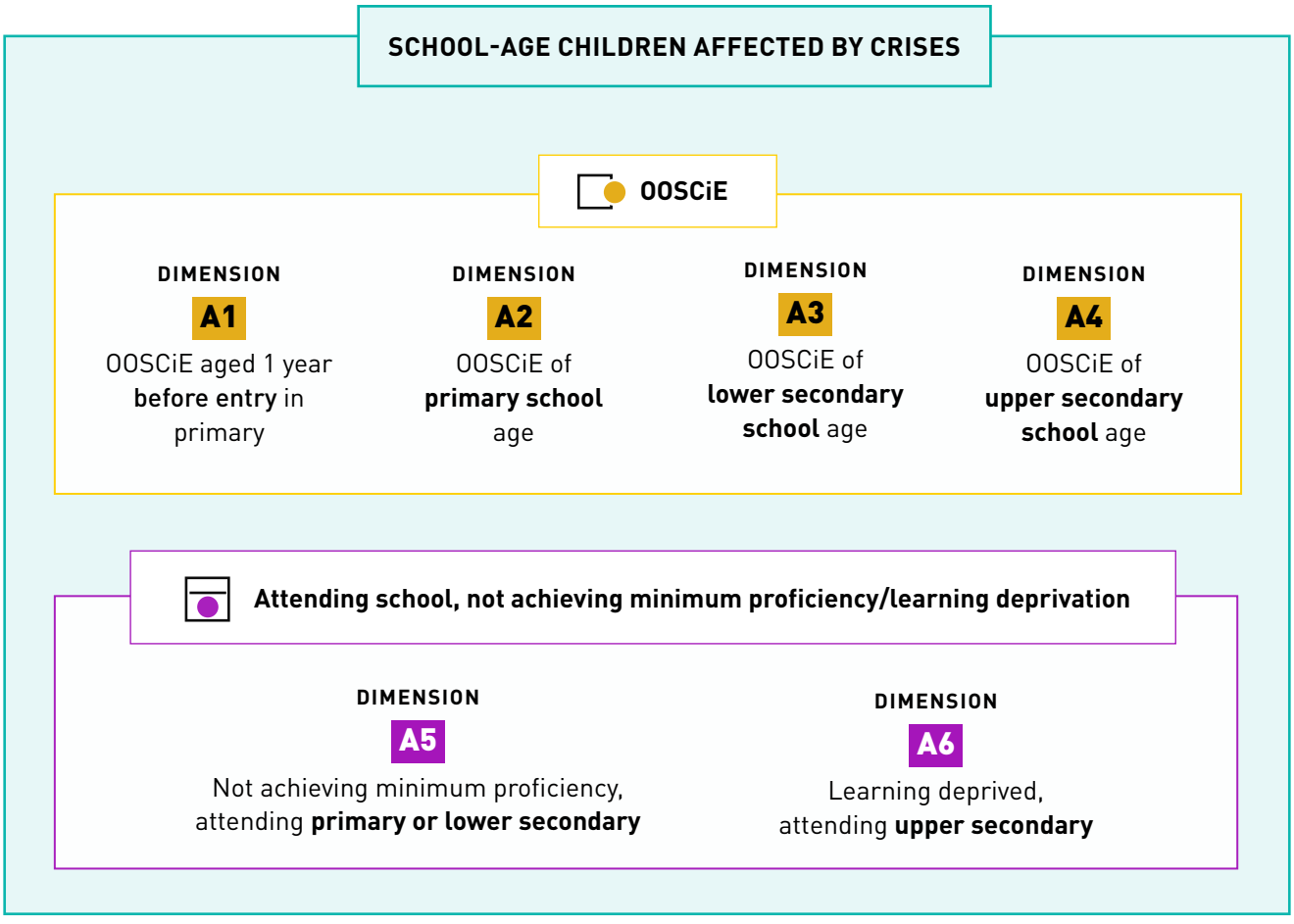
The objectives of this exercise are the following:

- Reach a shared understanding of the size of the population of OOSCiE;
- Reach a shared understanding of the number of children and adolescents in need of educational support in crises;
- Justify and advocate for targeted action on crisis-affected children and adolescents in need of educational support, especially in the case of forgotten and protracted crises;
- Monitor trends in the number of OOSCiE over time, countries and crises;
- Provide indicative estimates of how many children caught in crises may not be learning;
- Identify data gaps specific to the Education in Emergencies (EiE) space.
- Provide recommendations to improve data collection and analysis in EiE.

2. Methodology

The proposed methodology leverages several existing datasets and methodological approaches via a "building block" approach, in the attempt to leverage high-quality, pre-existing data sources and methodologies to enable the most precise and reliable estimates, without collecting primary data.

Definitions, concepts, and methodological choices in this note are aligned to the possible extent to the forthcoming manual of the out-of-school children initiative (UNICEF et al). In a somewhat similar fashion to the "seven dimensions" model of the new OOSCI manual[1], the methodology, which we would be referring to as the "A+6" methodology, considers the following "six dimensions" model for crisis-affected children – hence the "A" for "affected" prefix on each dimension:



1 A1-A3 match D1-D3 of the general Out of school Children Initiative (OOSCI) framework (see https://www.allinschool.org/); A4 matches D6; A5 relates to D4-D5; and A6 relates to D7.

Children in each of the four OOSCiE dimensions (A1 to A4) are disaggregated as follows:

	Non-forcibly displaced, crisis-affected	Refugees	IDPs	Asylum seekers and refugee-like populations
Sex *male, female*	✓	✓	✓	✓
Education cycle *one year before primary, primary, lower secondary, upper secondary*	✓	✓	✓	✓
Children with / without functional difficulties	✓	✗	✗	✗

Estimating number of OOSCiE children in emergencies

The estimation of the global population of OOSCiE (dimensions A1 to A4) follows four key steps:

