Estimating out-of-school rates (OOSR) in protracted crises: Options for improving measurement

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1. INTRODUCTION

However, the model estimates may not adequately capture education participation of crisis-affected children without fresh, reliable, disaggregated data - which is difficult to obtain during or in the intermediate aftermath of a crisis.

2022

The UNESCO Institute for Statistics and the GEM Report introduce the UIS-GEMR estimates, an innovative model-based approach that integrates diverse and vetted data sources - e.g., administrative data, household survey data -- to produce more accurate and coherent estimates of out-of-school rate**s.**

Feb 2024

At the Education Data and Statistics Conference, a decision called on the EDSC **to develop protocols and standards for measuring the impact of crises on affected populations.**

April 2024

A task force is established to provide expert guidance on adjusting country- and global-level estimates on out-of-school population in crisis-affected contexts in a timely and reliable way.

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2. WHAT ARE ALTERNATIVE DATA SOURCES THAT CAN BE LEVERAGED IN CRISIS CONTEXTS?

We propose a protocol that leverages multiple data sources, giving prominence to multisectoral needs assessments (MSNAs) as valuable data sources for tracking education participation in countries experiencing crises.

	Data on education disruptions		Data on crisis severity
	Multi-Sectoral Needs Assessments (MSNAs)	**Information on school closures/re-openings**	**Inform Severity Index**
What?	**Coordinated needs assessments** measuring the magnitude and severity of needs across assessed population groups using repeated, context-specific surveys	**Takes diverse forms,** but includes at minimum information on the location of affected schools and on the affected population.	**Composite index bringing together 31 core indicators** organised in three dimensions: impact, conditions of affected people, and complexity.
Why?	**Informs annual humanitarian planning and prioritization** decisions across various sectors, in-country at and global level.	**Guides stakeholders in prioritizing interventions** and monitoring protection risks.	**Enables comparisons** of the scale and severity of crises across the world
Where and when?	**20 MSNAs conducted across 15 countries** in 2023.	**Generally available through various sources,** but different degrees of granularity	**Updated monthly** to include crises in which the number of people affected is at least 30,000 or is > 1% of the total country population AND, the number of people in need is at least 10,000.

Coverage		Sampling	
Population groups	**Geographic coverage**	**Random sampling**	**Purposive or quota sampling**
Unlike traditional household surveys such as Multiple Indicator Cluster Surveys (MICS) or Demographic and Health Surveys (DHS), MSNAs focus on crisis-affected groups such non-displaced household and displaced populations.	Relevant geographic areas affected are covered. In most countries, this means nation-wide data, which is representative at the admin 2 level.	In most countries, where availability of data and access allow, stratified cluster sampling is used (e.g., using the population grid of World Pop and Meta for good).	In some geographic areas, where availability of data and access lack, alternative methodologies are used, in hard-to-reach areas for instance using phone surveys or safe third locations.

3.1 SPOTLIGHT ON MSNAS: HOW IS INFORMATION ON EDUCATION DISRUPTIONS CAPTURED?

In 2024, education indicators in the MSNA questionnaire were adjusted based on global research, as well as REACH country teams and Education Clusters consultations.

Indicators are collected at the individual level, for all children within households aged between 5 and 18 years old at the time of the data collection.

	Indicator name	Question	Answer choices	Can compute:
Aligned to MICs and DHS	% children 5 to 18 y.o. who attended school or any early childhood education program at any time during the 2023-2024 school year	Did (name) attend school or any early childhood education program at any time during the 2023-2024 school year?	• Yes • No • Don't know • Prefer not to answer	• **Participation rate** in organised learning (one year before the official primary entry age, typically 5 years old). Indicator 4.2.2 of the Sustainable Development Goal 4. • **Early enrolment** in primary grade • **Net attendance rate and out-of-school rate,** per level. • **Over-age for grade**
	% children 5 to 18 y.o. who attended school or any early childhood education program at any time during the 2023-2024 school year, by grade and level	(If Yes) During the 2023- 2024 school year, which level and grade or year was (name) attending?	Contextualized at country level	

1 A B

Inclusion of MSNAs in UIS-GEMR model

Applicable in countries in which fit-for-purpose MSNAs are available

2 A B C
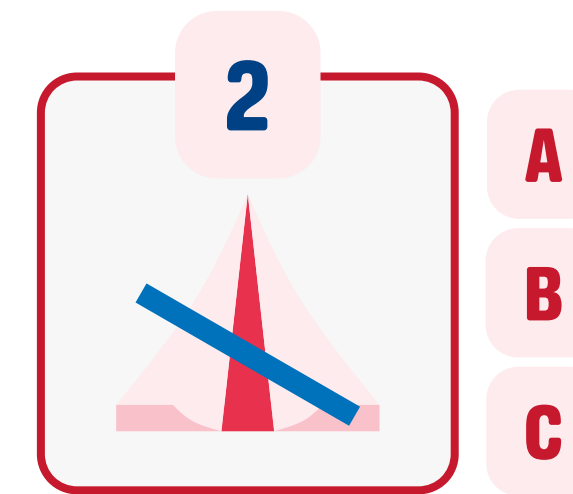
Separate correction based on school closure/ re-opening information

Applicable in a selection of crisis countries undergoing rapid change

A

1

Develop list of countries with new MSNAs in the prior year* and evaluate the extent to which the MSNAs are fit for purpose

Potential criteria

- **Alignment:** Questionnaires enable the calculation of OOSRs, consistent with the definitions of OOSR used at the country level, or with the definition used to report on SDG 4.

