Inter-Agency Group on Education Inequality Indicators (IAG-EII):
Summary of third meeting

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1. PARTICIPANTS

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2. MEETING OBJECTIVES

Members of the Inter-Agency Group on Education Inequality Indicators (IAG-EII) convened for their third meeting, hosted by the UNESCO Institute for Statistics in Montreal. The purpose of the meeting was to learn about recent activities related to education and equity, examine the methodology and data availability for parity indices (SDG indicator 4.5.1), review standards for reporting of indicators calculated from household survey data, and discuss future activities of the IAG.

3. MEETING SUMMARY

Silvia Montoya, UIS Director, opened the meeting and summarized the objectives for the day.

3.1. SESSION 1: SUMMARY OF ACTIVITIES SINCE LAST IAG MEETING

The first session, moderated by Friedrich Huebler, was dedicated to a summary of activities since the last IAG meeting.

In a presentation, Huebler gave an overview of **UIS activities** related to the IAG, which included the creation of an IAG website (http://uis.openplus.ca/iag/) and finalization of the definitions for three indicators, in collaboration with focal points from the GEM Report, OECD, UNICEF and the World Bank: completion rate (SDG indicator 4.1.4), out-of-school rate (SDG indicator 4.1.5), and percentage of children over-age for grade (SDG indicator 4.1.6). The UIS also launched an updated "Equity in Education" web page in December 2017 (http://uis.unesco.org/en/topic/equity-education) and expanded access to its database of education indicators through the UIS Data API (https://apiportal.uis.unesco.org) and the UIS.Stat data warehouse (http://data.uis.unesco.org).

Huebler also summarized recent data releases by the UIS, which included the addition of location and wealth parity indices. In February 2018, the UIS will add disaggregated data for SDG indicator 4.2.2, the participation rate in organized learning (one year before the official primary entry age). Lastly, he introduced recent and upcoming UIS publications, among them a forthcoming "Handbook on Equity in Education" that is intended as a reference for professionals involved in the measurement and monitoring of equity in education, as well as several UIS fact sheets and information papers on topics such as education and disability, education expenditure by households, out-of-school children, and children and adolescents not learning.

Suguru Mizunoya gave a presentation on **UNICEF activities** on education and equity. UNICEF maintains a database with disaggregated indicators from household survey data and plans to add indicator 4.2.2. He also presented work by UNICEF on standard errors and on regressions using education indictors. The sixth round of UNICEF's MICS surveys is being rolled out in more than 40 countries between 2017 and 2019 and UNICEF plans to publish MICS education reports for these countries.

UNICEF developed a Foundational Learning Skills Module for MICS and other surveys, targeting children aged 7-14 years to collect nationally representative data for the grade 2 and 3 component of SDG indicator 4.1.1 (minimum proficiency in reading and mathematics). Because of the regional distribution of MICS, limited data will be collected for some regions, unless the new module is adopted by DHS and other surveys. UNICEF also developed a Parental Involvement in Education and Learning Environment module, and a Child Functioning Module to identify children with disabilities. Mizunoya also described new tools for analysis of education data, reports and research by UNICEF, and work by UNICEF with other organizations. During the subsequent discussion, it was mentioned that modules that collect data from children require additional training for survey staff, and homes must be visited when children are present, which poses challenges for survey programs like DHS.

Daniel Capistrano followed with a presentation on work on **SDG indicators 4.3.1** (participation rate of youth and adults in formal and non-formal education and training) **and 4.6.3** (participation rate of

illiterate youth/adults in literacy programmes) that he carried out for the Technical Cooperation Group on the Indicators for SDG 4-Education 2030 (TCG). Information for indicator 4.3.1 is collected with different surveys (among them AES, PIAAC and SWTS), but the information is not fully comparable because these surveys cover different age ranges and forms of education and because the reference period is not always identical. For indicator 4.6.3, data are available from UIS data collection and from a limited number of national surveys. One issue that was raised during the discussion that followed the presentation is the fact that the number of participants in literacy programmes can exceed the number of illiterate persons, which indicates repeated participation by the same population in literacy programmes.

In the last presentation in this session, Brenday Tay-Lim described options for measuring **SDG indicator 4.6.1** (proportion of population in a given age group achieving at least a fixed level of proficiency in functional literacy and numeracy skills). The first option is to carry out a stand-alone assessment of literacy and numeracy skills. Tay-Lim compared PIAAC and STEP and concluded that the PIAAC conceptual framework could be used to collect data for indicator 4.6.1 because it covers literacy and numeracy, while STEP only covers literacy. One problem with PIAAC is that it is designed for countries at a high level of literacy and is not well suited to capture the skills of low-literate populations. For the latter, OECD is developing a Short Literacy Survey (SLS). UNESCO is considering a Short Literacy and Numeracy Survey (SLNS) but this work is at a very early stage. A second option would be to apply a literacy and numeracy test to a reduced sample and to use the scores to estimate the literacy and numeracy skills of a larger sample, e.g. from a population census. A third option is to add a literacy and numeracy module to existing survey programmes. The costing of assessments was discussed after the presentation. Countries may look at the cost of a survey like MICS and conclude that the cost of a literacy and numeracy assessment should not exceed the per-indicator cost of data collected with a multi-topic survey.