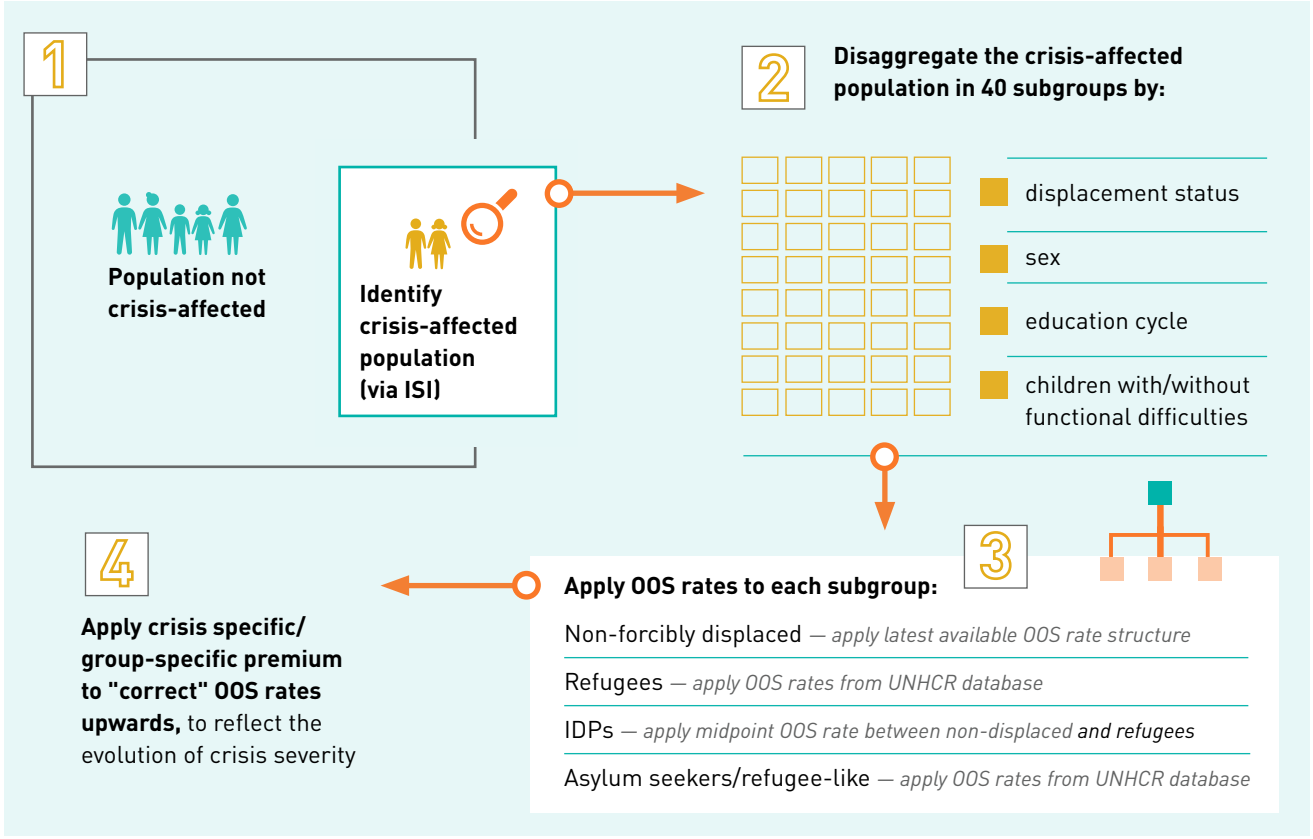
1 **Identification** of crises that have the potential to affect access to education;

2 estimation of crisis-affected population by sex, functional difficulty, education cycle, displacement status.
This results in a **disaggregation in 40 subgroups** of crisis-affected children;

3 For each of the 40 subgroups, **estimation of sub-group-specific OOS populations**, based on the latest available data and research;

4 **estimation of crisis-specific premium to revise the OOSC rates**, whenever either of the following:
a) a large-scale shock with the potential to drive dropout for the school year to come takes place;
b) the latest available OOSC rates are outdated in the face of a significant worsening of the crisis, as indicated by the Inform Severity Index (ISI)[2].

The key steps are articulated in the following infographic:



2 The INFORM Severity Index (ISI) attempts at estimating the severity of humanitarian crises in an objective and comparable manner. The index is built on highly granular, crisis-specific information from a range of credible, publicly available sources, such as UN agencies, governments, and multilateral organizations. The ISI is an open and free tool updated monthly. We consider all crises included in the ISI since January 2019, when the index was first published.

Each step is articulated in sub-steps, as follows.

STEP 1.

Identification of crises with the potential to affect access to education.

The ISI offers an updated and granular database for identification of crises globally. Based on the ACAPS definition of "crisis-affected" population (levels 2 to 5, see figure 1), we assume that all "crisis-affected" children – according to the ISI dataset – can be characterized as being on a spectrum of educational needs. Only crises with ISI > 2 are considered, to exclude small-scale, low-intensity crises with very low potential to drive large numbers of children out of school beyond the school year of reference. We also exclude crises in China, in all OECD countries (except for Chile, Colombia and Turkey, since they are experiencing major refugee influxes) and in the Russian Federation: it is assumed that in these countries national systems can cope with local crises. No crisis in these countries has ever displayed an ISI larger than 2.5 since the ISI is being issued (Jan 2019).

STEP 2.

Estimation of crisis-affected population by sex, functional difficulty, education cycle, forced displacement.

A breakdown of the population affected by crises (for each crisis identified by the Inform Severity Index over the period Jan 2019-Feb 2022) is estimated by country, following the disaggregation in the table below, resulting in a disaggregation of the global crises-affected populations in 40 subgroups.

Children in each of the four OOSCiE dimensions (A1 to A4) are disaggregated as follows:

	Non-forcibly displaced, crisis-affected	Refugees	IDPs	Asylum seekers and refugee-like populations
Sex *male, female*	✓	✓	✓	✓
Education cycle *one year before primary, primary, lower secondary, upper secondary*	✓	✓	✓	✓
Children with / without functional difficulties	✓	✗	✗	✗

We follow these sub-steps:

- **Leveraging the ISI, we construct a database of all crises that took place globally since January 2019.** Since ISI records all crises globally regardless of intensity or duration, we assume that only crises in middle-income and low-income countries with an ISI value greater than 2 have potential to cause repercussions on the OOSC in the following academic year. This assumption allows to focus the analysis on countries with large volumes of children in need. When relaxed, this assumption has minimum effect on global estimates (about 1% variation in the stock of crisis-affected children). Leveraging the granularity of ISI is particularly strategic as ISI provides both a classification and a large amount of information specific to the crisis, reviewed by human analysts at ACAPS to ensure cross-country consistency of estimation. One key advantage is that ISI identifies the percentage of the country population affected by crises, for each crisis in each country (see figure 1).

- The national school-age population was identified following the structure of education cycles from "1 year before primary" until the end of upper secondary via the ISCED mappings from the UIS online databases.

- Using data from UN/DESA we estimate for each country the proportion of children of 3-5 years of age, to be able to provide an additional, auxiliary estimate for this age group[3];

- Data from UNCHR and IDMC provides the latest available estimates of refugees, asylum seekers and IDPs, by age group[4].

- UNICEF MICS (Multiple Indicator Cluster Surveys) data provide estimates of the percentage of children with functional difficulties, by age group[5].

Whenever a country had missing data, a neighboring country with a similar ISI index has been used for imputation[6].

- Based on the ACAPS classification of "humanitarian conditions", we report the ACAPS estimate of crisis-affected populations as the sum of people living in levels 2 to 5 (ref. to ISI and ACAPS guidance notes – see figures below)[7]. The figures from ISI offer the strong advantage that human analysts review country-specific data following pre-defined guidelines to ensure comparability and consistency in the totals of individuals placed in each "level", as shown in fig. 1.

