Definitions and Properties of African Union Indicators
For Monitoring the Plan of Action in the Second Decade

AFRICAN UNION
2011

census
source
education management information systems
ratio
calculate
technical and vocational education
teacher development
early childhood education
data
higher and tertiary education
gender and culture
quality management
statistics
Acknowledgements

We wish to acknowledge the incorporation of key texts from the UNESCO Institute for Statistics Education Indicator Technical Guidelines (2004) and contributions from ACALAN, SIL International Africa Area, the EFA Teacher Task Force and other partners.

This manual was produced on behalf of the AU Observatory by a team from the ADEA Working Group on Education Management and Policy Support under the supervision of Angela Arnott (Team Leader) together with Tegegn Nuresu Wako, who was supported by Brighton Mutasa, Simbarashe Sibanda and Takudzwa Nkomo.

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With acknowledgements to wikimedia commons for some photographic material.
Preface

The Association for the Development of Education in Africa, ADEA, has since the launch of the African Union’s Plan of Action for the Second Decade of Education aligned its strategic objectives and work efforts with this continental initiative.

ADEA is a Pan – African network organisation formulated out of the need to create forums for development partners (multi and bi-laterals) to engage in policy dialogue on critical education challenges with senior decision makers in government. We have nine Working Groups focused on key areas in Education, which include Higher Education, Books and Learning, Early Childhood Development, Non-formal Education, Distance Education, Maths and Science, Teacher Development, Communication and a merged Working Group on Education Management and Policy Support – all of whom work with the AU’s Plan of Action in various ways. Governed by the Ministers of the AU’s Bureau and key development partners, we are proud of our achievements in ensuring that the African Union’s Priority Areas in its Plan of Action are increasingly realized.

We are conscious that the availability of relevant information is a sine qua non of informed decision-making and public discourse, and the development of information systems is an essential part of the transformation of our Ministries of Education into responsive learning organizations capable of solving the critical development issues in Africa. We are pleased to have produced this manual with financial support from USAID, and in partnership with numerous other players including the AU Restricted Committee on EMIS under the leadership of the AU Education Observatory, to support the AU’s programme in developing capacity of member states to monitor their progress in implementing the Plan of Action for the Second Decade of Education.

Ahlin BYLL-CATARIA
Executive Secretary
ADEA
Foreword

In January 2006, after assessing the First Decade of Education, the African Union Conference of Heads of States and Governments decided to launch a Second Decade. In September of the same year, in Maputo, Mozambique, the Conference of African Ministers of Education adopted the project on an Action Plan for a Second Decade that covered seven priority areas, including the Education Management Information Systems (EMIS).

Of all the selected priority areas, the EMIS, as a transversal area, was considered essential to the assessment and follow-up of the actions taken by the States and institutions in the Education arena. This is why, since 2008, the Education Division of the AU Commission’s Department of Human Resources, Science and Technology first issued a manual on indicators for monitoring the implementation of the Action Plan for the Second Decade.

This manual is therefore the second product issued in the same scope with the technical support of the ADEA’s Working Group on Education Management and Policy Support. Drawing lessons from the release of the first manual, it attempts to fill the gaps found in the former whilst adopting a more pedagogical approach to the use of this important tool by EMIS specialists within State-run Education institutions.

Besides dealing with the definition and calculation methods, this manual specifies the usefulness of each indicator and specifies whether it needs to be subject to a pilot study so as to better establish the probable difficulties that its use could generate.

But as in every human endeavor, this manual should not be considered perfect. This is why its users are requested to read and use it with a critical mind and forward their remarks and observations to us so as to improve it continually. On this note, we congratulate all those who contributed to its production. And to its future users we say, ‘Enjoy your reading!’

Dr. Amadou H. DIOP

Executive Secretary
IPED-African Union Observatory for Education
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<th>Definition</th>
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<tr>
<td>ADEA</td>
<td>Association for the Development of Education in Africa</td>
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<tr>
<td>ASER</td>
<td>Age Specific Enrolment Ratio</td>
</tr>
<tr>
<td>AU</td>
<td>African Union</td>
</tr>
<tr>
<td>COMEDAF</td>
<td>Conference of Ministers of Education of the African Union</td>
</tr>
<tr>
<td>CSO</td>
<td>Central Statistics Office</td>
</tr>
<tr>
<td>DHS</td>
<td>Demographic and Health Survey</td>
</tr>
<tr>
<td>ECD</td>
<td>Early Childhood Development</td>
</tr>
<tr>
<td>EMIS</td>
<td>Education Management Information Systems</td>
</tr>
<tr>
<td>GED</td>
<td>Global Education Digest</td>
</tr>
<tr>
<td>GER</td>
<td>Gross Enrolment Ratio</td>
</tr>
<tr>
<td>GPI</td>
<td>Gender Parity Index</td>
</tr>
<tr>
<td>HEMIS</td>
<td>Higher Education EMIS</td>
</tr>
<tr>
<td>ICT</td>
<td>Information and Communication Technology</td>
</tr>
<tr>
<td>ISCED</td>
<td>International Standard Classification system of Education</td>
</tr>
<tr>
<td>MDGs</td>
<td>United Nations Millennium Development Goals</td>
</tr>
<tr>
<td>MICS</td>
<td>Multiple Indicator Cluster Survey</td>
</tr>
<tr>
<td>MoE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>NER</td>
<td>Net Enrolment Ratio</td>
</tr>
<tr>
<td>NESIS</td>
<td>National Education Statistical Information Systems</td>
</tr>
<tr>
<td>NFE</td>
<td>Non Formal Education</td>
</tr>
<tr>
<td>NSO</td>
<td>National Statistics Office</td>
</tr>
<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
</tr>
<tr>
<td>PPP</td>
<td>Purchasing power parity</td>
</tr>
<tr>
<td>PTR</td>
<td>Pupil-Teacher Ratio</td>
</tr>
<tr>
<td>REC</td>
<td>Regional Economic Community</td>
</tr>
<tr>
<td>TVET</td>
<td>Technical and Vocational Education and Training</td>
</tr>
<tr>
<td>UIS</td>
<td>UNESCO Institute for Statistics</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational Scientific and Cultural Organisation</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
</tr>
</tbody>
</table>
Introduction

Who is the Indicator Handbook for?

A key strategy in modern education management is measurement – and a key feature of measurement is the use of quantitative indicators as both early warning measures of system dysfunction as well as benchmarks against which progress is assessed. This indicator handbook is part of a bigger capacity building strategy to empower education managers in African Ministries of Education to perform their jobs more effectively.

This Indicator Handbook is intended to serve as a resource for a greater understanding of how to use indicators, to measure, monitor and track education delivery within Ministries of Education. It is aimed at statisticians, planners, researchers and education managers who are tracking their Ministry’s performance in achieving the goals of the African Union’s Plan of Action for Education in the Second Decade.

How is the Indicator Handbook organized?

This Indicator Handbook is divided into eight main parts or sections. Each section is a priority area of the African Union’s Plan of Action with specific goals. A group of indicators has been identified and agreed upon by members of the AU Observatory’s Technical Committee and endorsed at various points by representatives from member states, Regional Economic Communities and some key partners such as UNESCO and UNICEF.

The priority areas are:

1. Gender and Culture
2. Education Management Information Systems
3. Teacher Development
4. Higher and Tertiary Education
5. Technical and Vocational Education
6. Curriculum and Learning Materials
7. Quality Management
8. Early Childhood Education

How to use it?

Countries are expected to create a national committee to produce their AU country report. These committees will consist of representatives of the different priority areas mentioned above. Their role will be to collect information pertinent to their area, analyse and write the country reports. This Handbook is to provide technical advice on how to identify, calculate and interpret the key indicators associated with monitoring the various priority areas. Users are requested to read each indicator in detail and determine how to follow the different activities in producing the indicator. This Handbook complements a COMEDAF V Reporting Framework and an Excel matrix of all these indicators.

This group of indicators is based upon what is thought to be feasible and essential to track the specifics of the goals of the 8 priority areas. Some of the proposed indicators are still in their pilot phase and this is indicated in the indicator template. These indicators are optional. However, countries are urged to complete as much of the listed indicators as possible.
A. Gender and Culture

A.I Gross Enrolment Ratio

Focus areas: Quality Management, Gender, Gender and Culture and Early Childhood Development (ECD)

Definition: Total enrolment in a specific level of education, regardless of age, expressed as a percentage of the eligible official school-age population corresponding to the same level of education in a given school-year.

Purpose: Gross Enrolment Ratio (GER) is widely used to show the general level of participation in a given level of education. It indicates the capacity of the education system to enroll students of a particular age-group. It is sometimes used as a substitute for net enrolment ratio (NER) when data on enrolment by single years of age are not available. Furthermore, it can also be a complementary indicator to NER by indicating the extent of over-aged and under-aged enrolment. Comparisons across male and female GER indicate the degree of equity of girls and boys accessing school.

Calculation method: Divide the number of pupils (or students) enrolled in a given level of education regardless of age by the population of the age-group which officially corresponds to the given level of education, and multiply the result by 100. Obtain data for females and males separately, at a level of education in a given school year.

Formula:

\[
\text{Gross Enrolment Ratio} = \frac{\text{Enrolment at level of education}}{\text{Population of official age group for level of education}} \times 100
\]

Data required

<table>
<thead>
<tr>
<th>Source of data</th>
<th>Data required</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMIS - Ministry of Education</td>
<td>Total enrolment for a given level of education by gender</td>
</tr>
<tr>
<td>Central Statistical Office (CSO)</td>
<td>Population of the age-group corresponding to the specified level by gender.</td>
</tr>
</tbody>
</table>

Type of disaggregation for the indicator: This indicator is to be disaggregated by gender and by level of education (pre-primary, primary and secondary education)

Interpretation: A high GER generally indicates a high degree of participation, whether the pupils belong to the official age-group or not. A GER value of 100 percent indicates that a country is, in principle, able to accommodate all of its school-age population, but it does not indicate the proportion already enrolled. The achievement of a GER of 100 percent is therefore a necessary but not sufficient condition for enrolling all eligible children in school. When the GER exceeds 90 percent for a particular level of education, the aggregate number of places for pupils is approaching the number required for universal access of the official age-group. However, this is a meaningful interpretation only if one can expect the under-aged and over-aged enrolments to decline in the future to free places for pupils from the expected age-group.

Quality standard: GER at each level of education should be based on total enrolment in all types of schools and education institutions, including public, private and all other institutions that provide organized educational programs.

Limitation: GER can be over 100% due to the inclusion of over-aged and under-aged pupils/students because of early or late entrants, and grade repetition. In this case, a rigorous interpretation of GER needs additional information to assess the extent of repetition, late entrants, etc.
A.2 Gender Parity Index

Focus area: Gender and Culture and Early Childhood Development (ECD)

Definition: The Gross Enrolment Rate of girls relative to that of boys, expressed as a value of one when there is parity between the sexes.

Purpose: The Gender Parity Index (GPI) measures progress towards gender parity in education participation and/or learning opportunities available for women in relation to those available to men. It is a comparison of the female and male values for a particular indicator in a given year. It also reflects the level of women’s empowerment in society.

Calculation method: Divide the female value of a given indicator by that of the male

Formula:

\[
\text{Gender Parity Index} = \frac{\text{Female value for an indicator}}{\text{Male value for an indicator}}
\]

Data required | Source of data
---|---
Male and female values of a given indicator | EMIS - Ministry of Education

Type of disaggregation for the indicator: This indicator is to be disaggregated by level of education (pre-primary, primary and secondary).

Interpretation: A value of one indicates a high degree of gender parity or balance. Less than one indicates insufficient girls in school. Greater than one indicates insufficient boys in school.

Quality standard: See quality standards for the underlying indicators

Limitation: Gender Parity Indicator is a macro indicator that lumps pupils by gender and ignores the distribution by school, age or grade

Is the indicator to be piloted?

- Yes
- No

Methodology: How will the indicator be collected?

- Census survey
- Sample survey

General Remarks: This indicator is based on other indicators. When the data source indicator is not available, this indicator cannot be computed.
A.3 Percentage of Primary Aged Children out of School

**Purpose:** The purpose of this indicator is to measure the proportion of children without access to primary education.

**Calculation method:** Divide the number of children of the official school age group who are out of school by the total number of children of the official age group.

**Formula:**

\[
\text{Percentage children out of school} = \frac{\text{Children of official school age group out of school}}{\text{Total number of children of the official school age}} \times 100
\]

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of children out of school by gender</td>
<td>EMIS-Ministry of Education</td>
</tr>
<tr>
<td>Total number of school aged children by gender in the population</td>
<td>CSO</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by gender.

