Data Quality Assessment Framework (DQAF) Report

Swaziland
Draft Version 1.0

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1. Education Management Information Systems (EMIS) are one of the priorities of the African Union’s action plan for the Second Decade of Education for Africa and the South African Development Community (SADC) education programme. In addition, the availability of reliable information at the continental, regional and national level is relevant for policy planning, monitoring and evaluation and decision-making, and should essentially be based on efficient reporting and well documented statistical information systems.

2. Many countries in Africa face several challenges including: Poor quality data that are unreliable and difficult to validate, weak statistical systems that do not facilitate the collection, processing, and analysis of data, high staff turn-over in Ministries of Education (and more particularly for key roles including statisticians and information technology staff), limited collaboration between data-producing agencies (central statistical offices), and a lack of statistical awareness within the Ministries of Education.

3. An integral component of the statistical production chain of all countries is the institutional, organisational and technical capacities available at the national level to produce reliable education statistics. These capacities have been evaluated in a number of SADC countries including Swaziland.

4. The Ministry of Education and Training (MoET) considers the role of effective and responsive EMIS systems for the purposes of policy planning and monitoring and evaluation as part its main sectoral development activities. The use of statistics and the availability of reliable Education Management Information Systems to monitor the progress of Swaziland’s education sub-sectors (Early Childhood Care and Development, Primary, Secondary, Technical and Vocational, Higher Education, Adult and Non-Formal education) and specifically for monitoring the EFA and MDG goals is clearly outlined in the MoET “Sectoral Development Plan” which clearly articulates that this will be achieved through the “…Improvement of the quality and effectiveness of the EMIS by the collection of the relevant, timely and accurate data and information about the education system”.

5. UNESCO is engaged in proposing methodologies to evaluate the quality of data produced by education sectors. Currently, eight pilot countries in the SADC region have been selected for the purposes of conducting data quality assessment framework (DQAF) evaluations. The results of these findings are expected to be synthesised at the regional level with the possibility of extending the DQAF assessment activities to other countries on the continent.

**General Analytical Framework**

6. The generic DQAF evaluation framework has the principal objective to provide a flexible approach to ensure that a qualitative assessment of the statistics produced by the education sector in Lesotho is possible. The tools and methodologies applied have been adapted from initial evaluations undertaken by the International Monetary Fund and the World Bank, and further adapted by the UNESCO Institute for Statistics (UIS) to ensure a comprehensive evaluation of the quality of education statistics.

7. A participatory approach has been adopted during the DQAF evaluation and includes conducting a series of interviews with national and sub-national agencies responsible for the production of statistics, together with evaluating the available statistical information systems.

8. The framework of evaluation aims to facilitate a qualitative review of the statistics in various contexts such as (i) sectoral reviews (ii) implementation of the national strategy for the development of statistics; and (iii) the self-evaluation of the of the data producers.

9. The evaluation framework has further considered the quality of the data collection, analysis and dissemination processes at the national and sub-national levels and has assessed the strengths and weaknesses of the available structures using the six DQAF

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1 Swaziland Government – Ministry of Education and Training – “Sectoral Development Plan” – Section 5.4.2.1 Management Information System (MIS)
dimensions: (i) Pre-requisites of data quality (ii) Integrity (iii) Methodological Soundness (iv) Accuracy and Reliability (v) Serviceability and; (vi) Accessibility.

10. To evaluate DQAF at the sub-national levels, the statistical processes in the production of education statistics have been assessed in Maseru Region which is one out of four regions in Swaziland and comprises the largest population in the country.

11. Subsequently, following the assessment of each DQAF dimension, a global score based on Lesotho’s degree of compliance to all six dimensions - and relative to the international standards and norms - has been assigned.

**Summary Conclusion and Recommendations**

12. Based on an assessment of all the relevant DQAF sub-dimensions, a global score of 50% has been assigned as a measure of the available institutional, organisational and statistical processes and systems currently in place to facilitate data collection, analysis and dissemination of education statistics in Swaziland.

13. There are several areas that the Ministry of Education and Training (in conjunction with the Swaziland Central Statistical Office) should consider the potential for improvement. These include strengthening the autonomy of the MoET to collect education statistics, promoting quality awareness and professionalism, ensuring data consistency, investing in human and technical resources, improving data and metadata accessibility, improving the dissemination of revised and timely education statistics, and improving transparency.

14. The recommendations presented in this report are drawn from considerations given to the data collection, processing and dissemination structures currently in use by the Ministry of Education and Training (MoET), an assessment of the statistical processes at

the national and sub-national levels, available human and technical resources, current statistical tools and their impact on data quality, and data coverage of the education statistics producing institutions.

15. It is imperative that MoET fully capacitates the organisational structure in view of its emerging role as the lead agency responsible for education statistics data collection in Swaziland. Official data quality standards should be established.

16. The leading umbrella agency (CSO) should fully enforce its fundamental role in sensitising national data producing agencies’ on the fundamental principles of sound national statistical information systems, and in addition, develop official data collection, verification and dissemination guidelines for adoption by line ministries including the MoET.
17. It is commendable that the EMIS department has initiated data collection of education statistics. The technical expertise available from the CSO should be transferred during this crucial stage. Further, in the absence of the NSDS, it is imperative that MoET institutionalise official guidelines to support close interaction with all data producing agencies and especially enforce the role of regional education officers and inspectors in data collection and verification.

18. MoET should consider the crucial benefit of defining and implementing an Education Management Information System (EMIS) policy. Without such a policy, the MoET is limited in its ability to fully enforce its role as the lead education statistics data collection agency, and further limits the full cooperation of the other education sectors that rarely share their statistical information systems with the EMIS department.

19. MoET should consider the urgent need to capacitate the EMIS planning department mainly through the recruitment of additional staff specialised in data analysis and statistical methodology at the national and regional levels. The limited capabilities of the national EMIS staff to process the annual census forms currently has a negative impact on data quality, and reduces significantly the availability of timely statistics. Further, MoET should consider allocation of incentive packages to retain staff where turnover remains a perennial challenge – mainly with the information technology staff.

20. All EMIS staff should have a clear understanding of the imputation methods applied to treat missing data. It is imperative that CSO initiates the transfer of knowledge to support quality assurance especially since the implementation of universal primary education in 2010 will result in the introduction of several new educational institutions that may not adhere to timely reporting guidelines.

21. To offset the burden of data capturing and processing at Central EMIS and considering the limited staff at the Central EMIS planning department, the envisioned EMIS decentralisation strategy should facilitate networking of IT systems, and should be accompanied by recruitment of qualified regional level staff to manage the IT infrastructure. In addition, statistical staff envisioned in the future MoET human resources plan should be trained in basic data analysis, and undertake such analysis at the regional levels.

22. A major constraint to data accessibility is the administrative restraints faced by the MoET to publish updated statistics on the government website. It is crucial for MoET to implement an independent data dissemination platform in which to include updated education statistics. The government – CSO link remains outdated with data pertaining to year 2004 representing the most recent year available at the national level.

23. With the forthcoming introduction of universal primary education, it is imperative that sound statistical techniques are implemented to facilitate data verification at the regional levels. Further, the MoET and CSO should define an official methodology to underpin the collection of age data in so far as key indicators on access and participation will rely on administrative data and population projections.

24. While provisional 2007 census results are available, it is crucial for CSO to release official population statistics to support assessment and publication of revised national education statistics indicators. It is understood that external population data is used for this purpose and does not depict accurate access and participation in school in Swaziland.

25. Technical documentation on the new EMIS database should be accessible to all staff engaged in the statistical production cycle. Training of staff on the functionalities of the database should be sustained. Especially relevant is the requirement to make provisions to migrate all education statistics from the previous CSO platform to the new EMIS database to support longitudinal data analysis.

26. EMIS department should consider adoption of a multi-sectoral database that would facilitate information sharing across all education sectors, and support sector analysis. The EMIS department should establish strong collaborative links with all data producing agencies and especially review the quality of statistics produced outside the EMIS department.

27. Statistical publications should evolve to support longitudinal data analysis. In addition, the classification systems of all Technical and Vocational educational programmes managed by TVE institutions should be available to the EMIS department.
28. Improved data coverage for all education sectors should be supported by mandated registration of all academic institutions. This is especially relevant for several secondary schools and Early Childhood development institutions that are not accounted for in national statistics.

**Dimension 0 - Pre-requisites of quality**

This dimension presents the context in which available statistical laws, including essential human and technical resources impact other DQAF dimensions.

**0.1 Legal and Institutional Environment:**

29. The Swaziland Central Statistical Office (CSO) is the leading umbrella agency responsible for the development of the national strategy for the development of statistics (NSDS), and is also charged with collecting and disseminating all the official statistics in the country. It derives its authority from the Statistics Act of 1967. Currently, Swaziland has no national strategy for the development of statistics.

30. It should be pointed out that the government of Swaziland supports the more autonomous role for the CSO through an envisaged. In 2009, in an effort to develop a NSDS, the CSO in conjunction with the World Bank has developed a survey questionnaire for all national stakeholder institutions with the view to collect pertinent information that would help in the conceptualisation of an NSDS. The questionnaire collects information on the availability of statistical information systems in national government ministries including the Ministry of Education. It is targeted at senior managers of various government ministries.

31. The questionnaire requests information on (i) The availability of a legal framework to address the statistical work in the organisation (and if the framework enables the performance of statistical work without interference) (ii) The availability of a statistical department within the organisation (iii) The availability of a designated statistical officer in the organisation (iv) The periodicity of data collection and dissemination (v) Availability of sufficient human resources allocated to statistical work (vi) Data processing and dissemination methods utilised by the organisation (vii) Use and usefulness of statistics to data users (viii) Methods of eliciting feedback from data providers, (ix) Availability of software and hardware facilities and networking facilities in the organisation and (x) Processes that the organisation would adopt in the establishment of statistical production functions.

32. The principal result of the NSDS is understood to ensure that the current national statistical system is strengthened to collect and disseminate data for monitoring and evaluation, and to support an efficient statistical production chain. The NSDS will be developed from funding provided by the World Bank and is expected to be in place by December 2009.

33. The amendment of the statistical act has been highlighted in Swaziland’s "Strategic Plan for Central Statistical Office in Swaziland (2004/05 – 2008/09)" This Strategic Plan has been prepared to strengthen the CSO and the National Statistical System.

34. Concerning the confidentiality of data at MoE, the aforementioned strategic plan comprises a proposal to revise the outdated Statistical Act - it is envisioned in a “2005 Statistics Bill” that is appended to the Swaziland’s Strategic Plan that data should be used for statistical purposes only and provides for punitive measures against unlawful discloser of individual data. Access to the EMIS database is only accessible using a password.

- **Limitations**-

35. The national stakeholders (questionnaire respondents) requests for information on data gaps but does not request information on the data verification processes or the statistical techniques or other methodologies applied by the various organisations to address data gaps or the regulations for the presentation of statistical data.

36. The qualifications of statistical staff in the various organisations are not sought from questionnaire respondents.
0.2 Resources are commensurate with the needs of the statistical programs

This section highlights the available human and technical resource to produce education statistics in Swaziland for Early Childhood Care and Development, Primary Secondary, Technical and Vocational, Tertiary and Non-Formal Education sectors.

37. The EMIS department is grossly under-staffed with less than 10 staff fully dedicated to the annual production of pre-primary, primary and secondary education statistics. The department continues to rely on the resources provided by the CSO to analyse and publish national resulting education statistics reports.

38. Central EMIS Department: Human Resources

**EMIS section:** this section is responsible for the annual design, revisions and processing of the two main annual school census forms (AEC) and the 16th Day census form for the pre-primary, primary and secondary education sectors:

- The department is overseen by the Head of EMIS (at least 15 years in EMIS)
- One Data Manager is available to manage the annual school surveys (at least 20 years in EMIS)
- Four permanent data capturing staff is available (at least 6 years in EMIS) and at least 12 - 14 data entry (contractual) temporary staff.