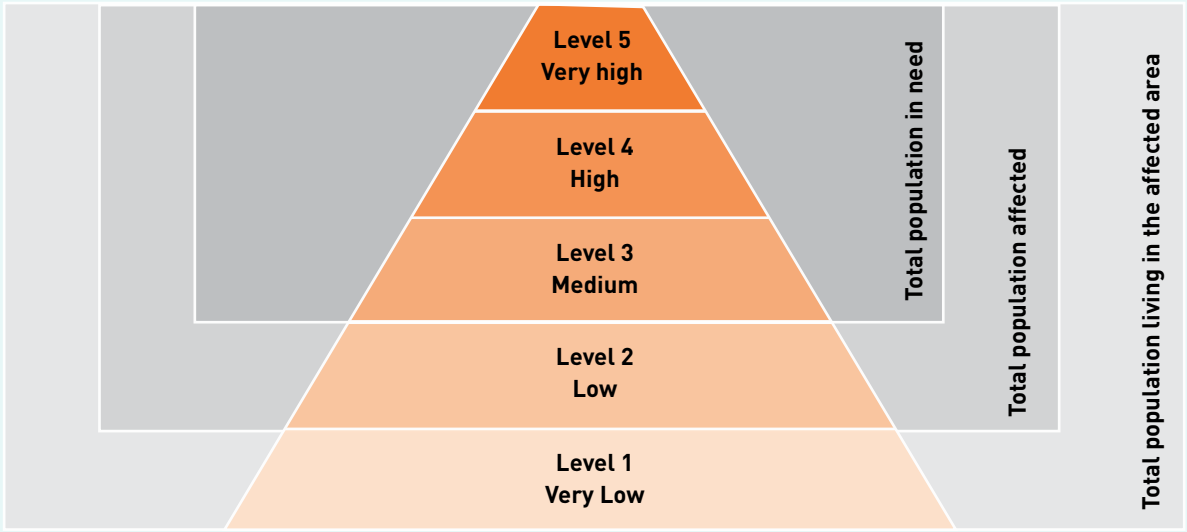
- We apply to the crisis-affected population the percentages of school-age children by level, from one year before primary to the end of upper secondary, to estimate the crisis-affected proportion of school-age children in each crisis/country.

- The number of asylum seekers in each education level is N/A; we assume that the asylum seekers and refugees have the same age distribution and the same distribution in each education level. Likewise, it is assumed that the IDP population follows the same age distribution as the general population.

- Estimating the number of IDPs in each crisis has been challenging. We used the following routine: we leverage the IDMC-provided[8] figure in ISI; if unavailable, we refer to the latest IDMC data for the crisis-affected country. If crisis is a conflict, we use the total stock of IDPs attributable to the conflict, following the available disaggregation in IDMC databases; if the crisis is natural disaster we use the disaster-related figure, following the available disaggregation in IDMC databases.

3 This auxiliary estimation was requested by ECW in connection with the preparation of its new strategic plan.
4 Some data needed cleaning and manipulation, for example raw data from UNHCR comes with a slightly different age group categorization: 2-4, 5-11, 12-17. Data has been adjusted accordingly to be aggregated across the same education levels for forcibly displaced and non-forcibly displaced alike.
5 Data came for children 2-4 and 5-17. Data has been adjusted accordingly to be aggregated across the same education levels.
6 See worksheet "CwFD Seen counted included" in the accompanying Excel file. The data comes from the 2021 UNICEF report "Seen, counted, included".
7 We sometimes make adjustment to this figure when it seems excessive (e.g. in the case of Tanzania, where ISI overestimates the affected population in host communities), or when the information in ISI is somewhat inconsistent (e.g. in the case of DRC, where it is unclear if the full country is considered "affected"). See comments in the "OOSC estimates" worksheet, column AA for country-specific details.
8 IDMC is the official source of global data (i.e. internationally comparable) as mandated by UN General Assembly.

FIGURE 1. CLASSIFICATION OF HUMANITARIAN CONDITIONS, ISI AND ACAPS[9]



Level 5 Extreme humanitarian conditions: People are facing extreme shortages or availability and accessibility problems in regards to basic services. Widely accepted fact that deaths have been reported due to the humanitarian situation, widespread mortality. People face a complete lack of food and/or other basic needs and starvation, death, and destitution are evident; and acute malnutrition is widely reported. They may face grave human rights violations.

Level 4 Severe humanitarian conditions: People are facing significant shortages and/or significant availability and accessibility problems in regards to basic services. People face severe food consumption gaps and have started to deplete their assets or already face an extreme loss of assets. This may result in very high levels of acute malnutrition and excess mortality. Presence of irreversible harm and heightened mortality as well as widespread grave violations of human rights.

Level 3 Moderate humanitarian conditions: People are facing shortages and/or availability and accessibility problems in regards to basic services but they are not life-threatening. Significant food consumption gaps are visible or people are marginally able to meet minimum food needs only with irreversible coping strategies. As a result of shortages and disruption of services, may face potentially life-threatening consequences if not provided assistance. People may also facing malnutrition. There may be physical and mental harm in populations resulting in a loss of dignity.

Level 2 Stressed humanitarian conditions: People are facing some shortages or/and some availability and accessibility problems in regards to basic services. People have some food gaps and food consumption is reduced but adequate are able to meet minimum food needs by applying coping strategies. There are strains on livelihoods. Needs are more increased but are still not life-threatening. There may exist localized/targeted incidents of violence and/or human rights violations.

Level 1 None/Minor humanitarian conditions: People are facing none or minor shortages or/and accessibility problems regarding basic services. People are able to meet food and other basic needs without having to apply to irreversible coping strategies. There may be some needs but are not life-threatening.

9 Source: Poljansek, K., Disperati, P., Vernaccini, L., Nika, A., Marzi, S. and Essenfelder, A.H., 2020, INFORM Severity Index, EUR 30400 EN, Publications Office of the European Union, Luxembourg, 2020.

STEP 3.

Estimation of subgroups of OOSC by sex, functional difficulty, education cycle and displacement type based on the latest available data and research.

Using available data from the UIS (online databases), UNHCR (internal database on education indicators) and UNICEF (MICS6), we estimate the population of OOSC in each crisis/country, for each of the 40 subgroups identified under step 1. We follow the sub-steps listed below:

- We use OOSC rates calculated from MICS6 survey data collected in or after the school year 2017/2018, since these offer a very useful disaggregation by sex, level, and functional difficulty.
- If the OOSC rate is N/A, we use the latest available OOSC rate reported on the online database of the UIS, from administrative data.
- If the OOSC rate is still N/A, we use the latest available OOSC rate reported on the online database of the UIS, from HH survey data preceding 2017.

This routine allows estimation of about 80% of the OOS rates needed at the desired disaggregation level; yet, in certain protracted crises (Syria, Somalia, Libya, amongst others), recent[10] estimates of OOS rates, either from household surveys or administrative sources, remain unavailable. To provide an evidence-driven educated guess, for these countries we input the average of the OOSC rates by sex and education level in crises with an ISI between 4.5 and 5, weighted by the relative school age population. OOS rates are unavailable also for some additional, less severe crises (ISI between 3.5 and 4.5); we use the same logic to calculate an average OOS rate structure for "mid-tier" crises, to estimate an OOS rate for each education level and disaggregated by sex.[11]

Disaggregated OOS rates for children with functional difficulties is not available before primary, so we assume the same OOS rate for children with functional difficulties and children without functional difficulties. In countries where OOS rates for children with functional difficulties are unavailable, we use a neighboring country in the same income group with a similar ISI and an available data point.

