AFRICAN UNION

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Continental Education Strategy for Africa

2016-2025

(CESA 16-25)

Indicators Manual

FOREWORD

It is with immense pleasure and satisfaction that I am presenting the Continental Education Strategy for Africa (CESA 16-25) Indicators Manual. The ambitious strategic goals objectified in CESA demand a comprehensive framework for monitoring and evaluating their implementation. Noting the value of education in catalyzing achievement of all aspirations of Agenda 2063 as well as the global SDGs, it is imperative that the framework for implementation and monitoring of CESA is clear and responsive enough to be of optimal benefit.

The manual provides a harmonized framework against which to benchmark progress of member states tracking the performance of various departments of Education in achieving the objectives of the Continental Education Strategy for Africa. It will also facilitate the strengthening of the continental AU Education Observatory, as the one stop platform for education data of African countries; and make the Observatory a more effectual agent for capacity building and policy analysis of Member States and RECs.

It is against this backdrop that my department has collaborated with the Association for the Development of Education in Africa (ADEA) to bring together Member States, RECs and education development agencies in the production, definition and validation of indicators for CESA 16-25. This manual catalogues indicators which will be used to measure progress on the twelve (12) Strategic Objectives of the Continental Education Strategy for Africa. It draws significantly from work done under the Plan of Action for the Second Decade of Education for Africa (2006-2015), and has taken cognizance of global indicators development for the SDG 4. It is expected that our work will also influence global initiatives through our partnership engagements.

I appreciate and commend my staff for steering, the members of the CESA Education Planning Cluster and Advisory group including Save the Children International for their invaluable contributions.

I therefore call on all Member States, RECs and stakeholders to embrace this manual, incorporate it into your various instruments, and make use of it to positively advance the course of education development in Africa and consequentially Agenda 2063, towards the Africa we want.

H.E. Prof. Sarah Anyang Agbor

Commissioner, Human Resources Science and Technology

The African Union Commission

Who is the Indicator Manual for?

This Indicator Manual is aimed at statisticians, planners and education managers who are tracking their Ministry's performance in achieving the objectives of the African Union's Continental Education Strategy for Africa. It 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

Education has long been recognized as a critical sector whose "performance directly affects and even determines the quality and magnitude of Africa's development." In 1997, the then Organisation for African Unity declared 1997 to 2006 the First Decade of Education in Africa. The First Decade of Education was drafted to respond to what were some of the critical issues in education at the time. Education Management Information Systems (EMIS) was subsequently included in the Second Decade for Education in Africa which came to a close in 2015.

The July 2012 African Union Summit made a decision to ascribe responsibility to the African Union Commission in close consultation with Members States and Regional Economic Communities, to identify Africa's priorities for the post-2015 Development Agenda (Assembly/AU/Dec. 423 (XIX)).

The development of the post 2015 agenda culminated in the African Agenda 2063 and the Continental Education Strategy for Africa 2016-2025 (CESA 16-25). This continental strategy matches the 2016-2025 framework of the African Union 2063 Agenda, meets the Common African Position (CAP) on the Post-2015 Development Agenda. It also draws lessons from previous continental plans and strategies being fully aware that many of the goals of the Second Decade for Education in Africa were unmet. Furthermore, many of the indicators used to measure progress on the Plan of Action for the Second Decade of Education in Africa were not being tracked.

It is against this background that this indicator manual has been produced. It catalogues most of the indicators which will be used to measure progress on the twelve Strategic Objectives of the Continental Education Strategy for Africa specifically and also keeping in mind the principles and guidelines of this document. It also draws significantly from work done under the Plan of Action for the Second Decade of Education and the previous African Union Indicators manual.

This Indicator Manual along with the list of indicators to monitor the Continental Education Strategy for Africa 16-25 and the annual Continental Education Strategy for Africa report form part of the wider CESA Monitoring and Evaluation Framework. The manual has been developed to empower education managers both within African Ministries of Education and outside of ministries to perform

their jobs more effectively. The selection of indicators for inclusion under the CESA 16-25 Monitoring and Evaluation Framework has been done at the level of the African Union Specialized Technical Group on Education, Science and Technology with representation from Member States, Regional Economic Communities and Partners.

How is the Indicator Manual organized?

This Indicator Handbook is divided into twelve sections. Each section represents a Strategic Objective of the African Union's Continental Education Strategy for Africa 16-25. Indicators have been identified and agreed upon by the African Union Specialised Technical Group on Education, Science and Technology based on how well they reflect the goals of the CESA Strategic Objectives and the targets of Sustainable Development Goal Four as well as their feasibility for collection.

An effort has been made to ensure that these indicators are consistent with global goals. Many of these indicators are replicated in other frameworks. This was done in order to reduce the burden of reporting on various and differing education frameworks. This manual also includes a matrix in the annex section which indicates the parent framework the indicator falls under e.g. CESA 16-25 of SDG4.

Several other indicators have also been included. These do not fall under any of the Strategic Objectives of the CESA 16-25. However they reflect some of the core themes of the African Agenda 2063 and the CESA 16-25 on African values and financial commitments to making quality education a reality for all of Africa's people. These indicators can be found from page 29.

Some of the proposed indicators are still in their pilot phase. These are indicators which have been selected to help measure a particular target. They however have not been tested to determine whether they work in practice or whether they have any unintended consequences and are fit for purpose. All indicators still in the pilot phase are marked as such. One example is indicator 1.2 under Strategic Objective One-Proportion of teachers qualified in Science or Technology or Engineering or Mathematics by Sex. This indicator will need to be tested in order to determine its validity and reliability.

The Indicator Handbook accompanies the CESA 16-25 Logical Framework. Users of the handbook are given guidance on which indicators are to be disaggregated and accordingly to what classification for example rural or urban. Where the handbook indicates that an indicator is to be disaggregated, those filling in the CESA 16-25 Logical Framework should take note.