39. **Survey and Research section:** This section is mandated to develop and maintain standards and norms for research and in particular ensure that all data collection activities are well managed within EMIS.
- The role of Coordinator of Surveys is currently vacant and is envisaged in the near future.

40. **The Information Technology (IT) section:** this section is tasked with maintaining the EMIS database and software upgrades as necessary.
- For several years, the department has secured the services of external consultants to develop and manage the EMIS database. However, these consultants have not been fully engaged in the management of the database. As a result, the database developer role has not been through official recruited and has been vacant since the turnover of key IT staff in 2008.
- In the absence of consultants, the Head of EMIS is currently overseeing the administration of the EMIS database.
- Concerning the future recruitment of a database developer, the MoET through an external consultant has trained a recent IT graduate to take over the role.

41. Although 2 vacancies have been created in the EMIS department, there are insufficient funds to recruit staff. The EMIS department will also request the MoET to obtain a budget to engage additional data capturing staff for 4 – 6 months.

42. Computing Services in Central EMIS:

43. All MoET computing services are fully centralised. The EMIS department relied on the CSO database in *(CSPRO format)* for several years, and is in the process of revamping the EMIS database. The department has at least 12 - 14 data capturing computers available to facilitate data capturing.

44. Decentralisation to the regional education offices plans cannot be realised until the new EMIS database is fully adopted.

45. The MoET and EMIS Department are faced with several IT constraints. While sufficient data capturing computers are available at the EMIS department, the government IT infrastructure has caused unnecessary delays in data capturing and dissemination. In particular, no government Ministry (including MoET) has available a Local Area Network (LAN). All government computers are managed under the government computing services. Data processing at MoET is therefore a protracted process.

46. The MoET department has in 2009 taken steps to adopt a web-based data capturing tool - *(ASP. Net)* - and to purchase a dedicated server. The government computing
services has been expected to reconfigure the network to support this initiative - However this has not yet been realised due to several factors including:

- Lack of adequate manpower at the government computing services to re-configure the main government network to support MoET IT tools.
- Lack of requisite skills at the government computing services to facilitate network reconfiguration.
- Reluctance to provide security passwords to external consultants to enable access to the government network facilities.
- At the sub-national LEVEL, the requisite telecommunications infrastructure exists at the regional education offices – however data capture is not possible until MoET can provide the regions with independent database servers.

47. Subsequently, to avoid any further delays to data capturing and processing, and to support data processing at the regional levels, MoET has engaged an external consultant to develop an Ms Access database (as an interim solution) until the MoET is in a position to purchase a dedicated database server, and to implement the web-based application.

48. The conceptualisation of the EMIS database has been undertaken by an external consultant contracted by the MoET. The consultant is also expected to assist the EMIS department to undertake analysis and publication of the data in 2009 - 2010.

49. It is also envisaged that a dedicated IT section (which is currently lacking within the MoET) will be available in the future to avoid the reliance on the government computing services.

50. Concerning the maintenance of EMIS hardware, the government of Swaziland through the Government Computer Services Department oversees this role on behalf of all government ministries.

51. Concerning financing resources, the EMIS department benefits from funding provided by the Permanent Secretary in addition to externally funded projects. In particular, the “Support for Education Training (SET)” project is available in 2009. The objectives of the fund is to support MOET activities including contracting consultants to oversee the development of the new EMIS database, purchasing computers for MoET, and supporting curriculum development.

52. Concerning other education sectors:

- Statistical officers are not assigned to the Technical and Vocational and Non-Formal Education Institutes.
- Post-secondary Technical and Vocational institutes in Swaziland collect education statistics using registration records – however, they have any software application tools for data capturing. E.g. IT vacancies have not been filed in the leading Swaziland TVET College of Technology (SCOT)
- The sole Tertiary education institute – The University of Swaziland (UNISWA) maintain two data capturing tools - a DBASE 4 database application which has been developed “in-house” (and has been utilised for more than 10 years), and a more recent Oracle database.
- The main provider of Non-Formal Education – SEBENTA Institute –manages data on national adult education programmes, young children and vulnerable adults. No data capturing instrument is currently available at the institute; however, a statistical information system existed in 2005. It has since been under-utilised due to high staff turn-over in the institute. Data recording is maintained in paper format.

53. While the national examination council also relies on the government computing services to maintain its database (used for the past 18 years) a systems developer to adapt the database as necessary is available on a permanent basis. The council has available only two data capturing staff – however it has invested heavily in scanning facilities to capture at least 20,000 records.

54. Sub-National Regional Departments of Education:

Swaziland comprises four administrative regions with each region having a regional education officer tasked with collecting the annual school census forms and assisting in coordinating all EMIS activities at the regional level. No statistical staff is currently
assigned to any region. It is envisaged that 4 Data managers will be available in the regional education offices in the near future. 6 additional vacancies are also envisaged to oversee data processing and follow-up at the school level (with 2 staff assigned to the largest regions.)

55. Computing Services at the Regional Level:

Data capturing is currently not undertaken in any regional department of education. As part of MoET future decentralisation plans, a donor funded (European Commission) project is ongoing, and is intended to secure at least 5 computers for each regional education department.

- Limitations -

56. It should be pointed out that data contained in the CS_PRO EMIS database is inaccessible to any EMIS staff. Passwords to access the database are in possession of CSO staff. In this regard, the department has not taken the initiative to ensure that the Head of EMIS or the Data manager can access the database in the absence external staff.

57. MoET does not have in place a staff retention policy – In particular, the EMIS department is in competition with the private sector to attract qualified IT staff and there are no formal training channels that would enable available staff to improve upon their statistical skills. The TVET institute cites turnover concerns and has not retained a registrar for at past 3 years. IT resources are also a major concern for the CSO.

58. The CSO also lacks sufficient IT staff to maintain crucial databases. In 2008, the CSO has contracted the database administrator through funding secured from external donors for the purpose of maintaining the SwazilandInfo national database. The EMIS department has also supported the CSO with data capturing staff for several years.

59. Budget constraints to purchase computers and the necessary software for data capturing facilities have been cited as the major concern of the Non-Formal Institute. CSO has cited budgetary constraints to enable it disseminate statistical publications to the regional levels.

60. Using the interim EMIS database, MoET has commenced data capturing of the 2009 response to the AEC and 16th Day form. However, it should be pointed out that longitudinal analysis of data with previous years’ may not be possible unless all previous years data available in CS_PRO are migrated to the new EMIS database.

61. Although the EMIS consultant has trained the available IT staff on the main functionalities of the new database, the recruitment of the staff has not yet been realised. The IT staff does not have any programming skills to enable substantive revisions to the database in the future.

0.3 Quality Awareness: Quality is the cornerstone of statistical work

62. The AEC form clearly articulates the mission, vision and values of MoET through the collection of education statistics. Questionnaire respondents are alerted on the importance of providing data to EMIS for the purpose of policy making. However there is no official documentation on the data collection activities or constraints at the regional level that would provide MoET with useful information to support improvements in statistical processes. CSO/ MoET do not elicit feedback from external data users that would improve statistical reports.

63. For the pre-primary to secondary education sectors, standardised data recording school registers are provided by MoET. Registered institutions are tracked with a unique school code. Teachers are identified by unique “Post” and “Employee” numbers.

64. Both the AEC and 16th School Day Census forms contain sufficient guidelines to support quality assurance. E.g. Samples of completed census forms are appended to the blank forms to guide questionnaire respondents on data requirements. Respondents are also alerted to avoid double-counting of students.

65. Metadata to guide questionnaire respondents on how to collect accurate data are appended to the census forms. In particular, qualifications of teaching staff, national qualification standards/codes/requirements for trained teachers etc are included in the
census forms. This information is maintained by the Teacher Service Commission (TSC) and is available at MoET.

66. Concerning data audits and publication standards, strong collaboration exists between the MoET and CSO to support the historical review of education statistics. This is relevant since the CSO has not set any data compilation standards for use by line ministries.

67. Several quality assurance mechanisms for implementation in the new EMIS database are under development and are intended to ensure a data verification process during the data capturing stage. See Dimension 2.4 – basis for recording.

68. In an effort to ensure accurate AEC form completion and timeliness, MoET undertakes annual training of school principals at the regional level. In 2009, The MoET has conducted physical site visits to almost all the schools at the regional level principally to update the “Master list of Institutions.”

69. Education statistics are archived and accessible from the government computing services mainframe. The MoET intends to transfer all education statistics from the CS_PRO files to their dedicated EMIS server to facilitate future data analysis.

70. Technical documentation on the complete functionality (including programming, database structure etc) of the CSPRO database is not available to any EMIS staff. No transfer of knowledge to staff has taken place. When future extraction of time series data will be necessary, the external staff would need to be consulted. Data extraction cannot be performed by any staff including the data capturing staff without the direct supervision of CSO.

71. The CSO has not outlined clear guidelines for the treatment of data, procedures for follow-up with non-respondents to annual surveys, methodologies for assessment and completion of pertinent data gaps, and official data dissemination standards. In fact, the EMIS department does not have access to any official statistical data production guidelines.

72. MoET does not request specific student age data in the education census form. To avoid errors in the recording and interpretation of age data, it is “assumed” that all students have been born on the first day of the year. Previously (using the old EMIS application), age data has been automatically generated by the CSPRO software using information on the “year of birth” requested in the forms.

**Dimension 0: SCORE AND RECOMMENDATIONS**

Based on an assessment of the sub-dimensions, a global score of 49% has been assigned for Pre-requisites of quality.
73. CSO should provide documentation of the findings of the NSDS stakeholder survey to all line ministries, and sensitise all education departments on the importance of a national statistical system.

74. Pending the implementation of universal primary education in 2010, MoET should consider the relevance of a monitoring and evaluation framework to address data requirements and standards to support accurate data collection and verification.

75. Without official manuals to guide national statisticians in the implementation of data verification procedures, MoET cannot improve upon the current data collection practices at the sub-national level. It is imperative that the lead agency takes full responsibility for setting basic guidelines that could be adapted by the different line ministries.

76. MoET should consider the implications of over-reliance on external consultants to maintain the EMIS database. In this regard, it should ensure that the training of staff is sustainable and also consider prioritising short-term plans to absorb the contractual data capturing staff in the annual budget. Considering that a strong vision towards decentralisation of EMIS to the regional levels exists, MoET should encourage competitive packages to retain future IT staff.

77. MoET should prioritise quality assurance mechanisms for all education sectors and consider in particular, future reporting on these sectors for monitoring and evaluation – e.g. in an effort to understand the requirements of all education sectors within MoET, collaboration to define updated requirements for data collection for the ECCD sector should be considered.

78. It is crucial to recruit data analysts and survey statisticians both at national and regional level to support quality assurance. MoET acknowledges the need to focus on building technical expertise in data collection, processing and analysis in light of the new EMIS role.

79. The assumption that all students have the same birth day distorts the national school age population – The AEC form does not indicate when age data should she collected (e.g. as at 30 March) so that age data may not recorded simultaneously in all schools. Further, the CSO does not derive population projections using the same methodology. The EMIS department has also cited misreporting of age data as a major concern. A single methodology to collect age data should be harmonised.

80. Given that students in Swaziland are not identified by a unique identifier, and since individual student data is captured, it is difficult to maintain accurate data or track student drop-outs at the primary and secondary levels. In particular, the data recording practice at the school level e.g. if student data capturing is consistent across several years etc has an impact on the quality of available data and should be addressed.

Dimension 1 Integrity

This dimension presents the level of impartiality of the data collection, analysis and dissemination processes in the MoET, and the institutionalized provisions that enhance the capacity of the different data producing agencies to produce acceptable quality statistics.

1.0 Professionalism

81. The national statistical system is quite weak with MoET focusing efforts on the Primary and Secondary education sectors. Concerning the Non-Formal sectors, the data capturing mechanisms used by the Non-Formal Institute are particularly weak and do not support longitudinal data analysis. The EMIS department has limited collaboration with TVET institutes to share updated statistics.