OOS rates specific to IDPs are generally not available. To accommodate, we take the midpoint between the OOS rate of non-displaced nationals for the same age group and the OOS rate for refugees in the country of reference, for every level of education. E.g. if the OOS rate for primary for nationals is 20% and OOSC rate for refugees is 40% for the same age group, we input an OOS rate of 30%. This can be justified by the fact that IDPs share some characteristics with refugees and some characteristics with national, non-displaced children.[12]

10 "Recent" here means from 2017 onwards.
11 Each inputting decision is detailed in the accompanying worksheet.
12 This assumption may need refinement in forthcoming rounds, as it could lead to a potential overestimate of IDPs, especially in middle-income countries, where national systems can be more resilient to re-absorb internally displaced children in national education systems.

STEP 4.

Estimation of crisis-specific premium – COVID-19 pandemic[13]

The estimation of OOSCiE is constructed on a matrix of subgroup-specific OOS rates, hence it allows to correct upwards pre-crisis OOS rates, via additional crisis-specific or sub-group specific premiums. This feature of the methodology can be leveraged to calculate a crisis-specific premium for the effects of COVID-19 on school attendance. Based on available research on effects on access to education of Ebola outbreaks, we estimate a "COVID-19 premium" for each country, proportional to the number of weeks of school closures in each country, to obtain an educated guess on COVID 19-induced increases in OOS rates.

In comparable situations in the past, 25% of students in Sierra Leone and 13% of students in Liberia did not return to school after the Ebola outbreak[14]. In Guinea, girls were 25% less likely than boys to enroll in secondary school compared with pre-crisis levels, and in Sierra Leone's most affected communities, girls were 16% less likely to be attending school after school reopening. In the DRC, Ebola outbreaks in 2018 seem to have a similar effect, with about 80% of children returning to formal education in the aftermath of Ebola-induced school closures[15]. For our premium estimates, we consider the Sierra Leone estimate of 16% "no-return-upon-reopening" rate as a reference point for girls of upper secondary education. We then take the average structure of OOSC rates across crises, weighted by the school-aged population, to obtain the following set of premiums for "worst case scenario" COVID-19-induced effects (we assume no effects on children younger than primary school age, since data is least accurate for this group, and in most crisis-affected countries pre-primary education is not compulsory):

TABLE 1. COVID-19 PREMIUM STRUCTURE

COVID-19 premium:					
Primary, male	LS, male	US, male	Primary, female	LS, female	US, female
3.9	6.9	12.7	4.3	7.2	16.0[16]

Since this is an estimated, "worst-case scenario" premium, we assign this set of values to the country with the longest school closure (according to the UNESCO database of school closures), namely Uganda, which kept schools closed for more than 65 weeks since the start of the pandemic. We then assign a premium to all the other countries in our dataset, relative to Uganda, in function of the length of school closures in each country. This translates to a total of 4.8 million additional OOSC that we may consider attributable to COVID-19 effects in crisis-affected contexts. This estimate could be considered as an "upper bound" for COVID-19 short-term effects on school enrolment in crises.

13 In future iterations, premiums can be added to reflect likely sudden increases in OOS rates, for any crisis, based on similar assumptions. This premium is intended to capture the compounded effects of COVID-19 on school attendance.

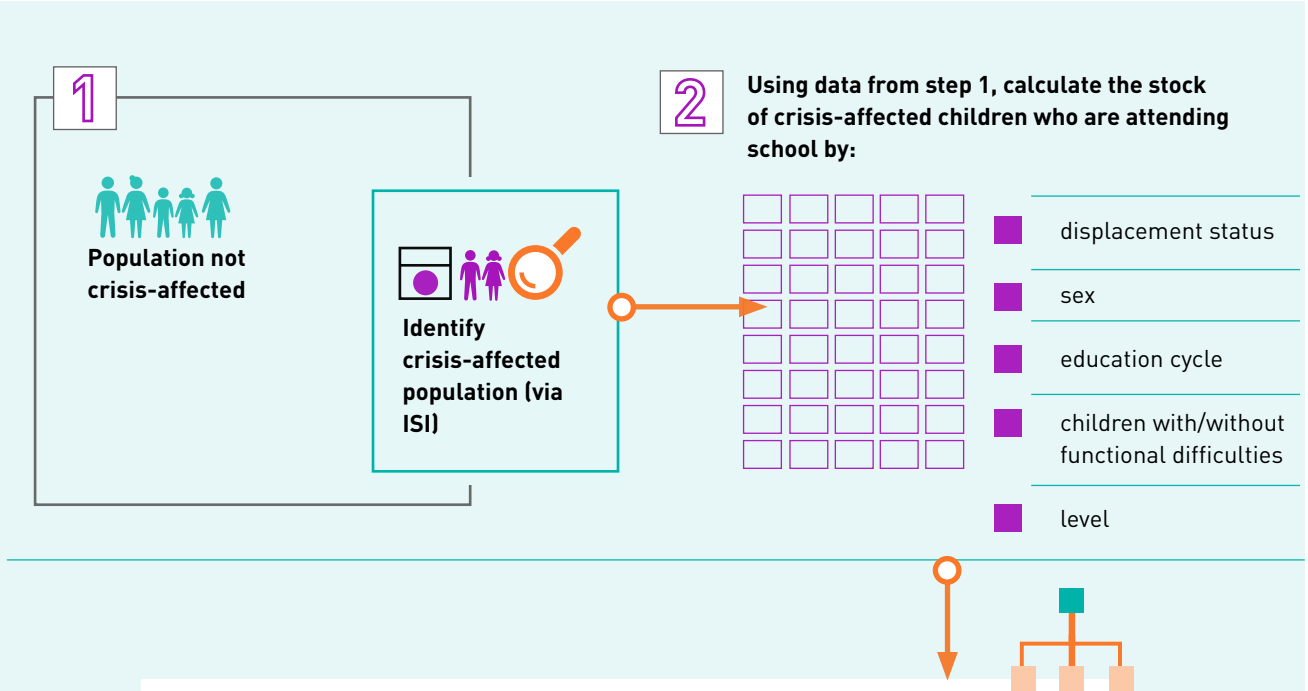
14 World Bank (2015), The socio-economic Impacts of Ebola in Liberia and Sierra Leone (https://www.worldbank.org/content/dam/Worldbank/document/Poverty%20documents/Socio Economic%20Impacts%20of%20Ebola%20in%20Liberi a%2C%20April%2015%20(final).pdf

15 https://www.unicef.org/press-releases/80-cent-school-children-returned-school-ebola-affected-areas-democratic-republic

16 Based on World Bank (2015), "The socio-economic Impacts of Ebola in Liberia and Sierra Leone".

Measuring learning deprivation among crisis-affected children and adolescents

Global population of children living in **dimensions A5** – namely those who did not achieve a minimum proficiency level in mathematics or reading, attending primary or lower secondary – and **A6** – namely those living in "learning deprivation" and attending upper secondary – were estimated according to the steps illustrated in the following infographic:



3 **Apply existing proxies** to quantify the number of crisis-affected children who are attending school but are not learning:

4 **Attending primary or lower secondary->** share of children not achieving minimum proficiency levels in reading and mathematics;
"learning in crises" premium calculated under the assumption that learning outcomes of a child in crisis ~ learning outcomes of a child in the lowest quintile of the wealth distribution

5 **Attending upper secondary->** learning deprivation based on PISA-D and TIMSS data in middle-income countries;
"learning in crises" premium calculated under the assumption that learning outcomes of a child in crisis ~ learning outcomes of a child in the lowest quintile of the wealth distribution

1

STEP 1
calculate the stock of crisis-affected children attending school, based on the OOSCiE estimates made for dimensions A1 to A4.