3.2. SESSION 2: SDG INDICATOR 4.5.1: PARITY INDICES (FEMALE/MALE, RURAL/URBAN, BOTTOM/TOP WEALTH QUINTILE AND OTHERS)

The second session, on parity indices and issues linked to disaggregation, was moderated by Moritz Bilagher.

Friedrich Huebler gave a presentation on **SDG indicator 4.5.1**, parity indices, which are expected to be calculated for close to 30 global and thematic indicators for SDG 4. Huebler described three problems with parity indices as they are currently calculated and presented. First, indicators like the gender parity index (female/male value of an indicator) are not symmetrical around 1 and have no upper limit. This problem can be solved by calculating an adjusted parity index. For example, the adjusted GPI is calculated as female/male if the female value is less than or equal to the male value, and as 2-1/GPI if the female value is greater than the male value. The adjusted GPI is symmetrical around 1 and is limited to values between 0 and 2. Because of this, adjusted parity indices are also suitable for indicators that tend to approach 0, such as the out-of-school rate; the unadjusted parity index is likely to take on extreme values with such indicators. Huebler also proposed a new standard way of visualizing parity indices, with bars that originate at 1 instead of 0 so that the bar length indicates the degree of disparity.

The second problem that affects parity indices is a lack of standard definitions for dimensions of disaggregation. For example, there is currently no universal definition of "urban" and "rural", wealth

indices calculated from information on household assets are not fully comparable across countries, and the definitions of disability vary across surveys and censuses. Because of these problems, it is important to document all data sources and definitions. Third, for several SDG 4 indicators no or only limited data are available in the database of the UIS. To close this gap, it is necessary to explore new data sources, develop new data collection instruments, and increase the cross-national comparability of data.

Corinne Heckmann also gave a presentation on **parity indices**, focusing on disaggregation by sex, socioeconomic status, immigrant status, and urban or rural location. She highlighted gaps in current data availability, as well as problems of comparability across countries and surveys. She gave the example of socioeconomic status, for which parental education is used by OECD as a proxy for some indicators, and urban or rural location, for which subnational areas are used as a proxy for some indicators.

The last presentation in this session was given by Moritz Bilagher, who spoke about **parity indices** from the perspective of GPE and mentioned additional dimensions for which data are currently not widely available, including ethnicity and conflict-affected populations. He also described the GPE Equity Index, which combines information on disparities linked to sex, location and wealth and which was developed in cooperation with the UIS, GEM, UNICEF and the World Bank. According to work by the GPE, socioeconomic status is the most important descriptor of learning. Lastly, he described a new project of GPE and UIS on disaggregation of education statistics by disability status.

The **discussion after the presentations** covered several issues. For wealth indices, cross-country comparability and the question of absolute versus relative wealth was discussed. The present wealth index, with its five quintiles, is a measure of relative wealth within a country. By contrast, an absolute wealth index with comparable values across countries would yield levels of wealth that would not be relevant in many countries. SDG monitoring is regional, which has important implications for regional aggregates based on the wealth index and for comparisons of inequality within and between countries. Regional analysis based on national wealth indices is still possible because disparities between the richest and poorest segments of a country's population are important regardless of the national level of development. As an alternative, analysis of education data in relation to national and global poverty lines was discussed but for such analysis limited data are currently available.

Other dimensions of disaggregation were also reviewed. For location, it was remarked that the distinction between urban and rural is not truly binary but a continuum. The participants also agreed that age would be an important dimension of disaggregation, for example to compare the literacy skills of older and younger cohorts. Another potential comparison could be made between the public and private sector, although varying definitions of "private" across countries would complicate such analysis.

3.3. SESSION 3: STANDARDS FOR REPORTING OF INDICATORS CALCULATED FROM HOUSEHOLD SURVEY DATA

The third session, on standards for reporting, was moderated by Suguru Mizunoya.

First, João Pedro Azevedo and David Newhouse gave a presentation on the use of **harmonized household survey data** at the World Bank. Recoding individual surveys to assign common variable

names and common codes facilitates easy and rapid cross-country analysis. The World Bank archive contains mostly survey data obtained from National Statistics Offices. Azevedo and Newhouse described two main harmonized databases with individual-level data: the Global Micro Database (GMD) and the International Income Distribution Database (I2D2). Combined, these databases contain data from close to 1500 surveys from more than 150 countries, covering the years 1989 to 2014. Education variables are limited to school attendance, educational attainment, and literacy. Household expenditure on education is available for a subset of countries.