**Interpretation:** A higher percentage of percentage of primary school children out of school indicates that a huge portion of children still find it difficult to access primary education. Disparities among girls and boys out-of-school status tend to reflect the low status given to educating the girl child.

**Quality standard:** Source data must be obtained from country CSO/NSO offices as they are the authority for population estimates. In most cases the source data is not readily available.

**Limitation:** This indicator does not tell us how many of those children out of school have attended schools previously.

Is the indicator to be piloted?

[ ] Yes [x] No

**Methodology:** How will the indicator be collected?

[ ] Census survey [x] Sample survey

**General Remarks:** Note that, in the absence of population estimates, the indicator can be obtained by subtracting the number of pupils in school from the total number of pupils of the official school admission age. Alternatively 100 minus the Net Enrolment Rate.

A.4 Percentage of Female Teachers

**Focus area:** Gender and Culture and Early Childhood Development (ECD)

**Definition:** The number of female teachers at a given level of education expressed as a percentage of total number of teachers (male and female) at the same level in a given school-year. Teachers are defined as persons whose full time professional activity involves the transmitting of knowledge, attitudes and skills that are stipulated in a formal curriculum programme to pupils or learners enrolled in a formal educational institution.

**Purpose:** It indicates the gender composition of the teaching force and helps in assessing the need for opportunities and/or incentives to encourage women to participate in teaching at a given level of education.
Calculation method: Divide number of female teachers for a given level of education (e.g. Primary) by the total number of teachers in that level in a given year multiplied by 100.

**Formula:**

\[
\text{Percentage Female teachers} = \frac{\text{Number of female teachers}}{\text{Total number of teachers}} \times 100
\]

**Data required** | **Source of data**
--- | ---
Number of full-time female teachers for a given year | EMIS - Ministry of Education
Total number of teachers for a given year | EMIS - Ministry of Education

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by level of education (pre-primary, primary and secondary).

**Interpretation:** Percentage of female teachers approaching 50% indicates gender parity in the composition of the teaching force. A value greater than 50% reveals more opportunities and/or preferences for women to participate in teaching activities at a specific level, grade or programme of education. Equitable utilization of female teachers is associated with less sexual harassment of female students by male teachers and students.

**Quality standard:** When this indicator is calculated by level of education, care must be taken to avoid counting the same teacher twice as there are teachers who teach in more than one level of education.

**Limitation:** This indicator measures the level of gender representation in the teaching profession rather than the effectiveness and quality of teaching. The association with higher female enrolment is not yet statistically established.

Is the indicator to be piloted?

- [ ] Yes  
- [x] No

**Methodology:** How will the indicator be collected?

- [x] Census survey  
- [ ] Sample survey

**A.5 Existence of African Language Policy**

**Focus area:** Gender and Culture

**Definition:** An African language is an indigenous or vernacular language spoken by a given African population. There is a high linguistic diversity in Africa as it is estimated that languages spoken in Africa range from 800 to just above 2000. An African language, by definition, would have originated in Africa, have its own recognized African culture and be spoken as a first language by Africans. It includes languages such as Afrikaans, Creole (as spoken in Mauritius, Seychelles and other places) and Arabic (the dialects spoken in North and western Africa).

**Purpose:** To promote the use of local languages and their associated cultures primarily and secondarily to ensure that higher levels of literacy and numeracy are obtained as children learn more fluently in their mother tongues. A secondary purpose is to identify how many African languages are officially recognized (or “codified”) by countries and the existence of a legal process for recognizing/codifying languages in the nation.

**Calculation method:** The existence of legislation or a legal instrument indicating the promotion of indigenous African languages as the medium of instruction in schools and other education institutions. Provide
information on the number of African languages that are officially recognized (or ‘codified’) by the country and the existence of a legal process for recognizing/codifying languages in a nation.

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
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</thead>
<tbody>
<tr>
<td>Legislation on a country’s African language policy</td>
<td>Government</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by country.

**Interpretation:** A short description on the policy and how it is interpreted in schools and other education institutions. Identification of different forms of official recognition and promotion of use of the indigenous languages e.g. through media will indicate the priority to which government gives its local language.

**Quality standard:** The description covers all levels of education were the policy is enforced. It is also critical to give a clear explanation of what constitutes an officially recognized indigenous African language nationally.

**Limitation:** It does not tell us of the challenges of implementation e.g. where there are insufficient children speaking a vernacular language in a school to warrant a full time vernacular teacher. It also does not tell us about the existence of other indigenous languages which lack an official status.

Is the indicator to be piloted?

- X Yes
- No

**Methodology:** How will the indicator be collected?

- Census survey
- Sample survey

**General Remarks:**

SIL International (Kenya) and ACALAN have advised on these language indicators.

**A.6 Percentage of pupils being taught using an African language as a medium of instruction**

**Focus area:** Gender and Culture

**Definition:** The percentage of pupils being taught in their African mother tongues as a medium of instruction in education institutions in a given level of education and a year. This is limited to intentional, systematic use of the mother tongue as the medium of instruction supported by teacher training and pedagogic materials.

**Calculation method:** Divide number of learners being taught in their mother African tongues for a given level of education and a given year by the total enrolment in that level in a given year multiplied by 100. Do not count learners who are mother tongue speakers in the colonial languages.

**Formula:**

\[
\text{Percentage taught in mother tongue} = \frac{\text{Number of learners taught in mother language}}{\text{Total enrolment}} \times 100
\]

**Data required**

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total enrolment by level of education</td>
<td>EMIS</td>
</tr>
<tr>
<td>Number of learners being taught in their African mother tongue</td>
<td>EMIS</td>
</tr>
</tbody>
</table>
**Type of disaggregation for the indicator:** This indicator is to be disaggregated by level of education (pre-primary, primary and secondary) and where possible by grade.

**Interpretation:** The medium of instruction in mother tongue in schools is a controversial issue as parents want their children to also master fluency in internationally recognized languages such as English, French, Arabic but research demonstrates that it is important that children are introduced to numeracy and literacy in their mother tongue for improved learning outcomes in the long term.

**Quality standard:** The recommendation is that the early grades are taught in mother-tongue but the variations on which grade children make the shift into non-mother tongue instruction compromises cross country comparisons. Hence it’s important that the grade at which this occurs is provided.

**Limitation:** There is a difference between policy and practice and in schools where teachers lack skills in non-mother tongue languages, mother tongue instruction may continue beyond the official grade. This indicator does not tell us about the other indigenous languages in the country that are not officially recognized. It also does not tell us the challenge of implementing such policy e.g. where there are insufficient children speaking a vernacular language in a school to warrant a full time vernacular teacher.

Further the indicator is not measured by observation, but inferred from the number of pupils who attend schools that are recognized mother tongue medium schools. The two ways of measurement would give you very different results.

Is the indicator to be piloted?

- [x] Yes  
- [ ] No

**Methodology:** How will the indicator be collected?

- [x] Census survey  
- [ ] Sample survey

**General Remarks:** Countries need to include information on the provision of mother tongue instruction in their school census questionnaires if it is not already collected

---

**A.7 Percentage of Learners learning an African language as a subject**

**Focus area:** Gender and Culture

**Definition:** The percentage enrolment of learners taking an indigenous African language(s) as a curriculum subject at secondary and tertiary (teachers’ colleges and universities) levels of education in a given year. A distinction must be made between required and optional courses as this would affect the enrolment statistics.

**Purpose:** To gauge the size of learners learning their indigenous African languages and their mother tongues at post primary level of education.

**Calculation method:** Divide the number of learners taking an indigenous language(s) as a curriculum subject for a given level of education and a given year by the total enrolment in that level in a given year multiplied by 100. Distinguish between required and optional courses.

**Formula:**

\[
\text{Percentage Learners} = \frac{\text{Total learners taking an indigenous language as a curriculum subject}}{\text{Total enrolment}} \times 100
\]
<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of learners taking an indigenous language as a curriculum subject by requirement and by option and by education level</td>
<td>HEMIS- Ministry of Higher Education</td>
</tr>
<tr>
<td>Total Enrolment by level</td>
<td>HEMIS-Ministry of Higher Education</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by level of education (pre-primary, primary and secondary) and by type of higher and tertiary institution (teacher training colleges, technical colleges and universities)

**Interpretation:** The more active a country is in promoting the use of indigenous languages the more cohesive and coherent the local cultures will be. Higher percentage enrolments in national languages are an indicator of the importance given to local cultures and languages in a country.

Quality standard: Comprehensive coverage of the issue.

**Limitation:** Interpretation of this indicator is difficult as there are no clear benchmarks for cross comparability. Additionally, what is being assessed is the number of places where African languages are taught as a subject versus who is taking the courses that are available. These are separate statistics. Also, a distinction needs to be made between whether the courses are optional or required as this would affect the numbers too.

Is the indicator to be piloted?

- [x] Yes
- [ ] No

**Methodology:** How will the indicator be collected?

- [ ] Census survey
- [x] Sample survey

**General Remarks:** Countries need to include information on the enrolment of pupils in national African languages in their school census questionnaires if it is not already collected.
B. EMIS

B.I School Census Return Rate

Focus area: EMIS (Education Management Information Systems)

Definition: The School census return rate is defined as the number of questionnaires completed and returned from education institutions expressed as a percentage of total number of institutions expected to return the questionnaires.

Purpose: This indicator provides an indication of the comprehensiveness and accuracy of the national school educational statistics. It is expected that Ministries collect near 100% of schools’ questionnaires. On the whole, the percentage indicates how well the data collection system is working.

Calculation method: Divide number of schools who have sent in their census questionnaire for that year by the total number of schools registered on the national master list of schools for the year.

Formula:

\[ SCRr = \frac{\text{Number of schools who have returned the completed annual questionnaire}}{\text{Total number of schools registered on national masterlist of schools}} \]

Where: SCRr = School census return rate

Data required | Source of data
---|---
No of School questionnaire filled and returned | EMIS - Ministry of Education
No of schools by type (public and private) and by level registered in the current census year | EMIS - Ministry of Education

Type of disaggregation for the indicator: This indicator is to be disaggregated by type of school (public, private, formal and non-formal education) - and by level of education (pre-primary, primary, secondary)

Interpretation: The response rate indicates the degree of coverage of the schools census. This indicator can also be used also to indicate the level of effective EMIS management and follow up at different levels (districts, provinces, and central ministry). It also indicates the level of accuracy in the reported annual national statistics.

Quality standard: The accuracy of this indicator is dependent on Ministries having up to date master lists or directories of registered schools (public and private)

Limitation: Ministries must prepare and complete list of schools by level of education annually. Master lists not regularly updated will provide an incomplete picture of number of schools which will affect the calculation of the return rate.

Is the indicator to be piloted?  
- [ ] Yes  - [x] No

Methodology: How will the indicator be collected?  
- [x] Census survey  - [ ] Sample survey

General Remarks: This information is essential for estimating missing data. Hence, should be compiled before the annual statistical bulletin is produced.
B.2 Existence of Functional EMIS Systems by Sub Sectors

Focus area: EMIS (Education Management Information Systems).

Definition: EMIS refers to a system for collection, processing, analysis, publication, dissemination and rendering of Information services for the Management of Educational resources and services.

Purpose: To assess if a country has recognized the importance of using evidence based decision making practices for the education and training sector. This presupposes the existence of operational management information systems at all levels of education. Ideally an effective EMIS should cover all levels of education from pre-primary up to and including tertiary and non-formal education.

Calculation method: A Ministry is able to provide basic statistical information on enrolment, facilities and teachers for all educational levels (pre-primary, primary, secondary, post-secondary, tertiary and non-formal education). This will be determined by the availability of international data, which will be ranked according to a set scale.

The functionality of the EMIS System for the various subsectors will be determined according the following levels:

<table>
<thead>
<tr>
<th>Data Availability for Sector</th>
<th>EMIS Functionality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic data for 2 out of 6 sub-sectors is available</td>
<td>Basic EMIS System</td>
</tr>
<tr>
<td>Basic data is available for at least 3 sub-sectors</td>
<td>Intermediary EMIS System</td>
</tr>
<tr>
<td>Basic data for all education sub-sectors is available</td>
<td>Self-Sustaining EMIS System</td>
</tr>
</tbody>
</table>

Data required

- List of indicators reported on by level
- List of internationally required indicators

Source of data

- EMIS
- EMIS, International body e.g UIS

Type of disaggregation for the indicator: This indicator can be disaggregated by levels of education, type of institution (private/public)

Interpretation: The availability of the data by different levels indicates the degree of EMIS functionality across the sub-sector.

Quality standard: Comprehensive, timely and accurate data is the quality norm

Limitation: Availability of data is not a real reflection of the functionality of that the information system supporting that level of education. It is possible that data is available but its incomplete, inaccurate and not timely.