82. The EMIS department does not have a clear mandate to collect statistics. It should be pointed out that an official EMIS Policy is in the formulation stages (July 2009). MoE has generally relied heavily on the CSO to enable it perform several activities related to data collection, processing and dissemination of education statistics.
83. MoET has commenced only in 2008 to manage its own data collection and processing activities with analysis and data dissemination still heavily managed by the CSO. As a result, sufficient professional staff is not yet available in the EMIS department to support research and other methodological papers. It is noted that MoET is yet to formalise an EMIS budget despite the substantive tasks assigned to the department.

84. The MoET flagship report – “Education Statistics” report is produced by the CSO with the MoET participating in deriving education statistics indicators for inclusion in the report. The CSO also produces other thematic reports on Agriculture, Employment, Trade, Household Income and Expenditure Survey (SHIES), among several others.

85. MoET conducts meetings at the regional levels to ensure that the education census forms are adequately understood and completed; however, statistical techniques to complete data gaps or support analysis of data at the regional levels are not documented. It is noted that primary school head teachers may not fully comprehend the requirements of the AEC form either due to insufficient training or training method (See example of Manzini District Education office) MoET estimates that at least 70% of teachers have sufficient knowledge levels to complete the form without encountering difficulties.

86. The MoET has not taken measures to prevent the misuse of statistics given that it does not have full control of statistical publications. In general, there is limited information on the nature of statistics published online. In particular, 2007 preliminary population statistics have been published online; however, it is understood that these data are still under revision at the national level.

87. Despite the reliance on external IT consultants, the current EMIS staff has not been involved in the development/conceptualisation of the EMIS database.

88. The CSO has not produced its flagship report “Annual Statistical Bulletin” for more than 5 years. It should be pointed out that within CSO, any existing official guidelines to support standard data processing/validation techniques are and not usually shared with external line ministries. However, the CSO has seconded several staff to other ministries in addition to MoET to support the compilation of statistics.

89. The EMIS department is responsible for processing annual education forms for at least 800 primary and secondary schools – 4 data capturing staff are assigned this role (under the supervision of the Data Manager). The forms comprise 10 pages. With the collection of individual student data, data capturing becomes a laborious task and rigorous data verification checks cannot be easily realised.

90. In the absence of the NSDS, the available “Strategic Plan” outlines several measures that are intended to improve quality awareness in all statistical producing agencies. These include: (i) introducing Total Quality Management (TQM) in the statistical process (ii) Promoting education on the importance of quality statistical products (iii) Encouraging a “demand-driven” approach to the production of statistics by involving all stakeholders in the statistical process (iv) Promoting the use of household survey data and data from surveys to derive estimates and (v) Developing standardized concepts, definitions, classifications, and quality control procedures in data production processes for use by the NSS and developed in conjunction with national stakeholders.

1.1 Transparency

91. A decentralised data collection strategy is currently in place for the treatment of the AEC form. Census questionnaires are completed at the school level, following data validation activities at the regional departments of education. Analysis and data dissemination is undertaken by the central EMIS department in conjunction with CSO.

92. It is noted that the EMIS department does not communicate regularly with the other education sectors nor does it take steps to determine the data requirement needs of the other sectors for the purposes of monitoring progress in these sectors. In particular, there is very limited knowledge of the type of statistics produced by the TVET and Non-Formal education sectors due to poor collaboration. Of noted concern, is that MoET is also not certain about the classification of several TVET programmes and does not keep abreast with curriculum. Some Adult and Non-formal education sectors are managed by non-governmental organizations and data sharing with MoET is not yet established.

93. The CSO and MoET do not maintain independent websites. All national ministries’ websites are accessible through the main “Government of Swaziland” portal -
http://www.gov.sz/ - There is limited information published on the website and several relevant publications on the site are outdated. Education statistics are not published under the authority of the MoET. Rather they are included in the "Education and Training" link on the Central Statistical Office link. All education statistics publications are attributed to the CSO. The examinations council and the UNISWA maintain an independent websites: http://www.examsouncil.org.sz and http://www.uniswa.sz respectively.

94. The "Master list of institutions" is available to track all registered pre-primary, primary and secondary schools in the country. The CSO/MoET education statistics report includes the number of schools that receive questionnaires and the corresponding response rates. A brief description of the national data collection process and response rates is included in the introductory section of the report.

95. An official policy of registration of schools has not been implemented by the MoET so that MoET relies on the information received from the regional education officers. MoET has thus taken an initiative in 2009 to identify schools during June – Mid July in an effort to update the available "Master List of Institutions." This exercise has been undertaken by the 4 core EMIS staff with the assistance of the regional education officers and the regional school inspectors.

96. Apart from the ECCD sector, and Non-Formal and TVET Education, the "Education Statistics" report presents key data on enrolment, teachers and indicators on the education system – historical series data is presented for at least 5 years. The TVET and Non-Formal education sector also publish independent reports – however these are not regularly shared with the EMIS department.

97. Concerning tertiary statistics, data flow between the University of Swaziland and the EMIS department is not conducive to promoting data accessibility. UNISWA provides MoET (in addition to other government agencies), annual statistics in publication formats that do not support efficient data extraction and is usually reluctant to share statistical data on an ad-hoc basis.

98. Concerning population statistics, population projections for Population aged 6 years to 18 years (based on the 1997 census) are presented in education statistics reports. Population data by single years of age are also available for years 2000 – 2004 and 2007 (unofficial). The national population census team has not provided the CSO with 2005 and 2006 data by single years of age citing data extraction problems.

99. MoET and CSO do not provide to the public information regarding the periodicity of statistical releases. Although CSO acknowledges the contribution of MoET in the production of reports, the identification logos of both data producing agencies are not identified in the CSO reports.

100. A major weakness is the updating of CSO and MoET links with more recent education statistics (and statistics on other government sectors). The government does not upload complete publications for any sector – rather, summary statistics (which are outdated in several cases) are available online. More recent education statistics data (year 2006) is available in publication format - 2007 provisional data are also available but are yet to be uploaded on MoET or CSO government link with 2002 and 2004 summary statistics representing the most recently available data on the CSO link only.

101. In the absence of official guidelines for data collection, processing and dissemination, the future implementation of the NSDS should refine the statistical practices – this is well articulated in the Strategic Plan - "Objective 7.2: to improve technical coordination arrangements among data producers to achieve synergy, data comparability and coherence, and data quality by promoting system-wide application of “best practices” and international standards."

1.3 Ethical Norms

102. Staff is aware of rules and regulations that govern behaviour –The strategic plan makes reference to core values – in particular the importance of guiding the conduct and behaviour of staff.

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Dimension 1: SCORE AND RECOMMENDATIONS

Based on assessment of the sub-dimensions, a global score of 52% has been assigned for Integrity.

Dimension 1 - Integrity

103. It is imperative for MoET to develop an EMIS Policy in the absence of a NSDS in view of the fact that the EMIS staff is under-resourced and to enhance its autonomy to undertake data collection responsibilities without interference from other data producing agencies.

104. It is crucial for the EMIS department to establish strong collaborative links with all education sectors to support data reporting at the national level. In particular, statistical reports should be shared and accessible to the EMIS department and data should be validated by the MoET prior to publication. The EMIS department should also play a role in defining the scope of data for inclusion in statistical reports that has not evolved since 2002.

105. In an effort to encourage the same level of quality assurance at the regional levels as the planning department, and pending the development of the NSDS, MoET should take the lead role in defining standard data verification procedures - MoET should also provide education sub-sectors with official statistical techniques to guide education sub-sectors undertake sample surveys. District education officers should further be encouraged to conduct data verification audits in a of sample schools. The guidelines could be developed in conjunction with the CSO in light of limited resources at MoET.

106. MoET should further cultivate the assessment and regular use of secondary sources of data with a view to improve data quality, and encourage the emergence of a statistical culture at the regional level.

Dimension 2 - Methodological Soundness – The methodological basis for the statistics follows internationally accepted standards and good practices.

This dimension presents the scope of data collection at the national level for all the education sub-sectors including education finance statistics, the structure of the available data recording instruments and IT systems, and further explores if the classifications of national programmes (and corresponding data) are compliant with internationally acceptable standards.

2.1 Concepts and Definitions – Concepts and Definitions are in accord with standard statistical frameworks.

107. MoET has prepared a comprehensive universal primary education indicators’ manual to inform users about the use of data in preparation for UPE. Definitions and concepts are aligned with UIS definitions (See Dimension 5.2 – Accessibility)

108. National data are collected for Early Childhood Care and Development (caters for children 0 – 8 years), Primary, Secondary, Teacher training colleges, Technical and Vocational Education, University Education, Non-Formal and Special Education.
109. The information collected in the Annual Education Census corresponds to ISCED levels 0 – 3. UNISWA generates its statistics from student registration records, while SEBENTA has a standard questionnaire instrument. The durations of study tends to vary for each programme – see detailed Swaziland ISCED mapping - Data collection at the national level is equivalent to:

- Early Childhood Care and Development: ISCED level 0
- Grades 1 – 7: Equivalent to Primary - ISCED level 1
- Forms 1 to 3: Equivalent to Lower Secondary (ISCED 2)
- Forms 4 and 5: Upper Secondary (ISCED 3)
- Skills Centres/Vocational Centres: offer technical certificate and diploma level programmes – equivalent to ISCED levels 2, 3 and 4
- Colleges of Education: Equivalent to ISCED level 5
- University of Swaziland: ISCED level 5.
- PhD programmes: ISCED 6 is currently not offered at the University of Swaziland.

110. While the "official" duration in secondary education is 5 years (national secondary (3 years) and national high school (2 years), an additional year (Form 6) is available is select schools in Swaziland. Enrolment in this programme is considered negligible on an annual basis. The programme is classified under ISCED 4 – Entrance requirement is the high school Swaziland Certificate of General Secondary Education (SCGCE).

111. Information on part-time students is not requested in the AEC form.

112. Compulsory education in Swaziland is not officially defined. The academic year is January – December (ISCED 1 – 3). The tertiary academic year commences in August to May.

113. Education statistics indicators on the Primary and Secondary sector are produced from the administrative surveys - corresponding indicator definitions are in accordance with international standards and definitions. Raw data are published in the "Education Statistics" report for the ECCD, TVET and Tertiary sectors.

114. Concerning teaching staff, full and Part-time data is requested in the education census – the full-time equivalent factor cannot be determined and FTE data are not published at the national level. The employment status of teachers i.e. Government (Public Service), Private and Foreign are also requested. At the tertiary level, there is no distinction between full-time and part-time teaching staff. Information on the number of teaching hours is not requested in the annual education census.

115. The annual education census classifies teacher status under Permanent, Temporary, Volunteer, Full and Part-Time teachers. However MoET only reports full-time teachers in UIS questionnaires for all ISCED levels.

116. Certificates are awarded at the end of the primary, secondary and senior secondary cycles. Technical certificates are awarded for secondary and post-secondary technical education. Degrees are awarded at the university level (including post-graduate diplomas) The International Baccalaureate (IB) is awarded at the end of Form 6. With this qualification students are eligible to enrol in educational institutions in South Africa.

117. Automatic promotion policy is not applicable in Swaziland.

2.2 Scope: The scope is in accordance with internationally accepted standards, guidelines and good practices:

118. Education statistics are produced by gender for all categories of data requested at the national level and for public (government aided) and private (government aided private; and not government aided) sectors of education.

119. Data are requested on Geographical boundaries i.e. Regional Level and further elaborated by Urban/Rural categories i.e. Urban, Peri-urban and Rural.
120. The tables below summarise the diverse scope of information requested in the AEC (survey year 2009) and other data collection instruments for ISCED levels 0 – 5. MoET uses one data collection instrument to collect data for ISCED levels 0 – 3 and also includes data collection on special education, vocational education and adult education programmes at the schools.

121. All schools in Swaziland are categorised as either urban or rural government, urban or rural aided or fully private schools. The majority of primary and secondary students in Swaziland are enrolled in aided schools.

122. The table below presents a summary of the 10 page Annual Education Census. Note: the acronym OVC refers to “orphans and other vulnerable children.