2

STEP 2
calculate a "learning-in-crises" (LiC) premium, per country, corresponding to the **differential between the value of the poorest quintile of the wealth distribution and the average value** of the proportion of children achieving at least minimum proficiency in reading in grade 2 or 3. Both values are routinely available in MICS reports. The underlying key assumption is that a crisis-affected child and **a child from a household in the bottom quintile of the wealth distribution have the same learning outcomes**. This assumption may not be optimal – e.g. in settings in which the wealth distribution is quite flat (leading to a likely underestimate of the premium), or in the case of sudden-onset crises affecting relatively well-off households (leading to a likely overestimate of the premium) – yet this escamotage provides an opportunity to attempt estimation of a "learning in crises" premium whose calculation would otherwise be even more complex and assumption-heavy.

Whenever the data point was not available for a country, the following routine was followed:
a) the LiC premium was calculated for the proportion of children achieving at least minimum proficiency in mathematics at the end of the primary cycle, or missing that, in reading at the end of the primary cycle.
b) if the data is still unavailable, a similar country in the region with a similar ISI score and an available data point was chosen.

3

STEP 3
calculate the proportion of children in crises who are not learning by applying the LiC premium to the national average of the proportion of children achieving at least minimum proficiency in reading in grade 2 or 3, calculated under the previous step.

4

STEP 4
calculate the proportion of school-age, crisis-affected children who are not achieving a minimum proficiency level in mathematics and reading in the early grades – and thus need remedial education, at least – by applying the LiC premium to the stock of children in dimensions A2 and A3. This calculation returns the estimates of the proportion of school-age, crisis-affected children who are not achieving a minimum proficiency level in mathematics and reading in the early grades. **The rationale is that the proportion of school-age, crisis-affected children who are did not achieve minimum proficiency levels by grade 3 acts as a proxy for the performance of an education system to timely deliver learning in the early grades**[17] **and as a consequence, acts as a proxy for the need of provision of remedial education.** In other words, if a child does not reach minimum proficiency by the early grades, s/he is unlikely to catch up quickly, and consequently it is assumed that s/he will still need remedial education until the end of lower secondary, even if s/he will - in absolute terms - keep on learning.

17 Data on reading and mathematics are collected for children aged 7 to 14 years old; the calculations reflect this age disaggregation to fully exploit the available data. While the indicator can in theory be calculated for children of a given age group (or all age groups) who are attending a particular grade, this would reduce dramatically sample size and consequently, the precision of the connected estimates.

5

STEP 5

calculate the proportion of children in crises of upper secondary school age who are not learning by applying the LiC premium calculated in the previous step to the national average of the proportion of secondary school students who, depending on the country, are either:

- Underperforming in the PISA-D (Programe for International Student Assessment for Development) assessment, taking all evaluation domains together (that is, performing under level 2); or
- Not scoring at least 400 on the TIMSS (trends in international mathematics and science study) mathematics assessment. Students at this benchmark have only limited knowledge of whole numbers and basic graphs and are categorized as reaching the "low" international benchmark of mathematics achievement.

Data on learning outcomes is typically not available in protracted crises for adolescents of upper secondary school age. Estimation is carried out via regional averages in the MENA region, since data on TIMSS is available for Lebanon, Egypt and Jordan. Other high ISI settings (e.g. in Sub-Saharan Africa) are assigned the highest existing value, which is that of Senegal in the PISA-D assessment (in other words, the lowest learning outcomes are assumed in these settings).

Additional methodological remarks

Any methodology is likely to use proxies, omit some aspects, and rely on incomplete data sets; any methodology must rest on a set of assumptions and agreed approaches; the proposed one is no exception, since it attempts a complex, multi-country, multi-dimensional estimate.

Using Education Cluster PIN in Education to estimate global OOSCiE figures comes with PROs and CONs:

TABLE 2. PROS AND CONS OF USING "PIN IN EDUCATION" FIGURES

⊕ PROs	⊖ CONs
• Well-established category in the sector, easy to communicate; guidelines available • Could be directly aggregated across countries to produce sector-specific, global estimate	• Despite global guidelines, not estimated consistently across countries [key problem] • Not updated frequently • Not available for crises without interagency plans and appeals • PIN in education leave out of the radar all those children who may be crisis-affected, still out of school, but not strictly in need of humanitarian assistance. This subcategory is quite large in protracted crises, where few children learn, yet not everybody fares so badly to be deemed in need of humanitarian assistance[18].

18 In other words, being "in need of educational support" and being "in need of humanitarian assistance" according to a humanitarian needs overview are quite different concepts.

The identified CONs seem quite important, so we decided against use of "PIN in education" figures for the estimations[19]. On the other hand, since the ratings 1-5 for humanitarian conditions in ISI are regularly and frequently reviewed by human analysts for cross-country consistency – relying on OCHA data whenever available – by using ISI data we benefit from high-quality, high-frequency and cross-country comparable data.

Pros and cons of identified methodology can be summarized as follows:

TABLE 3. PROS AND CONS OF THE IDENTIFIED METHODOLOGY

⊕ PROs	⊖ CONs
• High granularity guarantees possibility of disaggregating and slicing data • ISI offers possibility to focus on the subnational national level, to isolate sub-portion of countries that are affected by emergencies, as opposed to using country-level data [key advantage] • Relies on primary data sources that are updated at a high frequency (ISI) • Uses compatible language / approached / methodology between UN bodies, ECHO and ACAPS • Uses evidence-based premiums that stem from a common logic, as opposed to arbitrary premiums	• Several missing data, assumptions and imputation required to obtain global totals • ISI only available from Jan 2019, hence it does not provide localized, granular crisis-level info for crises prior to Jan 2019.

19 GEC is working to improve cross-country comparability of PIN figures, hence PIN figure comparability is expected to improve in the medium term.

3.
Findings

We find that about 222 million children and adolescents (from one year before the primary school age till the end of the theoretical age of secondary education) were affected by crises globally (based on February 2022 data). Of these, about 78.2 million (54% females, 17% with functional difficulties, 16% forcibly displaced) are out of school.