Is the indicator to be piloted?

Yes [ ] No [X]

Methodology: How will the indicator be collected?

[ ] Census survey [X] Sample survey

---

1 Sub-sectors include: Pre-primary, secondary, tertiary, technical and vocational, teachers colleges, and non-formal education sectors of the ministry
B.3 Reporting Rate of International Data Coverage

Focus area: EMIS

Definition: The provision of the required statistics to the UNESCO Institute for Statistics’ annual questionnaires.

Purpose: To assess the efficacy of countries being able to provide the appropriate statistics within the UIS time frames that will allow cross country comparison.

Calculation method: The availability of published data by level as reported in the UNESCO’s Global Education Digest (UIS) for the appropriate year.

Formula:

\[
\text{Reporting Rate of International Data Coverage} = \frac{\text{Number of indicators reported}}{\text{Total number of indicators required}} \times 100
\]

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reporting rate on AU Indicators</td>
<td>AU Outlook Database or UIS’s latest Global Education Digest</td>
</tr>
</tbody>
</table>

Type of disaggregation for the indicator: This indicator is to be disaggregated by the African Union priority areas in the AU Plan of Action for Education in the Second Decade in Africa.

Interpretation: The country’s provision of education data to international bodies such as the UNESCO Institute for Statistics for global comparisons, can give a fair indication of the level of robustness of a country’s EMIS. A higher reporting rate for international data implies a more developed EMIS system.

Quality standard: Comprehensive, timely and accurate data is the quality norm

Limitation: The shortage of planners and statisticians in most African ministries impacts negatively on the completion of the UIS annual questionnaires

Is the indicator to be piloted? 

- [ ] Yes  
- [x] No

Methodology: How will the indicator be collected?

- [ ] Census survey  
- [x] Sample survey
C. Teacher Development

C.1 Pupil Teacher Ratio

Focus area: Teacher Development and Early Childhood Development (ECD)

Definition: Total number of pupils per teacher at a specific level of education in a given school year. Teachers are defined as persons whose full time professional activity involves the transmitting of knowledge, attitudes and skills that are stipulated in a formal curriculum programme to students enrolled in a formal education institution.

Purpose: It measures the level of human resources input in terms of number of teachers in relation to the size of the pupil population. It should be benchmarked against established national norms on the number of pupils per teacher for each level or type of education.

Calculation method: Divide the total number of pupils enrolled at the specific level of education by the number of teachers for a given level and year.

Formula:

\[
Pupil\ teacher\ ratio = \frac{Total\ number\ of\ pupils\ in\ a\ given\ level\ of\ education}{Total\ number\ of\ teachers} \times 100
\]

Data required

- Total number of pupils by level
- Total number teachers by level

Source of data

- EMIS - Ministry of Education

Type of disaggregation for the indicator: This indicator is to be disaggregated by level of education (pre-primary, primary and secondary).

Interpretation: It is commonly believed that a low number of pupils per teacher ratio indicate that pupils will experience more contact time with teachers and hence experience a quality teaching and learning process.

Quality standard: When calculating by level, care must be taken to account for the existence of part-time teachers, school shifts, multi-grade classes and other practices that may affect the precision and meaningfulness of pupil-teacher ratios. If feasible, the number of part-time teachers is to be converted to “full-time equivalent” a double shift teacher is to be counted twice etc. Care should be exercised to include all staff involved in teaching (and not those who are only doing administrative work e.g. Head teachers who are not teaching should be excluded.

Limitation: This indicator does not take into account differences in teacher’s qualifications, pedagogical training, experiences and status, teaching methods, teaching materials and variations in classroom conditions, factors which would affect the quality of teaching/learning.

Is the indicator to be piloted?

- Yes [ ]
- No [x]

Methodology: How will the indicator be collected?

- Census survey [x]
- Sample survey [ ]
C.2 Percentage of Teachers Qualified to Teach According to National Standards

Focus area: Teacher development

Definition: Percentage of teachers qualified to teach according to national standards is derived by expressing the number of teachers who are certified to have received the minimum organized initial professional teacher-training required for teaching at the relevant level of education, expressed as a percentage of the total number of teachers at that level.

Purpose: It provides an indication of the relative proportion of teachers that are sufficiently and officially qualified to teach at any given level of education

Calculation method: Divide total number of teachers who have professional teacher training by the total number of teachers. Multiply the result by 100 to express as a percentage.

Formula:
\[
\text{Percentage of teachers qualified} = \frac{\text{Number of certified teachers}}{\text{Total number of teachers}} \times 100
\]

Data required | Source of data
---|---
Number certified teachers by level | EMIS - Ministry of Education
Total number of teachers by level | EMIS - Ministry of Education

Type of disaggregation for the indicator: This indicator is to be disaggregated by gender, and by level of education (pre-primary, primary and secondary).

Interpretation: A higher percentage of trained teachers lead to higher quality education as it is assumed trained teachers can transmit knowledge more effectively.

Quality standard: Clarity on the notion of trained teachers is needed especially in cases where teachers have had short courses and in-service training that may or may not accrue to their qualifications.

Limitation: Definitional issues on what constitutes a teacher and what is an officially recognized pedagogically trained teacher.

Is the indicator to be piloted?

- Yes
- No

Methodology: How will the indicator be collected?

- Census survey
- Sample survey

General Remarks: Information on national qualification standards must be obtained from relevant department of the ministry.
C.3 Number of Foreign Teachers Teaching in the Country (Inbound Mobility)

**Focus area:** Teacher Development

**Definition:** The number of foreign teachers teaching in the country expressed as a percentage of total teachers employed by level.

**Purpose:** This indicator provides a measure of the demand for qualified teachers that cannot be met locally.

**Calculation method:** Divide the number of foreign teachers teaching in the country by the total number of teachers by level.

**Formula:**
\[
\text{Number of Foreign Teachers} = \left( \frac{\text{Number of foreign teachers in the country}}{\text{Number of teachers in the country}} \right) \times 100
\]

**Data required**

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of foreign teachers by level</td>
<td>EMIS Ministry of Education</td>
</tr>
<tr>
<td>Total number of teachers by level</td>
<td>EMIS Ministry of Education</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by level of education (pre-primary, primary and secondary).

**Interpretation:** A high percentage indicates that there are a high number of foreign teachers in the country implying that there is a need to train more teachers in the country as the local supply of teachers is not meeting the demand.

**Quality standard:** A foreign teacher is a teacher officially employed as an expatriate teacher.

**Limitation:** Foreign teachers are often not distinguished from their local counterparts.

Is the indicator to be piloted?

[ ] Yes  [X] No

Methodology: How will the indicator be collected?

[X] Census survey  [ ] Sample survey

**General Comment:** Ministries need to include this data item in their annual census for schools & tertiary institutions.

C.4 Percentage of Female Head Teachers

**Focus areas:** Teacher development

**Definition:** The total number of female teachers appointed into substantive positions and who have overall academic and administrative responsibility of a particular school.

**Purpose:** Percentage of female head teachers shows the gender composition of the teaching force at the most senior level. It also helps to assess the need for opportunities and/or incentives to encourage women to be promoted to management levels.
Calculation method: The sum of all the female head teachers in the country divided by the total number of head teachers in a year at a particular level.

Formula:

\[
\text{Percentage of Female Head Teachers} = \frac{\text{Number of Female Head Teachers}}{\text{Total Number of Head Teachers}} \times 100
\]

Data required | Source of data
---|---
Number of female head teachers by level | EMIS – Ministry of Education
Number of head teachers by level | EMIS-Ministry of Education

Type of disaggregation for the indicator: This indicator is to be disaggregated by level of education by level of education (pre-primary, primary and secondary), and by type of institution (private/public).

Interpretation: A high number of female head teachers suggest a measure of gender parity and women’s access to decision making positions.

Quality standard: The definition of ‘Head Teachers’ must be clearly defined and care must be taken not to count females acting as head teachers.

Limitation: Cultural and economic contexts vary and this can affect the interpretation of the percentage of female heads. The tendency is for men to hold these posts when there are fewer opportunities in the private sector. Hence a high percentage of female heads of primary schools could mean better opportunities in other sectors.

Is the indicator to be piloted?

- Yes
- No

Methodology: How will the indicator be collected?

- Census survey
- Sample survey

General Remarks: Data on teachers need to be collected twice a year to calculate this indicator preferably at the beginning of the year and at the end of the year

### C.5 Percentage of Teachers by Age Range

**Focus areas:** Teacher development

**Definition:** The total number of teachers within a particular age range expressed as a percentage of the total number of teachers.

<table>
<thead>
<tr>
<th>Age Ranges</th>
<th>&lt; 20</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>&gt;60</th>
</tr>
</thead>
</table>

**Purpose:** This indicator provides an indication of the demographics of the teaching sector. This knowledge informs planning for teacher training and salaries.

**Calculation method:** Divide the total number of teachers in the age range by the total number of teachers currently employed in a given year.
**C.6 Teacher Attrition Rate**

**Focus area:** Teacher development.

**Definition:** This is the proportion of teachers who leave the profession annually in the public sector for reasons of retirement, new job opportunities, marriage, death, illness or other reasons.

**Purpose:** It provides an important component in teacher policy as it is an indication for teacher supply and morale. In most countries the two main drivers of teacher attrition are retirement and voluntary resignation. Attrition through retirement varies with the age profile of teachers and retirement policies and is relatively predictable. Voluntary resignation varies with the labour market opportunities and is highly volatile. Research shows that part of attrition is potentially sensitive to policy changes. Better deployment policies, greater use of local recruitment, improved teacher conditions of work, improved reliability of payment and improved management at school level can lead to declines in teacher attrition.

**Calculation method:** Divide total number of teachers who left teaching according to four categories – retirement, voluntary resignation, death and other – by the total number of teachers currently employed in a given year.

**Formula:**

\[
\text{Teacher attrition rate} = \frac{\text{Number of teachers who left teaching in a given year}}{\text{Total Number of teachers in a given year}} \times 100
\]
Data required | Source of data
--- | ---
Number of teachers who left teaching profession by reasons of retirement, voluntary resignation, death or other. Total number of teachers by level | Ministry of Education or Ministries responsible for salary payments for the public sector.

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by level of education (pre-primary, primary, secondary).

**Interpretation:** This indicator provides a measure of the teacher morale and attraction the profession provides in attracting and retaining staff. Teacher attrition tends to be selective with the rate of attrition varying between different categories of teachers. Attrition is generally higher among teachers with higher academic qualifications; teachers based in rural areas and teachers who have a specialization in mathematics and science.

**Quality standard:** The data on teachers needs to exclude part-time teachers as it may exaggerate the trends. Additionally the tracking of teachers who leave a public school and move to a private school are seldom tracked.

**Limitation:** The data on public teachers’ movement is usually outside the mandate of EMIS and falls under Human Resources and Salaries Bureaux. This data may prove to be even more difficult to access among teachers employed in private schools. This militates against generalisations.

Is the indicator to be piloted?

- [x] Yes
- [ ] No

**Methodology:** How will the indicator be collected?

- [x] Census survey
- [ ] Data Mining

**General Remarks:** A sound methodology needs to be adopted to track the movement of teachers. Just because a teacher has left school does not mean a teacher has left the teaching profession. Transfer, promotion, or change to other professions, other than teaching, must be considered.
D. Higher and Tertiary Education

D.1 Enrolment of Students in Higher and Tertiary Education per 100,000 Inhabitants

Focus area: Higher Education and Gender and Culture

Definition: The number of students enrolled in higher education institutions per 100,000 population in a given year. Please refer to the definition of Higher and Tertiary education in Appendix One. Note that no distinction is made between full time and part time students.

Purpose: To measure the level of access the population has to higher and tertiary education, and in particular young women

Calculation method: Divide full time enrolment in higher and tertiary education institutions by the total population and multiply by 100,000. Repeat the exercise separately for male and females.

Formula:

\[ SPH = \frac{\text{Total enrolment in higher and tertiary education}}{\text{Total population}} \times 100\,000 \]

Where:

- \( SPH \) = students enrolled in higher education institutions per 100,000 population

Data required

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of full time students enrolled in higher and tertiary education by gender in a given year</td>
<td>EMIS- Ministry of Education</td>
</tr>
<tr>
<td>Total population by gender for the same given year</td>
<td>CSO</td>
</tr>
</tbody>
</table>

Type of disaggregation for the indicator: This indicator is to be disaggregated by gender.

Interpretation: This reflects a country’s human capital resources available. The higher the figure the more a country is expected to have greater economic growth.

Quality standard: Population estimates differ from different sources. A country must have confidence in the population statistics used.

