Technical Review of EMIS and Statistical Analysis in Cambodia

REPORT

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Secretary

Ministry of Education, Youth & Sport

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By

Dr Arun C. Mehta

Professor & Head

Department of Educational Management Information System

National University of Educational Planning & Administration

(NUEPA)

17-B, Sri Aurobindo Marg, New Delhi – 110016 (INDIA)

Website: www. nuepa.org

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ANNEXURES

Abbreviations

DEO	District Education Office
DISE	District Information System for Education
DoP	Department of Planning
DRC	District Report Cards
ECCD	Early Childhood Care and Development
EFA	Education for All
EMIS	Education Management Information System
ESP	Education Strategic Plan
ESSP	Education Sector Support Program
ESWG	Education Sector Working Group
HRMIS	Human Resource Management Information System
ICR	Intelligent Character Reading
JICA	Japan International Cooperation Agency
MoEYS	Ministry of Education, Youth and Sport
NIE	National Institute of Education
NFE	Non formal education
NUEPA	National University of Educational Planning and Administration
NIS	National Institute of Statistics
PACO	Planning and Aid Coordination Office
PES	Provincial Education Services
PRC	Provincial Report Cards
SPSS	Statistical Packages for Social Sciences
TOR	Terms of Reference

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Section I

BACKGROUND

A Cambodian delegation led by Secretary, MoEYS visited India in July 2007. During their visit to India, the delegation visited the *National University of Educational Planning and Administration (NUEPA), New Delhi* and had interaction with its faculty on different aspects of educational planning and management. NUEPA has successfully developed *District Information System for Education (DISE)* which is in operational in all the districts of the country (http://dpepmis.org). Like other publications, the analysis of data produced in the form of Analytical Report was found impressive by the delegation. The delegation was of the view that NUEPA's expertise can be of great help in strengthening EMIS in Cambodia as well as in designing Capacity Building programmes for Cambodian Officers in the areas of EMIS and data analysis. Subsequently, the Secretary of State, Ministry of Education, Youth and Sport (MoEYS), Royal Cambodian Government requested NUEPA to depute its expert in the areas of EMIS and Data Analysis to help Cambodia in strengthening its EMIS. Accordingly, the Vice-Chancellor, NUEPA, New Delhi deputed Dr. Arun C. Mehta, Professor and Head, Department of EMIS to Cambodia. Japan International Cooperation Agency (JICA) provided all financial and logistical support to this mission. The MoEYS, Cambodia envisages long term association with NUEPA on different aspects of EMIS and Data Analysis. The main objectives (detailed TOR is annexed) of the visit were as follows:

- To review the current processes, functions and output of EMIS and identify the areas that needs further upgrading and improvement;
- To study and understand the current situation of the education sector in Cambodia with a particular focus on the EMIS and monitoring framework and indicators set out in the government's national strategies and plans;

• Prepared by Dr. Arun C. Mehta, Professor & Head, Department of EMIS, National University of Educational Planning & Administration (NUEPA), New Delhi, India.

- To review the existing analysis indicators in terms of better EMIS/monitoring and to propose a possible framework as well as procedure for educational statistics analysis; and

- To develop a proposal for the strengthening of Cambodian EMIS and educational statistics analysis as well as capacity building in the areas of data analysis and EMIS

The present report is based on the discussions held with different Officers and presentations on EMIS made by the officers of the Department of Planning during December 17 to 25, 2007 details of which is annexed.

Section II

EMIS IN CAMBODIA

Educational data in Cambodia is being collected by the respective departments of Ministry of Education, Youth and Sport (MoEYS) such as Departments of ECCE, Primary education, Secondary education and Higher education but the same used to have time-lag in availability of statistics and the full set of data that is required for efficient planning was not available at all levels. In view of these limitations, a number of attempts were made to improve the coverage and quality of educational data amongst which the UNESCO, UNDP and UNICEF's joint initiative to strengthen EMIS in Cambodia is the most prominent and recent one.

In 1995, an EMIS Centre was established in the Department of Planning, MoEYS with the overall objective to develop a functional EMIS. The EMIS Centre was designated as the focal point for collecting and dissemination of the Official Statistics in Cambodia through a set of formats one each for ECCE, Primary and Secondary schools. In addition to schools formats, one form each was also developed for the Provincial/Municipal Education Services (PES) and District/Khan Education Offices (DEO). The frequency of data collection in case of all the formats is annual. A cursory look at the formats suggests that all the variables required for developing an efficient education plan are found place in the formats. All the schools are required to fill-up four copies; one to be kept in school for reference purposes, one each to be sent to DEO and PES and the last copy to be sent to EMIS Centre at the Central level in the Department of Planning for checking, editing, data entry and analysis.