The CESA Strategic Objectives are:

- SO 1: Revitalize the teaching profession to ensure quality and relevance at all levels of education

- SO 2: Build, rehabilitate, preserve education infrastructure and develop policies that ensure a permanent, healthy and conducive learning environment in all sub-sectors and for all, so as to expand access to quality education

- SO 3: Harness the capacity of ICT to improve access, quality and management of education and training systems

- SO 4: Ensure acquisition of requisite knowledge and skills as well as improved completion rates at all levels and groups through harmonization processes across all levels for national and regional integration

- SO 5: Accelerate processes leading to gender parity and equity

- SO 6: Launch comprehensive and effective literacy programmes across the continent to eradicate the scourge of illiteracy

- SO 7: Strengthen the science and math curricula in youth training and disseminate scientific knowledge and culture in society

- SO 8: Expand TVET opportunities at both secondary and tertiary levels and strengthen linkages between the world of work and education and training systems

- SO 9: Revitalize and expand tertiary education, research and innovation to address continental challenges and promote global competitiveness

- SO 10: Promote peace education and conflict prevention and resolution at all levels of education and for all age groups

- SO 11: Improve management of education system as well build and enhance capacity for data collection, management, analysis, communication, and use

- SO 12: Set up a coalition of stakeholders to facilitate and support activities resulting from the implementation of CESA 16-25.

ACRONYMS

ADEA	Association for the Development of Education in Africa
AU	African Union
COMEDAF	Conference of Ministers of Education of the African Union
CESA	Continental Education Strategy for Africa
CSO	Central Statistics Office
ECD	Early Childhood Development
EMIS	Education Management Information Systems
GED	Global Education Digest
GER	Gross Enrolment Ratio
GPI	Gender Parity Index
HEMIS	Higher Education EMIS
ICT	Information and Communication Technology
ISCED	International Standard Classification system of Education
SDGs	Sustainable Development Goals
MoE	Ministry of Education
NER	Net Enrolment Ratio
NFE	Non Formal Education
NSO	National Statistics Office
OECD	Organization for Economic Cooperation and Development
PTR	Pupil-Teacher Ratio
REC	Regional Economic Community
TVET	Technical and Vocational Education and Training
UIS	UNESCO Institute for Statistics
UNESCO	United Nations Educational Scientific and Cultural Organisation
	UNICEF United Nations Children's Fund

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APPENDICES

SO 1: Revitalize the teaching profession to ensure quality and relevance at all levels of education

1.1 Percentage of Teachers Qualified to Teach According to National Standards

Definition: Percentage of teachers qualified to teach 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 who 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:

$$PTT = \frac{Number\ of\ certified\ teachers}{Total\ number\ of\ teachers} X100$$

Where

PTT = Percentage of teachers qualified to teach according to national standards

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, by urban/rural and by level of education. The focus is on Primary and Secondary levels of education.

Interpretation: A higher percentage of trained teachers leads 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 | x | No |

Methodology: Will the indicator be collected through a census or sample survey?

| x | Census survey | | Sample survey |

General Remarks: Information on national qualification standards must be obtained from relevant department of the ministry.

1.2 Percentage of teachers qualified in Science or Technology or Engineering or Mathematics by Sex

Definition: Percentage of teachers qualified to teach Science or Technology or Engineering or Mathematics by sex is derived by expressing the number of teachers male or female who are certified to have received the minimum organized initial professional teacher-training required in Science or Technology or Engineering or Mathematics 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 male or female who are sufficiently and officially qualified to teach Science or Technology or Engineering or Mathematics at the relevant level of education.

Calculation method: Divide total number of teachers male or female who have professional teacher training in Science or Technology or Engineering or Mathematics by the total number of teachers. Multiply the result by 100 to express as a percentage.

Formula:

$$PTSTEM = \frac{Number\ of\ certified\ teachers\ in\ S\ or\ T\ or\ E\ or\ M}{Total\ number\ of\ teachers} \times 100$$

Where

PTSTEM =Percentage of teachers qualified in Science or Technology or Engineering or Mathematics by Sex.

Data required	Source of data
Number certified teachers in subject by sex	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 urban/rural. The focus is on Secondary levels of education.

Interpretation: A higher percentage of trained teachers in Science or Technology or Engineering or Mathematics by sex leads to higher quality education in these subjects as it is assumed trained teachers can transmit knowledge more effectively. Having more female teachers in these subjects can increase the number of girls who take up these subjects and produce better outcomes for females.

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. Definitional issues on the parameters of Science, Technology, Engineering or Mathematical subjects.

Is the indicator to be piloted?

x	Yes		No

Methodology: Will the indicator be collected through a census or sample survey?

x	Census survey		Sample survey

General Remarks: Information on national qualification standards and curriculum limitations must be obtained from the relevant department of the ministry.

1.3 Existence of operational teacher development policy

Indicator still under development –

1.4 Percentage of Teachers who have undergone In-Service Training

Indicator still under development –

SO 2: Build, rehabilitate, preserve education infrastructure and develop policies that ensure a permanent, healthy and conducive learning environment in all sub-sectors and for all, so as to expand access to quality education

2.1 Proportion of schools with access to (i) basic drinking water; (ii) single sex basic sanitation facilities; and (iii) basic hand-washing facilities

Indicator still under development – Refer to UNESCO Institute of Statistics[1],[2]

2.2 Proportion of schools with adapted infrastructure and materials for students with disabilities

Indicator still under development – Refer to UNESCO Institute of Statistics[3],[4]

SO 3: Harness the capacity of ICT to improve access, quality and management of education and training systems

3.1 Proportion of schools with access to (i) electricity (ii) the Internet for pedagogical purposes and (iii) computers for pedagogical purposes

Indicator still under development – Refer to UNESCO Institute of Statistics[5],[6]

[1] http://uis.unesco.org/sites/default/files/documents/education-2030-incheon-framework-for-action-implementation-of-sdg4-2016-en_2.pdf
[2] http://uis.unesco.org/sites/default/files/documents/laying-the-foundation-to-measure-sdg4-sustainable-development-data-digest-2016-en.pdf
[3] http://uis.unesco.org/sites/default/files/documents/education-2030-incheon-framework-for-action-implementation-of-sdg4-2016-en_2.pdf
[4] http://uis.unesco.org/sites/default/files/documents/laying-the-foundation-to-measure-sdg4-sustainable-development-data-digest-2016-en.pdf
[5] http://uis.unesco.org/sites/default/files/documents/education-2030-incheon-framework-for-action-implementation-of-sdg4-2016-en_2.pdf
[6] http://uis.unesco.org/sites/default/files/documents/laying-the-foundation-to-measure-sdg4-sustainable-development-data-digest-2016-en.pdf

4.1 Gross intake ratio for final year of primary, lower secondary and upper secondary

Definition: The total number of new entrants in the last grade of primary education, lower secondary or upper secondary respectively regardless of age, but excluding repeaters expressed as percentage of the total population of the theoretical entrance age to the last grade of primary.

Purpose: Gross Intake Rate to Last Grade of Primary Education, Lower secondary or Upper secondary respectively is considered to be a measure of primary or lower or secondary completion in a country's education system.

