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CONFERENCE ON
**EDUCATION DATA
AND STATISTICS**

CONFERENCIA SOBRE
**DATOS Y ESTADÍSTICAS
DE EDUCACIÓN**

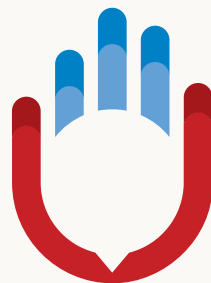
CONFÉRENCE SUR LES
**DONNÉES ET STATISTIQUES
DE L'ÉDUCATION**

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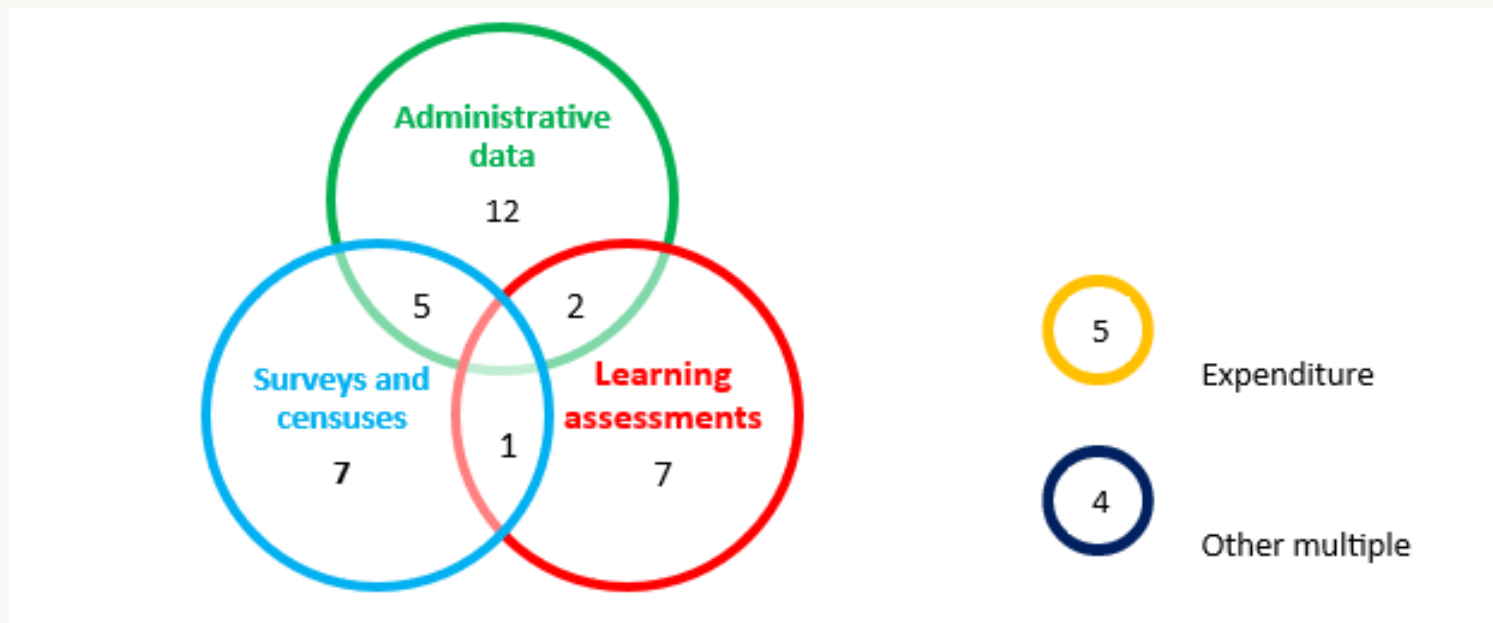


2024 CONFERENCE ON EDUCATION DATA AND STATISTICS

**Data integration:
challenges and solutions forward**

More than one source exists for several indicators

Distribution of SDG 4 global and thematic indicators, by potential data source



Some indicators can be informed by...