School-aged children affected by crises globally:

222 MILLION

78.2 MILLION
out of school (54% females, 17% with functional difficulties, 16% forcibly displaced)

119.6 MILLION
in school, but not achieving minimum proficiency in reading or mathematics

24.2 MILLION in pre-primary or attending primary/secondary school and achieving the minimum proficiency levels for mathematics or reading

To calculate the number of crises-affected children, it would be possible to solely adding up figures from appeals and interagency plans (option 5 in table 4) as well as to calculate a total figure that covers all children caught in crises (according to the ISI – this is option 2 in table 4). As shown in table 4, by comparing options 2 and 5, it is possible to conclude that about 19 M crises-affected children caught in crises[20] are currently left out of interagency response plans globally. All children caught in conflict or complex, protracted crises deserve to be counted, regardless of the presence of an interagency response plan. Since ACAPS figures ensure better coverage (they capture any crisis regardless of interagency plan), they are updated monthly, and they are consistent with OCHA / UN figures (as they draw on these whenever available), we conclude that the ISI / ACAPS dataset is best suited to tackle the research questions. Accordingly, the following estimates for crisis-affected children are provided:

TABLE 4. SENSITIVITY ANALYSIS: COMPARISON OF ESTIMATES FOR CRISIS-AFFECTED CHILDREN IN COUNTRIES WITH AND WITHOUT INTERAGENCY PLANS AND APPEALS

Option	Crisis severity *(ISI)*	Coverage *[presence of interagency plans and appeals]*	Crisis-affected children, **from age 3 till end of secondary** *[population estimated to live in CAPS levels 2 to 5, see figure 1]*	Crisis-affected children, **from one year before primary till the end of secondary** *[population estimated to live in ACAPS levels 2 to 5, see figure 1]*
1	all crises	All countries	**263,636,926**	**223,243,793**
2	ISI > 2	All countries	**262,220,644**	**222,050,709**
3	ISI > 2.5	All countries	**259,332,465**	**219,563,329**
4	all crises	Countries with interagency plans and appeals only	**240,066,620**	**202,777,773**
5	ISI > 2	Countries with interagency plans and appeals only	**240,022,080**	**202,738,165**
6	ISI > 2.5	Countries with interagency plans and appeals only	**238,080,379**	**201,056,401**

Option 2 – that is, considering crises with ISI > 2 only – was chosen as the most appropriate to answer the research questions. By this choice, we exclude only some small-scale, low-intensity crises typically taking place in middle-income countries with very low potential to drive large numbers of children out of school beyond the school year of reference[21]. Relaxing this assumption to include all crises (option 1) has a relatively small effect on the estimates. Note that option 1 still excludes China, Russia, and OECD countries (except for Chile, Colombia and Turkey, since they are experiencing major refugee influxes), since it is assumed that in these countries national systems can cope with local crises. No crises in these countries (excluding the unfolding crisis in Ukraine) display an ISI larger than 2.5.

20 All such crises have ISI > 2.

21 This approach is consistent with the new version of the OOSCI manual.

To estimate the A + 6 model, we therefore maintain that there are 222,050,709 crisis-affected children and adolescents globally, considering those who are aged one year before the theoretical age at which they should enter primary, until the theoretical age of completion of secondary. Out of these, the table below summarizes the findings in the 4 OOSCiE dimensions of the A + 6 model.

TABLE 5. ESTIMATED OOSCIE DIMENSIONS OF THE A + 6 MODEL, BASED ON AN ESTIMATE OF 222.05 M CRISIS-AFFECTED CHILDREN AND ADOLESCENTS OF SCHOOL AGE

Dimension (A + 6 model)	Total	Non-forcibly displaced	Refugees	IDPs	Asylum seekers and refugee-like populations
A1 OOSCiE one year before primary	**10.56 M** *(49% female)*	**8.85 M** *(49% female)*	**0.47 M** *(50% female)*	**0.90 M** *(50% female)*	**0.34 M** *(50% female)*
A2 OOSCiE primary	**24.96 M** *(55% female)*	**20.58 M** *(55% female)*	**1.20 M** *(52% female)*	**2.82 M** *(54% female)*	**0.39 M** *(52% female)*
A3 OOSCiE lower secondary	**17.66 M** *(55% female)*	**15.02 M** *(53% female)*	**0.69 M** *(62% female)*	**1.77 M** *(60% female)*	**0.18 M** *(61% female)*
A4 OOSCiE upper secondary	**25.02 M** *(54% female)*	**21.47 M** *(55% female)*	**1.17 M** *(52% female)*	**2.26 M** *(52% female)*	**0.24 M** *(51% female)*
Grand total OOSCiE	**78.2 M** *(54% female)*	**65.9 M** *(54% female)*	**3.4 M** *(54% female)*	**11.1 M** *(54% female)*	**1.2 M** *(52% female)*

About 84% of OOSCiE (65.7 M) live in protracted crises. Of these 65.7 M, about two thirds (65%) are in ten countries alone (Ethiopia, DRC, Pakistan, Afghanistan, Yemen, Sudan, Mali, South Sudan, Nigeria, Somalia).

The lack of primary data on learning outcomes does not allow us to provide a disaggregation for dimensions A5 and A6 akin to that provided for dimensions A1 to A4, yet it is possible to present a disaggregation by type of crisis (protracted vs not protracted) and by presence of interagency plans and appeals: those who are not learning are typically in protracted crises (83% to 85%), and even to a larger extent, in crises covered by interagency plans and appeals.

TABLE 6. ESTIMATED DIMENSIONS A5 AND A6, BASED ON AN ESTIMATE OF 222 M CRISIS-AFFECTED CHILDREN AND ADOLESCENTS OF SCHOOL AGE

Dimension (A + 6 model)	Total	% in protracted crises	% in countries covered by interagency plans / appeals
A5 Attending school, not achieving minimum proficiency (reading)	**87.27 M** *(85% of those attending primary or lower secondary)*	**83%**	**92%**
A5 Attending school, not achieving minimum proficiency (mathematics)	**93.04 M** *(91% of those attending primary or lower secondary)*	**83%**	**92%**
A6 Attending upper secondary school, learning deprived	**26.56 M** *(90% of those attending upper secondary)*	**85%**	**90%**
Grand total, In school, not learning	**119.6 M**[22] *(91% of those attending school)*	**84%**	**91%**