- **Coverage:** The MSNA covers at least a certain percentage of the national population (e.g. 60% or 80%)

- **Precision:** The MSNA achieves a 90% confidence level and a margin of error of 10% at a minimum.

Include MSNA data in the UIS-GEMR model and proceed to Step B

1

B

Evaluate the extent to which there has been a change in the severity/scale of the crisis that is likely to have a a significant impact on education access since prior data points in the UIS-GEMR model, including the MSNA.
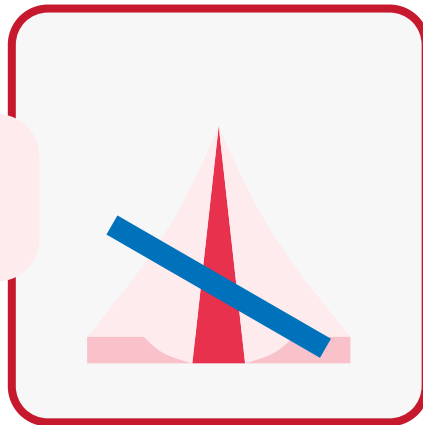
Potential criteria

- **Magnitude of change in severity/scale:** Change in the ISI score (overall or relevant sub-dimension) above a certain threshold

- **Frequency of change in severity/scale:** Total number of changes in the ISI score (overall or relevant sub-dimension) above a certain threshold

Consider weighting or excluding older observations in the UIS-GEMR model and other ad-hoc adjustments, including Track 2, Step B

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A

2

Develop a list of crisis countries where there has likely been a significant change in out of school rates and numbers in the past year.
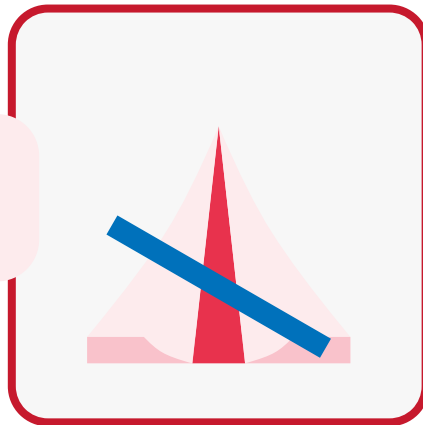
Potential data sources

- **ISI score:** Change in the ISI score (overall or relevant sub-dimension) above a certain threshold

- **MSNA:** OOSRs can be used as a flag, even if due to alignment, coverage and precision the survey was excluded from Track 1

- News reports/grey literature

● **Proceed to Step B**

B

2

Assess the availability and quality of information on changes in the status of school openings/closures:

Potential criteria

- **School-level:** Reliable information on affected school locations linked to school enrollment data

  OR

- **Area-level:** Reliable information on percentage of school closures/re-openings within an area (L2 or L3) linked to area school-level population data

  AND

- **Baseline OOS population** pre-closure can be estimated with available data.

● **Proceed to Step C**

C

2
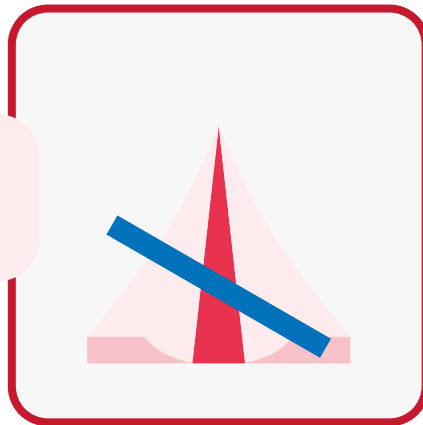
Consider adjustments based on data availability

Potential adjustments

- **Scale of closure:** Potentially only count closures that affect populations above a certain threshold
- **Duration of closure:** Only count durations longer than a threshold, after which children affected by school closures are considered out-of school. Potentially adjust for longer school closures based on the assumption that extended disruptions increase the likelihood of student dropout.
- **Displacement:** Consider enrolment increases in areas hosting displaced school-aged population
- **Double shift access:** Consider adjustments if data is available.
- **Alternative education access and participation:** If government-approved, equivalent education is provided through alternative means, explore methodologies to identify students reached (e.g., through education cluster data).

Consider additional validation with alternative data sources (e.g., MSNAs that don't meet coverage/precision criteria, ACLED data)

Develop a separate correction to the latest model estimates, for which assumptions and data sources are clearly documented

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5. APPLYING THE PROTOCOL: CENTRAL AFRICAN REPUBLIC AND SUDAN

Both cases have MSNA data and have undergone rapid changes in the severity/scale of crisis. They differ in the extent to which MSNA data is fit-for-purpose and available post-change in crisis severity, as well as the extent to which school closure data is available.