**Pre-Primary, Primary and Secondary Statistic: Annual Education Census (AEC) Survey 2009 – Pre-Primary, Primary, Junior and Senior Secondary Education.**

<table>
<thead>
<tr>
<th>General School Data - Swaziland</th>
<th>Student and School Facilities Data</th>
<th>General School Data - Swaziland</th>
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</thead>
<tbody>
<tr>
<td>General School Data</td>
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<td>General School Data - Swaziland</td>
</tr>
<tr>
<td>School Code, Name of School, School Type, Educational Type Offered, Location of School, Address, Nearest Town, Distance in km, Available Telecommunication, Head teacher details, Number of teaching posts, Availability of school feeding, medical support and school committee, questionnaire respondent details, Number of Staff (Teaching and Non-Teaching staff by gender)</td>
<td>Number of Pupils in Early Childhood Education - 1 Child Care 2: Pre-School</td>
<td>General School Data - Swaziland</td>
</tr>
<tr>
<td>(ISCED 0, 1 2 and 3)</td>
<td>Number of Pupils in Primary - Grades 0 to 7</td>
<td>Number of Pupils in Secondary/High School Form 1 to Form 6</td>
</tr>
<tr>
<td>Students</td>
<td>Number of Pupils in Special Education</td>
<td>Number of Pupils in Adult and Non-Formal Education</td>
</tr>
<tr>
<td>Individual Student Data (&quot;Pupil Particulars&quot;)</td>
<td>Number of Pupils in Vocational Education</td>
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<tr>
<td>Serial Number in School Register</td>
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<tr>
<td>Gender</td>
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<td>Year of Birth</td>
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<td>Nationality</td>
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<td>Re-starter (following departure from education)</td>
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<tr>
<td>Attended Early Childhood Development</td>
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<td>New Entrant in Grade</td>
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<tr>
<td>Repeater</td>
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<tr>
<td>Subjects taken at the school</td>
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<tr>
<td>Daily Travel Distance to School</td>
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<tr>
<td>Information pertaining to the previous academic year - (GRADE 1 - 7 (Primary) FORM 1 to 8 (Secondary)</td>
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<tr>
<td>Dropouts</td>
<td>Number of Pupils who have left the school (by reason)</td>
<td>Number of Pupils who have Passed/Failed</td>
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<tr>
<td>Graduates</td>
<td></td>
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<tr>
<td>Absences and Attendance</td>
<td>Total Number of Absences</td>
<td>Total Possible number of attendance</td>
</tr>
<tr>
<td>Facilities</td>
<td>Textbooks, Library Books, Equipment, Water and Electricity Supply, Number and Type of building facilities, Classroom furniture, Type of teacher housing, Other facilities</td>
<td>Teacher Data</td>
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<tr>
<td>(ISCED 0, 1 2 and 3)</td>
<td>Teacher Data</td>
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<tr>
<td>Teaching and Non-Teaching Staff</td>
<td>Teacher Data</td>
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<td>Teacher Data</td>
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<tr>
<td>Teaching and Non-Teaching Staff</td>
<td>Qualifications, Qualifications to Teach, Specialisations, Teaching Subjects, Periods Per Week, Education in the subject of Teaching and Number of years, Experience in current post, Teacher Absent and Absenteeism (by reason), Training in Life Skills, Early Childhood Education, Health and Hygiene</td>
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<tr>
<td>Teaching Data</td>
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</table>
123. **16th Day Census Form:**

- The 16th School Day Census is a one page summary of General School data, enrolment and teacher data. This instrument is considered the main source for planning purposes.
- Data on school facilities is not requested in the form.
- Adult Education is further classified into *Distance Education, Skills Training, Literacy Courses* and *Non-Formal Upper – Primary* (these distinctions are not available in the AEC form)

124. **Tertiary Statistics:**

The UNISWA publishes basic tertiary statistics in its "Report of the Vice Chancellor" publication.

The table below presents the categories of data collected at the tertiary level for students, teachers and tertiary education finance statistics.

<table>
<thead>
<tr>
<th>Tertiary Statistics</th>
<th>Students</th>
<th>Teachers</th>
<th>Education Finance</th>
<th>Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Enrolment by Faculty, gender, and</td>
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<tr>
<td>Year of Study</td>
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<td>Student Enrolment by gender and Faculty</td>
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<tr>
<td>Full-Time Students by Faculty, gender and</td>
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<td>Year of Study</td>
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<tr>
<td>Part-Time Students by Faculty, gender and</td>
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<tr>
<td>Year of Study</td>
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<tr>
<td>Foreign Students by Country of Origin</td>
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<tr>
<td>Enrolment by University Campus and gender</td>
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<tr>
<td>Full-Time Enrolment by University Campus</td>
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<td>Part-Time Enrolment by University Campus</td>
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<td>and gender</td>
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<tr>
<td>Citizens on Training by Faculty and gender</td>
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<td>Academic and Administrative Staff by</td>
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<td>Faculty and gender</td>
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<td>Academic and Administrative Staff by</td>
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<td>Faculty, CITIZENSHIP and Gender</td>
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<tr>
<td>Revenue and Expenditure: Categories</td>
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<tr>
<td>Recurrent Subvention</td>
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<tr>
<td>Student Tuition Fees</td>
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<td>Residence Fees</td>
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<td>Refectory Income</td>
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<tr>
<td>Bookshop Sales</td>
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<td>Building and Maintenance</td>
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<td>Books</td>
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<tr>
<td>Consumables</td>
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<tr>
<td>Contract Staff Passages</td>
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<tr>
<td>Fixed Supplies</td>
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<tr>
<td>Personnel Costs</td>
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<td>Maintenance</td>
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<tr>
<td>Utilities</td>
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- An additional *internal* UNISWA report is available and circulated among selected government ministries including the MoET. *Tertiary Graduates by field of study* and confidential student records - *student examination results* are published in the report. Sensitive information is generally not shared with the public unless MoET requests specific data from UNISWA.

125. **Education Finance Statistics:**

The AEC requests school level education finance data including:

- Total amount of school finances for the previous academic year
- Total amount received in the previous academic year from the capitation fund
- Total amount received in the previous academic year from the orphans and vulnerable children fund (OVC)

126. MoET prioritises data collection on OVC's at the school level – in particular: 1) General bursary information (Sources of bursary, Amount per year) and 2) Finances earmarked for (school fees and examination fees)

127. In addition to the school level data, MoET maintains budget (estimates) and expenditure data. Data refer to the financial year 1st April to 30 March. The table below
presents a summary of the data published in the “Government of the Kingdom of Swaziland – Estimates” report. Data on education finance are presented alongside data on all the government sectors in Swaziland.

128. The **Education Finance** component is covered under Section “ACTIVITY/ HEAD 30” in official government reports.

**Source:** The Government of Swaziland Estimates for the year from 1st April to 31 March 2008.

<table>
<thead>
<tr>
<th>Type of Information</th>
<th>Category of Information</th>
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<tbody>
<tr>
<td>Budget Estimates</td>
<td>Grants and Subsidies (Internal and External)</td>
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<tr>
<td>Actual Expenditure</td>
<td>Personnel Costs</td>
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<td></td>
<td>Professional and Special Services</td>
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<td>Bursaries to students</td>
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<td>Post-Secondary grants to students</td>
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<td>Subvention to special education</td>
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<td>Travel, Transport and Communication</td>
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<td>Consumable and Durable materials and supplies</td>
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<td>Vehicle Services</td>
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<thead>
<tr>
<th>Programmes/Activity</th>
<th>Ministry Administration</th>
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<tr>
<td></td>
<td>Pre-School Education (for RURAL) nursery schools</td>
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<td>Primary Education</td>
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<td></td>
<td>Secondary Education</td>
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<td></td>
<td>Special Education</td>
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<td></td>
<td>Post-Secondary Education</td>
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<td></td>
<td>Adult and Non-Formal Education</td>
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<td></td>
<td>Education Fund for Orphaned and Disadvantaged Children</td>
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<td></td>
<td>Curriculum Development</td>
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<td></td>
<td>Teachers Training</td>
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<td></td>
<td>Career Guidance and Psychological services</td>
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<td></td>
<td>National Library Services</td>
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</tbody>
</table>

129. **Technical and Vocational Statistics:**

TVET institutes do not design annual data collection survey forms. Collaboration between the EMIS department and TVET institutions to facilitate implementation of data capturing tools has not been established. However the TVET institutes provide data to the public upon request In particular, Swaziland College of Technology captures basic statistics on:

- Total **Number of Students** by Faculty (Full-time and Part-Time)
- Total **Number of Graduates** by Faculty.
- The main monitoring and evaluation tool comprises defined targets and annual performance indicators on the institute.

130. **Non-Formal Statistics:**

- The SEBENTA non-formal education Institute has designed two annual survey forms to collect basic data. Form A is completed by the school facilitators. Form B is completed by the Non – Formal field regional officer.
- Form A comprises enrolment by gender, Attendance and statistics on Absenteeism and OVC’s. Form B is a consolidation of data obtained from the 4 administrative regions.
- The SEBENTA Institute provides monthly reports to their field operators - Education statistics are also available to the public upon request and comprise:
  - Total **Number of Students** enrolled by month
  - Total **Number of Facilitators (teachers)** by month
  - Total Absenteeism by month
  - Total **Number of Classes** by month
  - Total **Number of Graduates** (academic cycle April – March)

**2.3 Classification and Sectorization systems are in accord with internationally accepted standards, guidelines or good practices.**
131. Classifications and definitions of education statistics and indicators at the national level conform to International Standard Classification of Education (ISCED) standards.

132. Sufficient data to measure the entire education system is not available for all education sectors. Although the TVET and Non-Formal sectors independently collect their own data, there are several coverage issues with the statistics collected by the EMIS department for Pre-primary, Secondary and TVET education sectors.

a) Concerning ECCD, MoET does not undertake regular data collection from these institutions. The majority are to be privately managed (Non-governmental Organisations) – a registration of pre-schools guidelines is under consideration. In poor communities, several ECCD centres serve as “feeding points.” MoET intends to limit the data collection in the future to those schools that offer programmes leading to primary Grade 1. A separate ECCD questionnaire form has been designed in 2008 to capture basic information on enrolment, teachers (including non-teaching staff) and facilities at the institution. Statistics are collected for three levels Child-care / day-care, Pre-primary and Grade 0 (last year of pre-primary).

b) Concerning the coverage of students enrolled in Primary and Lower Secondary institutions, MoET has taken the initiative to encourage OVC’s to enrol in schools. MoET estimates that at least one-third of the total primary and lower secondary students are OVC’s. Despite the provision of government subsidies, MoET estimates that several of these students are still left out of the education system due to acute drop-out. The major concern is that MoET is unable to track such students given that MoET does not issued students with unique identification numbers during registration.

c) Concerning Secondary schools, MoET classifies un-registered secondary school as “illegal establishments”. These schools comprise mainly private schools that are registered as business establishments. MoET estimates that the number of un-registered schools is sufficient to affect national indicators but no information is available concerning the exact number of schools - Several of these un-registered institutions offer similar education standards as regular registered secondary schools. The EMIS department estimates that about 10 schools per region (and at least 5000 students) were enrolled in these schools during academic year 2008. MoET has no legal framework in place to collect education statistics from these institutions but is considering the implementation of a law to support registration efforts. Private enrolment statistics have not been reported to UIS for all years since 1999.

d) Post – secondary education in Swaziland consists of vocational and tertiary education. However, it should be pointed out that the official classifications of Technical and Vocational education are not regularly adhered to. For example, the “SCOT institute” should officially enrol students who have qualified for a senior secondary certificate. However ISCED 3 level drop-outs and under-performing students are also eligible to enrol in Part-time studies. However, Part-Time enrolment figures have not been reported in UIS questionnaires for all years since 1999. Moreover, The EMIS department has confirmed that they are not fully conversant with the nature of the programmes offered by the TVET institutions.

e) Concerning teacher data for all education categories, the AEC form requests information on “Employee number” and “Post Number.” In most cases, these
unique identification numbers are not standardised codes e.g. the Employer numbers issued by the government (for public civil servants) by private entities are not standardised. MoET is unable to track teaching staff using these unrelated codes. Moreover, some schools do not systematically assign “Post Numbers” to teachers – thus MoET does not maintain accurate data on the number of teachers remunerated through other sources. Part-time teachers have not been reported in UIS questionnaires – however they are requested in the Annual Census form.