Limitation: Ideally the enrolment should be by full time equivalence which takes into consideration part-time students but most African Ministries don’t collect this data. This limits the accuracy of the statistic.

Is the indicator to be piloted?  

- [ ] Yes  
- [x] No

Methodology: How will the indicator be collected?

- [x] Census survey  
- [ ] Sample survey
D.2 Percentage of Female Students in Scientific Fields of Study at Tertiary Level of Education

Focus area: Higher and Tertiary Education

Definition: Number of female students at tertiary level of education, studying in the fields of Science as a percentage of total students enrolled at tertiary level of education.

Purpose: To track the gender balance of women in the strategic and technical fields of work.

Calculation method: Divide the number of female students in science fields by the total number of students enrolled at the tertiary level.

Formula: \[ PFS = \frac{\text{Female students in science at tertiary level of education}}{\text{Total number of students enrolled in tertiary education by level}} \times 100 \]

Where: PFS = Percentage of female students in science fields at tertiary level of education

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of female students in the fields of science</td>
<td>EMIS</td>
</tr>
<tr>
<td>Total number of students at tertiary level of education</td>
<td>EMIS</td>
</tr>
</tbody>
</table>

Type of disaggregation for the indicator: This indicator is to be disaggregated by institutional type (universities, colleges, polytechnics) and by gender.

Interpretation: The higher the percentage of female students in the field of science the more likely the country is to see social equity and growth.

Quality standard: It is important to clearly map enrolment in all the science programmes including those in technical and vocational education.

Limitation: Courses in these fields vary in quality and length and this tends to lessen the specificity of the indicator.

Is the indicator to be piloted?

- [ ] Yes
- [x] No

Methodology: How will the indicator be collected?

- [x] Census survey
- [ ] Sample survey

D.3 Percentage of Female Students in Engineering, Manufacturing and Construction fields of Study at Tertiary Level of Education

Focus area: Higher Education and Gender and Culture

Definition: Number of female students at tertiary level of education, studying in the fields of Engineering, Manufacturing and Construction as a percentage of total female students enrolled at tertiary level of education.
**Purpose:** To track the gender balance of women in the strategic and technical fields of work.

Calculation method: Divide the number of female students enrolled in the Engineering, Manufacturing and Construction fields by the total number of female students enrolled at the tertiary level.

**Formula:**
\[ \text{PF}_{\text{set}} = \frac{\text{Female students in science, engineering & technology at tertiary level of education}}{\text{Total number of female students enrolled in tertiary education by level}} \times 100 \]

Where: \( \text{PF}_{\text{set}} \) = Percentage of females in engineering, manufacturing and construction fields at tertiary level of education.

**Data required**

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of female students in the fields of Engineering, Manufacturing and Construction</td>
<td>EMIS</td>
</tr>
<tr>
<td>Total number of female students at tertiary level of education</td>
<td>EMIS</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by type of institution (universities, colleges, polytechnics, etc.)

**Interpretation:** The higher the percentage of female students in these fields the more likely the country is to see sustainable social equity and growth.

**Quality standard:** It is important to clearly map enrolment in all the engineering, manufacturing and construction programmes including those in technical and vocational education.

**Limitation:** Courses in these fields vary in quality and length and this tends to lessen the specificity of the indicator.

Is the indicator to be piloted?

[X] Yes  [ ] No

**Methodology:** How will the indicator be collected?

[X] Census survey  [ ] Sample survey

**D.4 Inbound Mobility Ratio**

**Focus area:** Higher Education

**Definition:** The number of students from abroad studying in a given country, as a percentage of the total tertiary enrolment in that country.

**Purpose:** To gauge the extent of the number of students studying in the country from abroad. This may give an indication of the value attached to the quality of a country’s tertiary institutions by other countries.

**Calculation method:** Divide the number of students studying in the country from other countries by the total number of students in the country.

**Formula:**
\[ \text{IMR} = \frac{\text{Total number of students from other countries studying in higher & tertiary education}}{\text{Total number of students in higher & tertiary education in the country}} \times 100 \]
Where: IMR = Inbound Mobility Rate

Data required | Source of data
---|---
Students from other countries studying in higher education in the country | EMIS
Total number of students in higher education | EMIS

Type of disaggregation for the indicator: This indicator is to be disaggregated by country and region.

Interpretation: A higher rate indicates a high inflow of students from abroad and implicitly recognition of the quality the country’s tertiary institutions.

Quality standard: It is useful to collect the source information through the annual census questionnaire.

Is the indicator to be piloted?

- [X] Yes
- [ ] No

Methodology: How will the indicator be collected?

- [X] Census survey
- [ ] Sample survey

General Remarks: In the short-run this indicator can be piloted. However, in the long-run, it may be collected through the annual census.

### D.5 Outbound Mobility Ratio

**Focus area:** Higher Education

**Definition:** The number of students in higher and tertiary education from any given country studying abroad as a percentage of the total tertiary enrolment in that country.

**Purpose:** To gauge the extent of student outflow to other countries. It may indicate the perceived gaps and weaknesses of a country’s tertiary sector.

**Calculation method:** Divide the number of students studying in higher and tertiary education abroad by the total number of students enrolled in higher and tertiary education in the country.

**Formula:**

\[
OMR = \frac{\text{Total number of students in higher & tertiary education studying abroad}}{\text{Total number of students in higher & tertiary education in the country}} \times 100
\]

Where: OMR = Outbound mobility Ratio.

Data required | Source of data
---|---
Number of students in higher and tertiary education studying abroad | EMIS
Total number of students in higher and tertiary education | EMIS

Type of disaggregation for the indicator: This indicator is to be disaggregated by country and region.

Interpretation: A high rate of Outbound Mobility may indicate the perceived insufficiency or lack of available programmes offered by higher and tertiary institutions in the country.
Limitation: Some countries do not keep track of all their students studying abroad which then limits the completeness of the data.

Is the indicator to be piloted?

☐ Yes ☐ No

Methodology: How will the indicator be collected?

☐ Census survey ☐ Sample survey

General Remarks: In the short-run this indicator may be piloted, however, in the long-run it is useful to collect the source information through annual census.

D.6 Net Entry Rate into Higher and Tertiary Education

Focus area: Higher Education and Gender and Culture.

Definition: This represents the proportion of people of a synthetic age-cohort who enter the tertiary level of education, irrespective of changes in the population sizes and of differences between countries in the typical starting age of tertiary education.

Purpose: To determine the proportion of the population which goes into the tertiary education, with particular attention paid to young women.

Calculation Method: Where the official tertiary age range is not provided this can be determined from the pre-primary entry age and total number of school years, the tertiary age range is normally not more than 5 years. The net entry rate of the official tertiary entry age group in a given year is obtained by dividing the number of first-time entrants to each type of tertiary education of that age group by the total population in the corresponding age group then multiply by 100. The sum of net entry rates is calculated by adding the net entry rates for each single year of age. Repeat the process by separating out girls.

Formula:

\[
\text{Net entry rate of a specific age group} = \frac{\text{Number of first time entrants}}{\text{Total population of the corresponding age group}} \times 100
\]

Data required | Source of data
--- | ---
Number of first-time entrants to each type of tertiary education of that age group | Ministry of Higher Education
Total population in the corresponding age group | CSO/EMIS

Type of disaggregation for the indicator: This indicator is to be disaggregated by gender and institution type (private/public)

Interpretation: A high entry rate means more people are enrolling into higher education which implies a good transition from school to tertiary education system for that country.

Quality standard: The accuracy of this indicator depends on the availability of accurate data from the institutions.

Limitation: Some countries do not keep track of the age of the students entering the tertiary sector.
Is the indicator to be piloted?

- Yes
- No

**Methodology:** How will the indicator be collected?

- Census survey
- Sample survey

**General Remarks:** In the short-run this indicator may be piloted, however, in the long-run it is useful to collect the source information through annual census.

**D.7 Percentage of Secondary Education Graduates who Qualify for Higher Education**

**Focus area:** Higher Education and Gender and Culture

**Definition:** This measures the number of secondary education graduates who qualify for entry into higher education in a given year expressed as a percentage of the total number of secondary education graduates in the same year.

**Purpose:** To gauge the number of secondary school students who qualify for entry into higher education, in particular young women.

Calculation Method: Divide the number of secondary education graduates who qualify for entry into higher education sector for a given year by the total number of secondary education graduates in the same year. Repeat the process and calculate separately for gender.

**Formula:**

\[ PSGTE = \frac{NSTE}{TNSE} \times 100 \]

**Where:**

- PSGTE = Percentage of secondary education graduates who qualify for entry into higher education
- NSTE = Number of secondary education graduates who qualify for entry into higher education
- TNSE = Total number of secondary education graduates

**Data required**

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of graduates in secondary education qualifying in higher education by gender</td>
<td>EMIS</td>
</tr>
<tr>
<td>Total number of secondary education graduates by gender</td>
<td>EMIS</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator can be disaggregated by gender

**Interpretation:** A high percentage indicates a high proportion of students are qualifying for entry into tertiary education. It will be useful to compare this statistic with the net entry rate into tertiary to understand what is happening to transition from secondary to higher and tertiary education.

**Quality standard:** The accuracy of this indicator depends on the availability of accurate data from secondary education.

**Limitation:** Some countries confuse the terms graduation and completion yet in this case we need graduation.
Is the indicator to be piloted?

X Yes  No

Methodology: How will the indicator be collected?

X Census survey  Sample survey

General Remarks: In the short-run this indicator may be piloted, however, in the long-run it is useful to collect the source information through annual census

**D.8 Amount of Research Expenditure in Higher and Tertiary Education for Science Fields**

**Focus area:** Higher Education

**Definition:** The total amount allocated for research in the fields of Science expressed as a percentage of the total research funds in higher and tertiary education’s public institutions.

**Purpose:** This indicator can be used to measure the priority given by a country to research and development in a strategic important field for economic growth.

**Calculation method:** Divide total amount of funds allocated to research in Science, Engineering and Technology by total funds available for research in higher and tertiary education institutions in a given year.

**Formula:**

\[
RF_{set} = \frac{\text{Total amount allocated for research in science}}{\text{Total fund in tertiary and higher education}} \times 100
\]

Where: \(RF_{set} = \) the total amount allocated for research in the fields of Science.

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of fund allocated for research for Science in a given year</td>
<td>EMIS - Ministry of Education</td>
</tr>
<tr>
<td>Total amount of funds allocated for research by all higher and tertiary institutions in the same year</td>
<td>EMIS/Ministry of Higher Education</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by type of institutions (public or private)

**Interpretation:** High levels of investment in the fields of science are seen as a key determinant in the extraordinary growth of the South East Asian economies. Hence it is important to track the level of priority African countries place in this regard.

**Quality standard:** Research and development grants are obtained from a variety of sources and care must be taken to ensure that all of these are captured.

**Limitation:** Complete coverage of all grants will be difficult and this mitigates against the effectiveness of the indicators. Tertiary institutions typically do not collect this data and initially there may be some gaps in data coverage.
Is the indicator to be piloted?

X Yes  No

Methodology: How will the indicator be collected?

Census survey  X Sample survey

General Remarks: It may be useful to do preliminary pilot studies to establish how records on finance are kept by tertiary institutions in countries.

D.9 Amount of Research Expenditure in Higher and Tertiary Education in Engineering, Manufacturing and Construction Fields

Focus area: Higher Education

Definition: The total amount allocated for research in the fields of Engineering, Manufacturing and Construction expressed as a percentage of the total research funds in higher and tertiary education’s public institutions.

Purpose: This indicator can be used to measure the priority given by a country to research and development in a strategic important field for economic growth.

Calculation method: Divide total amount of funds allocated to research in Engineering, Manufacturing and Construction by total funds available for research in higher and tertiary education institutions in a given year.

Formula:

\[
RF_{emc} = \frac{\text{Total amount allocated for research in engineering, manufacturing & construction}}{\text{Total fund in higher & tertiary education}} \times 100
\]

Where: \(RF_{emc}\) = the total amount allocated for research in the fields of Engineering, Manufacturing and Construction.

Data required

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amount of fund allocated for research in Engineering, Manufacturing and Construction in a given year</td>
<td>EMIS</td>
</tr>
<tr>
<td>Total amount of funds allocated for research by all higher and tertiary institutions in the same year</td>
<td>EMIS</td>
</tr>
</tbody>
</table>

Type of disaggregation for the indicator: This indicator is to be disaggregated by type of tertiary institutions (public or private)

Interpretation: High levels of investment in the fields of engineering, manufacturing and construction are seen as a key determinant in the extraordinary growth of the South East Asian economies. Hence it is important to track the level of priority African countries place in this regard.

Quality standard: Research and development grants are obtained from a variety of sources and care must be taken to ensure that all of these are captured.