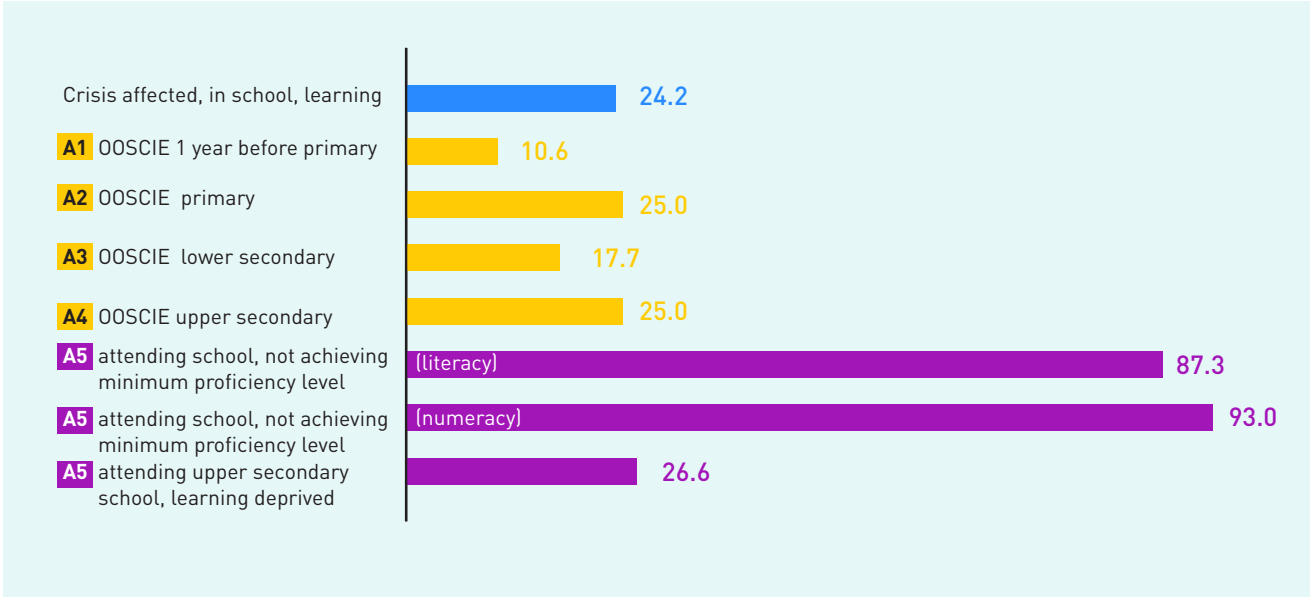
In total, we estimate that 197.81 M crisis-affected children and adolescents are either out of school or not learning – corresponding to 89% of all crisis-affected children and adolescents caught in crises globally. This means that 24.2 M or 11 per cent of all crisis-affected children are either (1) attending pre-primary school or (2) attending primary or secondary school and achieving minimum proficiency in the early grades. Nonetheless, despite achieving minimum proficiency, these children may still be in need of education support due to the crisis impact (e.g. psychosocial support).

Estimates do not reflect COVID-induced learning loss, which was recently estimated as amounting to 0.17 of a standard deviation, equivalent to roughly 5 months' worth of learning, on average[23] on a sample of twenty (mostly OECD) countries. Learning losses were higher in middle income countries (a reduction of 0.22 of a standard deviation in South Africa, a reduction of 0.55 of a standard deviation in Mexico, and a reduction of 0.32 of a standard deviation in Brazil), which may constitute initial evidence pointing in the direction that COVID-related learning losses in crisis contexts is significant. On this tab, recent evidence from Uganda[24] is mixed, yet it identifies significant COVID-related learning loss at lower parts of the learning distribution: the proportion of children who could not read or sound out letters of the alphabet doubled from 6.2% in 2018 to 11.6% in 2021. For primary grade 3, the proportion of those who could not read increased from 12.7% in 2018 to 25.1% in 2021.

23 A5 (mathematics) was used for the computation. Patrinos, Harry Anthony; Vegas, Emiliana; Carter-Rau, Rohan. An Analysis of COVID-19 Student Learning Loss (English). Policy Research working paper no. WPS 10033; Washington, D.C., World Bank Group. Available at http://documents.worldbank.org/curated/en/099720405042223104/IDU00f3f0ca808cde0497e0b88c01fa07f15bef0

24 https://www.cgdev.org/blog/ugandas-record-breaking-two-year-school-closure-led-to-no-decline-number-kids-who-can-read

A visualization of the estimates by each dimension of the A + 6 model is given below (figures are totals, expressed in millions):



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The following table provides an overview of the advantages of the proposed methodology by comparing it to existing estimates and studies.

TABLE 7. RECAP OF RECENT ESTIMATES OF OOSCIE, 2016-2022

Estimate	Source, Year	Includes countries with appeals and interagency plans	Includes countries without appeals and interagency plans	Identifies crisis-affected sub-populations within crises-affected countries	Includes forcibly displaced population that may be "invisible" to official estimates of school-aged populations
75 M children aged 3-18 years in 35 crisis-affected countries need educational support	*ODI, 2016*	**Yes.** Estimates are built from a list of 35 countries that had UNICEF HAC appeals in 2015.	No	**Partially.** The estimated total of crisis-affected children in the 35 countries (as identified in HAC appeals) was chosen as the proxy for children in need of education support.	**Partially** (reflecting HAC figures).
127 M million OOSC of primary and secondary school age are living in crisis-affected countries	*INEE, 2020*	**Yes.** Estimates are built from a list of crisis-affected countries, chosen based on study-specific criteria[25]	No	No. OOSC estimates carried out on the whole national school aged population, once country is considered "crisis-affected" according to the study's own criteria	**Partially**
128 M OOSC of primary and secondary school age are living in crisis-affected countries	*PLAN, 2019*	**Yes.** Estimates are built starting from a list of crisis-affected countries, chosen based on study-specific criteria[26]	No	No. OOSC estimates carried out on the whole national school aged population, once country is considered "crisis-affected" according to the study's own criteria	**Partially**
222 M children of school age are crisis-affected; of these, 78.2 M are OOSC	*ECW, 2022*	**Yes.** Estimates allow disaggregation by plan and includes high-severity crises that do not have an interagency plan	Yes	Yes. Estimates reflect, for each country, only the proportion of children that are crisis-affected, according to the ISI	Yes, systematically. The latest estimates of refugees, IDPs, and asylum-seekers are treated with sub-group-specific estimates of OOS rates.

The estimates illustrated in this note maintain therefore several exclusive advantages: 1) they provide a disaggregation focused on crisis-affected subpopulations, rather than applying a national OOS rate to the whole school-aged population of a "crisis-affected" country; 2) they provide a disaggregation that also covers severe crises (according to ISI) that do not have appeals or interagency plans; 3) they make systematic provisions to include all of refugees, IDPs, asylum seekers and refugee-like people, based on the latest research and needs assessments.

25 Based on a predefined list of crisis-affected countries that are eligible for ECW multi-year funding.

25 To be included, a country needed UNICEF HAC appeals or UN-coordinated humanitarian appeals in at least two years between 2014 and 2018.

4
Data

The proposed approach leverages the granularity of the data underpinning the ISI, together with a selection of newly available datasets and selected research papers, as well as peer-reviewed research findings available in the public domain. In particular, the ISI is built on highly granular, crisis-specific information from a range of credible, publicly available sources, such as UN agencies, governments, and other multilateral organizations. Expert judgement from human analysts is involved in deciding what data to report, and an estimate of the reliability of the data is provided for each crisis. The ISI also uses and provides information on the 'distribution of severity', i.e. the number of people that fall into different categories of severity within the same crisis, which constitutes one of the pillar of the proposed methodology. The ISI is an open and free tool updated monthly on ACAPS and INFORM websites. We consider all crises included in the ISI since January 2019, when the ISI was first published, hence **estimates should be understood as covering the 37-months long window between January 2019 and February 2022**[27].

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27 These estimates do not account for loss of access to education following the invasion of Ukraine in 2022. The war is affecting 6 million school-aged children to different degrees.