Calculation method: Divide the number of new entrants in last grade of primary education, irrespective of age, by the population of the theoretical entrance age to the last grade of primary, and multiply the result by 100.

Formula:

$GIRLG^t$

$$= \frac{\text{Total number of new entrants in the last grade of primary education (enrolments minus repeaters), in school} - \text{year } t}{\text{Population of the theoretical entrance} - \text{age } a \text{ to last grade of primary, in school} - \text{year } t} X100$$

Data required	Source of data
Entrants in that grade excluding repeaters	EMIS – Ministry of Education
Population data	NSO/CSO

Type of disaggregation for the indicator: This indicator can be disaggregated by level and gender.

Interpretation: A high gross intake rate indicates a high degree of coverage, whether the pupils belong to the population of official graduation age or not. Care should be taken when comparing cross-cutting results since the duration of education levels varies from country to country.

Quality standard: Data on population used in deriving this indicator should refer strictly to the official/typical graduation age.

Limitation: The completion rate could be over-estimated due to the inclusion of over-aged and under-aged pupils because of early or late entrants. However, this problem will, in most cases cancel out over time.

Is the indicator to be piloted?

☐ Yes   ☒ No

Methodology: Will the indicator be collected through a census or sample survey?

☒ Census survey   ☐ Sample survey

4.2 Existence of a National Qualifications Framework

Definition: A structure which allows Technical and Vocational Education and Training and Academic certifications to be significantly broadened, harmonized in line with industry requirements, unified and streamlined.

Purpose: This indicator gives an indication of whether a country can catalogue the skills that are being produced and whether these skills can easily be compared across institutions and countries. A National Qualifications Framework which is aligned to a Regional Qualifications Framework presents opportunities for regional integration.

Calculation method: Yes or No question

Data required	Source of data
National or Regional Qualifications	Policy unit - Ministry of

Framework	Education/Training/Industry

Type of disaggregation for the indicator: This indicator can be disaggregated by Lower Secondary, Upper Secondary and Tertiary Education.

Quality standard: See quality standards for the underlying indicators

Limitation: The indicator assumes that a 'Yes' value means that there is national and regional integration and cataloguing of skills. However, this is dependent on whether the Qualifications Framework is in being used properly or whether it is crafted properly.

Is the indicator to be piloted?

☐ Yes   ☒ x ☐ No

Methodology: Will the indicator be collected through a census or sample survey?

☒ x Census survey   ☐ Sample survey

General Remarks: This indicator is collected for Lower Secondary Education going upwards as this is the point at which students begin to exit formal education in search of employment.

4.3 Membership in the Network of African Learning Assessments

Definition: The Network of African Learning Assessments (NALA) supports country level work on learning assessment and the use of assessment data to improve learning.

Purpose: This indicator indicates whether a country is part of a system which promotes the use of a set of criteria and measures for advocating best practice and benchmarking countries capabilities in being able to produce relevant, accurate, timely and comprehensive education Learning Assessment results and information. Such information can help a country determine whether it is meeting its learning outcomes targets.

Calculation method: Yes or No question

Data required	Source of data
Membership in the Network of African Learning Assessments	Curriculum Development Unit - Ministry of Education/Training/Industry

Type of disaggregation for the indicator:

Quality standard:

Limitation: The indicator assumes that a 'Yes' value means that the member country participates in all the relevant capacity building activities undertaken by the NALA and that this is subsequently cascaded down to teachers and learners for better outcomes which might not necessarily be the case.

Is the indicator to be piloted?

X	Yes		No

Methodology: Will the indicator be collected through a census or sample survey?

x	Census survey		Sample survey

General Remarks:

4.4 Percentage Distribution of Tertiary Graduates by field of study

Definition: The proportion of graduates in higher and tertiary education in field of study expressed as a percentage of total graduates at that level.

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

Calculation method: Divide the number of students studying in each field of study in higher and tertiary education by the total number of students in higher and tertiary education.

Formula:

$$PDG = \frac{\begin{array}{c} number\ of\ graduates\ in\ higher\ and\ tertiary\ education \\ in\ field\ of\ study \end{array}}{Total\ number\ of\ graduates\ in\ higher\ and\ tertiary\ education} X100$$

Where

PDG^t = Percentage Distribution of Graduates in year t

Data required	Source of data
Number of graduates in field of study from higher and tertiary education	EMIS
Total number of graduates in higher and tertiary education	EMIS

Type of disaggregation for the indicator: By gender, field of study, type of institution.

Interpretation: Countries with high numbers of graduates in particular fields (e.g. Science, Engineering, and Technology) are associated with having high growth potential in international markets. It also provides information for Labour Market Information Systems.

Quality standard: This indicator needs to include graduates from all higher and tertiary institutions including those from Technical Vocational Education 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 ☒ No

Methodology: Will the indicator be collected through a census or sample survey?

☒ Census survey ☐ Sample survey

Definition: A measure of how many children or young children have achieved a minimum proficiency level in certain subjects. The Minimum proficiency level is the benchmark of basic knowledge in a domain.

Purpose: The indicator is a direct measure of the learning outcomes achieved in the subject areas being assessed at the relevant stages of education.

Calculation method: Divide the number of children and/or young people at the relevant stage of education achieving or exceeding a pre-defined proficiency level in a given subject by the number of children and/or young people in that stage of education.

Formula:

$$PL = \frac{\text{Percentage of students in a learning assessment at stage of education in a subject in year } t \text{ achieving the level of proficiency}}{\text{Percentage of students at stage of education in year } t} \times 100$$

Where

PL^t = Performance above minimum level in year t

Data required	Source of data
Performance level data	National and Cross-national assessments
Enrolment data	EMIS

Type of disaggregation for the indicator: By age or age-group of students, sex, location, socio-economic status, migrant status and ethnicity.

Interpretation: This indicator is a measure of the quality of teaching and learning in specific subjects and can be used for cross national comparability.

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[7] Indicator parameters currently being developed further. Refer to http://uis.unesco.org/sites/default/files/documents/sdg4-metadata-global-thematic-indicators.pdf

(a) Below minimum is the proportion or percentage of students who do not achieve a minimum proficiency level as established by countries according to the globally-defined minimum competencies.

(b) At or above minimum is the proportion or percentage of students who have achieved at least the minimum proficiency level as defined in the assessment. Due to heterogeneity of performance levels set by national and cross-national assessments, these performance levels will be mapped to the globally-defined minimum performance levels. Once the performance levels are mapped, the global education community will be able to identify for each country the proportion or percentage of children who achieved at least minimum proficiency levels.