133. Concerning Education Finance statistics, the EMIS department has identified several areas where limitations to classify information outside the scope of education finance data collected at the national level (as highlighted in the preceding section.) apply including:

- Pre-Primary Schools located in rural areas are allocated subventions by the government – data are generally inconsistent from year to year given that this allocation tends to vary from year to year.
- To separate allocate government post-secondary grants between the Swaziland College of Technology, UNSWA, the teacher training college and the Nursing College. Rather they are lumped as a single post-secondary grant.
- To separate grants allocated to vocational programmes into ISCED levels 2, 3 and 4
- To allocate separately, all costs associated to curriculum development (at least 80%) is allocated to primary schools into ISCED 1, 2 and 3
- To allocate separately, grants and subsidies allocated to OVC’s into to ISCED levels 1, 2 and 3
- To allocate separately grants provided for “Career Guidance” (60% of which is allocated to secondary schools) across all relevant ISCED levels.
- To separate the costs allocated to Primary and Special programmes that provide primary level courses e.g. those offered by the non-formal SEBENTA Institute.
2.4 Basis for recording: Data are recorded according to internationally accepted standards, guidelines and good practices

134. The referential integrity of the database is fully respected with all tables being well linked so that extraction on all captured data is efficient. The “conceptual” framework of the MoET EMIS database is modelled on the information collected in the AEC and 16th Day census form, and is easily adaptable to any revisions to the data collection instruments.

135. Given the limited human resources available at the EMIS department to facilitate data verification and to support quality assurance, a number of error detection mechanisms have been embedded in the EMIS database. In particular:

- Data capturing errors are flagged at the data capturing stage: e.g. aggregate total enrolment is automatically validated against all related captured data.
- Database integrity constraints have been set: e.g. the database ensures that captured data are not inadvertently deleted. E.g. to avoid partial data records, particular school records cannot be automatically deleted unless the entire school record is deleted. Users are alerted to confirm if data should be deleted.
- To support accurate recording of individual student record data, the database is programmed not to accept implausible values e.g. error messages are available to the users if the data captured on enrolment at the school level exceeds the theoretical school population in Swaziland.
- Formulas to derive age data from the year of birth will be programmed in the database. The database developer will also consider the importance of setting age parameters so that any captured age data should correspond to the appropriate grade.
- To track the number of teachers from year to year, the database will also be reconfigured to ensure that any teachers assigned a post-number (and assigned to a given school) should be recorded in the same school in the database for all subsequent academic years.

136. To maintain updated records on the numbers of schools, the master list of institutions has been imported into the EMIS database. Key school data will be transferred from the previous to the current academic year (with the possibility to exclude those schools that would have closed in the current academic year) and addition of new schools to the list as necessary.

137. The 16th Day Annual Education Census will be used to update the master list of institutions – the database administrator is tasked to ensure that schools in the EMIS database are transferred to the current year and closed schools are excluded from the database.

138. The EMIS database is configured to store data for multiple years and facilitates time series analysis and automatic report generation. This is a marked improvement from the
CS_PRO database application that is not easily accessible unless data fields/characteristics to facilitate data extraction are known to the users.

139. MoET does not have full access to complete teacher data records at the school level. Since the key teacher identifier - “Post-Number” is not assigned to all teachers; the teacher service commission (TSC) is taking steps to ensure that it maintains updated and accurate statistic. In this regard, the TSC intends to implement a teacher database and to fully computerise the available statistical information system.

140. The database is intended to maintain updated monthly records on the status of teachers which may not be easily determined from information collected through the AEC form. All related data would be merged with MoET database so that teachers and principals would have access to updated records at all times.

141. The examination council databases have in-built data validation mechanisms that do not permit duplication of captured records. The system is using the personal identification (PIN) system that is linked to the birth year of students to track all student records.

**Dimension 2: SCORE AND RECOMMENDATIONS**

Based on an assessment of the sub-dimensions, a global score of 71% has been assigned for Methodological Soundness.

142. The EMIS department should take the lead role in coordinating data collection and processing of all education sectors including Secondary, TVET and Non-Formal education sectors. In particular, mandated registration of all institutions should be enforced to improve data coverage.

143. Given that the EMIS database is undergoing major revamping, MoET should consider developing a “multi-sectoral database” that would encompass data from all education sectors. Future longitudinal analysis should be considered and steps should be taken to ensure that data sharing is systematic (and not occasioned by the need to respond to ad-hoc requests alone). This is especially relevant since MoET has taken the lead role to collect education statistics.

144. MoET does not disseminate documentation on international classification systems with other TVET/Non formal sectors – Training on ISCED classification systems would need to be initiated by MoET essentially to facilitate accurate completion of UIS questionnaires on secondary and post-secondary technical and vocational education.

145. The EMIS department has expressed a keen interest in modelling the new database to be aligned with ISCED classifications to facilitate data capturing and to meet international reporting requirements. Follow-up is required.

**3 Accuracy and Reliability: Source Data and Statistical Techniques are sound and statistical outputs portray reality.**

This dimension presents the availability of comprehensive data sources at the national level, the availability of education statistics indicators in the public domain, the application
of sound statistical techniques and data validation mechanisms at the national and sub-
national levels, and the resulting impact on the quality of education statistics.

3.1 Source data available provide an adequate basis to compile statistics

146. Quantitative data necessary to derive indicators on access, participation and completion can be produced from the data requested in the AEC form (for the pre-primary – secondary) and data collected by the UNISWA. Information requested in the AEC form is sufficient to measure the performance of the education system with some noted limitations – mainly unregistered/private ECCD home based centres.

147. All key indicators on the efficiency of the education system (repetition, promotion, drop-outs and survival rates) are published in the “education statistics report” for a single academic year. Despite the availability of more recent 2007 raw data, the data presented in the report are outdated and correspond to the current education statistics report (which in 2009 presents data up to academic year 2006 only).

148. Time series data on raw data is available for the number of teachers and students enrolled in primary and secondary institutions is available in statistical reports for a period exceeding 15 years (1990 – 2006). Also published are the number of students undergoing teacher training in Swaziland (for the most recent academic year). The non-formal institute publishes time series data by month (April – March)

149. Enrolment data are collected and published in national statistical reports by geographical boundaries. by District level and by rural/urban categories. At the tertiary level, data on foreign students (by full nationality) is collected by UNISWA.

150. Concerning national age distribution data, the age/grade matrix by gender is published at the national and regional levels for primary and secondary level. Also published by age and grade are repetition data by gender, number of re-starters (primary level) by gender, and the number of transfers (“new comers” primary level) by gender.

151. Primary and secondary enrolment by age data is further disaggregated by Government aided, private and Grant aided schools.

152. Characteristics of the school such as available school facilities/buildings, availability of teaching and learning materials, and information on distance to school are requested in the AEC form. Distance to school is requested in AEC forms but is difficult to determine especially in rural environments.

153. Data on the socio-economic status of the school such as information on the financial status of the school, availability of water and electricity at the school level, availability of school feeding programmes and medical supplies at the school level are requested in the AEC form.

154. Key characteristics on teachers including gender, education, and years of teaching experience, professional qualifications of teachers and subject areas taught at the school level, are requested in the AEC form. Information on pre-service and in-service teacher training is published and also maintained by the TSC.

155. Primary and Secondary teacher data is further disaggregated by ‘age group and corresponding teaching qualification” and “remuneration method” (government and non-government.) At the primary and secondary levels, teacher data is further disaggregated and published by nationality (citizen/non-citizen).

156. The CSO conducts household surveys every 5 years (2009 DHS survey has been undertaken) Household educational expenditure component is evaluated for the exception of private costs of education.

157. Data on teacher and student absenteeism are requested in AEC form but are not published in statistical reports.

158. Information on the availability of Multi-grade classes and the multi-shift system at the school level is requested in the AEC form – however they are not published in national statistical reports. The multi-shift system does not exist in Swaziland pending the implementation of universal primary education.
159. Concerning technical and vocational and Tertiary (UNISWA), enrolment by TVET Institution, programme of study, faculty of study, duration, and gender is published for all nationally registered institutions.

160. The level of community involvement is assessed in the AEC form i.e. availability of school committees and parent’s – teacher association.

161. Concerning the statistics on the quality of learning outcomes:

a) The national examinations council of Swaziland is responsible for statistics on examination results for the primary and secondary sectors.

b) The examination council is in the process of shifting from the internationally recognised Cambridge Examinations and is currently localising all national examinations. - The Internal Certificate Examination sat at the end of ISCED 3 has been phased out in 2008.

c) In 2009, the first phase of the local examinations for the" 0 levels" (SGCSE) has been undertaken. Phase two will be implemented during 2010 and will include more local syllabus.

d) During 2011 – 2012 – the examinations council expects to set all national standards and provide fully localised examinations to students.

e) Examination results are disaggregated by Gender, Region and Subject area. Data on Pass and Fail rates are published for at least 5 years on the national website.

f) Regarding international assessment studies, Swaziland has participated in the 2007 SAQMEC assessment exercise.

g) Cohort/Trend analytical studies – socio-economic correlation studies have not been undertaken at the national level

- Limitations –

162. There is limited collaboration between the EMIS and examination council concerning sharing results of national assessments e.g. the data processing of the 2007 SAQMEC assessment is still underway in 2009.

163. The examinations council has no input in the processing of the SAQMEC assessment which is managed solely by the EMIS planning department in conjunction with the CSO.

164. While teacher training "examination results" are available from the "Education Statistics" report, the same is not available for primary and secondary national examination/ graduates - results can be obtained from the national examinations council. Concerning tertiary statistics, graduates data by faculty are only accessible from UNISWA.

165. Concerning reliability of population statistics, it is noted that while the 2007 preliminary census results are available, population by single years of age is not yet official. MoET has noted that Preliminary results indicate that the national population has decreased substantially (yet enrolment at the school level is increasing consistently.) National consensus concerning the HIV component is lacking.

166. Subsequently, an external consultant has been engaged by CSO to evaluate the quality of census results. Literacy rates are not yet available pending the outcome of 2009 DHS survey.
The table below presents a compendium of nationally published indicators. The sections highlighted in yellow denote core EFA and MDG indicators that are not currently published in the official “Education Statistics” report. Despite the availability of population statistics at the regional level, limited indicators on access and participation are published at this level.

Other indicators considered relevant in the national context are included in the UPE manual e.g. orphan hood, teacher attrition etc. Time series indicators (up to 2005) are presented for a few core EFA indicators in the manual but not in the official “Education Statistics report.”