Limitation: Complete coverage of all grants will be difficult and this mitigates against the effectiveness of the indicators. Tertiary institutions typically do not collect this data and initially there maybe some gaps in data coverage.
Is the indicator to be piloted?

[X] Yes  [ ] No

**Methodology:** How will the indicator be collected?

[ ] Census survey  [X] Sample survey

**General Remarks:** It may be useful to do preliminary pilot studies to establish how records on finance are kept by tertiary institutions in countries.

## D.10 Percentage Distribution of Tertiary Graduates in Science

**Focus area:** Higher Education and Gender and Culture

**Definition:** The proportion of graduates in higher and tertiary education in Science expressed as a percentage of total graduates at that level. Refer to Appendix One for definitions on Science.

**Purpose:** To determine the degree to which a country is able to develop sufficient skilled human resources in science field of study to compete in the global economy.

Calculation method: Divide the number of students studying Science, in higher and tertiary education by the total number of students in higher and tertiary education.

**Formula:**

\[
PDG = \frac{\text{Total number of graduates in higher & tertiary in the fields of science}}{\text{Total number of graduates in higher & tertiary education}} \times 100
\]

Where: PDG = Percentage Distribution of Tertiary Graduates in Science

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
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</thead>
<tbody>
<tr>
<td>Number of female graduates in Science, from higher and tertiary education by gender</td>
<td>EMIS</td>
</tr>
<tr>
<td>Total number of graduates in higher and tertiary education</td>
<td>EMIS</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by type of institution (public or private).

**Interpretation:** Countries with high numbers of female graduates in these fields are associated with having high female growth potential in international markets.

**Quality standard:** This indicator needs to include graduates from all higher and tertiary institutions including those from technical vocational and training institutions.

**Limitation:** The indicator does not tell us about the quality of the graduates and their marketability in the world economy.

Is the indicator to be piloted?

[ ] Yes  [X] No

**Methodology:** How will the indicator be collected?

[X] Census survey  [ ] Sample survey
D.II Percentage Distribution of Tertiary Graduates in Engineering, Manufacturing and Construction

Focus area: Higher Education and Gender and Culture

Definition: The proportion of graduates in higher and tertiary education in Engineering, Manufacturing and Construction expressed as a percentage of total graduates at that level by gender.

Purpose: To determine the degree to which a country is able to develop sufficient skilled human resources in engineering, manufacturing and construction fields of study to compete in the global economy.

Calculation method: Divide the number of students studying Science, in higher and tertiary education by the total number of students in higher and tertiary education and disaggregate by gender.

Formula:
\[
PDG_{emc} = \frac{Number \ of \ graduates \ in \ higher \ & \ tertiary \ education \ in \ the \ fields \ of \ engineering, \ manufacturing \ & \ construction}{Total \ number \ of \ graduates \ in \ higher \ & \ tertiary \ education} \times 100
\]

Where: \( PDG_{emc} = \) Percentage Distribution of Tertiary Graduates in Science

Data required

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of graduates in engineering, manufacturing and construction from higher and tertiary education by gender</td>
<td>EMIS</td>
</tr>
<tr>
<td>Total number of graduates in higher and tertiary education</td>
<td>EMIS</td>
</tr>
</tbody>
</table>

Type of disaggregation for the indicator: This indicator is to be disaggregated by type of tertiary institution and gender.

Interpretation: Countries with high numbers of graduates in these fields are associated with having high growth potential in international markets.

Quality standard: This indicator needs to include graduates from all higher and tertiary institutions including those from technical vocational and training institutions.

Limitation: The indicator does not tell us about the quality of the graduates and their marketability in the world economy.

Is the indicator to be piloted?

[ ] Yes  [x] No

Methodology: How will the indicator be collected?

[ ] Census survey  [ ] Sample survey
D.12 Distribution of Tertiary Education Enrolment by Key Fields of Study

**Focus area:** Higher Education and Gender and Culture

**Definition:** It is the number of students enrolled in higher and tertiary education institutions regardless of age by fields of study and by gender.

**Purpose:** To know the distribution of enrolment in higher education institutions by field of study in order to identify where countries have placed their priorities in addressing their socio-economic growth.

**Calculation method:** Total enrolment by key fields in a given year. The key fields are Agriculture, Science, Engineering, Construction, Humanities, Health, Education, Arts, Social Science, Business, Law and Welfare.

**Formula:** The cumulative total of student enrolment by key fields in all the countries post-secondary/tertiary institutions - universities, polytechnics, and colleges.

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolment in higher institutions by field of study in Agriculture, Science,</td>
<td>Ministry of Education</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by ISCED levels 5A, 5B and 6 (refer to Appendix One) by type of enrolment (full-time or part-time enrolment) and by gender

**Interpretation:** High enrolment in a specific field indicates that there is recognition either through the market (by offering jobs in this field) or government (by providing services and incentives or subsidies) that it is of value to a country.

**Quality standard:** Ideally the enrolment should be full-time equivalents which include factoring in part-time enrolment proportionately. However, typically most countries only collect full-time and part-time separately.

**Limitation:** The indicator may not be completely comprehensive as it does not include national students studying abroad.

Is the indicator to be piloted?

- [ ] Yes  [X] No

**Methodology:** How will the indicator be collected?

- [X] Census survey  [ ] Sample survey

**General Remarks:** Name as well as content of fields of study differs from country to country. Common understanding must be established as to the names and content of the fields.
E. Technical and Vocational Education and Training

E.1 Percentage of Total Enrolment in Technical and Vocational Education and Training

**Focus area:** Technical and Vocational Education and Training (TVET) and Gender and Culture.

**Definition:** This indicator is the enrolment by gender in Technical and Vocational Education and Training programmes as a percentage of total enrolment in Upper Secondary (ISCED 3 - see Appendix One for definitions).

**Purpose:** This indicator illustrates the proportion of students studying in the TVET sector compared to total enrolment (ISCED 3) by gender.

**Calculation method:** Divide the total enrolment by gender in Technical and Vocational Education and Training by the total number of enrolment in upper secondary by gender.

**Formula:**

\[
\text{PETVET} = \frac{\text{Enrolment in technical & vocational training ISCED 3}}{\text{Total enrolment in ISCED 3}} \times 100
\]

Where: PETVET = Percentage of enrolment in Technical & Vocational Education & Training  
ISCED = International Standard Classification of Education

**Data required**

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total in enrolment in Technical and Vocational Education and Training (ISCED 3B and 3C) by gender</td>
<td>HEMIS - Ministry of Higher Education</td>
</tr>
<tr>
<td>Total enrolment in ISCD 3 by gender</td>
<td>HEMIS – Ministry of higher education</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by gender

**Interpretation:** A high percentage indicates mainstreaming and prioritising of TVET programmes as an alternative to the academic programmes typically found in upper secondary education. It is important to track the participation of girls and young women in this field as an indicator of access to strategic job opportunities.

**Quality standard:** Countries must map their national understanding of technical vocational education and training to the definition provided by UIS for cross country comparability.

**Limitation:** The indicator does not provide insight into non-formal TVET which in some countries can significantly exceed that of the formal sector. It also does not include post-secondary enrolment in TVET.

Is the indicator to be piloted?

- [ ] Yes
- [X] No

**Methodology:** How will the indicator be collected?

- [X] Census survey
- [ ] Sample survey
E.2 Existence of Life Skills Programmes

Focus area: Technical and Vocational Education and Training

Definition: Life skills are a large group of psycho-social and interpersonal skills which can help people make informed decisions, communicate effectively, and develop coping and self-management skills that may help them lead a healthy and productive life. Life skills may be directed toward personal actions and actions toward others, as well as actions to change the surrounding environment to make it conducive to health. In this instance the focus is formal programmes offered in the school curriculum.

Purpose: To identify the degree to which Ministries are helping the youth to obtain a minimum of skills to ensure they are functional, civic aware members of society.

Calculation method: Existence of formal life skill programs in the school curriculum that help people make informed decisions.

Formula: Existence by grade and by level (pre-primary, primary, secondary and tertiary).

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability of life skills curricula programmes by grade and by level</td>
<td>EMIS</td>
</tr>
</tbody>
</table>

Type of disaggregation for the indicator: This indicator is to be disaggregated by level of education (pre-primary, primary, and secondary) and type of skills offered (health, entrepreneurship skills and civic society knowledge).

Interpretation: This indicator is important to track as it is associated with youth awareness of health (HIV/AIDS, reproductive issues), entrepreneurship skills and civic society knowledge.

Quality standard: Life Skills are a proxy for skills development but vary across countries.

Limitation: Definitions of Life Skills vary across levels of education and differs across countries which limits the cross comparability of this indicator.

Is the indicator to be piloted?

☐ Yes  ☐ No

Methodology: How will the indicator be collected?

☐ Census survey  ☒ Sample survey

E.3 Percentage of TVET Graduates

Focus area: Technical Vocational Education and Training and Gender and Culture

Definition: This is the number of graduates by gender in Technical and Vocational training in upper secondary (ISCED 3) as a proportion of total graduates by gender graduating from the upper secondary level. (Refer to Appendix One for definition of upper secondary level).

Purpose: To assess the number of graduates, in particular girls, in Technical and Vocational training being produced relative to other graduates from the same level of education.

Calculation method: Calculate the number of TVET graduates as a proportion of total graduates for upper secondary level - ISCED 3 in a given year. Repeat the process for calculating the gender dimensions.
Formula:

\[
\text{Percentage of graduates} = \frac{\text{Number of graduates in TVET}}{\text{Total number of graduates}} \times 100
\]

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of TVET graduates from upper secondary by gender</td>
<td>EMIS - Ministry of Education</td>
</tr>
<tr>
<td>Number of total graduates from upper secondary by gender</td>
<td></td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by gender.

**Interpretation:** Tracking TVET graduate outcomes relative to the mainstream production of graduates from upper secondary education levels gives insight into the supply of potentially skilled workers and artisans – long recognized as a strategic area to boost a country’s employment and economic growth. It’s particularly pertinent to comment on the achievements of female graduates in this regard, as they provide a barometer of how successful TVET has become recognized as a critical to the labour market.

**Is the indicator to be piloted?**

- [ ] Yes
- [x] No

**Methodology:** How will the indicator be collected?

- [ ] Census survey
- [x] Sample survey
F.I Primary Pupil-Textbook Ratio in Mathematics

Focus area: Curriculum and Teaching and Learning Materials

Definition: This is the average total number of core mathematics textbooks per pupil in a given year for the primary cycle. Textbooks are defined as learning materials designated by the Ministry as covering the knowledge that is stipulated in a formal curriculum for primary level.

Purpose: This indicator provides information on the availability of physical resources input in terms of the number of textbooks a pupil can access it should be used to compare with established national norms on the number of pupils per textbooks.

Calculation method: Divide the total number of mathematics textbooks available at the primary level by the number of pupils at the same level.

Formula: \[ \text{Textbook/pupil ratio} = \frac{\text{Total number of core mathematics text books}}{\text{Total number of pupils}} \times 100 \]

Data required

<table>
<thead>
<tr>
<th>Source of data</th>
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</thead>
<tbody>
<tr>
<td>EMIS - Ministry of Education</td>
</tr>
</tbody>
</table>

Type of disaggregation for the indicator: This indicator is to be disaggregated by type of institution (public and private primary schools).

Interpretation: A low mathematics pupil-textbook ratio suggests adequate provision of learning material to pupils which indicates higher opportunities for quality learning and teaching. It can be assumed a ratio of one book per pupil is adequate and ratios of higher than three pupils per textbooks indicate difficulties in ensuring appropriate access for all pupils. It is important to distinguish between the public and private schools as it may indicate inequities.

Quality standard: One should take account of the official policy on what constitutes a pupil/textbook ratio at a particular education level.

Limitation: This indicator does not take into account variations in quality of textbooks –its relevance to the curriculum, its accessibility for pupils and its physical condition, or other physical conditions which could affect the quality of teaching and learning.

Is the indicator to be piloted?

[ ] Yes  [x] No

Methodology: How will the indicator be collected?

[ ] Census survey  [ ] Sample survey
F.2 Primary Pupil- Textbook Ratio in Reading

**Focus area:** Curriculum and Teaching and Learning Materials.

**Definition:** The average total number of core reading textbooks (for the learning of languages) per pupil in a given year for the primary cycle. Textbooks are defined as learning materials designated by the Ministry as covering the knowledge that is stipulated in a formal curriculum for primary level.

**Purpose:** This indicator provides information on the availability of physical resources input in terms of the number of textbooks a pupil can access it should be used to compare with established national norms on the number of pupils per textbooks.