Case study 1: Central African Republic

Case study 2: Sudan

5.1 CASE STUDY 1: CENTRAL AFRICAN REPUBLIC

1

A

Evaluate the extent to which the MSNAs are fit for purpose

|	**MSNA 2022**	**MSNA 2023**	**MSNA 2024**	**MSNA 2024: Coverage map**
Alignment	✓	✓	✓	
Coverage	13,000 households in 17 prefectures (L1) out of 20, and 66 out of 72 sub-prefectures (L2), using stratified two-stage cluster sampling	12,298 households in 17 prefectures (L1) out of 20, and 66 out of 72 sub-prefectures (L2), using stratified two-stage cluster sampling	14,000 households in 18 prefectures (L1) out of 20, and 74 out of 85 sub-prefectures (L2), using two-stage cluster sampling	
Precision	92% confidence level and a 10% margin of error	92% confidence level and a 10% margin of error	92% confidence level and a 10% margin of error	

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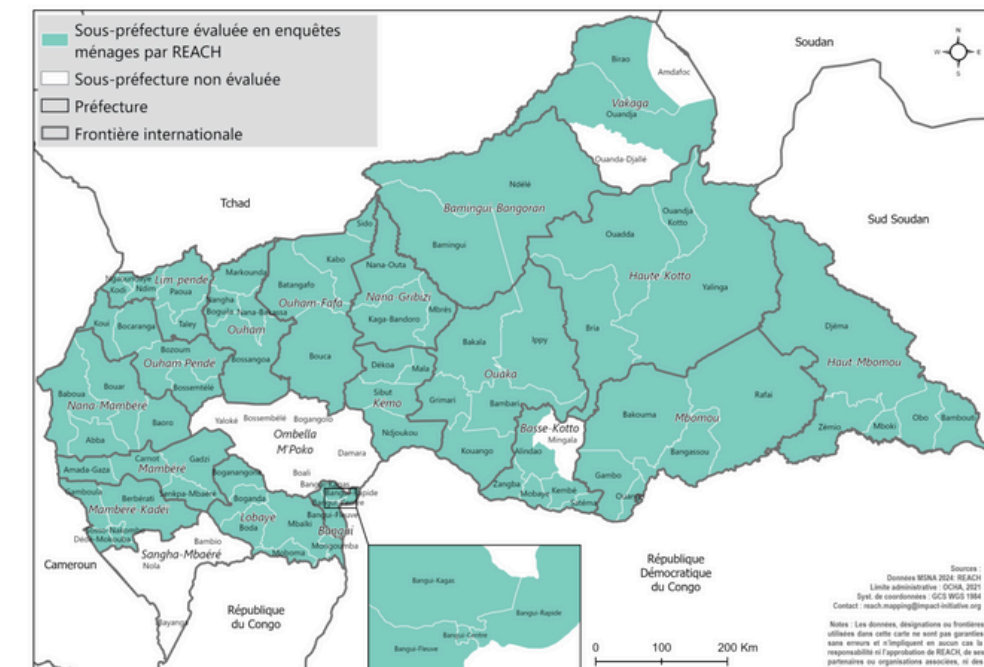
5.1 CASE STUDY 1: CENTRAL AFRICAN REPUBLIC

1
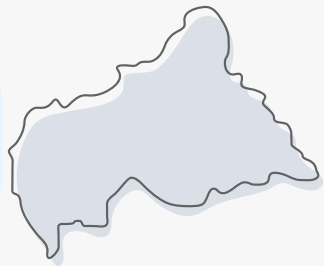
B Evaluate the extent to which there has been a change in the severity/scale of the crisis that is likely to have a a significant impact on education access since prior data points in the UIS-GEMR model, including the MSNA.

- **Most recent data point in UIS-GEMR model:** 2019 (MICs)

- **Low relative volatility** of ISI human impact score between 2020-2025 (CV = 3.85%)

- **Sudden drop** in ISI human impact score (.4 points) between June and July 2022