<table>
<thead>
<tr>
<th>Core EFA and MDG Indicators and all other nationally Published indicators and Education Statistics in SWAZI LAND</th>
<th>REGIONAL</th>
<th>National</th>
<th>Gender</th>
<th>Public/private</th>
<th>Rural/Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access</strong></td>
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<tr>
<td>Apparent Intake Rate</td>
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<tr>
<td>Net intake rate</td>
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<tr>
<td>% of new entrants to primary grade 1 with ECCE experience</td>
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<tr>
<td><strong>Participation</strong></td>
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<tr>
<td>GER in ECCE</td>
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<tr>
<td>Primary GER</td>
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<td>Secondary GER</td>
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<tr>
<td>Primary NER</td>
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<tr>
<td>Secondary NER</td>
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<tr>
<td>Primary Age Specific Enrolment Ratio</td>
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<td>Secondary Age Specific Enrolment Ratio</td>
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<tr>
<td><strong>Quality</strong></td>
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<tr>
<td>Pupil-teacher ratio – Primary</td>
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<tr>
<td>Pupil-teacher ratio – Secondary</td>
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<tr>
<td>Public current expenditure on primary *</td>
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<tr>
<td>Public expenditure on primary education as a % of total public expenditure on education*</td>
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<tr>
<td>% of primary school teachers having the required academic qualifications *</td>
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<tr>
<td>% of primary school teachers who are certified to teach according to national standards*</td>
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<tr>
<td><strong>Equity</strong></td>
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<tr>
<td>Gender Parity Index – Primary</td>
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<tr>
<td><strong>Efficiency</strong></td>
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<tr>
<td>Repetition rate by grade</td>
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<tr>
<td>Drop-out rates by grade</td>
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<td>Survival Rate to Grade 5</td>
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<tr>
<td>Coefficient of efficiency</td>
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<td>Promotion Rates</td>
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<td>Transition rates from Primary to Lower Secondary</td>
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<tr>
<td>Percentage of students having reached grade 4 of primary (with learning competencies)</td>
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<tr>
<td><strong>Literacy</strong></td>
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<tr>
<td>Literacy rate of 15-24 year olds.</td>
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<tr>
<td>Adult literacy rate (15+)</td>
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<tr>
<td><strong>Other Indicators - Primary, Secondary only (No Tertiary Indicators are published)</strong></td>
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<tr>
<td>Pupils Per Qualified Teacher by Region</td>
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<tr>
<td>Pupils Per Class by Region</td>
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<tr>
<td>Pupils Per Room by Region</td>
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<tr>
<td>Proportion of Late Starters (over-aged)</td>
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<tr>
<td>Proportion of Early Starters (under-aged)</td>
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<tr>
<td>Overall Enrolment Rates</td>
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</tbody>
</table>

169. While indicators on Public current expenditure on primary, and public expenditure on primary education as a percentage of total public expenditure on education are not
published in the “Education Statistics” report, these indicators can be derived from the scope of information on education finance compiled from government sources.

170. *While the proportion of primary school teachers having the required academic qualifications, and the proportion of primary school teachers who are certified to teach according to national standards are not published in the education statistics report, data on primary and secondary school teachers is distributed by qualification, experience, type of remuneration and gender and is sufficient to derive these indicators.

3.2 Statistical techniques: Statistical techniques employed conform to sound statistical procedures and are documented

Data collection:

171. It should be pointed that the EMIS department has taken initiatives to ensure that 2009 primary and secondary data is complete (in comparison to previous years where the CSO has facilitated data collection). The general data collection deadlines for all education sectors is discussed in Dimension 4 (Serviceability).

172. School principals are trained to complete census forms at the regional level prior to census form distribution. Moet estimates that at least 90% of principals participate in the training.

173. Response rates to census forms are communicated on a monthly basis (mainly during the remuneration of school principals) by the regional education officers.

174. An unofficial practice of withholding the school principal’s salaries has been instituted by MoET (and is enforced by regional education officers) to encourage mandatory response to the AEC. Pending the introduction of universal primary education in 2010, MoET intends to enforce punitive measures (including possible suspension of school principals) for non-response to census forms or non-response to data quality queries.

175. Regional inspectors are assigned to all 4 administrative regions – their role is to monitor pre-primary, primary, and special education needs schools. However, they are not mandated to support any data collection activities. Commencing in 2008 and 2009, to support MoET initiative to collect data, external donors (E.U) have provided funding for the recruitment of temporary on-site data collection staff at the regional level. At least 40 staff has been trained for 3 – 4 days to support the EMIS department.

176. To identify ECCD institutions since data collection exercise in 2004, a regional workshop has been conducted in 2008 for all ECCD stakeholders. Data collection activities have been initiated at this time.

Data validation at the Regional LEVEL:

177. Completed census forms are returned to the regional education office registry (or sent directly to the EMIS office as stipulated in the census forms.) Data capturing at the regional level is not yet computerised.

178. Due to the limited human and technical resources at the regional level, no data verification is undertaken by the regional education officers or regional inspectors. The master list of institutions is also not availed at the regional level so that regional officers are unable to provide accurate data on response rates to census forms. Given that all schools are assigned to “a cluster” and all regional inspectors are assigned to a cluster, MoET intends to capacitate in the future, the regional inspectors to undertake data validation activities following the introduction of UPE in 2010.

Data validation and follow-up at National LEVEL:

179. Following questionnaire completion at the regional level, the EMIS department assigns 12 – 14 data capturing staff to validate questionnaires. Data checks on the completeness of student enrolment, teaching staff and OVC’s are prioritised. Where these data are missing, the school principals are contacted directly (or in cases where rural schools are located, the EMIS staff undertake on - site census form review). The regional education officers will also follow-up on missing AEC forms at during the remuneration of school principals on a monthly basis. However no follow-up on the data quality issues identified by the EMIS department is done.
Data Processing/Capturing at National LEVEL:

180. The data cleaning phase of the AEC and 16th day census form has been undertaken in conjunction with the piloting of the new EMIS system. Data validation during the data collection phase in 2009 has been incomplete. It should also be pointed out that due to the limited permanent human resources at the EMIS department; data verification process is not systematic. In particular, the crucial testing phase to ensure that data captured in the 2009 AEC form are accurate has not been fully undertaken. A number of discrepancies have been identified. E.g. data on subjects at the school level is not captured while the number of classes for each subject is captured. Temporary (externally remunerated staff) have also been utilised to process the 2007 SAQMEC assessment.

Completion of missing data gaps at National LEVEL:

181. To complete data gaps for new schools, the principals are usually contacted at least once a month during the remuneration phase – However if the institutions are not new, the CSO supports MoET to undertake imputation for missing data at the school level. This entails review of enrolment data trends - The last three years’ data are reviewed and used as a basis to adjust enrolment data. Population data is also reviewed.

Data Dissemination at the National LEVEL:

182. The EMIS department has yet to define data dissemination standards for publication of 2009 education statistics. The CSO has defined the data publication standards for academic years 1996 – 2006. Apart from the flagship MoET/CSO joint “Education Statistics 2006” report, the EMIS department does not publish additional reports on the education sector. The UPE core EFA indicators manual has not been shared with the regional education officers.

183. The EMIS department is also considering a number of data extraction options for the education statistics on academic year 2009 including:

- Generating data table structures using pivot tables and exporting data to excel to support analysis.
- Generating reports for the production of a statistical bulletin.
- Generating pre-defined data tables, customising individual data reports, and manipulating data queries as necessary. Data capturers should be able to verify captured data as well as generate ad-hoc queries.

184. Implementation of a “reporting module” will be undertaken by the available EMIS department IT staff in conjunction with the external consultant. The EMIS department is expected to be fully capacitated to customise data reports, support data extraction and generate analytical graphs and charts such as illustrated in the sample below using data for three regions.

### 15. Number of pupils enrolled in classes (streams) of different sizes

<table>
<thead>
<tr>
<th>Grade or Education level</th>
<th>Hhohho</th>
<th>Lubango</th>
<th>Masindi</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child care</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preschool</td>
<td>19</td>
<td>66</td>
<td>-</td>
</tr>
<tr>
<td>Grade 1</td>
<td>65</td>
<td>1,242</td>
<td>1,363</td>
</tr>
<tr>
<td>Grade 2</td>
<td>79</td>
<td>1,557</td>
<td>1,576</td>
</tr>
<tr>
<td>Grade 3</td>
<td>28</td>
<td>1,452</td>
<td>1,464</td>
</tr>
<tr>
<td>Grade 4</td>
<td>55</td>
<td>1,628</td>
<td>1,679</td>
</tr>
<tr>
<td>Grade 5</td>
<td>75</td>
<td>1,750</td>
<td>1,920</td>
</tr>
<tr>
<td>Grade 6</td>
<td>109</td>
<td>1,406</td>
<td>1,451</td>
</tr>
<tr>
<td>Grade 7</td>
<td>207</td>
<td>2,633</td>
<td>2,329</td>
</tr>
<tr>
<td>Form 1</td>
<td>13</td>
<td>649</td>
<td>962</td>
</tr>
<tr>
<td>Form 2</td>
<td>712</td>
<td>818</td>
<td>629</td>
</tr>
<tr>
<td>Form 3</td>
<td>1,122</td>
<td>228</td>
<td>828</td>
</tr>
<tr>
<td>Form 4</td>
<td>348</td>
<td>566</td>
<td>476</td>
</tr>
<tr>
<td>Form 5</td>
<td>75</td>
<td>443</td>
<td>214</td>
</tr>
<tr>
<td>Form 6</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Vocational programmes</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Distance education</td>
<td>-</td>
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</tr>
<tr>
<td>Skills training program</td>
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<tr>
<td>Literacy courses</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Non-formal upper primary</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>702</td>
<td>16,265</td>
<td>16,012</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of pupils enrolled in different categories of class sizes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 20</td>
</tr>
<tr>
<td>20 - 35.5</td>
</tr>
<tr>
<td>40 - 49.9</td>
</tr>
<tr>
<td>60 and above</td>
</tr>
</tbody>
</table>

![Graph showing data](image)
- Limitations-

185. MoET does not maintain documentation on the technical imputation methods used by the CSO to complete data gaps. The CSO has not provided any basic data verification guidelines to support the EMIS department commencing in 2008.

186. For those schools that submit census forms prior to official deadlines, age data is missing or partially completed. MoET returns census forms to schools – however, data re-submission to MoET is usually slow.

Manzini District Education Office

187. To assess investment in human and financial resources, professionalism, transparency and quality awareness at the sub-national level, Manzini Region has been selected by the Ministry of Education and Training. The region comprises the largest primary and secondary school population in the country.

Data Collection:

188. Organisational Capacity: Human and Technical resources available at the Manzini Region education office are not sufficient to adequately address data quality issues. The organisational structure comprises only one regional education officer (REO) who is tasked with managing the data collection of all the pre-primary schools, at least 150 primary schools, and at least 60 Secondary schools in the region.

189. Adequate Financial resources to train school principals on data collection instruments are not available. In 2008 and previous years, a one-day large scale training workshop has been targeted at both primary and secondary head-teachers in the district for this purpose. The REO has stressed the importance of conducting separate workshops so that principals can have a more comprehensive overview of the AEC instrument and data requirements.

190. Despite the availability of a telecommunications infrastructure at the regional levels, computers are yet to be availed to regional education office. Computers will be purchased though the SET project, however the current government network would also need to be reconfigured to support data capture at the district.

191. The regional education office is tasked with distributing the AEC and 16th Day census forms to the schools. The 16th Day census form is usually completed on time (by February) while some school experience considerable delays to complete the AEC form. At least 85% of schools have submitted the AEC form by the official deadline (May). In 2008, the MoET has taken steps to contact the schools directly in an effort to explain the AEC form. Data Collection: At the sub-national level, available MoET education regional inspectors responsible for the ECCD, Primary, Secondary and Special education sectors. However they are not engaged in the data collection process and are not requested to follow-up on AEC forms.

Data Processing:

192. On several occasions, some AEC forms have been returned to the regional education office while others have been sent directly to the EMIS department. A noted concern is that the master list of Institutions is not available at the regional education office. The REO is unable to track response rates or follow-up with the schools. The core role of the REO is not limited to data collection.

Data Dissemination:

193. The district education office is a recipient of the Annual “Education Statistics” publications. No analysis of collected data is undertaken at the district level. E.g. Population statistics on the district are not available to the REO unless officially requested from CSO/MoET or as included in official statistical reports. Data received by REO from CSO/MoET is at least two years behind the current data collection cycle.

194. Data Quality:
   a) There is virtually no information on the quality of time series data available to the regional education officer or the regional inspectors.
   b) No additional staff is assigned to the regional education office to facilitate data validation of AEC form. Due to the REO workload, questionnaire completeness is not checked. The REO has pointed out that official data validation checks are not well established.
c) Concerning key data for planning purposes at the regional level e.g. number of schools, the REO has pointed out that these data are not usually available on an ad-hoc basis.

d) The REO has cited that annual questionnaire review prior to dissemination to the schools is also necessary due to concerns that school principals do not fully comprehend the content of the AEC form, and that insufficient time is allocated to questionnaire training.

e) The REO has stressed that several areas for improvement to the AEC and 16th Day census forms have been identified, but information exchange with MoET is not realised. Feedback on questionnaire design is elicited from school principals during the annual training workshops and should be extended to REO’s.