Quality standard: Results are comparable for countries which participated in the same cross-national learning assessments.

Limitation: Results are not comparable across different cross-national learning assessments. Assessments are typically administered within school systems, which are usually referred as school-based learning assessments. The current indicators cover only those in school. The proportion of in-school target populations varies from country to country due to differences in out-of-school children and youth populations in each country. Assessing competencies of children and young people who are out-of-school would require household-based surveys. Given that Assessments are usually not conducted in or on the Mother Tongue, some poor scores can end up being an misleading reflection of proficiency.

Is the indicator to be piloted?

☐ Yes   ☒ X ☐ No

Methodology: Will the indicator be collected through a census or sample survey?

☒ X Census survey   ☒ x Sample survey[8]

4.6 Proportion of population in a given age group achieving at least a fixed level of proficiency in functional (a) literacy and (b) numeracy skills, by sex[9]

Definition: A measure of how many youth (aged 15-24 years) and of adults (aged 15 years and above) have achieved a minimum proficiency level in literacy and numeracy. The fixed level of proficiency is the benchmark of basic knowledge in a domain (literacy or numeracy) measured through learning assessments.

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[8] Data for out-of-school children or young people will need to collected using sample surveys
[9] Indicator parameters currently being developed further. Refer to

Purpose: The indicator is a direct measure of the skill levels of youth and adults in the two areas: literacy and numeracy.

Calculation method: Divide the number of youth and/or adults at the relevant stage of education achieving or exceeding a pre-defined proficiency level in a given subject by the number of children and/or young people in that stage of education.

Formula:

$$PL = \frac{\text{Percentage of students in a learning assessment at stage of education in a subject in year } t \text{ achieving the level the fixed level of proficiency}}{\text{Percentage of students at stage of education in year } t} \times 100$$

Where

PFL^t = Proficiency at fixed level in year t

Data required	Source of data
Performance level data	National and Cross-national assessments
Enrolment data	EMIS

Type of disaggregation for the indicator: By age or age-group of students, sex, location, socio-economic status, and type of skill.

Interpretation: There is only one threshold that divides youth and adults into below minimum or at or above minimum proficiency levels.

(a) Below minimum level is the proportion or percentage of youth and adults who have not achieved the minimum proficiency level as established by countries according to the globally defined minimum competencies.

(b) At or above minimum level is the proportion or percentage of youth and adults who have achieved at least the minimum proficiency level. Due to heterogeneity of performance levels set by national and cross-national assessments, these performance

levels will have to be mapped to the globally-defined minimum proficiency levels. Once the performance levels are mapped, the global education community will be able to identify for each country the proportion or percentage of youth and adults who achieved at least minimum proficiency level.

Quality standard: Results are comparable for countries which participated in the same cross-national learning assessments.

Limitation: The measurement of youth and adult skills requires some form of direct assessment.

Is the indicator to be piloted?

☐ Yes ☒ X ☐ No

Methodology: Will the indicator be collected through a census or sample survey?

☒ X Census survey ☒ x Sample survey[10]

4.7 Percentage of girls who complete secondary education

Indicator still under development

SO 5: Accelerate processes leading to gender parity and equity

5.1 Gender Parity Index for Gross Enrolment Ratio

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.

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[10] Data for out-of-school children or young people will need to collected using sample surveys

Purpose: The GPI measures progress towards gender parity in education participation and/or learning opportunities available for women in relation to those available to men. 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:

$$GPI_i^t = \frac{Female\ value\ of\ given\ indicator}{Male\ value\ of\ given\ indicator}$$

Where

GPI_i^t =Gender Parity Index of a given indicator i, in year t

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 can be disaggregated by urban and rural, geographic sub-division and level of education. The focus is on Secondary and Tertiary education in the post 2015 era.

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: This indicator uses Gross Enrolment Rates and should refer to quality standards for the underlying indicators i.e. GER.

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 | X | No |

Methodology: Will the indicator be collected through a census or sample survey?

| X | 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.

5.2 Percentage of Female Teachers

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 professional activity involves the transmitting of knowledge, attitudes and skills that are stipulated in a formal curriculum programme to students 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:

$$PFT = \frac{Number\ of\ female\ teachers}{Total\ number\ of\ teachers} X100$$

Where

PFT   = Percentage female teachers in educational level in a given school year

Data required	Source of data
Number of female teachers	EMIS - Ministry of Education
Total number of teachers	EMIS - Ministry of Education

Type of disaggregation for the indicator: This indicator is to be disaggregated by geographical location (region, urban/rural), public and private and level of education. The focus is on 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 ☒ No

Methodology: will the indicator be collected through a census or sample survey?

☒ Census survey ☐ Sample survey

5.3 Percentage of Female Head Teachers

Definition: The number of female head teachers at a given level of education expressed as a percentage of total number of head teachers (male and female) at the same level in a given school-year. Head teachers are the most senior managers present in a school on a daily basis and their professional activity involves the overall management of the school.

Purpose: It indicates the gender composition of the teaching force at the most senior level.

Calculation method: Divide number of female head teachers for a given level of education (e.g. Primary) by the total number of head teachers in that level in a given year multiplied by 100.

Formula:

$$PFHT = \frac{Number\ of\ female\ head\ teachers}{Total\ number\ of\ head\ teachers} X100$$

Where

PHFT = Percentage female head teachers in educational level in a given school year

Data required	Source of data
Number of female head teachers	EMIS - Ministry of Education
Total number of head teachers	EMIS - Ministry of Education

Type of disaggregation for the indicator: This indicator is to be disaggregated by geographical location (region, urban/rural), public and private and level of education. The focus is on primary and secondary.

Interpretation: Percentage of female head teachers approaching 50% indicates gender parity in the composition of the teaching force at the senior level. A value greater than 50% reveals more opportunities and /or preferences for women to participate in teaching activities at this specific level. Female head teachers and supervisors are important to ensure that a gender perspective is fully incorporated in schools.

Quality standard: Having a high number of acting or temporary head teachers in a country can distort the overall figure.

Limitation: This indicator measures the level of gender representation in the school management profession rather than the effectiveness and quality of school systems. This is a process indicator and does not guarantee positive outcomes.

Is the indicator to be piloted?

☐ Yes   ☒ No

Methodology: will the indicator be collected through a census or sample survey?