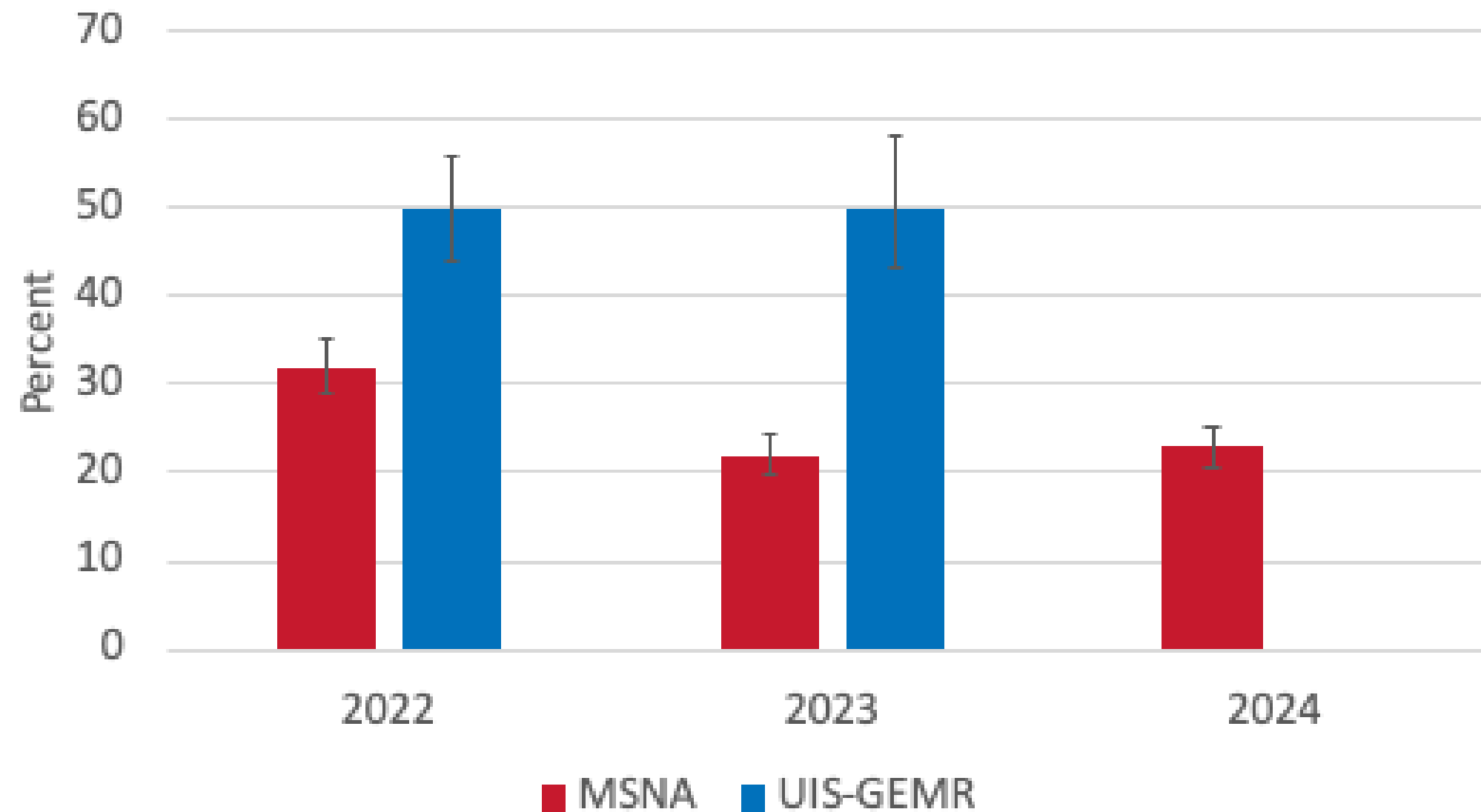### CAR UIS-GEMR model estimates: Data sources

CAR Inform Severity Index 2020-2024

5.1 CASE STUDY 1: CENTRAL AFRICAN REPUBLIC

Estimated OOSRs among primary and secondary school-age children (%) 2022-2024: MSNA and UIS-GEMR

Consider weighting or excluding older observations in the UIS-GEMR model. Given further declines in the ISI in late 2024, consider further correction through Track 2 Step B

Note: The results are representative by population group at the prefecture level but combined for all population groups at the sub-prefecture level. Due to security concerns, data collection in Bakouma (Mbomou) was incomplete, so results for Mboumou prefecture are indicative by population group and non-specific for Bakouma sub-prefecture.
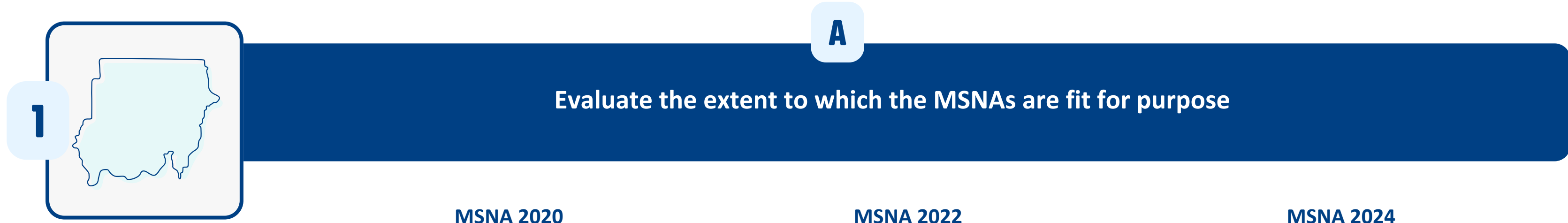
2

B

Assess the availability and quality of information on changes in the status of school openings/closures:

Potential criteria

- **School-level:** Reliable information on affected school locations linked to school enrollment data

  OR

- **Area-level:** Reliable information on percentage of school closures/re-openings within an area (L2 or L3) linked to area school-level population data

  AND

- **Baseline OOS population** pre-closure can be estimated with available data.

- **Duration of closure:** Only count durations longer than a threshold, after which children affected by school closures are considered out-of school.