EMIS centre located in the Department of Planning is doing excellent work and should be further strengthened both in terms of equipments (computer software and hardware) and professionals. Despite significant achievements, there is still further scope of reducing the time-lag as well as improving the quality, dissemination and use of educational statistics which are briefly presented below:

DATA CAPTURE FORMATS

Though the formats (under EMIS) in use are comprehensive ones and are developed by considering requirements of all the provinces, still there may be a few **province and district-specific variables which are required at the provincial level, provisions for which may be made in the software to tackle additional/supplementary variables both for data entry as well as for the report generation** (*for example if a province has a provision to provide scholarships/uniforms to its students and wants to know how many children received it, information on such variables is not being collected through the annual school census as it is specific to the province only and not applicable to other provinces. Such variables may be identified by the individual province and not at the central level).* Information on the supplementary variables need not be transmitted to the national level. **Wherever necessary items in the formats should be pre-coded and printed accordingly as presently the same are being coded manually at the provincial level** *(in the school format there are questions whose answers are either Yes or No and are accordingly tick-marked by the School Director but software does not support 'text' (Yes/No); therefore needs to be converted in to digits (1 or 2 or any number. Other example is education of Director of P/MES which is opened ended and is coded at the provincial level before the data entry commences).*

Information on physically challenged children was first time collected during the 2007-08 annual school census which is collected by the nature of disability. Depending upon the number of such children, inclusive education programmes would be required to design for which NUEPA may provide its expertise. During the field visit to Kandal province, it was

informed that so far no such programmes as such for physically challenged children have been developed and they are made to sit with other children in the school.

Section III

COVERAGE

For assessing the level of educational development and progress towards EFA goals, it is essential to analyze and present the overall picture. Though the publications brought out by the Department of Planning has separate publications for the Government and Private schools but most of the crucial indicators that have been presented are based on the data of only the Government schools. For example, presenting enrolment ratio separately for Government schools will unable to present the complete coverage of child population unless enrolment in the Private schools are also considered in computing the enrolment ratio. This is also true in case of the other indicators such as promotion, drop-out and repetition rate. Therefore, **in all the forthcoming publications, it would be better to have published crucial indicators by considering data of both the Government and Private schools together** and wherever necessary, separately for Government and Private schools. In view of the small number of Private schools in Cambodia, collecting data annually as part of the School Census may not be difficult one. **So far as possible same format be used in case of both the Government as well as Private schools.**

In addition to Private Schools**, it has also been observed that a large number of Buddhist Schools are functioning under the Ministry of Culture and Religious which are not covered under the EMIS annual data collection. Efforts should be made to cover all such schools under EMIS so as to ensure complete coverage of schools.** For example, based upon the data of only Government schools, if the number of out-of-school children is estimated to be 10,000 possibilities of many of them being in the Private and Buddhist schools cannot be ruled out. All such children cannot be brought to the education system (government schools) as many of them are already enrolled either in Private or in Buddhist

schools. **The MoEYS may like to coordinate with the Ministry of Culture and Religious to ensure that all schools imparting school education are covered in the Annual School Census.** This should also be considered while setting targets under ESP which should not confined only to data of Government Schools.

Section IV

FLOW OF INFORMATION

As of now it seems that the EMIS activities developed under the Department of Planning is highly centralized in the nature. There is limited reverse flow of information from top to the bottom. The formats are printed at the Central level and through the provinces and districts, they reach to schools and through the same channel they reach back to the Central level for data entry and analysis. In most of the cases the provincial level data is not available at their level except in case of a few provinces that manages data entry at their level; thus minimizes chances of data utilization at the provincial level. Despite the data entry being decentralized from the year 2000 onwards, still it is being done at the Central level (in case of most provinces) in the Department of Planning which significantly causes delay in data dissemination. If decentralized to the provincial level, it can help significantly in reducing the time-lag in availability of educational statistics. In view of the above, **it is recommended that an EMIS unit with all the modern software and hardware and computer professionals exclusively for the work relating to EMIS be established in all the 24 provinces and municipalities of Cambodia which may be treated as the short term activity.** The EMIS unit at the provincial level should be located in the Planning Office. **The time has not yet arises to further decentralize the data entry to the level of district but that should be treated as the ultimate (long-term) goal.** Ultimately, districts would own handle data entry and the filled–in formats would not be required to pass on to the higher levels (provincial level) for data entry; the EMIS software would also support to generate reports at the district level.