**Calculation method:** Divide the total number of reading textbooks available at the primary level by the number of pupils at the same level.

**Formula:**

\[
\text{Pupil/textbook ratio} = \frac{\text{Total number of pupils in primary grades}}{\text{Total number of textbooks in reading in the same level}} \times 100
\]

**Data required**

- Total number of reading books by school type.
- Total number of pupils in the primary cycle by school type (public/private).
- The expected norm of reader textbooks to pupils by grade.

**Source of data**

EMIS - Ministry of Education

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by public and private primary schools.

**Interpretation:** A low pupil/reading textbook ratio suggests adequate provision of learning material to pupils which indicates higher opportunities for quality learning and teaching. It can be assumed a ratio of one book per pupil is adequate and ratios of higher than three pupils per textbooks indicate difficulties in ensuring appropriate access for all pupils.

**Quality standard:** One should take account of the official policy on what constitutes an acceptable pupil/textbook ratio.

**Limitation:** This indicator does not take into account variations in quality of textbooks –its relevance to the curriculum, its accessibility for pupils and its physical condition, or other physical conditions which could affect the quality of teaching and learning.

Is the indicator to be piloted?

- Yes
- No

**Methodology:** How will the indicator be collected?

- Census survey
- Sample survey
G. Quality Management

G.1 Primary Survival Rate

Focus area: Quality Management

Definition: Percentage of a cohort of pupils enrolled in the first grade of a given level or cycle of education in a given school-year who are expected to reach successive grades.

Purpose: Survival rate measures the holding power and internal efficiency of an education system. It illustrates the situation regarding the retention of pupils from grade to grade in schools, and conversely the magnitude of drop out by grades.

Calculation method: Divide the total number of pupils belonging to a school cohort who reached each successive grade of the specified level of education by the number of pupils in the school-cohort i.e. those originally enrolled in the first grade of primary education, and multiply the result by 100.

\[
SR_{g,i}^{k} = \frac{\sum_{i=1}^{m} E_{g,i}^{t}}{E_{g}^{t}} \times 100
\]

Where:

- \( E_{g,i}^{t} \) = Total number of pupils belonging to a cohort \( g \) at a reference year \( k \)
- \( R_{g,i}^{t+1} \) = Promotes from \( E_{g}^{t} \) who would join successive grades \( i \) throughout successive year \( t \)
- \( R_{g,i}^{t} \) = Number of pupils repeating grade \( i \) in school – year \( t \)

Data required

- Enrolment by grade for two consecutive years (years \( t \) and \( t+1 \)); number of repeaters by grade for year \( t+1 \). (EMIS - Ministry of Education)

Source of data

Type of disaggregation for the indicator: This indicator is to be disaggregated by public and private primary schools.

Interpretation: Survival Rate approaching 100% indicates a high level of retention and low incidence of drop-out. Survival Rate may vary from grade to grade, giving indications of grades with relatively more or less drop-outs. The distinction between survival rate with and without repetition is necessary to compare the extent of wastage due to drop-out and repetition. Survival rate to grade 5 of primary education is of particular interest since this is commonly considered as pre-requisite for sustainable literacy.

Quality standard: Since the calculation of this indicator is based on pupil-flow rates, the reliability of the Survival Rate depends on the consistency of data on enrolment and repeaters in term of coverage over time and across grades.

Limitation: Given that this indicator is usually estimated using cohort analysis models that are based on a number of assumptions, care should be taken in using of the results in comparisons.
G.2 Primary Completion Rate

**Focus area:** Quality Management and Gender and Culture

**Definition:** Primary completion rate is the percentage of students completing the last year of primary school.

**Purpose:** Primary Completion Rate provides an indication of an education system’s coverage and most importantly shows how well learners progress through the system. A high completion rate points to a high quality and efficient primary system. It also indicates the capacity of the education system to provide primary education for the theoretical age. It allows the tracking of the achievements at primary level of education.

**Calculation method:** Establishing the new entrants into the last grade of primary school i.e. total number of students in the last grade of primary school, and subtract number of repeaters in final grade, divided by the total number of children of official graduation age.

**Formula:**

\[
\text{Primary Completion Rate} = \frac{\text{New entrants into the last grade of primary school}}{\text{Population of theoretical primary completion age}}
\]

**Data required**

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of students and repeaters by gender in the last grade of primary education.</td>
<td>EMIS</td>
</tr>
<tr>
<td>Population of the theoretical primary completion age</td>
<td>CSO/NSO</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by gender.

**Interpretation:** A high ratio indicates the effectiveness of the primary education system in producing accredited outputs.

**Quality standard:** Data on population used in deriving this indicator should refer strictly to the theoretical completion age in the last grade of primary.

**Limitation:** The indicator is not a measure of on time completion but focuses on pupils completing the schooling cycle. It also falls short of providing any indications why the learners may be facing challenges in completing the schooling cycle. The indicator does not take into consideration number of learners who have at some stage repeated a grade even though they have not completed the cycle nor does its calculation consider those who drop out of last grade.
G.3 Tertiary Gross Completion Rate, First Degree

Focus area: Quality Management and Gender and Culture

Definition: Gross completion rate (first degree) is the percentage of all first degree university graduates in ISCED 5A (see appendices for ISCED levels) programs expressed as a percentage of the population of the age where learners theoretically finish the most common first degree programs.

Purpose: This is an indicator of the number of graduates (first degree) compared to the corresponding population of the theoretical first degree graduate age, in a given year. It is also important to track the completion rate of girls relative to that of boys.

Calculation method: Divide all first degree graduates by the corresponding population age group. Repeat the process with the gender dimension.

Formula:
\[
\text{Gross completion rate in a given year} = \frac{\text{Graduates of first degree}}{\text{Population of theoretical first degree graduate age}} \times 100
\]

Data required | Source of data
--- | ---
Graduates for first degree by gender | EMIS
Corresponding population by gender | CSO

Type of disaggregation for the indicator: This indicator is to be disaggregated by gender.

Interpretation: A high percentage indicates the country has a skilled human resource supply which can support economic development.

Quality standard: The quality of this indicator depends on the number of over-aged or under-aged graduates of a first degree. When either of the two is high, this indicator gives a wrong picture.

Is the indicator to be piloted?

- Yes
- No

Methodology: How will the indicator be collected?

- Census survey
- Sample survey

General Remarks: In Africa there are many over aged graduates of first degree and substantial under aged graduates. This affects the validity of this indicator.

G.4 Net Enrolment Ratio

Focus area: Quality Management, ECD and Gender and Culture.

Definition: Enrolment of the official age group for a given level of education expressed as a percentage of the corresponding population. This needs to be broken down by gender.

Purpose: To show the extent of coverage in a given level of education of children and youths belonging to the official age group corresponding to the given level of education.
**Calculation method:** Divide the number of pupils (or students) enrolled who are of the official age group for a given level of education by the population for the same age group and multiply the result by 100. If the entrance age for primary education is 7 years with duration of 6 years then the official age group is (7-12) years. Repeat the process separating out girls and boys to calculate the gender dimension.

**Formula:**

\[
\text{Net Enrolment Rate} = \frac{\text{Enrolment of official age group}}{\text{Total population of official age group}} \times 100
\]

**Data required**

<table>
<thead>
<tr>
<th>Description</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolment by single years of age by gender for a given level of education.</td>
<td>EMIS</td>
</tr>
<tr>
<td>Population of the age group corresponding to the given level of education.</td>
<td>EMIS</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by gender and level of education (pre-primary, primary and secondary).

**Interpretation:** A high NER denotes a high degree of coverage for the official school-age population. The theoretical maximum value is 100%. Increasing trends can be considered as reflecting improving coverage at the specified level of education. When the NER is compared with the GER, the difference between the two highlights the incidence of under-aged and over-aged enrolment. If the NER is below 100%, then the complement, i.e. the difference with 100%, provides a measure of the proportion of children not enrolled at the specified level of education. However, since some of these children/youth could be enrolled at other levels of education, this difference should in no way be considered as indicating the percentage of students not enrolled. To measure universal primary education, for example, adjusted primary NER is calculated on the basis of the percentage of children in the official primary school age range who are enrolled in either primary or secondary education. A more precise complementary indicator is the age-specific enrolment ratio (ASER) which shows the participation in education of the population of each particular age, regardless of the level of education.

**Quality standard:** NER at each level of education should be based on enrolment of the relevant age group in all types of schools and education institutions, including public, private and all other institutions that provide organized educational programmes.

**Limitation:** For tertiary education, this indicator is not pertinent because of the difficulties in determining an appropriate age group due to the wide variations in the duration of programmes at this level of education. As regards primary and secondary education, difficulties may arise when calculating an NER that approaches 100% if:

1. The reference date for entry to primary education does not coincide with the birth dates of the entire cohort eligible to enrol at this level of education;
2. A significant portion of the population starts primary school earlier than the prescribed age and consequently finishes earlier as well;
3. There is an increase in the entrance age to primary education but the duration remains unchanged.

Although the NER cannot exceed 100%, values up to 105% have been obtained reflecting inconsistencies in the enrolment and/or population data.
Is the indicator to be piloted?

- Yes    - X No

**Methodology:** How will the indicator be collected?

- X Census survey  
-   Sample survey

**G.5 Adult Literacy Rate**

**Focus area:** Quality management and Gender and Culture.

**Definition:** The percentage of population aged 15 years and over who can read and write with understanding a short simple statement on his/her everyday life. Generally, ‘literacy’ also encompasses ‘numeracy’, the ability to make simple arithmetic calculations.

**Purpose:** Adult literacy rate shows the accumulated achievement of primary education and literacy programmes in imparting basic literacy skills to the population, thereby enabling them to apply such skills in daily life and to continue learning and communicating using the written word. Literacy represents a potential for further intellectual growth and contribution to economic-socio-cultural development of society. The literacy rate of the female population is a litmus test of the prevailing values assigned education in a society.

**Calculation method:** Divide the number of literates by the corresponding age-group of population and multiply the result by 100. Disaggregate by gender and repeat the process.

**Formula:** 

\[
\text{Adult literacy rate} = \frac{\text{Adult (aged 15+) literate population}}{\text{Total adult population (aged 15+)}} \times 100
\]

**Data required**  

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of literate population 15 years and over by gender</td>
<td>CSO/NSO</td>
</tr>
<tr>
<td>Total population 15 years and over by gender</td>
<td></td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by gender.

**Interpretation:** High literacy rate (or low illiteracy rate) indicates a wide coverage of the primary education system and/or literacy programs in that a large proportion of the population have acquired the ability of using the written word in daily life and to continue learning. It is common practice to present and analyze literacy rates together with the absolute number of adult illiterates as improvements in literacy rates may sometimes be accompanied by increases in the illiterate population due to the changing demographic structure.

**Quality standard:** It will be useful to align measurements of literacy with the standard international definition given above, and to administer literacy tests on a sample basis to verify and improve the quality of literacy statistics.

**Limitation:** It has been observed that some countries apply definitions and criteria for literacy that is different to the international standards above, or equate persons with no schooling to illiterates, or change definitions between censuses. Practices for identifying literates and illiterates during actual census enumeration may also vary, as well as errors in literacy self-declaration can affect the readability of literacy statistics.
Is the indicator to be piloted?

Yes ☐ No ☒

**Methodology:** How will the indicator be collected?

X Census survey ☐ Sample survey

**General Remarks:** This indicator must be obtained from CSO.

---

**G.6 Youth Literacy Rate**

**Focus area:** Quality Management and Gender and Culture

**Definition:** The number of people aged 15-24 who can both read and write with understanding of simple statement on their everyday life, divided by the population in that age group. Generally ‘literacy’ also encompasses ‘numeracy’, the ability to make simple arithmetic calculations. This indicator can be used to reflect the literacy status of young women.

**Purpose:** To reflect recent outcomes of the basic education process. It’s a summary measure of the effectiveness of the education system.

**Calculation method:** Divide the number of people aged 15 to 24 years who are literate by the total population in the same age group and multiply the result by 100.

**Formula:**

\[
\text{Literacy Rate of persons aged 15–24 years} = \frac{\text{Literate population aged 15-24 years}}{\text{Population aged 15-24 years}} \times 100
\]

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of literates (or illiterates) aged 15- to 24-years-old by gender</td>
<td>CSO</td>
</tr>
<tr>
<td>Population aged 15- to 24-years-old by gender</td>
<td></td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by gender.

**Interpretation:** A high literacy rate among the 15- to 24-year-olds suggests a high level of participation and retention in primary education, and its effectiveness in imparting the basic skills of reading and writing. Because persons belonging to this age group are entering adult life, monitoring their literacy levels is important with respect to national human resources policies, as well as for tracking and forecasting progress in adult literacy.