Final adjustment procedure: Model estimates updated based on fit-for purpose MSNAs and potential weighting of older data points

5.1 CASE STUDY 2: SUDAN

1 **A**

Evaluate the extent to which the MSNAs are fit for purpose

|	MSNA 2020	MSNA 2022	MSNA 2024
Alignment	✗	✓	✗
Coverage	13,769 households in all 18 states and 184 out of 189 localities using non-representative, snowball quota sampling	24,000 households in all 18 states and 156 out of the 189 localities using two-stage cluster sampling	26,660 households in 15 out of 18 states and 162 localities. In 49 localities, however, simple random sampling could not be implemented as planned, and results are not representative at the state or national level
Precision	NA	*Not reported in publicly available documents*	Where random sampling implemented according to plan, 90% confidence with 10% margin of error.

5.1 CASE STUDY 2: SUDAN
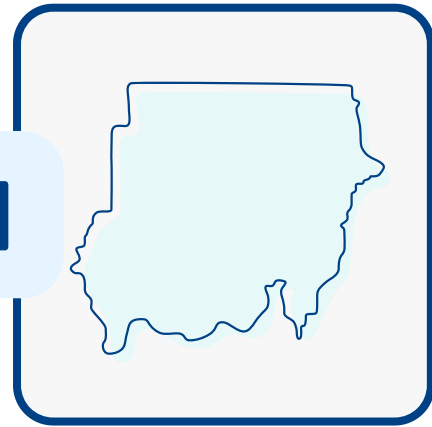
1

B

Evaluate the extent to which there has been a change in the severity/scale of the crisis that is likely to have a a significant impact on education access since prior data points in the UIS-GEMR model, including the MSNA.

- **Most recent data point in UIS-GEMR model:** 2022 (Other)
- **Moderate relative volatility** of ISI human impact score between 2020-2024 (CV = 18.2%)
- **Sudden increase** in ISI human impact score (.9 points) between May and June 2023, and significant subsequent fluctuations.