3.3 Assessment and validation of source data: source data are regularly assessed and validated

195. Despite the availability of standardised school registers, the MoET does not undertake regular assessments to validate data recording practices at the school levels.

196. Concerning student data, it is difficult for MoET to track students in the education system including drop-outs and transfers. Although regulations require that all students should have official notes to allow them to transfer/register in new schools, this process is not systematically enforced. Re-entrants are considered students who have been out of the education system for at least two years. Although all births are registered in Swaziland, MoET intends to enforce with the introduction of UPE, the national personal identification number (PIN) for registration purposes. Students will be required to prove their eligibility for enrolment at Grade 1 (at age 6).

197. Concerning teacher data, MoET intends to enforce the employee and post number identification regulations by ensure that all teachers in Swaziland are registered in the education system. A major limitation to validate teacher data is that Post-numbers are linked to the budget – and the demand for teachers (for public remunerated teachers). Private teachers have the employment number which is not issued by the government. As of 2010, punitive measures will be implemented to target teaching staff without official registration. Subsequently, the education acts to force registration for all teachers – and teaching service acts – are under revision. The future teacher database is also expected to partly resolve the issue.

198. The EMIS department has no access to the TVET and Non-Formal institutions’ independent databases and rely on data reported by the institutions without any further follow-up.

199. MoET does not make periodic visits to schools and is unable to ascertain if student drop-out/transfer data are well recorded. It is noted that MoET envisages the adoption of the South African learner record system (LURITS) model in the future.

200. Concerning population data, given that CSO is yet to release the final version of the 2007 preliminary population statistics, it should be pointed out that 2005 and 2006 indicators on primary and secondary education - (GER, NER, NIR, ASER) have been derived using the outdated 1997 projections.

3.4 Intermediate Results and Statistical outputs are regularly assessed and validated

201. Concerning indicators derived from secondary data sources (and for comparison purposes with administrative data sources), the CSO does not publish education data based on household survey and MoET does not usually assess the quality of data using household data.

202. Concerning post – enumeration assessments, MoET does not usually compare the results of the 16th Day census with the AEC Form. However, in 2009 the EMIS department has cross-referenced a sample of questionnaires. Where inconsistencies have been identified (e.g. misreporting of student enrolment), the EMIS department has conducted site visits to the school to validate school registers. MoET is unable to determine data recording practices at the school level despite the data collection form being modelled on the school register.
203. Misreporting of enrolment data is attributed to grants to schools that are required to obtain extra textbooks etc etc. The EMIS department has found that inflation of enrolment has occurred in at least 5% of all primary and secondary schools. New head teachers in two of the largest regions are especially prone to misreporting of data due to challenges with interpreting the AEC forms. Subsequently, MoET has introduced training on the AEC form as part of the in-service teacher training.

204. Systematic processes are not in place to monitor errors and omissions in census forms – however it is expected that the new EMIS database should ease the burden of data validation.

205. Large scale post-enumeration surveys are not undertaken by MoET - Regional education officers have conducted partial assessment of school records – however, the practice has not been consistent i.e. any identified data quality concerns at the school level have never been reported to the EMIS department.

206. CSO/MoET undertakes historical series review of enrolment and student data for primary and secondary schools – no comparison from year to year is done on related indicators. Statistical reports do not include meta-data/descriptive notes to explain changes to the data. Longitudinal analysis of data will not be possible due to 2008 data quality concerns. In particular, 2008 enrolment and teachers data are very partial and several census forms are incomplete. Following 2008 MoET initiative to commence data collection, follow-up with the schools is not yet realised.

207. Concerning teacher data collected in AEC form i.e. data completed by the school principal and by teachers, consistency between the two sources is ensured by school inspectors and follow-up with the school is conducted if any discrepancies between the two forms are identified.

208. UNICEF and NGO’s usually conduct post-enumeration surveys. However the findings are not regularly shared with MoET. School inspectors are not capacitated to conduct regular site visits due to difficult network systems and therefore do not have regular access to schools.

3.5 Revision studies: Revision studies, as a measure of reliability, are tracked and mined for the information they may provide.

209. Concerning population statistics, population projections for Population aged 6 years to 18 years (based on the 1997 census and adjusted on an annual basis) are published in statistical reports. The 2008 projections have been withheld by CSO and are still preliminary.

210. Data collection instruments are reviewed annually – however methodologies are not systematically reviewed. E.g. concerning ECCD data, the 2008 ECCD questionnaire has been designed to provide information to the child protection unit. However, the findings of the 2008 survey have not been publicised for assessment of the sector or to inform data requirements. The MoET notes that any future surveys would result in response rates under 80% since several institutions are still unregistered.

211. Given that there is inadequate staff to follow-up on missing data at the regional levels, and it is possible to impute for missing data, the EMIS database is not updated following the completion of data processing. E.g. there is no guarantee that MoET will undertake completion of data gaps of 2008 data following the publication of 2009 data.

212. Given that education statistics are published at least 3 years following data collection, most data included in statistical reports are usually outdated and provide no information on the current performance of the education system. It would be beneficial if provisional 2009 data could be presented alongside outdated data for comparison purposes.

213. Academic years 2007, 2008 and 2009 national indicators on the performance of the education system will not be accessible until the 2007 population census issues are resolved.

214. There is no documentation at EMIS on data quality concerns that have been identified during the data processing phase that could be useful to train new EMIS staff.
**Dimension 3: SCORE AND RECOMMENDATIONS**

Based on an assessment of the sub-dimensions, a global score of 62% has been assigned for Accuracy and Reliability.

**Dimension 3 – Accuracy and Reliability**

215. The EMIS department should obtain from CSO official technical documentation on the imputation methodology applied to complete gaps so as to undertake such tasks in the future and train new EMIS staff. Feedback on the quality of data submitted by REO following the data processing process should be institutionalised.

216. MOET should consider establishing and sustaining "in-house" expertise to maintain and develop software systems and data extraction applications. Training should be extended to all EMIS staff implicated in the statistical data production cycle. It is imperative that technical documentation on the tools is readily available to data capturers who perform the bulk of data processing, and considering that future turnover could be an issue.

217. MoET should consider capacitating regional education officers to conduct data validation in view of the understaffed national EMIS department. Also, the “master list of institutions” should be available to district education officers to ensure that tracking for non-response is not initiated during monthly remuneration of school principals.

218. Data validation procedures should be encouraged at the school level. To support quality assurance, it is recommended that simple "control tables” that would facilitate cross-referencing of key data tables within the questionnaire forms be embedded in the design of the instruments. E.g. Table 1: Enrolment data should essentially tally with the same information collected by Age "pupil-particulars” table – this is especially relevant since individual student data is requested and accurate age data is problematic at the national level.

219. The annual revision of questionnaire instruments should be a consultative process with the regional education officers to ensure that respondent burden is taken into consideration. MoET should support additional training on census forms.

220. Considering that the EMIS department will expand in the future, clear data processing and verification guidelines should be developed. This practice would be beneficial to new EMIS staff and would help inform methodologies for data processing.

**4 Serviceability: Statistics are relevant, timely, consistent, and follow predictable revision policy.**

This dimension presents the general data consistency at the sub-national and national levels for historical series, and compares national datasets with data reported in the UIS questionnaires. It also assesses timely availability of data, and official practices related to data revisions.
4.1 Timeliness and Periodicity Follow internationally accepted dissemination standards

221. Official deadlines to complete the AEC form are not indicated on the census form. Rather, this information is communicated to the regional education officers in “circulare” and subsequently to the school principals on a monthly basis. Deadlines are indicated for the 16th Day census form.

222. Results from the annual primary and secondary school surveys are not disseminated within 6 – 12 months after the beginning of the school year. MoET experiences considerable delays to upload timely data on the website, and subsequently to report consolidated data to international agencies. In this regard some limitations include:

1. The adoption of the new EMIS database software will have an impact on data capturing and processing of recent education statistics. Considerable delays are envisaged - data on academic year ending 2008 is yet to be processed in 2009, while the 2009 data capturing (of available census forms) has only commenced in July 2009.

2. 2008 data are yet to be verified and follow-up on missing questionnaires has not been considered - official statistics may not be available until 2010. The 2009 AEC and 16th Day census forms data capturing process has been prioritised and is ongoing concurrently with the testing of the new EMIS database in September 2009. Therefore, there is no guarantee that MoET will have adequate time to review 2008 education statistics following the official release of 2009 data.

3. Although MoET has conducted on-site data collection in 2009, the response rates are not at 100% in March 2009. Manzini and Hhohho regions have submitted at least 85% and 80% of the school census forms respectively to MoET and at least 95% of questionnaires from Lubombo and Shiselweni regions have been submitted. Follow-up on missing questionnaires will be initialised in September 2009. The unofficial practice of withholding salaries has not had an impact on data reporting especially in the larger regions.

4. 2006 and 2007 statistical publications are yet to be released in 2009.

5. Notwithstanding these delays, the general data production cycle in Swaziland is:

- The AEC forms should usually be reported to the MoET by May – however delays are experienced for at least 2 - 4 months). The 16th Day census forms should be completed by February- No delays are usually experienced.
- All data should be available at the national level by December (or 7 months following data collection in the case of individual student data) or 10 months for the SNAP survey.
- Graduates data are collected between October and December and should be available for national dissemination by January the following year.

6. These delays are not experienced by all education sectors: Some TVET Institutions (such as SCOT) can provide recent (2007/2008) education statistics upon request. The Non-Formal institute also has 2008 data available in the annual report. 2009 data are available in March - April. Concerning Tertiary Statistics, 2008/2009 data are published in UNISWA reports.

7. Post-Secondary Non-Tertiary education and Tertiary education data are usually collected by 30 August and available for national dissemination within 4 months (30 October). Graduates data are usually collected and available in May.

8. Source data on education expenditure are collected by the end of the school year; however, the data are not available on a timely basis. Actual Expenditure data is published at least 2 years following the publication of the official government publication - “Head 30 Activity Estimates.” Data contained in the report are at least 2 financial years behind the current year.

9. Examination results for the primary and secondary sectors are sat in November with data available on the examinations council website by January.
10. Concerning international reporting, Swaziland has been unable to meet the official deadlines to report the UIS questionnaires in 2008 and 2009. e.g. 2007 Primary and Secondary statistics have been reported to UIS in February 2009 (at least 1 year following data availability at the national level.) 2006 education finance data has been reported in February 2009 (following the national schedule). 2007 and 2008 Tertiary Statistics have been reported to UIS in June 2009 (at least 2 years later).

223. It is noted that prior to the process of revamping the EMIS database, Swaziland has reported 1998 – 2005 (UIS Questionnaire A) data in a timely manner.

4.2 Statistics are consistent within a dataset and overtime, and with other major data sets

224. Concerning partial data in the EMIS database, it is noted that only 20 schools have data in 2006 and no data in 2007. At least 105 schools have a variation exceeding than 10% between 2006 and 2007, and only 39 schools have a variation exceeding 20% for a total of 549 schools registered in the CSPro files.

225. Concerning data published in the "Education Statistics Report" compared to data available in the national EMIS database:

- In 2006, aggregated figures published in EDUCATION STATISTICS REPORT 2006 for primary school enrolment is 229,686 – however data available in the CSPro-Database indicate that primary enrolment is 218,374 representing a 5% difference between the two sources.

226. Pre-Primary Education: These statistics have not been collected on an annual basis. An externally donor project has been initiated in 2004. However data have not been collected until 2008. These data are considered partial given the problems with registration of ECCD institutions.

227. Primary Education: Primary enrolment by Grade is consistent for at least two years. Given that 2008 data are partial, longitudinal analysis is not possible.