**Quality standard:** The rate cannot exceed 100%. It is useful to align measurements of literacy with the standard international definition given above and to administer literacy tests on a sample basis to verify and improve the quality of the statistics.

**Limitation:** It has been observed that some countries apply definitions and criteria for literacy which are different from the international standards defined above, or equate persons with no schooling to illiterates, or change definitions between censuses. Practices for identifying literates and illiterates during actual census enumeration may also vary, as well as errors in literacy self-declaration can affect the reliability of the statistics.
Is the indicator to be piloted?

- Yes
- No

**Methodology:** How will the indicator be collected?

- Census survey
- Sample survey

**General Remarks:** This indicator must be obtained from CSO/NSO

### G.7 Public Expenditure on Education as a Percentage of Total Government Expenditure

**Focus area:** Quality Management

**Definition:** Total public expenditure (current and capital) expressed as a percentage of total government expenditure.

**Purpose:** This indicator shows the proportion of a country's total government expenditure during a given financial year that was spent on education.

**Calculation method:** Divide total government expenditure on education in a given financial year by the total government expenditure of the same financial year and multiply by 100.

**Formula:**

\[
PGXE = \left( \frac{\text{Government expenditure on education}}{\text{Total government expenditure}} \right) \times 100
\]

**Where:**

- PGXE = Percentage of government expenditure on Education in year t

**Data required**

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government expenditure on education</td>
<td>MOE finance division</td>
</tr>
<tr>
<td>Total government expenditure</td>
<td></td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is normally calculated at the national level only.

**Quality standard:** Total expenditure on education should include those incurred by all concerned ministries and levels of administration. Total government expenditure on education refers to all expenditure on education by the central or federal government, state governments, provincial or regional administrations and expenditure by municipal and other local authorities. Central government includes ministerial departments, agencies and autonomous institutions which have education responsibilities. The statistics on expenditure should cover transactions made by all departments or services with education responsibility at all decision-making levels. Government expenditure on education as a percentage of total government expenditure cannot exceed or even approach 100%.

**Interpretation:** A percentage of PGXE indicates a high allocation of Government budget to education which assumes that this is then a priority for government. However in fragile states, government budgets may be substantially supported financially by development partner contributions which depending on whether this is reported upon or not can distort the interpretation.
Limitation: In some instances data on total government expenditure on education refers only to the Ministry of education, excluding other ministries that spend a part of their budget on educational activities. Also it is often easier to access budget figures rather than expenditure data.

Is the indicator to be piloted?

- [ ] Yes
- [X] No

Methodology: How will the indicator be collected?

- [X] Census survey
- [ ] Sample survey

**G.8 Public Current Expenditure on Education as a Percentage of Total Education Expenditure**

Focus area: Quality Management.

Definition: Public current expenditure expressed as a percentage of total government expenditure on Education.

Purpose: This indicator shows how financial resources have been used in education. It measures the relative emphasis of government current spending on a particular level of education within the overall educational expenditure.

Calculation method: Divide the public current expenditure on education in a given financial year by the total government expenditure on Education of the same financial year and multiply by 100.

**Formula:**

\[
PCGXE = \frac{\text{Government current expenditure on education}}{\text{Total government for expenditure}} \times 100
\]

Where:

PCGXE = Percentage of public current expenditure on Education in a given year

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current Expenditure on Education</td>
<td>MOE finance division</td>
</tr>
<tr>
<td>Government Expenditure on Education</td>
<td></td>
</tr>
</tbody>
</table>

Type of disaggregation for the indicator: This indicator is normally calculated at the national level only.

Quality standard: Public current expenditure on education should include those costs incurred by the ministry responsible. The statistics on expenditure should cover transactions made by all departments or services with education responsibility at all decision-making levels. Government expenditure on education as a percentage of total government expenditure cannot exceed or even approach 100%.

Interpretation: Relatively high percentage of current expenditures shows the priority given to a specific level or activity in national educational policy and resource allocation. However in fragile states, government budgets may be substantially supported financially by development partner contributions which depending on whether this is reported upon or not can distort the interpretation.
**Limitation:** In some instances data on total government current expenditure on education refers only to the Ministry of education, excluding other ministries that spend a part of their budget on educational activities. Also it is often easier to access budget figures rather than expenditure data.

Is the indicator to be piloted?

- Yes
- No

**Methodology:** How will the indicator be collected?

- Census survey
- Sample survey

**G.9 Public Expenditure on Education per Learner**

**Focus area:** Quality Management

**Definition:** This is the total government expenditure on education per learner expressed in US Dollars.

**Purpose:** This indicator allows a degree of cross national comparability on the unit costs per learner.

**Calculation method:** Convert the national expenditures in the country’s local currency to the average rate of your currency to the US Dollar in the most recent year. Divide total government expenditure on education for a specific level and year by the total number of pupils / learners at the corresponding level in a given year.

**Formula:**

\[
\text{Per Pupil Expenditure} = \frac{\text{Total government expenditure on education}}{\text{Total enrolment}}
\]

<table>
<thead>
<tr>
<th>Data required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total enrolment by level of education</td>
<td>EMIS</td>
</tr>
<tr>
<td>Total government expenditure by level of education by the average national currency to US Dollar rate for the most recent year.</td>
<td></td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by level of education (pre-primary, primary, secondary, technical and vocational education, higher and tertiary and non-formal).

**Quality standard:** Total government expenditure on education should include those incurred by all concerned ministries and levels of administration.

**Interpretation:** A high unit cost indicates a high level of expenditure per learner by the government which suggests the costs of education delivery are high in a country – such as teacher salaries and teaching and learning materials.

**Limitation:** In most instances data on expenditure on education cannot be obtained easily, or it is incomplete. Further it is often not disaggregated by the levels of education as requested by the African Union.

Is the indicator to be piloted?

- Yes
- No

**Methodology:** How will the indicator be collected?

- Census survey
- Sample survey

**General Remarks:** It should be noted that this indicators utilizes government expenditure only and not total education expenditure.
**H. Early Childhood Development**

**H.1 Annual Population Growth Rate of 0-4 Years**

**Focus Area:** Early Childhood Development

**Definition:** Average exponential rate of growth of the population of 0 to 4 years old infants over a given period. This is the increase in a country’s population of 0 to 4 years during a one year period, expressed as a percentage of the population of the 0 to 4 year olds at the start of that one year period. It factors in the number of births and deaths during the same period and the number of people migrating to and from a country.

**Purpose:** The population growth rate measures how fast the size of the population is changing. Population growth usually has implications for indicators related to education and infrastructure.

**Calculation Method:** Divide the population increase of 0 to 4 years in a year by the population of 0 to 4 years at the start of the year then multiply the result by 100.

**Formula:**

\[
APGR = \frac{The \ population \ increase \ of \ 0 \ to \ 4 \ years \ in \ year \ t}{Total \ population \ of \ 0 \ to \ 4 \ years \ at \ the \ start \ of \ year \ t} \times 100
\]

**Where:** APGR = Annual population growth rate

<table>
<thead>
<tr>
<th>Data Required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>The population increase of 0 to 4 years for a given year</td>
<td>CSO</td>
</tr>
<tr>
<td>Total population of 0 to 4 years at the start of that given year</td>
<td>CSO</td>
</tr>
</tbody>
</table>

**Type of disaggregation for the indicator:** This indicator is to be disaggregated by gender.

**Interpretation:** A higher annual population increase of 0 to 4 year olds indicates a future increase in the education enrolment.

Is the indicator to be piloted?

- [ ] Yes
- X No

**Methodology:** How will the indicator be collected?

- [ ] Census survey
- X Sample survey

**H.2 Gender Parity Index for Gross Enrolment Ratio**

Refer to A.2 for information

**H.3 Gross Enrolment Ratio in Pre Primary Education by Gender**

Please refer to A.1 for information

**H.4 Infant Mortality Rate**

**Focus Area:** Early Childhood Development
**Definition:** Infant mortality refers to deaths of children under the age of one year. It is the total number of deaths for children under the age of one year in a given year for every 1,000 live births in the same year.

**Purpose:** Infant mortality rate is crucial in determining how many children survive after their first year of birth. This can help in ascertaining the provisions that can be made in terms of educational requirements for surviving children.

**Calculation Method:** Divide the number deaths of infants under the age of one in a given year by the total number of live births then multiply the result by 1000.

**Formula:**

\[
IMR = \frac{\text{Number of infant deaths under age 1 in a year}}{\text{Total number of live births in the same year}} \times 1000
\]

**Where:** IMR = Infant Mortality Rate

<table>
<thead>
<tr>
<th>Data Required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birth and deaths registration statistics</td>
<td>CSO</td>
</tr>
</tbody>
</table>

**Type of Disaggregation for the indicator:** This indicator is to be disaggregated by gender.

**Limitations:** Many developing countries lack fully functioning vital registration systems that accurately record all births and deaths. Thus, household surveys, such as Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS), have become the primary source of data on child mortality in developing countries; but there are some limits to their quality.

Is the indicator to be piloted?

[ ] Yes  [x] No

**Methodology:** How will the indicator be collected?

[ ] Census survey  [x] Sample survey

### H.5 Net Enrolment Ratio in Pre Primary

Refer to G.4 for information

### H.6 Percentage of Female Pupils in Pre-Primary Education

**Focus Area:** Early Childhood Development and Gender and Culture.

**Definition:** The number of female pupils at pre-primary level of education expressed as a percentage of total number of pupils at the same level in a given school-year. A pupil can be referred to as a young learner under the supervision of a teacher.

**Purpose:** It indicates the gender composition of pupils in Early Childhood Education and how the participation of the girl child can be enhanced in education.

**Calculation Method:** Divide number of female pupils for a given level of education (e.g. Primary) by the total number of pupils in that level in a given year multiplied by 100.
**Formula:**

\[
\text{Percentage of female pupils} = \frac{\text{Pre-primary enrolment of female pupils}}{\text{Total number of pupils}} \times 100
\]

**Data Required**

<table>
<thead>
<tr>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>EMIS - Ministry of Education</td>
</tr>
</tbody>
</table>

**Type of Disaggregation for the indicator:** This indicator is to be disaggregated by levels of education (pre-primary, primary and secondary)

**Interpretation:** Percentage of female pupils approaching 50% indicates gender parity in the composition of the total number of pupils. A value greater than 50% reveals more opportunities and/or preferences for women/girls to participate in learning activities at a specific level, grade or programme of education.

**Limitation:** This indicator measures the level of gender representation in early childhood education rather than the effectiveness and quality of learning. The association with higher female enrolment is not yet statistically established.

**H.7 Percentage of Female Teachers in Pre Primary Education**

Refer to A.4 for information

**H.8 Percentage of Teachers Qualified to teach in Pre-Primary Education**

Refer to C.2 for information

**H.9 Percentage of Under Five suffering from Stunting**

**Focus Area:** Early Childhood Development.

**Definition:** Stunting, (low height for age) reflects a child’s height in relation to his/her age. It is an indicator of cumulative deficient growth associated with chronic insufficient dietary intake, frequent infection, and poor feeding practices over a long period. Stunting generally occurs before age two, and effects are largely irreversible. These include delayed motor development, impaired cognitive function and poor school performance. Nearly one third of children under five in the developing world are stunted.

**Purpose:** This indicator belongs to a set of indicators whose purpose is to measure nutritional imbalance and malnutrition resulting in under nutrition (assessed by underweight, stunting and wasting) and overweight. Child growth is the most widely used indicator of nutritional status in a community and is internationally recognized as an important public-health indicator for monitoring health in populations. In addition, children who suffer from growth retardation as a result of poor diets and/or recurrent infections tend to have problems in learning and attending school. Illness and death occurs because of a poor nutritional balance.

**Calculation Method:** Divide the total number of children under 5 with stunting growth in a given year by the total number of children under 5 in the same year then multiply the result by 100.
Formula: 
\[ PUSST = \frac{\text{Number of stunted children (moderate & severe) under age 5}}{\text{Total number of children under age 5}} \times 100 \]

Where: PUSST = Percentage of under-five suffering from stunting (moderate and severe)

**Data Required**

<table>
<thead>
<tr>
<th>Data Required</th>
<th>Source of data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of children under five with stunting (moderate and severe)</td>
<td>CSO\NSO</td>
</tr>
<tr>
<td>Total number of children under five</td>
<td>CSO\NSO</td>
</tr>
</tbody>
</table>

**Type of Disaggregation for the indicator:** This indicator is to be disaggregated by gender.

**Limitations:** Many developing countries lack fully functioning vital registration systems that accurately record all births and deaths. Thus, household surveys, such as Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS), have become the primary source of data on child mortality in developing countries; but there are some limits to their quality.