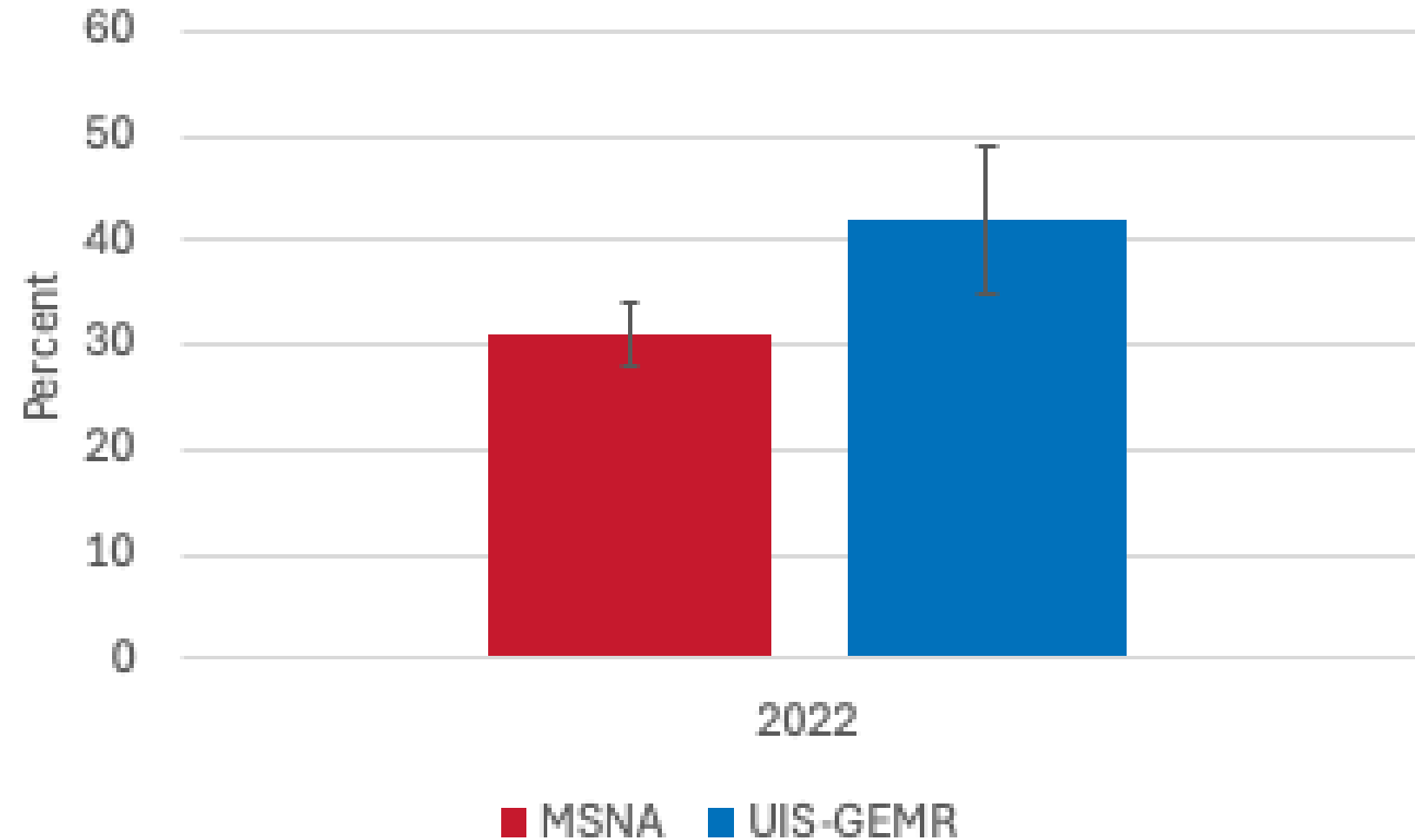**Sudan UIS-GEMR model estimates: Data sources**
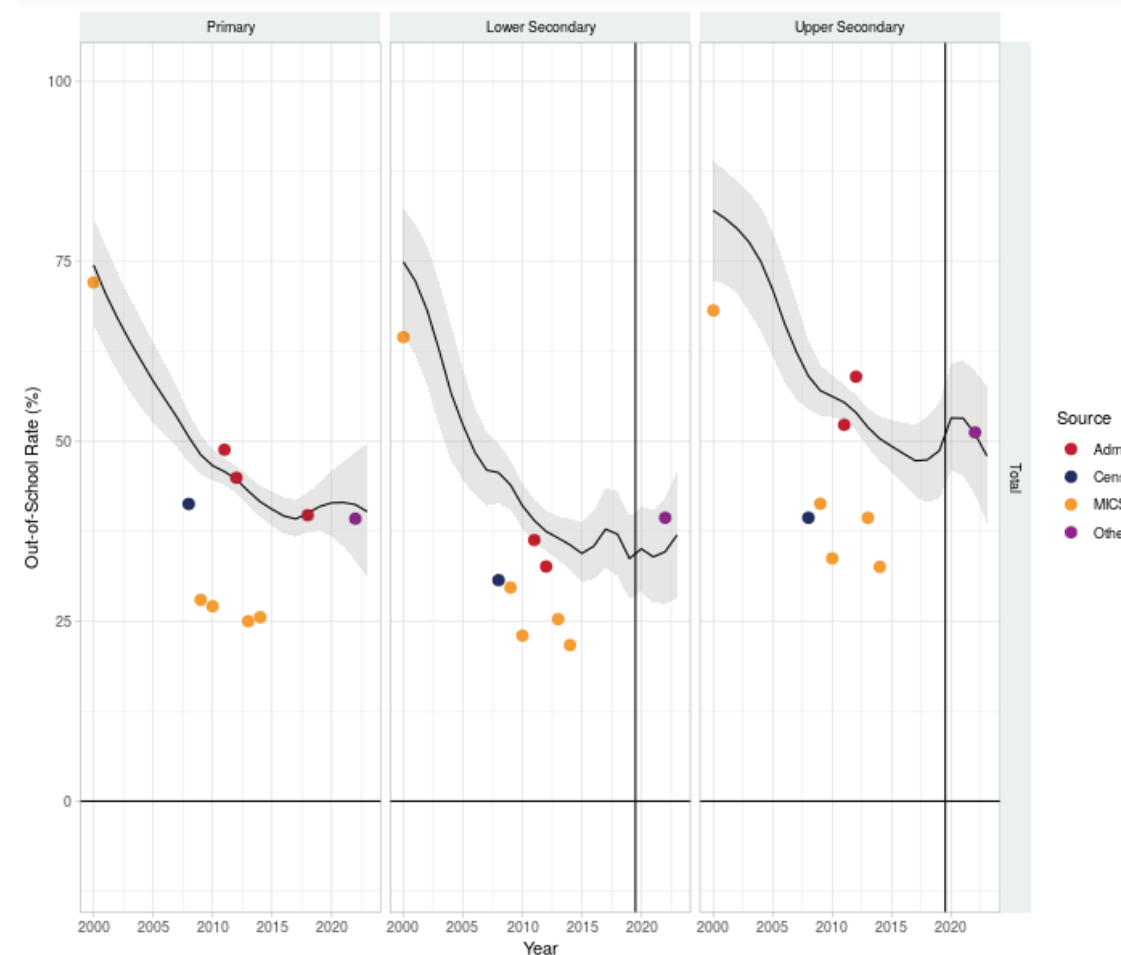