In the **discussion** that followed, options for collaboration between the World Bank and other organizations were examined. Access to the databases by non-World Bank staff is limited because of restrictions imposed by countries but it is possible to work on joint products. It would also be possible for the World Bank to produce indicator estimates and share them with others for dissemination. Another option would be a joint work plan involving UIS, UNICEF and the World Bank, possibly with financial support through the new Knowledge and Innovation Exchange (KIX) program of GPE.

Next, Friedrich Huebler gave a presentation on **reporting standards for education indicators** calculated from household survey data. He highlighted three challenges for reporting of disaggregated data. First, the sample size is a problem for calculation of indicators, especially as a survey sample is increasingly disaggregated to examine smaller subgroups of the population. At present, the UIS suppresses all indicator estimates calculated from fewer than 25 unweighted observations, similar to DHS and MICS. Sample size is a particular challenge for disability and similar relatively rare characteristics, where even simple disaggregation by sex is not always possible. Second, Huebler reviewed the benefits and drawbacks of the calculation and reporting of measures such as standard errors, confidence intervals and coefficients of variation. Third, he described some issues related to documentation of education data and indicators.

Suguru Mizunoya gave a presentation on **reporting standards used by UNICEF**. For MICS, indicator values are suppressed if the unweighted sample size is less than 25. For unweighted sample sizes between 25 and 49, indicator values are reported in parentheses. For key indicators, standard errors are provided in MICS reports. Mizunoya also mentioned that for the calculation of regional and global estimates, data must be available for more than 50% of the population in a region. (The UIS requires publishable data for at least 33% of the population in a region but generates imputations for each country without data.)

The **discussion** for this topic led to the conclusion that the calculation and dissemination of standard errors for all indicators is not feasible and that standard errors should not be used to decide on publication or non-publication. Instead, it was recommended to calculate standard errors only for key indicators, similar to DHS and MICS reports and *Education at a Glance* by the OECD, and to disseminate them with guidelines for readers. The group also discussed exploring alternatives to parity indices for measurement of disparities, in preparation of the SDG indicator review in 2020. The use of regression results to assess the significance of differences between groups of disaggregation was also reviewed.

3.4. SESSION 4: FUTURE ACTIVITIES OF THE IAG

The last session of the meeting, on future activities of the IAG, was moderated by Alison Kennedy.

The first topic on the agenda was the **mandate of the IAG** and whether it should be expanded to cover education indicators derived from household survey data more broadly, with less emphasis on indicators linked to the measurement of inequality. No objection was raised and an examination of the TOR of the IAG showed that such a change in the focus of the group would be covered by the current TOR.

An important issue was the **linkage of IAG work to the work of the TCG**, the Technical Cooperation Group on the Indicators for SDG 4-Education 2030. Kennedy described the role of the TCG and explained that the IAG could provide input to activities by the IAG. She also mentioned that some thematic indicators might become global indicators in the future. It was decided that a report on IAG activities would be prepared for the next TCG meeting, held from 16 to 18 January 2018.

The participants next agreed on the next **indicators to be defined** by the IAG: 4.5.1 (parity indices), 4.2.2 (participation rate in organized learning one year before the official primary entry age), and 4.2.4 (gross early childhood education enrolment ratio in pre-primary education and early childhood educational development). The focal points from each agency who will work on the definitions will also consider looking at indicator 4.3.2 (gross enrolment ratio for tertiary education), although its calculation may be difficult with data from surveys that only collect current school attendance for persons up to 24 years of age.

For **reporting standards**, the group will examine the option not to publish parity indices if the difference between the values for the groups in the numerator and denominator is not statistically significant. The group will also examine options for joint research, for example on descriptive statistics and regression results, with a proposal for such work to be drafted by Suguru Mizunoya. Husain Abdul-Hamid will coordinate possible activities of UIS and UNICEF with the World Bank.

4. NEXT STEPS

- The UIS will add the meeting documents (agenda, presentations, meeting summary) to the IAG website at http://uis.openplus.ca/iag/.
- The UIS will present a report on IAG activities at the January 2018 meeting of the Technical Cooperation Group on the Indicators for SDG 4-Education 2030 (TCG).
- Suguru Mizunoya will draft a proposal for joint research of UIS, UNICEF and World Bank by mid-January.
- Focal points from the member agencies of the IAG will prepare the next set of indicator definitions for SDG indicators 4.5.1, 4.2.2 and 4.2.4. Target date: end-February 2018.
- The UIS will review options for calculating and reporting standard errors and similar measures for key education indicators in its database.