If planning exercises are decentralized to the level of provinces, the same would generate demand for data and that would eventually improve data utilization at all levels. Upon

decentralization, the Department of Planning will oversee the management and organization of EMIS operations at the Central level and would focus more on dissemination and analysis of data. It would also be actively involved in training of provincial level officers in the use of EMIS software and data analysis which is a continuing process. It would continue to make efforts that would help in improving the quality of EMIS data as quality of data cannot be improved in one go. The responsibility to provide technical and software support to EMIS Units in all the provinces would be exclusively taken up by the Department of Planning.

A field visit to neighboring provinces Kandal and Phnom Penh also helped a lot in understanding flow of information, data entry, use and dissemination of statistics under EMIS. Discussion with the Director, Provincial Education Service, Kandal reveals very interesting information. For example, for immediate requirements, they first collect information on priority basis and arrange its data entry (about 10 per cent of items in school census form) by using the EXCEL and generate information on number of schools, teachers and enrolment. The information so generated is immediately used at the provincial level and it is also sent to the Ministry of EYS (not to the Planning Department). Information on these variables is also being collected under the EMIS. Only upon the completion of this task, entry of data collected under the EMIS gets started in the Visual dbase; thus causing delay in making available information. The province does not extract data from the Visual dbase engine in the EXCEL form. It is of interest to note that because province wants to use the latest information on key indicators and is not sure about the entry of EMIS data, it first completes entry of the data which is collected for local consumption. It is also of interest to note that two parallel systems are going on but both are being handled by the same Department and Officers. Had the EMIS software supports both data entry and report generation, it would have avoided duplicity of efforts. Since the EMIS is scientific and official one, it should continue only. **The EMIS Centre should provide flexibility to provinces to first undertake the data entry of key variables to facilitate their urgent need; thereafter data entry of remaining variables can be undertaken as this would help them in avoiding duplicity of efforts.**

The other important point that has been observed is the manual coding in case of a few variables in the school format at the provincial level before the data entry actually takes place which is also time consuming and causing delay. In the light of the above **it is recommend that the existing formats be re-designed so as to make it complete in all sense** (DISE DCF can be seen in this direction). If duplicity is avoided and built-in codes are provided in the school formats, the same would help in reducing time-lag in the availability of data. It was unfortunate to know from the provincial officers that they use only data collected by themselves and EMIS data is being used only for the reporting purposes.

Section V

DISSEMINATION

As of now EMIS data is being disseminated and used mostly at the Central level by the Department of Planning. The EMIS Centre has come out with a variety of publications disseminating statistics on different aspects of pre-school and school education. It has also come out with the Year Book which is latest available for the school year 2006-07. The year book has two volumes, one each for the national and provincial level and presents comprehensive information on different aspects of school level. Through the EMIS initiatives, not only the time-lag in availability of educational statistics in Cambodia is reduced but the necessary statistics is also made available at the Central and Provincial levels which are significant achievements. There is a separate publication for each province which disseminates limited district-specific information.

In addition to the existing publications, the Department of Planning may also explore possibility to bring out Provincial Report Cards (PRCs) annually which may present information on all aspects of school education. Bringing out the Provincial Report Cards may be treated as the short term goal. Thus data concerning each province may be presented in one sheet details of indicators and variables which are to be disseminated through the Provincial Report Cards that may be identified by the Department of Planning in consultation with all the stakeholders and according to the planning needs. The Provincial

Report Cards may include information regarding ECCE, Primary as well as Secondary schools on one sheet. **NUEPA will be happy to provide expertise for bringing out the Provincial Report Cards and may depute one its technical experts to Cambodia.** Report Cards such as this need to be designed in such a manner so that they not only reflect progress towards achieving EFA goals but also provide a clear insight as to the emerging realities with respect to the planning and management of basic education in Cambodia. **Till the Provincial Report Cards are brought out, the Department of Planning should continue to bring out its existing publications which may be further strengthened by including new variables such as Retention Rate** *which presents information about the retaining capacity of the system which is calculated by using enrolment data over a period of 6 years. As of now only grade-to-grade promotion, repetition and drop-out rates are being disseminated through the EMIS publications which presents information regarding transition during two years but the same failed to present information about the retaining capacity of the system which can be known only if enrolment in Grade 6 (minus repeaters) is linked to enrolment in Grade 1 six years back. This is the standard method being used elsewhere and is different than the Survival Rate which is based upon a set of assumptions amongst which continuation of current promotion, repetition and drop-out rates throughout the evolution of cohort are the most crucial one. On the other hand, completion rate is being calculated by relating number of primary graduates to relevant single-age '11' population. However, the best way of obtaining information about completion rate would be to initiate child-tracking studies which allow tracking of students those who enter into the education system (Grade 1) in a year. These students are then tracked from year to year until they reach Grade 6 over a period of 6 years. Those who complete Grade 6 are termed as 'completers' and are linked to Students in Grade 1 through which true completion rate of students those who complete Primary level in 6 years can be obtained. However, the students be tracked until the last remained in the system. Through such analysis students who complete Primary level in 6 years as well as in 7, 8 and more years can be estimated. The completion rate through child-tracking can also be undertaken for the previous cohorts based upon the class registers available in the schools. Completion rates for different cohorts would be helpful in assessing progress towards retaining capacity of the system. Special formats can be designed for tracking students from one class to another.* **If**

approached, NUEPA may help in initiating Child-Tracking Studies by deputing one of its faculty members to Cambodia.