Sudan Inform Severity Index 2020-2024
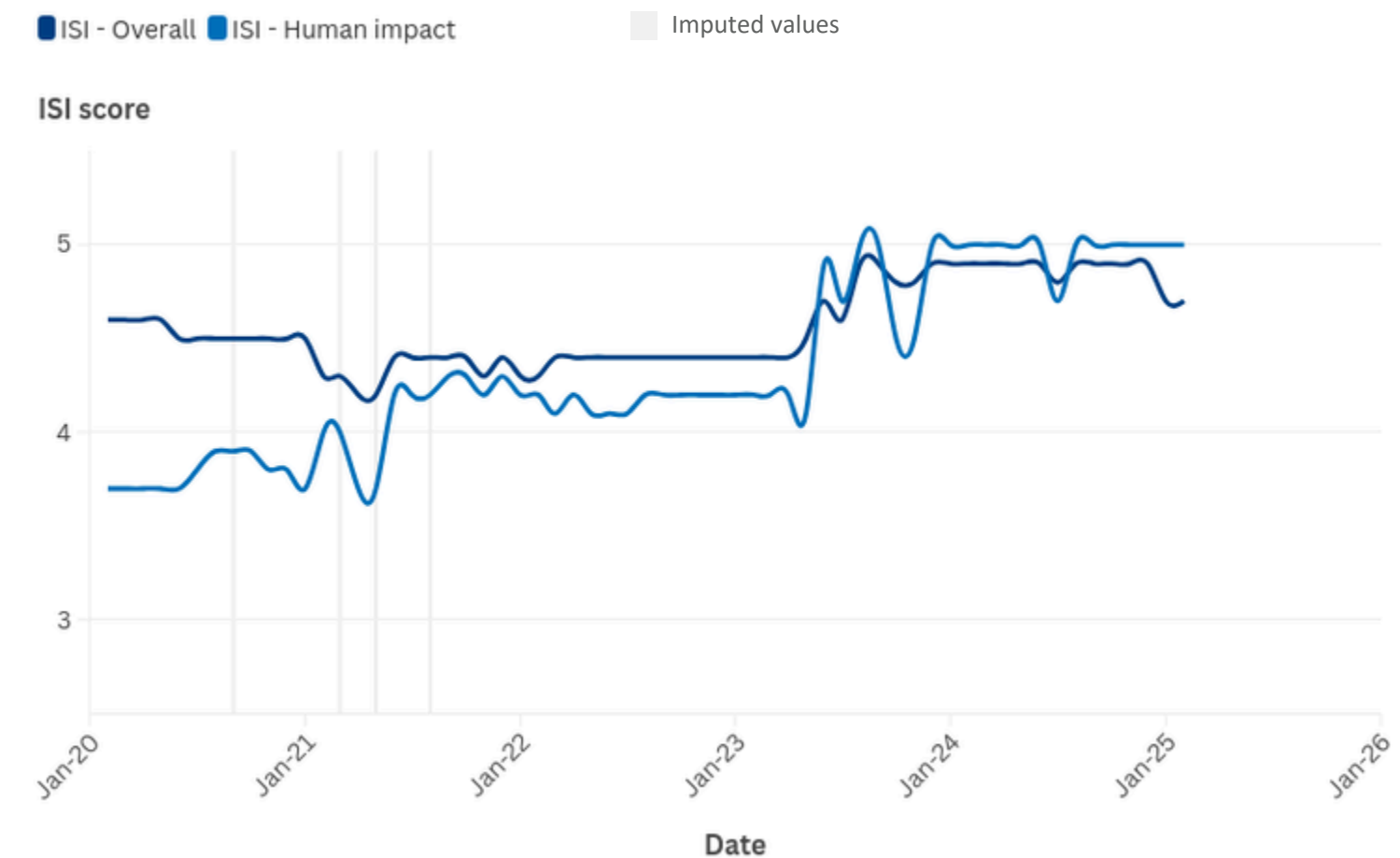
5.1 CASE STUDY 2: SUDAN