Additional datasets have been considered, most of them have been linked and leveraged for the first time to produce EiE-specific analyses. A data recap is offered in the table below.

Data source	Contribution / role of dataset
UIS	Used to estimate population of school age in each country
UIS	Source for OOSC rates and populations of school age, by country and education cycle; source of data on learning outcomes in reading and mathematics
INFORM Severity Index	Source for crisis-specific data (outside of education), including figures of affected populations
UNICEF	Source for OOSC rates; source for disaggregation specific to children with functional disability vs without functional disability [MICS6] ; main source for data on learning outcomes in readiwng and mathematics
UN/DESA	Estimation of population stocks by age
UNCHR	Source of OOSC rates amongst refugees
UNHCR	Estimates of school aged population amongst refugees
IDMC	Estimation of the number of internally displaced people, 2020
UNESCO	Premium estimation [COVID shock] following school closures
UNICEF	Estimate the of percentage of children with functional difficulties by country ["Seen, counted, included" report]
OCHA	Interagency response plans' coverage
PISA-D	Main source for data on learning deprivation for adolescents of upper secondary school age
TIMSS	Main source for data on learning deprivation for adolescents of upper secondary school age

5.
Limitations

The key limitation of this methodology is that it **relies crucially upon correctly estimating the proportion of people who can be considered as "crisis-affected"** in each crisis. Limitations exist also in relation to the potential miscommunication of these estimates. The fact that the database yielding the estimates was built following a bottom-up approach, building "up" from the crisis-level ensures a degree of consistency; however, country-specific estimates should not be used outside of their intended objective – namely that of contributing to an aggregated, global measure, as opposed to providing estimates of individual countries' specific OOSCiE populations.

This exercise* also revealed significant data gaps in EiE that could inform future research:

- In several large crises-affected countries, data on OOS rates for children aged 3 to 4 years and for those in the year prior to primary school is not available. MICS/EAGLE reports represent a best-in-class resource, with duly disaggregated estimates available, but they are only available for a handful of countries. Estimates of OOS rates for children aged 3 to 4 represent therefore a very likely underestimate of the real OOS population.
- Treatment of IDP data: when internal displacement takes place, it typically affects many subgroups differently. It can be very challenging to understand which internally displaced subgroups are unlikely to re-enroll their children after displacement, and when/at what conditions IDPs can be more likely to re-enroll in formal education. Significant research gaps at the intersection of forced displacement and access to education exist, with only a few qualitative studies investigating the issue at close range. Whenever feasible, inserting IDP- dedicated strata in MICS sampling frames could be an interesting option.
- Data at district level from administrative data is not always available. It is fundamental to better estimate stocks of OOS locally, without recurring to national averages. MICS/EAGLE reports represent a best-in-class resource, with subnational level estimates available, but their availability is limited to a relatively small set of countries.
- Data on learning outcomes for crises-affected children and adolescents is typically not available. Data on learning outcomes would help to best assess learning needs, to better qualify the "education support" needed and better monitor the results of the support provided. Disaggregations of learning poverty of children in crises by displacement status and children with functional difficulties would be very useful to monitor how the learning crisis affects different subgroups.

* This exercise also helped reveal some additional shortcomings connected to using the ISI:
In a few cases, ACAPS data do not seem to be consistent in identifying crisis-affected populations. For example, in refugee crises, sometimes the whole population of a district or a province is deemed affected, even when refugee inflows are small compared to the host population and are consequently relatively unlikely to put significant pressure on provision of education services in host communities.
ACAPS data are prone to interpretation for some large crises. In DRC, where the whole country is considered "crisis-affected" from a geographical standpoint, but only about 20% of the total population is considered "crisis-affected" (that is, in "level 2" with reference to figures 1 and 2). Given the cyclical patterns of recurring crises in most of the country, the whole school-aged population of the DRC was considered as crisis-affected.

6. Recommended next steps

Recommendations

a) **A collective focus on learning is needed, both programmatically and in terms of monitoring.**
All partners – especially ECW in its role of global catalyst for investment in EiE– are called upon to work collectively to design and deliver EiE-specific models that are learning-oriented, and that systematically monitor and lower barriers to learning, to better understand what works for driving learning and at what conditions in emergency and crises settings.

b) **Prioritisation of assistance to countries with large numbers of OOSCiE should be considered.**
ECW may consider prioritizing investments more explicitly in countries with the highest number of OOSCiE. Likewise, UNICEF and UNESCO could consider prioritizing OOSCI studies in countries affected by protracted crises.

c) **Affirmative action should be undertaken to i) close existing data gaps in EiE via development of joint approaches and tools, and ii) integrate EiE reporting within SDG 4 reporting, ideally via a dedicated disaggregation layer.**
Integrating EiE-specific disaggregations in reporting processes of SDG 4 would help the analysis of EiE indicators and increase visibility of EiE data in global reporting. UNHCR, IDMC, IOM and UNICEF should engage more effectively in measuring learning for displaced populations – refugees, IDPs and children on the move respectively, fulfilling their commitments vis-a-vis learning outcomes measurement, in line with the spirit of SDG4. Building a shared tools for measurement of holistic learning outcomes as well as process to source the data from the different EiE partners systemically would lead to improvements in data availability, quality and integration of reporting, with benefits for the whole EiE community. If more data becomes available, the need for assumptions and simulations to estimate the model would reduce. For example, UNICEF should try to insert a dedicated stratum on IDPs or emergency-affected populations in MICS surveys. Meanwhile, ECW should continue working with Governments and partners worldwide to build capacity to measure learning outcomes in emergency settings.

d) The EiE community of practitioners should harmonize data collection modalities and improve clarity and consistency of communication of research findings.
The EiE community could be clearer in communicating figures on crisis-affected children. There is a significant difference between "crisis-affected children who are OOS" versus "OOSC in crises-affected countries". EiE indicators should be built having crises, not arbitrarily defined "crisis-affected countries" as the building block. To exemplify, in Uganda, which is considered a "crisis-affected country", only 8% of school aged children can be considered crisis-affected (including both refugees and host communities). Hence, assuming that the whole of the Ugandan population is crisis-affected would represent a significant faux pas from a methodological standpoint. Adoption of common definitions and shared methodologies and tools for measurement of learning in EiE would be an important step forward towards improving consistency in communication.

e) Enter a process of continuous improvement of the current methodology
ECW and/or the INEE reference group may decide to update the estimates in this note yearly, for example in May every year, using a similar methodological approach for comparability. The methodology could be revised every 2-3 years to reflect progress in the systematization of calculation of PIN figures by the Global Education Cluster, alongside any potential progress by other institutions in monitoring education outcomes. For example, UNESCO-GEM report developed a Bayesian hierarchical model that constructs underlying out-of-school rate curves for cohorts over time to estimate out-of-school rates for all countries. The data interacts with the latent out-of-school rate patterns through two likelihood formulations designed to address the specific constraints, biases, and error structures of administrative data and survey data. Incorporating this approach in the next iteration holds potential to improve both the reliability and the precision of estimates.

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