☒ Census survey   ☐ Sample survey

5.4 Girls' dropout rate per reason of drop out

Indicator still under development

5.5 Percentage of girls enrolled to STEM

Indicator still under development

SO 6: Launch comprehensive and effective literacy programmes across the continent to eradicate the scourge of illiteracy

6.1 Youth literacy rate

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.

Purpose: To reflect recent outcomes of the basic education process. Its 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:

$$LIT_{15-24}^{t} = \frac{Literate\ Population\ aged\ 15-24\ years\ old}{Population\ aged\ 15-24\ years\ old}\ X100$$

Where

LIT_{15-24}^{t}=Literacy rate of persons aged 15-24 years old in year t

Data required   **Source of data**

Number of literates (or illiterates) aged 15- to 24-years-old	CSO/NSO
Population aged 15- to 24-years-old	CSO/NSO

Type of disaggregation for the indicator (e.g. Gender, geography, level of education, race/ethnic group, public/private/state aided, urban/rural)

-By gender and geographical location (region, urban/rural).

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: will the indicator be collected through a census or sample survey?

    ☒ Census survey   ☐ Sample survey

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

6.2 Adult Literacy Rate

Definition: The percentage of population aged 15 years and over who can both 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.

Calculation method: Divide the number of literates by the corresponding age-group of population and multiply the result by 100.

Formula:

$$LIT_{15+}^{t} = \frac{Adult\ literate\ population\ (15+)}{Adult\ population\ (15+)} X100$$

Where

LIT_{15+}^{t} = Adult Literacy Rate (15+) in year t

Data required	Source of data
Number of literate population 15 years and over	CSO/NSO
Total population 15 years and over	CSO/NSO

Type of disaggregation for the indicator

This indicator is to be disaggregated by gender, geographical location (urban/rural).

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 from 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 readility of literacy statistics

Is the indicator to be piloted?

☐ Yes   ☒ No

Methodology: will the indicator be collected through a census or sample survey?

☒ Census survey   ☐ Sample survey

General Remarks: This indicator must be obtained from CSO

6.3 Participants in literacy programmes as a percentage of illiterate population

Definition: Number of youth (aged 15-24 years) and adults (aged 15 years and older) participating in literacy programmes expressed as a percentage of the illiterate population of the same age.

Purpose: To show the level of participation of illiterate youth and adults in literacy programmes.

Calculation method: The indicator is calculated as the number of illiterate persons in the relevant age group participating in literacy programmes expressed as a percentage of the illiterate population of the same age.

Formula:

$$PRLP = \frac{\text{number of illiterate persons in the relevant age group participating in literacy programmes}}{\text{illiterate population of the same age}} \times 100$$

Where

$PRLP^t$ = Participation rate of the population in age group in literacy programmes in year

Data required	Source of data
Number of participants in the relevant age group in literacy programmes	CSO/NSO
Illiterate population estimates for the same age groups.	CSO/NSO

Type of disaggregation for the indicator

This indicator is to be disaggregated by age, sex, location, and income (depending on the data source).

Interpretation: A high rate denotes a high degree of coverage of the illiterate population by the programmes designed to reach that specific group. The theoretical maximum value is 100%. Increasing trends can be considered as reflecting improved coverage by the literate programmes of their target population.

Quality standard: The indicator values must be analysed with caution and together with other indicators reflecting the literacy situation of the population because of its limitations. 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: The degree of coverage of the illiterate population measured by this indicator might be underestimated because of the exclusion of illiterate population that have decided to attend primary education programmes instead of specifically-designed literacy programmes. When numerator and denominator are taken from household surveys,

special attention should be given to the estimations' standard errors mainly in countries with very high levels of literacy where the sample sizes and design might not be appropriate for producing the indicator. When numerator and denominator are taken from different data sources (e.g. administrative data and household survey or population estimates), there will be possibilities of inconsistencies. Also refer to the limitations for indicators 6.1 and 6.2.

Is the indicator to be piloted?

☐ Yes ☒ No

Methodology: will the indicator be collected through a census or sample survey?

☒ Census survey ☒ Sample survey

General Remarks: This indicator must be obtained from CSO

SO 7: Strengthen the science and math curricula in youth training and disseminate scientific

7.1 Percentage of teachers qualified to teach in Science or Mathematics according to national standards

Definition: Percentage of teachers qualified to teach Science or Mathematics 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 Science or Mathematics 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 Science or Mathematics at any given level of education

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

Formula:

$$PTQSM^t = \frac{Number\ of\ certified\ teachers\ in\ Science\ or\ Mathematics}{Total\ number\ of\ teachers}X100$$

Where

$PTQSM^t$ = Percentage of teachers qualified to teach in Science or Mathematics in given year

Data required	Source of data
Number certified teachers by level	EMIS - Ministry of Education (teacher profiles records)
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. The focus here is on Secondary and Tertiary Education. At the Tertiary level, the label may read Lecturers.

Interpretation: A higher percentage of trained teachers in Science and Mathematics can lead to higher quality education in these subjects as it is assumed trained teachers can transmit knowledge more effectively. Higher numbers would also presumably result in greater numbers of students being able to take on and be taught these critical subject areas.

Quality standard: Clarity on the notion of trained teachers in Science and Mathematics 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. Also, the indicator restricts comparability across countries as national standards differ.

Is the indicator to be piloted?

☐ Yes ☒ No

Methodology: will the indicator be collected through a census or sample survey?

x	Census survey		Sample survey

General Remarks: Information on national qualification standards must be obtained from relevant department of the ministry.

8.1 Percentage of Total Enrolment in Technical and Vocational Education and Training

Definition: This indicator is the enrolment in Technical and Vocational Education and Training programmes as a percentage of total enrolment in Upper Secondary (see appendix one for ISCED levels and a definition of TVET)

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

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

Formula:

$$PETVET = \frac{Enrolment\ in\ Technical\ and\ Vocational\ Training\ ISCED\ 3}{Total\ Enrolment\ in\ ISCED\ 3} X100$$

Where

$PETVET$ = Percentage of enrolment in Technical & Vocational Education & Training

$ISCED$ = International Standard Classification of Education

Data required	Source of data
Total in enrolment in Technical and Vocational Education and Training (ISCED 3B and 3C)	EMIS - Ministry of Higher Education

Total enrolment in ISCD 3	EMIS – Ministry of higher education

Type of disaggregation for the indicator

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: will the indicator be collected through a census or sample survey?

☒ X Census survey   ☐ Sample survey

8.2 Percentage of TVET Graduates

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

Purpose: To assess the number of graduates 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.