Is the indicator to be piloted? 
- Yes [X] No

**Methodology:** How will the indicator be collected?
- Census survey [ ] Sample survey [X]

**H.10 Pupil Teacher Ratio in Pre Primary Education**

Refer to C.1 for information

**H.11 Under 5 Mortality Rate**

**Focus Area:** Early Childhood Development

**Definition:** Under-Five Mortality Rate is the number of infants who die in a given year before reaching 5 years of age per 1,000 live births. This is also the probability (expressed as a rate per 1,000 live births) of a child born in a specified year dying before reaching the age of five if subject to current age-specific mortality rates.

**Purpose:** Under-five mortality rate measures child survival. It also reflects the social, economic and environmental conditions in which children (and others in society) live, including their health care. Because data on the incidences and prevalence of diseases (morbidity data) frequently are unavailable, mortality rates are often used to identify vulnerable populations.

**Calculation Method:** Divide the total number of deaths of children under the age of 5 in a given year by the total number of live births in the same year then multiply the result by 1000.

Formula: 
\[ U5MR = \frac{\text{Total number of deaths of children under age 5}}{\text{Total number of live births}} \times 1000 \]

Where: U5MR = Under five mortality rate.
<table>
<thead>
<tr>
<th>Data Required</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of deaths of children under 5</td>
<td>CSO/NSO</td>
</tr>
<tr>
<td>Total number of live births</td>
<td></td>
</tr>
</tbody>
</table>

**Type of Disaggregation for the indicator:** This indicator is to be disaggregated by gender

**Limitations:** Many developing countries lack fully functioning vital registration systems that accurately record all births and deaths. Thus, household surveys, such as Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS), have become the primary source of data on child mortality in developing countries; but there are some limits to their quality.

Is the indicator to be piloted?
- [ ] Yes
- [X] No

**Methodology:** How will the indicator be collected?
- [ ] Census survey
- [X] Sample survey

**H.I2 Grade One Repetition Rate**

**Focus Area:** Quality Management, Gender and Culture and Early Childhood Development.

**Definition:** A proportion of pupils from a cohort enrolled in a given grade at given school years who study in the same grade the following school year. A cohort is a group of pupils that start an educational level together and move through the subsequent years of the programme together.

**Purpose:** It measures the phenomenon of pupils from a cohort repeating grade 1 and its effects on the internal efficiency of educational systems. In addition, it is one of the key indicators analyzing and projecting pupil flows from grade to grade within the educational cycle.

**Calculation Method:** Divide the number of repeaters in a given school grade in school year t+1 by the number of pupils from the same cohort enrolled in the same grade in the previous school year t.

**Formula:**

\[
\text{Repetition rate for a grade} = \frac{\text{Number of pupils repeating a grade}}{\text{Total number of pupils enrolled in grade}}
\]

**Data Required:** Enrolment by grade for School year t and number of repeaters from the same cohort by grade for year.

**Type of Disaggregation for the indicator:** This indicator is to be disaggregated by Repetition Rate can be disaggregated by gender.

**Interpretation:** Repetition Rate ideally should approach zero percent; a high repetition rate reveals problems in the internal efficiency of the education system. When compared across grades, the patterns can indicate specific grades for which there is higher repetition, hence requiring more in depth study of causes and possible remedies.

**Quality Standard:** Like other pupil-flow rates (promotion and dropout rates), the repetition rate is derived by analyzing data on enrolment and repeaters by grade for two consecutive years. One should therefore ensure that such data are consistent in terms of coverage overtime and across grades. Special attention should be paid to minimizing some common errors which may bias these flow rates such as over reporting enrolment repeaters.

**Limitation:** The level and maximum number of grade repetitions allowed can in some cases be determined
by the educational authorities with the aim of coping with limited grade capacity and increasing the internal efficiency and flow of pupils or students. Care should be taken in interpreting this indicator, especially in comparisons between educational systems.

Is the indicator to be piloted?

- Yes  
- No

**Methodology:** How will the indicator be collected?

- Census survey  
- Sample survey

**H.13 Fertility Rate**

**Focus Area:** Early Childhood Development

**Definition:** This is the number of live births per 1000 female population between the ages of 15 and 44 years for a given year.

**Purpose:** To determine the number of children born in a specific time frame. This is useful in measuring the expected number of children that are supposed to attend Early Childhood Development Classes.

**Calculation Method:** Divide the total number of live births to women aged 15-44 years in a given year by the total number of women aged 15 to 44 in the same year then multiply the result by 1000.

**Formula:**

\[
Fertility\ Rate = \frac{\text{Total number of live births to women aged 15-44}}{\text{Total number of women aged 15-44}} \times 1000
\]

**Data Required**

<table>
<thead>
<tr>
<th>Data Required</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of registered births in a given year to women aged 15 – 44</td>
<td>CSO/NSO</td>
</tr>
<tr>
<td>Total number of women aged 15 – 44</td>
<td>CSO/NSO</td>
</tr>
</tbody>
</table>

**Type of Disaggregation for the indicator:** This indicator is to be disaggregated by age and location.

**Limitation:** There are a number of limitations:

(a) For civil registration, rates are subject to limitations which depend on the completeness of birth registration, the treatment of infants born alive but dead before registration or within the first 24 hours of life, the quality of the reported information relating to age of the mother, and the inclusion of births from previous periods. The population estimates may suffer from limitations connected to age misreporting and coverage.

(b) For survey and census data, both the numerator and denominator come from the same population. The main limitations concern age misreporting, birth omissions, misreporting the date of birth of the child, and sampling variability in the case of surveys. The adolescent birth rate is commonly reported as the age-specific fertility rate for ages 15 to 19 in the context of calculation of total fertility estimates. It has also been called adolescent fertility rate. A related measure is the proportion of adolescent fertility measured as the percentage of total fertility contributed by women aged 15-19.

Is the indicator to be piloted?

- Yes  
- No

**Methodology:** How will the indicator be collected?

- Census survey  
- Sample survey
### Appendix One:

#### Description of ISCED Levels, Classification Criteria And Sub-Categories

<table>
<thead>
<tr>
<th>ISCED-Programmes (ISCED-P)</th>
<th>ISCED-Attainment (ISCED-A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 ECD</td>
<td>Not further defined</td>
</tr>
<tr>
<td>1 Primary</td>
<td>Recognized successful completion of programme is insufficient for completion or partial completion of ISCED level (and thus without direct access to programmes at a higher ISCED level) (ECD)</td>
</tr>
<tr>
<td>2 Lower Secondary</td>
<td>Recognized successful completion of programme is sufficient for partial completion of ISCED level but without direct access to programmes at a higher ISCED Level (Primary)</td>
</tr>
<tr>
<td>3 Upper Secondary</td>
<td>Recognized successful completion of programme is sufficient for completion of ISCED level but without direct access to programmes at a higher ISCED level</td>
</tr>
<tr>
<td>4 Post-Secondary non-Tertiary</td>
<td>Recognized successful completion of programme is sufficient for completion of ISCED level and with direct access to programmes at a higher ISCED level 3,4</td>
</tr>
<tr>
<td>5 Short Cycle Tertiary</td>
<td>First degree/qualification programme - bachelor or equivalent (3-4 years)</td>
</tr>
<tr>
<td>6 Bachelor or equivalent</td>
<td>Long first degree/qualification programme - bachelor or master, or equivalent</td>
</tr>
<tr>
<td>7 Master or Equivalent</td>
<td>Second or further degree/qualification programme - following a bachelor or equivalent programme</td>
</tr>
<tr>
<td>8 Doctoral or Equivalent</td>
<td>Second or further degree/qualification programme - following a master or equivalent programme</td>
</tr>
<tr>
<td>9 Not elsewhere classified</td>
<td>Not elsewhere classified</td>
</tr>
</tbody>
</table>

1. Programmes: completion/access (ISCED-P levels 2-5 and 8), position in national degree/qualification structure (ISCED-P levels 6-7), not further defined (ISCED-P levels 0-1)  
Attainment: completion/access (ISCED-A levels 2-4), not further defined (ISCED-A levels 0-1 and 5-8)
2. At ISCED-A levels 1 and 5-7, including successful completion of a programme or a stage of a programme at a higher ISCED level insufficient for level or partial level completion.

3. In the case of ISCED level 3, ‘higher ISCED level’ refers to ISCED-P levels 5-7.

4. In the case of ISCED levels 5 and 8, all (full) programmes are classified as type 4 regardless of whether they give access to higher ISCED levels or not.

5. At ISCED-A levels 2-4, including successful completion of a programme or a stage of a programme at a higher ISCED level insufficient for level or partial level completion.

9. Not all combinations of categories and subcategories exist or are widespread. The three digit codes provided in this document are thus limited to the combinations in use. Full listings of these codes are given in Sections 22 and 23 (Annexes 2 and 3) of this Document. If users of ISCED identify additional combinations of categories and subcategories, the list of three-digit codes can be expanded using the existing codes provided for the complementary dimensions.

Appendix Two: Definitions of Terms

**African Languages** - Indigenous languages spoken by an African population. This language would have originated in Africa and has its own culture.

**Attrition Rates** - Attrition is defined as a person who worked in a school (or district) the prior year and is not working at that same school (or district) in the next year. School level attrition measures the number of teachers who left a school, including those teachers who transferred to other schools within a district.

**Existence of an African Language Policy** - The existence of legislature or policy documents stating how languages are used, which languages are official. Language policy can also be used to cultivate native language or ensure the existence of threatened languages.

**Gross Completion Rates** - All graduates in ISCED 5A programmes (first degree) expressed as a percentage of the population of the age where they theoretically finish the most common first degree programme in the given country.

**Gross Domestic Product** - Gross domestic product is an aggregate measure of production equal to the sum of the gross values added of all resident institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs). The sum of the final uses of goods and services (all uses except intermediate consumption) measured in purchasers’ prices, less the value of imports of goods and services, or the sum of primary incomes distributed by resident producer units.

**Gross National Income** - (GNI) is GDP less net taxes on production and imports, less compensation of employees and property income payable to the rest of the world plus the corresponding items receivable from the rest of the world (in other words, GDP less primary incomes payable to non-resident units plus primary incomes receivable from non-resident units). An alternative approach to measuring GNI at market prices is as the aggregate value of the balances of gross primary incomes for all sectors; (note that gross national income is identical to gross national product (GNP) as previously used in national accounts generally).

**Gross National Product** - This is the total dollar value of all final goods and services produced for consumption in a country during a particular time period. Its rise or fall measures economic activity based on the labor and production output within a country. The figures used to assemble data include the manufacture of tangible goods such as cars, furniture, and bread, and the provision of services used in daily living such as education, health care, and auto repair. Intermediate services used in the production of the final product are not separated since they are reflected in the final price of the goods or service. The GNP does include allowances for depreciation and indirect business taxes such as those on sales and property.
Higher and Tertiary Education - Programmes with an educational content more advanced than what is offered at ISCED levels 3 and 4. The first stage of tertiary education, ISCED level 5, covers level 5A, composed of largely theoretically based programmes intended to provide sufficient qualifications for gaining entry to advanced research programmes and professions with high skill requirements; and level 5B, where programmes are generally more practical, technical and/or occupationally specific. The second stage of tertiary education, ISCED level 6, comprises programmes devoted to advanced study and original research, and leading to the award of an advanced research qualification.

Inbound Mobility - This is defined as the number of students from abroad studying in a given country, as a percentage of the total tertiary enrolment in that country.

Life Skills - A large group of psycho-social and interpersonal skills which can help people make informed decisions, communicate effectively, and develop coping and self-management skills that may help them lead a healthy and productive life. Life skills may be directed toward personal actions and actions toward others, as well as actions to change the surrounding environment to make it conducive to health.

Live Births - This is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life - such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles - whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered a live birth.

Outbound Mobility - The number of students from a given country studying abroad as a percentage of the total tertiary enrolment in that country.

Science and Technology in Higher Education - Science is search for the profound knowledge and technology is the use of scientific knowledge to create new things. Science and technology in higher education seeks to study how social, political, and cultural values affect scientific research and technological innovation, and how these in turn affect society, politics, and culture.

Teacher Morale - The state of the spirits of a person or group as exhibited by - among others - confidence, cheerfulness, discipline, and willingness to perform assigned tasks.

Technical Vocational Education and Training (TVET) - This refers to the deliberate interventions to bring about learning which would make people more productive (or simply adequately productive) in designated areas of economic activity (e.g., economic sectors, occupations, specific work tasks).

TVET will also have other purposes which are not unique to TVET, and which also apply to other forms of education, e.g., knowledge, skills, insights and mindsets which are deemed to be generally valuable for the learners, not only in designated areas of economic activity.
Everyone has the right to education.