Multiple sources of same type

- ▶ Differences in methodologies, objectives or circumstances at the point of data collection produce results that are not fully comparable:
 - Learning outcome indicators based on different assessments
 - Wealth parity index indicators based on different surveys with wealth measure in different ways

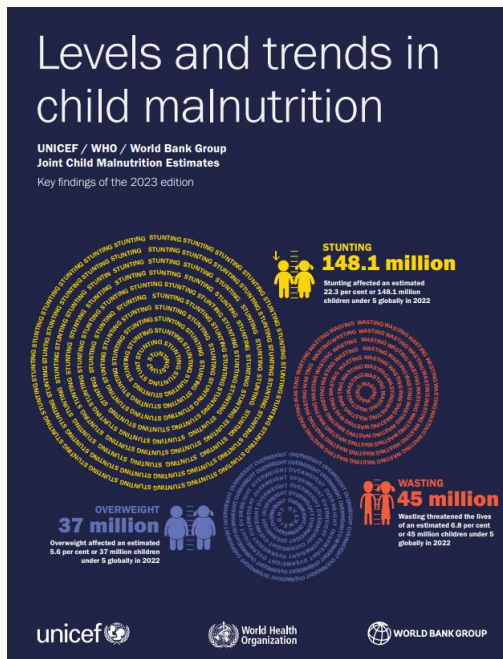
Different types of sources

- ▶ Administrative and other data
 - Out-of-school rate, which can rely on both administrative and survey data.
 - Teacher continuous professional development, which can draw on administrative and learning assessment data.

Other sectors have dealt with similar issues

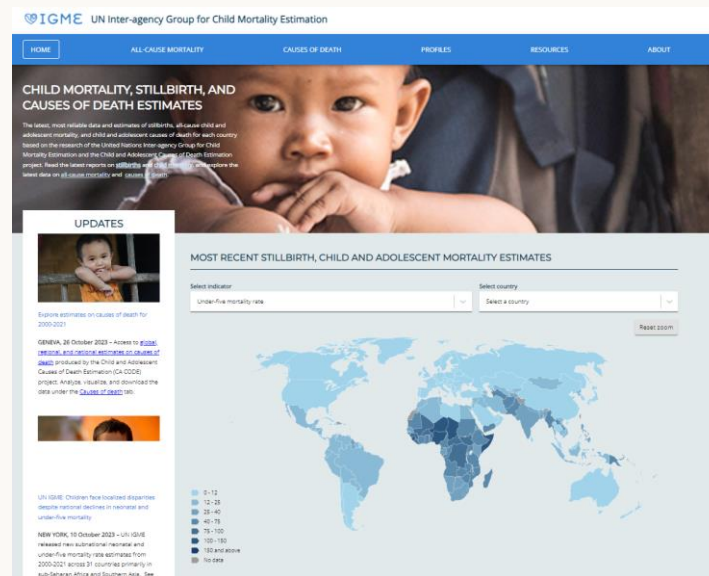
Multiple sources of same type: Nutrition

- ▶ Joint Child Malnutrition Estimates inter-agency group



Different types of sources: Health

- ▶ UN Inter-agency Group for Child Mortality Estimation



- ▶ UN Maternal Mortality Estimation Interagency Group

Completion rate estimation model

= percentage of a cohort of children or young people aged 3–5 years above the intended age for the last grade of each level of education who have completed that grade' ('flow' measure of attainment)

Combining multiple survey sources can:

- ▶ tackle infrequent survey cycles (every three to five years)
- ▶ address variety of sampling and non-sampling errors
- ▶ better record age information
- ▶ universally covers education programs

Cohort model developed

- ▶ Late completion explicitly modelled
- ▶ Age misreporting also addressed

Following TCG decision, model estimates used for regional and global aggregates for the SDG database



Out-of-school rate estimation model

The need for a methodology that combines data sources to estimate out-of-school rates was recognized 20 years ago, when it was acknowledged that *'some sort of composite approach may be needed for estimating time series and producing estimates for the most recent year'*

Using administrative data is challenging in countries with high out-of-school rates

- ▶ enrolment records often incomplete, inaccurate or missing
- ▶ combine enrolment counts with a population measure; often negative rates
- ▶ low school capacity to record student age accurately

Cohort model developed

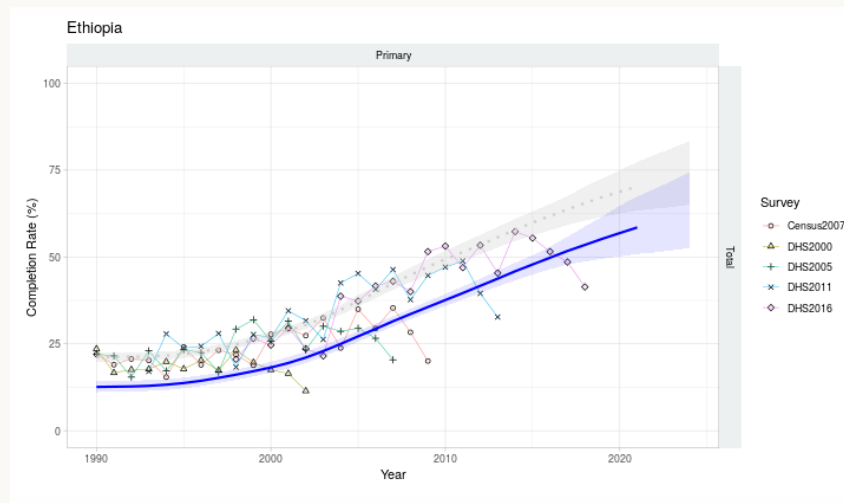
Following TCG decision, model estimates used for regional and global aggregates for the SDG database: 250 million in 2022