Formula:

$$PG_t = \frac{Number\ of\ graduates\ in\ TVET\ t}{Total\ number\ of\ graduatess}\ X100$$

Where

PG_t = Percentage of graduates in a given year

Data required	Source of data
Number of TVET graduates from upper secondary	EMIS - Ministry of Higher Education
Number of total graduates from upper secondary	EMIS – Ministry of higher education

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?

| X | Yes | | No |

Methodology: will the indicator be collected through a census or sample survey?

| | Census survey | X | Sample survey |

8.4 Rate of Graduate Entry into the Labour Market

Indicator still under development –

8.5 Percentage of Students who Meet National Requirements for Academic programs in secondary or University but enrol for TVET

Definition: This is the number of graduates from either primary or secondary level in general education who qualify to enter the next level of academic study but enrol in TVET.

Purpose: To assess the number of graduates who choose to pursue TVET programmes. It also reflects status differentiation between different tracks (Academic and Vocational).

Formula:

$$PSMNRU - TVET^t$$

$$= \frac{Number\ of\ students\ qualifying\ for\ academic\ programmes\ from\ primary\ secondary^t\ respectively\ but\ enrolled\ in\ TVET}{Total\ number\ of\ students\ enrolled\ in\ TVET\ from\ primary\ or\ secondary\ respectively^t} X100$$

Where

$PSMNRU^t$ = % enrolment in TVET for students meeting university entry in year t

Data required	Source of data
Number of qualified Primary school graduates to pursue academic studies but enroll in TVET	H/EMIS
Number of students enroll in TVET from primary or secondary respectively	H/EMIS

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

Interpretation:

Is the indicator to be piloted?

| X | Yes | | No |

Methodology: will the indicator be collected through a census or sample survey?

☐ Census survey   ☒ Sample survey

8.5 Number of MoUs signed between TVET Institutions and Private companies

Indicator still under development –

8.6 Percentage of TVET Graduates who have participated in Apprenticeships

Refer to TVET Strategy –

SO 9: Revitalize and expand tertiary education, research and innovation to address continental challenges and promote global competitiveness

9.1 Number of earned doctoral degrees by field

Indicator still under development -

9.2 Expenditure on Research and Development as a Percentage of GDP

Definition: Expenditures for research and development are current and capital expenditures (both public and private) on creative work undertaken systematically to increase knowledge, including knowledge of humanity, culture, and society, and the use of knowledge for new applications. R&D covers basic research, applied research, and experimental development.

Purpose: This ratio provides an indication of the level of financial resources devoted to R&D in terms of the share of the GDP.

Calculation method: The indicator is calculated by dividing gross domestic expenditure on R&D by GDP and expressed as a percentage. Both data on R&D expenditure and GDP can be expressed in current values and in the national currency.

Formula:

$$ERD = \frac{Gross\ Domestic\ Expenditure\ on\ R\&D}{Gross\ Domestic\ Product} X\ 100000$$

Where:

ERDPGDP = Expenditure on Research and Development as a Percentage of GDP

Data required	Source of data
Gross domestic expenditure on R&D	HEMIS/NSO
Gross Domestic Product	MOF/NSO

Type of disaggregation for the indicator: This indicator can be disaggregated by sector.

Interpretation: This indicator is required to assess the level and trends of R&D expenditure in relation to GDP, at a given point of time. Adequate R&D funding that is commensurate with economic growth and national income is necessary for ensuring development in the Science and Technology sector.

Quality standard: This information is best collected via survey.

Limitation: There are several weaknesses of measuring only expenditure. Expenditure does not reflect the potential of R&D in a given country, but only the effort conducted in a given year. As a single figure, it hides the question if this effort comes from government, private, or foreign sources. A significant part of expenditure corresponds usually to researchers' salaries, and these depend on the position of researchers in society and also the ups and downs of the economy, and in particular the public sector in developing countries. Data on expenditure can also be of poorer quality, since accounting systems are usually not well set up to reflect R&D. Also, inflation and the existence of vast informal sectors make the analysis of these figures more difficult.

Is the indicator to be piloted?

☐ Yes   ☒ No

Methodology: will the indicator be collected through a census or sample survey?

☐ Census survey   ☒ Sample survey

9.3 Enrolment of Students in Higher and Tertiary Education per 100,000 Inhabitants

Definition: The number of students enrolled in higher education institutions per 100,000 population. Please refer to the definition of Higher and Tertiary education in appendix one.

Purpose: To measure the level of access the population has to higher and tertiary education.

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:

$$SPH_{tp} = \frac{Total\ enrolment\ in\ higher\ and\ tertiary\ education}{Total\ Population} X\ 100000$$

Where:

SPH_{tp} = students enrolled in higher education institutions per 100,000 population in a given year

Data required	Source of data
Total number of full time students enrolled in higher and tertiary education by given year	EMIS- Ministry of Education (Embassies abroad etc)
Total population by a given year	CSO/NSO

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 improved 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 ☒ No

Methodology: will the indicator be collected through a census or sample survey?

| X | Census survey | | | Sample survey |

9.4 Inbound Mobility Ratio

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:

$$IMR = \frac{Total\ number\ of\ students\ from\ other\ countries\ studying\ in\ higher\ \&\ tertiary\ education}{Total\ number\ of\ students\ in\ higher\ \&\ tertiary\ education\ in\ the\ country} \times 100$$

Where:

IMR = Inbound Mobility Ratio

Data required	Source of data
Students from other countries studying in higher and tertiary education in the country	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 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?

	Yes	X	No

Methodology: will the indicator be collected through a census or sample survey?

X	Census survey		Sample survey

9.5 Outbound Mobility Ratio

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:

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

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

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

Is the indicator to be piloted?

☐ Yes   ☒ No

Methodology: will the indicator be collected through a census or sample survey?

☒ Census survey   ☐ Sample survey

9.6 The quality of graduates and their employability in the world economy

<u>Indicator still under development -</u>

9.7 Conducive environment for research and innovation through the provision of adequate infrastructure and resources

<u>Indicator still under development -</u>

9.8 Proportion of Learners enrolled in: a. Distance Education, b. Open learning, c. E-Learning Programmes

<u>Indicator still under development -</u>

SO 10: Promote peace education and conflict prevention and resolution at all levels of education and for all age groups

10.1 Your government has developed and adopted strategies to ensure the continuation of education during armed conflict and support the re- establishment of educational facilities;

Indicator still under development -

10.2 National education policies exist to address psychosocial support, disaster risk reduction and other systems/mechanisms to protect education from attacks and support for rehabilitation of school infrastructure.