Source – National EMIS Database:

228. However, it is noted that there are some grades in the regions where the variation of enrolment between 2 consecutive year exceeds 5% between 2006 and 2007) without sufficient information in the national EMIS database to explain the changes.
229. Concerning Secondary Enrolment by age, secondary data by single years of age is inconsistent for several years. The table below illustrates 3 regions where enrolment by age increases and decreases by more than 20% between years (especially for ages 12 to 14 - highlighted in red) without adequate documentation in the EMIS database to explain shifts.

230. Concerning Repetition by Age in government primary schools it is noted that repetition by age data is inconsistent for academic years 2005, 2006 and 2007. The same applies to repetition by age in secondary government schools – 2007 data is inconsistent with previous years for males and females.

231. There is no documentation in the national database to explain substantial decreases in repetition especially for male students.

**PRIMARY – Government schools - Repetition by AGE in Primary School:**
SECONDARY – Government schools: Repetition by AGE in Secondary School:

Technical and Vocational Secondary and Post-Secondary Statistics:

232. Due to the constraints for MoET to accurately classify technical and vocational programmes at the national level (as identified in the Dimension 2 – Scope); and the limited collaboration between MoET and the Technical and Vocational Institutes in Swaziland, statistics available in MoET on post-secondary non-tertiary are generally unreliable.

233. The EMIS department does not verify the information reported by the TVET sectors and statistics are not consistent with data reported in official “Education Statistics Reports.”

234. For international reporting purposes, MoET reports that enrolment in lower and upper secondary technical and vocational enrolment is negligible and not applicable respectively. However there are at least four TVET Institutes (“Nhlangano Agricultural Skills Training Centre”, “Mpaka Vocational Training Centre”, “Ngwane Park Youth Centre” and “Manzini Industrial Centre”) that offer TVET programmes at the ISCED levels 2, 3 and 4.

Source: UIS Database – Data Reported by MoET Swaziland – Academic years 1998 - 2007

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Post-secondary - Non-Tertiary ENROLMENT Total</th>
<th>Post-secondary - Non-Tertiary ENROLMENT Females</th>
<th>Post-secondary - Non-Tertiary TEACHING staff Total</th>
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<tr>
<td>Swaziland</td>
<td>1999</td>
<td>n</td>
<td>n</td>
<td>n</td>
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<td>Swaziland</td>
<td>1999</td>
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<td>n</td>
<td>n</td>
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</tr>
<tr>
<td>Swaziland</td>
<td>2008</td>
<td>missing</td>
<td>missing</td>
<td>missing</td>
</tr>
</tbody>
</table>

Assessment of Internal Efficiency (primary- national education statistics by REGION) – Key indicators are consistent for all grades.
235. It is not feasible to compare indicators derived from international sources and those derived from national indicators pending official population statistics at the national level. MoET has noted that sensitive indicators such as (NER) that have been derived using external population projections (mainly the World Bank) differ substantially with NER derived from the national 1997 population census projections. Subsequently, following the 2007 census, no changes have been made to published education statistics. Subsequently, the EMIS department relies (on an interim basis) on external population estimates (UNPD) to derive national (more recent) indicators on an ad-hoc basis.

4.3 Revision Policy and Practice: Data Revisions follow a regular and publicised procedure:

236. The pending release of “official” Population statistics will determine the extent that all related indicators will be updated in national reports. For the time being, CSO online reports do not provide data users with any indication that figures are subject to future revision.

237. The EMIS department is also unable to provide a definitive date when population data will be available. Following the 2007 population census, 2000 – 2004 education statistics indicators are yet to be revised.

Dimension 4: SCORE AND RECOMMENDATIONS

Based on an assessment of all the sub-dimensions a global score of 34% has been assigned for Serviceability.

238. Several data inconsistencies have been noted at the regional and national level. MoET should consider reviewing the data recording practices at the school level and further encourage broader indicators’ analysis to the regional level.
239. Timelines can be improved following the recruitment of additional staff at the regional levels to support data processing and to offset the overburdened role of the EMIS department. It is imperative that MoET coordinate closely with other data producing agencies.

240. For consistency purposes, MoET should encourage clear communication on the periodicity of release of “official” data sets that should be uploaded on the MoET websites.

5. Accessibility: Data and metadata are easily available and assistance to users is adequate

5.1 Statistics are presented in a clear and understandable manner; forms of dissemination and availability are adequate.

241. For all education sector publications, statistics are presented in a clear manner. However, presentation of graphs and charts to facilitate analysis are very limited in the CSO reports.

242. The official "Education Statistics" report comprises a total of 70 data tables covering education statistics on the primary to Tertiary education sectors. However, the corresponding analytical charts are only presented for aggregate primary and secondary enrolment and teacher historical series (1990 – 2007.)

243. The table below illustrates one of two longitudinal data charts available in the “Education Statistics” reports – a similar table is presented for secondary education statistics. No additional graphical charts are available in the report. Several tables that contain statistics on enrolment at the regional level, drop-outs, repeaters, relevant information on teaching qualifications, and statistics by grade at the regional level are not analysed graphically.

![Number of Primary Schools 1990-2005](image)

244. Raw data on enrolment, teachers, and indicators on access, participation, progression, completion and internal efficiency of the education system are published. Data are comprehensive and correspond to the detail of information requested in the AEC and UNISWA registration forms. Data on learning outcomes or graduates at TVET and tertiary level are not published.

245. Provisional data is available and can be released to the public upon request e.g. MoET releases 2006 and 2007 raw data to the public while finalising review of data tables and related indicators for inclusion in the official "Education Statistics" report.

246. Regarding non-published data, all education sectors can provide the necessary data upon request. It is noted that even for primary and secondary data that are still undergoing national review (in particular population by single years of age) this information has been provided in response to data requests. Although individual student data are collected in AEC forms, they are not published in any statistical reports.
247. Conversely, UNISWA "internal" reports contain individual student data including performance in examinations and status. This report is shared between a few Ministries including MoET and can be accessible to the public.

248. The major constraint faced by the EMIS department, TVET and the Non-Formal data producing agencies is the heavy reliance on the government computing services. Updated data sets (when available) are not systematically uploaded on the government portal. Of particular concern is that MoET is required to request the government to update the website following which the approval process becomes a protracted process.

249. To improve data accessibility, MoET intends to develop an independent website that could be potentially hosted by the UNESCO National Commission for Swaziland. Selected indicators and raw data will be included on the website.

250. Neither the MoET nor the CSO website links provide any information on the modalities to request or obtain - no contact information is available to familiarise users on available data sets. While 2007 provisional education statistics are available, external data users are not aware.

251. As illustrated below, the government website/ CSO link suggests that 2002 and 2004 education statistics are the most recent statistics on education. Statistical reports on the TVET, Non-Formal and Tertiary statistics are not available on the government website.

Welcome to the home page of the Government of Swaziland

252. Concerning Non-Formal Education, the (SEBENTA) institute publishes sufficient tables and analytical charts on enrolment patterns. Data on academic year 2007 are published in official reports. However the reports are not accessible online but can be provided to users upon request.

253. Concerning Tertiary statistics, 2009 data are available in publication format. Longitudinal data are not presented. Statistics are not published on the UNISWA website.

5.2. Metadata Accessibility: Up-to date and pertinent metadata are made available

254. The “Education Statistics” report contains standard metadata in the introductory section of the report. These include brief descriptions of the annual data collection process, the numbers of targeted schools, and response rates. Key education statistics on enrolment in primary, secondary and higher education, number of teachers in primary and secondary schools and some core EFA indicators are also presented in the introductory section of the report.

255. The entire statistics report comprises data tables alone. Where longitudinal data (1990 – 2006) is presented in the report, there are no descriptive notes/metadata to elaborate on data analysis including enrolment shifts from year to year, changes to enrolment data due to the introduction of new policies or introduction of new programmes.
etc. The reports are also available in **PDF format** thus limiting exporting data into **excel format** to support detailed analysis of the scope of indicators presented in Dimension 3.

256. Concerning response rates, it is noted that all annual surveys achieve a 100% response rate during the period that the statistical report is reproduced. Incidentally, while the official deadlines to submit the AEC form are not published in the data collection forms, these deadlines are published in the introductory section of the education statistics report. However, this information tends to be misleading in so far as the presentation of metadata is not consistent from year e.g. for the outdated 2002 and 2004 publications published online, the official deadlines to submit questionnaires to the EMIS department varies between years.

257. While several indicators based on school age population data are presented in the report, population statistics are not presented alongside data nor is there any metadata on the basis of projections i.e. base census year/inter-census estimates etc.

258. Regarding published indicators, the technical documentation on the calculation of indicators such as indicators on progression and completion that require at least two years’ consecutive data (and all other indicators published in reports) is not included in statistical reports. Given that indicators are derived by CSO, MoET does not maintain a database on concepts and definitions (although it is assumed that these definitions are aligned with the MoET internal UPE manual).

259. While the UNISWA statistical report does not publish longitudinal data, comprehensive summary information is published on all faculties of education. Statistical tables are presented. Charts are only available to support the analysis of education revenue and expenditure at the tertiary level.

260. Where charts are presented in the education statistics report, metadata to support analysis are not published. The Chart below indicates that the number of teachers has increased substantially in year 2003 with no explanation if this is due to policy shifts –. The report is not yet accessible online.

![Graph on the number of pupils and teachers in Secondary schools](image)

*Source: 2005 Education Statistics Report – Graph on the number of pupils and teachers in Secondary schools*

261. The UPE manual prepared by the EMIS department includes all input, output, demand and educational expenditure indicators, technical documentation on calculations of core EFA and MDG indicators and other nationally relevant indicators. The manual promotes international comparability of data (e.g. 2006 UNPD statistics are used to derive indicators) No further updates on the report since 2005 are available. The manual is not accessible online.

### 5.3. Assistance with the users

262. It is noted that in addition to outdated education statistics on the CSO education link, users also do not have access to CSO publications. E.g. while provisional "snap" data on population census results and other thematic results are availed online, users are not able
to provide feedback on any reports. Results of any online surveys are not administered online.

263. MoET indicators manual is considered an internal document and not shared within MoET. Most indicators have not been re-produced in CSO reports.

264. Although timely reporting of data to international agencies is problematic, 2007 data is available at the national level - this information is usually available for external dissemination to external users upon request (in excel format to support analysis). The EMIS department is further responsible for processing ad-hoc requests (and particularly briefings for parliament as the need arises).

Dimension 5: SCORE AND RECOMMENDATIONS

Based on an assessment of the sub-dimensions, a global score of 32% has been assigned for Accessibility.

Dimension 5 - Accessibility

265. MoET should consider expanding longitudinal data analysis to present at least 2 consecutive years of data to support analysis e.g. number of school by type and region, numbers of students in higher education, promotion, repetition and drop-out rates. These data are published for one year and are useful for longitudinal analysis.

266. MoET should consider expanding the published information to include more details on the education sector e.g. Literacy rates, historical data on national assessment trends etc that can be easily obtained from the national examinations council.

267. To improve data accessibility of examination results, MoET should consider linking the EMIS database to the examinations database.

268. Given that expenditure data are requested at the school level in the AEC form, MoET has the capacity to publish more comprehensive education finance indicators in the education statistics report. Also, at least 2 out of 7 pages of the AEC form are dedicated to collecting data on school facilities and equipment. Yet this information is not published in any report.

269. Important information concerning the education system should be availed in statistical reports including information on the structure of the education system (education flow diagrams would be useful) e.g. “Form 6 in Secondary is not common in schools and enrolment is very negligible – yet statistics are published as part of regular secondary schools.

270. The data tables contained in the education statistics report do not support longitudinal analysis. Additional charts and graphs would be useful to regular data users.
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<th>Title</th>
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</tr>
</thead>
<tbody>
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<td>UNESCO National Commission for Swaziland</td>
<td><a href="mailto:thnkasha@yahoo.co.uk">thnkasha@yahoo.co.uk</a></td>
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