Visualization of estimation model results

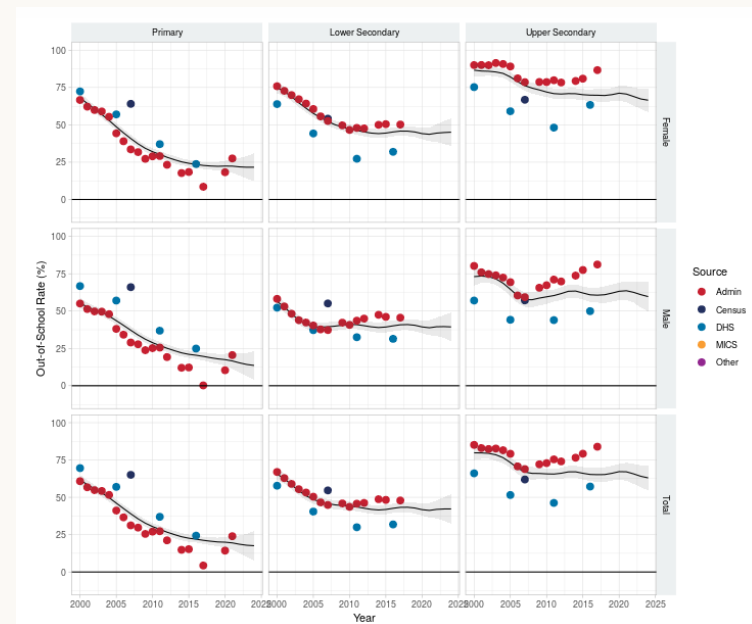
Primary completion rate

▶ Ethiopia



Out-of-school rate

▶ Ethiopia, by age group and sex



Challenges

- ▶ Ensure best practice in reporting estimates based on multiple sources
- ▶ Ensure country participation and ownership in generating estimates
 - Introduce mechanism for countries to seek clarifications, understand the methods underpinning the estimates and contest results that contradict their understanding; and proactively contribute data sources and ideas for model development.
- ▶ Ensure consistency between out-of-school and completion estimates
 - Each estimate is internally consistent, but completion and out-of-school rates are estimated independently, even though they are not
 - Other challenges: model is driven by a cohort approach and cannot easily incorporate an impact on school attendance from one year to the next caused by emergencies

Agenda forward to work with Member States

- ▶ Formalize good practice for reporting estimates
 - Adapt to education and use GATHER best reporting practices = 18 items covering (1) objectives and funding, (2) data sources, (3) data analysis, and (4) results
- ▶ Support country participation and ownership in estimates
 - Include model estimates in the UIS agenda of regional capacity development workshops to familiarize countries with the methods
 - Develop an inventory of surveys (see household surveys) to serves data integration, ensuring countries are involved in the data inputs used
- ▶ Develop a joint model of out-of-school and completion rates
- ▶ Develop models to estimate other indicators that rely on multiple data sources
 - Multiple data sources, including: children over-age; adult education and training
 - Multiple types of data sources, including: participation rate in organized learning (one year before primary entry age; gross early childhood education enrolment ratio; gross enrolment ratio for tertiary education; adult literacy rate

Proposed decision (1)

Data integration: challenges and solutions

- ▶ *Noting* the information presented in the report ‘Integration of statistics: challenges and solution forward’ (1 UIS/EDS/10);
- ▶ *Acknowledging* that multiple sources of data are a growing area of interest in education statistics, which presents opportunities and challenges;
- ▶ *Noting* the initiatives that have recently been taken to use multiple sources and prepare estimation models on out-of-school and completion rates;

Proposed decision (2)

Data integration: challenges and solutions

The UNESCO Conference on Education Data and Statistics

- ▶ *requests* the TCG/EDS Commission to focus efforts on:
 - formalizing good practice for reporting estimates, for instance adapting the WHO GATHER checklist on health to education statistics
- ▶ *invites* the UIS and the GEM Report to:
 - support country participation through a mechanism to address country queries and suggestions;
 - propose a joint model of out-of-school and completion rates
 - propose a prioritization of other indicators that might benefit from development of estimation models that rely on multiple data sources



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