Indicator still under development -

10.3 Your Government has a policy or strategies to ensure the continuation of quality education during humanitarian situations.

Indicator still under development -

10.4 Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, (iii) Peace, Life Skills, Media and Information Literacy education, are mainstreamed in: (a) national education policies, (b) curricula, (c) teacher education and (d) student assessment

Indicator still under development -

SO 11: Improve management of education system as well build and enhance capacity for data collection, management, analysis, communication, and use

11.1 Funds allocated to EMIS (a) are used specifically for EMIS activities and (b) absorption capacity is optimal

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 committed resources towards using evidence based decision making practices for the education and training sector and whether these resources are actually being used for their intended purpose.

Calculation method: Review official government documentation.

Data required	Source of data
Government allocation by sector	Ministry of Finance
Government expenditure by sector	Ministry of Finance

Type of disaggregation for the indicator: This indicator can be disaggregated by Pre-primary, Primary and Secondary, type of institution (private/public) and by year of availability of data.

Interpretation: The use of EMIS funds specifically for EMIS activities indicates the degree of commitment to EMIS from the Government.

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

Limitation: Availability of data is not a real reflection of the functionality of the EMIS system. The figures are likely to be given as aggregate sums which will not show what the funds were spent on in EMIS.

Is the indicator to be piloted?

☒ Yes ☐ No

11.2 Your Government produces an Annual School Census Report: Last year available

Indicator still under development -

11.3 School Census Return Rate

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:

$$SCRr = \frac{Number\ of\ schools\ which\ returned\ the\ completed\ annual\ questionnaire}{Total\ number\ of\ schools\ registered\ on\ national\ masterlist\ of\ schools}$$

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   ☒ No

Methodology: Will the indicator be collected through a census or sample survey?

☒ 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.

11.4 Your Government Conducts EMIS Assessments: Last year conducted

Indicator still under development -

11.5 Education Sector Plan includes a chapter on EMIS

Indicator still under development -

11.6 EMIS country performance level

Indicator still under development -

SO 12: Set up a coalition of stakeholders to facilitate and support activities resulting from the implementation of CESA 16-25

12.1 Existence of School Management Committee Policy

Definition: This indicator is defined as whether the country in question has a policy supporting local level education coordination body composed of various education stakeholders, most often the Government, school proprietors, and the local communities (parents).

Purpose: To determine whether the involvement of local level stakeholders in the management of schools has been institutionalized and whether they receive support from the Government.

Calculation method: The existence of legislation or a legal instrument indicating the inclusion of School Management Committees into policy. This is a Yes/No indicator.

Data required	Source of data
Documents on School Management Committees	Government policy document

Type of disaggregation for the indicator: This is by Country level

Interpretation: A short description on the policy and how it is interpreted in schools and other education institutions can go some way towards understanding how the School Management Committees are expected to work.

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 government policy document.

Limitation: It does not tell us of the challenges of implementation e.g. how many schools have school management committees and how effective these are. It also does not tell us the relationship between the operations of the School Management Committee and the targets of CESA 16-25 and/or SDG4.

Is the indicator to be piloted?

[X] Yes   [ ] No

Methodology: will the indicator be collected through a census or sample survey?

[X] Census survey   [ ] Sample survey

12.2 Existence of National Education Cluster

Definition: This indicator is defined as whether the country in question has a National Education Cluster whose membership is often composed of national level education stakeholders including CSO's, Teacher Unions and Development Partners and which is formed to coordinate education efforts that are being run in parallel with Government activities.

Purpose: To determine whether the involvement of Education Stakeholders is coordinated at the local level.

Calculation method: The existence of official National Education Cluster is recognised by the Government. This is a Yes/No indicator

Data required	Source of data
Documents on National Education Cluster	Ministry of Education Archives

Type of disaggregation for the indicator: This is by Country level

Interpretation: The existence of a National Education Cluster can give an indication of whether education efforts are coordinated and whether there is a partnership in place for the achievement of CESA 16-25 and even SDG4.

Quality standard: The description covers all levels of education. It would also help to know what status the Government has given the National Education Cluster.

Limitation: It does not tell us of the challenges of implementation e.g. how well the National Education Cluster is working and whether the National Education Cluster is working towards the targets of CESA 16-25 and/or SDG4.

Is the indicator to be piloted?

X	Yes			No

Methodology: will the indicator be collected through a census or sample survey?

X	Census survey			Sample survey

12.3 Does your Government provide financial or political support to the CESA Implementation cluster on Education Planning?

Indicator still under development –

12.4 Evidence of communications and advocacy for CESA objectives at country level

Indicator still under development –

ADDITIONAL INDICATORS

Agenda 2063 Aspiration 7: Africa with a strong cultural identity, common heritage, values and ethics

A.1 Existence of African Language Policy

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.This language would have originated in Africa and have its own recognized African culture. It includes languages such as Afrikaans and Creole (as spoken in Mauritius, Seychelles and other places).

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.

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.

Data required	Source of data
Documents on African language policy	Government policy document

Type of disaggregation for the indicator: This is by Country level

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: will the indicator be collected through a census or sample survey?

X	Census survey			Sample survey

A.2 Percentage of pupils being taught using an African language as a medium of instruction

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:

$$PUAL_h^t = \frac{Number\ of\ learners\ taught\ in\ mother\ language}{Total\ enrolment} \times 100$$

where:

$PUAL_h^t$ = Percentage use of African Language as a medium of instruction for year t and level h

Data required	Source of Data
Total enrolment by level of education	EMIS

Number of learners being taught in their mother tongue	EMIS

Type of disaggregation for the indicator: This indicator is to be disaggregated by level of education (preprimary, 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: will the indicator be collected through a census or sample survey?

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.3 Percentage of Learners learning an African language as a subject

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:

$$PLLAL_h^t = \frac{Total\ learners\ taking\ an\ indigenous\ language\ as\ a\ curriculum\ subject}{Total\ enrolment} \times 100$$

Where:

$PLLAL_h^t$ = Percentage of Learners learning an African language as a subject year t and level h

Data required	Source of data
Number of students taking an indigenous language as a curriculum subject	H/EMIS- Ministry of Higher/Education
Total Enrolment	H/EMIS-Ministry of Higher/Education

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: will the indicator be collected through a census or sample survey?

| X | Census survey | | 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

A.4 National cultural festivals in Learning Institutions

Indicator still under development -

Finance Indicators

F.1 Public Expenditure on Education as a Percentage of Total Government Expenditure

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:

$$PGXE_t = \frac{Government\ expenditure\ on\ education}{Total\ government\ expenditure} X100$$

Where:

$PGXE_t$ =Percentage of government expenditure on Education in year t

Data required	Source of data
Government expenditure on education	Ministry of Finance
Total government expenditure	Ministry of Finance

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 ☒ No

Methodology: will the indicator be collected through a census or sample survey?