Estimated OOSRs among primary and secondary school-age children (%) 2022: MSNA and UIS-GEMR

Include 2022 MSNA in model; however, given the significant volatility in the severity of the crisis since 2023, consider other ad-hoc adjustments, including

• **Track 2 Step B**

2

B

Assess the availability and quality of information on changes in the status of school openings/closures:

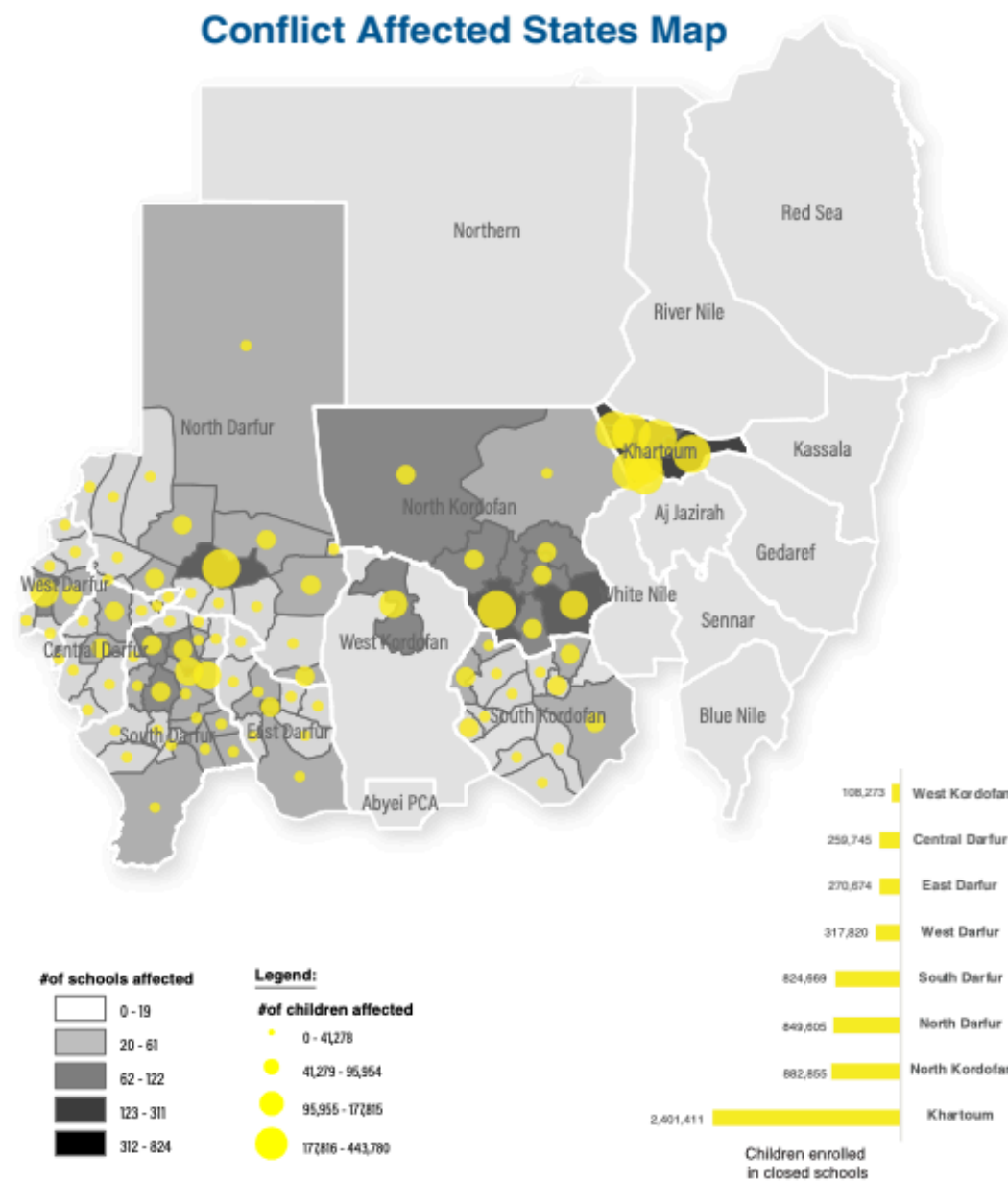**Potential criteria**

- **School-level:** Reliable information on affected school locations linked to school enrollment data

OR

✔ **Area-level:** Reliable information on percentage of school closures/re-openings within an area (L2 or L3) linked to area school-level population data

AND

✔ **Baseline OOS population** pre-closure can be estimated with available data.

5.1 CASE STUDY 2: SUDAN

Conflict Affected States Map

#of schools affected
- 0 - 19
- 20 - 61
- 62 - 122
- 123 - 311
- 312 - 824

Legend:
#of children affected
- 0 - 41,278
- 41,279 - 95,954
- 95,955 - 172,815
- 172,816 - 443,780

West Kordofan — 108,273
Central Darfur — 259,745
East Darfur — 270,674
West Darfur — 317,820
South Darfur — 824,669
North Darfur — 849,605
North Kordofan — 882,855
Khartoum — 2,401,411

Children enrolled in closed schools

Source: Sudan Education Cluster, 2023

5.4 M
Estimated out of school population 2022 (UIS, 2024)

	2022 school-age population (UIS, 2025)	OOSR 2022 pre-crisis (UIS, 2024)	OOS children 2022 pre-crisis	OOSR post-Spring 2023 (Assumed)	Net OOS children post-Spring 2023
Khartoum	2.3 M	18%	4 M	100%	1.9 M
Darfur & Kordofan	5.6 M	60%	3.4 M	100%	2.2 M

The New York Times

Students on the Run, Schools Taken by Troops and a Generation's Catastrophe

With an estimated 19 million children out of school for months because of war, Sudan is on the verge of becoming "the worst education crisis in the world," U.N. officials say.

4.2 M
Additional out-of-school children post- Spring 2023*

9.6 M
total out-of-school 2023

Final adjustment procedure: Model estimates updated based on fit-for purpose MSNAs and separate correction based on school closure.

6. POTENTIAL NEXT STEPS AND ADDITIONAL CONSIDERATIONS

Track 1:
- Pilot integration of fit-for-purpose MSNAs in UIS-GEMR model
- Consider one-time recalibration effort to integrate MSNAs

Track 2:
- Select additional case study countries: Potentially develop profiles based on volatility in crisis severity and availability of school closure data
- Develop protocol implementation guidance Track 2 to best ensure reliability and reproducibility
- Convene reference group to pilot guidance

6. DECISIONS

	Option 1	Option 2
Description	Track 1	Track 1 and 2. Track 1 is applicable in countries in which fit-for-purpose MSNA data is available and Track 2 is applicable in a selection of crisis-affected countries undergoing significant change in the scale/severity of crisis.
Pros	• Leverages vetted, high-frequency data sources in crisis contexts, facilitating the extent to which the UIS-GEMR model can adequately capture education participation of crisis-affected children • Responsive and adaptive to the unique challenges of crisis-affected contexts	• Provides more timely data in settings, including in settings where MSNA data is outdated • More reflective of the current state of education access • Outside of the model
Cons	Requires meta-data from REACH	• Requires more ad-hoc adjustments and verification of school closure data • May require calling on an expert group to validate • Intra-year volatility in school closures may not be critical for annual OOS estimates
Proposed decision	Adopt Option 2	
Document		

THANK YOU

WITH SPECIAL THANKS

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Manos Antoninis
UNESCO GEM Report

Silvia Montoya
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