☒ Census survey ☐ Sample survey

F.2 Public Current Expenditure on Education as a Percentage of Total Education Expenditure by level

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:

$$PCGXE_h^t = \frac{Government\ current\ expenditure\ on\ education}{Total\ government\ for\ expenditure}\ X100$$

Where:

$PCGXE_h^t$ = Percentage of public current expenditure on Education in a given year

Data required	Source of data
Current Expenditure on Education	Ministry of Finance
Government Expenditure on Education	Ministry of Finance

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: will the indicator be collected through a census or sample survey?

☒ Census survey   ☐ Sample survey

F.3 Public Expenditure on Education as a Percentage of GDP

Definition: This is the total government expenditure on education as a percentage of Gross Domestic Product.

Purpose: This indicator gives an indication of the priority given by governments to education relative to other areas of investment, such as health care, social security, defence and security.

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 (or all levels combined) and year by the total Gross Domestic Product in that year and multiply by 100.

Formula:

$$PEEPG = \frac{Total\ government\ expenditure\ on\ education}{Gross\ Domestic\ Product} X100$$

Where:

$PEEPG$ = Public Expenditure on Education as a Percentage of GDP

Data required   Source of data

Total government expenditure on education	Ministry of Finance
Gross Domestic Product	Ministry of Finance

Type of disaggregation for the indicator: This indicator is to be disaggregated by primary and secondary levels of education.

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

Interpretation: If the percentage of GDP expended on education is high, this may indicate that the education represents a higher government priority. It is also indicative of the capacity of the government to generate revenue for public expenditure in relation to the size of the country's economy.

Limitation: In most instances data on expenditure on education cannot be obtained easily, or 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   [X] No

Methodology: will the indicator be collected through a census or sample survey?

[X] Census survey   [ ] Sample survey

APPENDICES

APPENDIX ONE

DESCRIPTION OF ISCED LEVELS, CLASSIFICATION CRITERIA AND SUB-CATEGORIES

International Standard Classification of Education (ISCED97)		
0 PRE-PRIMARY LEVEL OF EDUCATION		**Main criteria**
ECD	Initial stage of organized instruction, designed primarily to introduce very young children to a school-type environment.	Should be centre- or school-based, be designed to meet the educational and developmental needs of children of at least 3 years of age, and have staff that are adequately trained (i.e. qualified) to provide an educational programme for children.
1 PRIMARY LEVEL OF EDUCATION		**Main criteria**
	Normally designed to give pupils a sound basic education in reading, writing and mathematics.	Beginning of systematic studies characteristic of primary education, e.g. reading, writing and mathematics. Entry into the nationally designated primary institutions or sufficient criteria for classification of an educational programme at ISCED level 1.
2 LOWER SECONDARY LEVEL OF EDUCATION		**Main criteria**
	The lower secondary level of education generally continues the basic programmes of the primary level, although teaching is typically more subject-focused, often employing more specialised teachers who conduct classes in their field of specialisation.	Programmes at the start of level 2 correspond to the point where programmes are beginning to be organised in a more subject-oriented pattern, using more specialised teachers conducting classes in their field of specialisation. If this organizational transition point does not correspond to a natural split in the boundaries between national educational programmes, then programmes should be split at the point where national programmes begin to reflect this organisational change.
3 UPPER SECONDARY LEVEL OF EDUCATION		**Main criteria**
	The final stage of secondary education in most countries. Instruction is often more organised along subject-matter lines than at ISCED level 2 and teachers typically need to have a higher level, or more subject-specific, qualification than at ISCED 2.	National boundaries between lower secondary and upper secondary education should be the dominant factor for splitting levels 2 and 3. Admission into programmes at this level usually requires the completion of ISCED 2 for admission, or a combination of basic education and life experience that demonstrates the ability to

			handle ISCED 3 subject matter.
4 POST-SECONDARY NON-TERTIARY			**Main criteria**
	These programmes straddle the boundary between upper secondary and postsecondary education from an international point of view, even though they might clearly be considered as upper secondary or post-secondary programmes in a national context. ISCED 4 programmes typically have a duration of 6 months to 2 years. They are often not significantly more advanced than programmes at ISCED 3 but they serve to broaden the knowledge of participants who have already completed a programme at level 3. The students are typically older than those in ISCED 3 programmes.		Students entering ISCED 4 programmes will typically have completed ISCED 3.
5 FIRST STAGE OF TERTIARY EDUCATION			**Classification criteria for level and sub-categories (5A and 5B)**
	ISCED 5 programmes have an educational content more advanced than those offered at levels 3 and 4.		Entry into these programmes normally requires the successful completion of ISCED level 3A or 3B or a similar qualification at ISCED level 4A.
5A	ISCED 5A programmes are largely theoretically based and are intended to provide sufficient qualifications for gaining entry into advanced research programmes and professions with high skills requirements.		1. have a minimum cumulative theoretical duration (at tertiary level) of three years; 2. typically require that the faculty have advanced research credentials; 3. may involve completion of a research project or thesis; 4. provide the level of education required for entry into a profession with high skills requirements or an advanced research programme.
5B	ISCED 5B programmes are generally more practical/technical/occupationally specific than ISCED 5A programmes.		1. are more practically oriented and occupationally specific than programmes at ISCED 5A and do not prepare students for direct access to advanced research programmes; 2. have a minimum of two years' duration; 3. the programme content is typically designed to

		prepare students to enter a particular occupation.
6 SECOND STAGE OF TERTIARY EDUCATION (LEADING TO AN ADVANCED RESEARCH QUALIFICATION)		
	This level is reserved for tertiary programmes that lead to the award of an advanced research qualification. The programmes are devoted to advanced study and original research.	1. requires the submission of a thesis or dissertation of publishable quality that is the product of original research and represents a significant contribution to knowledge; 2. are not solely based on course-work; 3. prepare participants for faculty posts in institutions offering ISCED 5A programmes, as well as research posts in government and industry.

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.

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

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 birth

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 total tertiary enrollment 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.

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