In addition to the educational indicators, basic data such as literacy rate, number of districts in province, number of villages, total population, percentage of rural and urban population, child population in different age groups, annual population growth rate, sex ratio etc. should also be presented as the background information in the Provincial Report Cards. Similarly, efforts should also be made to incorporate statistics made available through the other surveys such as the Human Resource MIS and Population Census. Information regarding out-of-school children should also be presented in report cards, if available. NUEPA's State Report Cards may be referred in identifying new variables a copy of which is annexed.

The Department of Planning used to generate School Sheets (school report cards) **at the Central level and send it back to schools through provinces. This is significant achievement and should be further strengthened** to ensure that all the schools (Government as well as Private schools) receive it on time which can be displayed in the schools. School Sheet presents raw data and indicators as well as a few charts. **In view of a few new variables such as grade-wise number of disabled children added to School Census Form recently, the Department of Planning may like to revise its existing School Sheets which may be treated as the short-term goal.** Other variables such as grade-wise examination results, teachers received in-service training etc. may also be presented in the School Report Cards. **It would be better to decentralized creation of school sheets to the provincial level as it would help in making available school sheets on time.** Efforts should also be made to make available school report cards on line. **As a mid-term goal, the Department of Planning may also explore possibility to bring out District Report Cards in the line of report cards brought out by the NUEPA.** Each district can have one page where information on all aspects of school education can be presented. NUEPA will be happy to provide expertise in this direction. The Programmers of the Department of Planning engaged in the EMIS activities will be playing an important role in designing and bringing out Provincial as well as District and Cards.

In view of the above, **the Department of Planning should develop a detailed plan** *(indicating titles of publication, coverage, level at which information would be presented,*

month by which it would be published, how many copies would be printed, to whom publications would be dispatched, when would it be made available on line) **on above lines and log-frame for regular and timely publication of data highlighting clearly types of publications,** their coverage and the level at which data will be disseminated. This should be done for both the Central as well as for Provincial level publications. **As a short term goal, it should make available its publications on line.**

Efforts should be made to present the data analysis (to begin with central and provincial analysis) **at the time of release of EMIS data in a function to be organized by the Department of Planning starting 2007-08.** All those who are interested in school education may be invited (including Government Officers, National Institute of Statistics, NGO's and Development Partners) to attend the release function.

Efforts should be made to bring out all the publications bi-lingual. With minor efforts, the existing publications can easily be made bi-lingual. Each table/statement should have captions both in English and Khmer and there is no need to have one page each for both languages. This will also help in saving resources and the existing size of publications would reduce to half of its present size.

Section VI

QUALITY & RELIBAILITY OF EMIS DATA

There are multiple data collecting agencies in Cambodia. In addition to Annual School Census under the EMIS, Department of ECCE, Primary and Secondary Education also collects statistics annually on different aspects of school education. In addition, through the household surveys such as Demographic and Health Survey, information on educational variables is also being collected from time to time but they generally do not matches well with the other sources of data; thus raises question about the reliability of educational data which is a major area of concern. **As the data respondents are primarily school directors/head teachers they also need intensive training** to better understand and comprehend the importance of EMIS and the ways and means for completing the several instructions of data collection. This would also be of great help in improving the quality of

data. Such type of training may be imparted through the District level officers as the central/provincial officers may not able to devote sufficient time. The officers at the district level should also be exposed to use and analysis of EMIS data and its importance in educational planning. The EMIS formats should be translated into the local language and it be supported by providing written instructions.

The other major area of concern is the flow of information where all the filled-in formats reach back to the Central level in the Department of Planning; thus contributing a lot to delay in making available statistics to users. This is seriously affecting the quality of data as no thorough checking of filed-in formats is possible at the Central level where formats from all the 9000 and odd schools spread over 24 provinces are received. In many provinces, Clusters are functional and all such clusters have a Cluster Head. **On pilot basis, the responsibility of thorough checking of the filled-in formats should be entrusted to the Cluster Head as in view of a large number of schools at the district level, thorough checking of filled-in format is not possible.** *On the other hand, there are only 15-20 schools per cluster and it is the only level where thorough checking of formats can be ensured because of only a few schools. Distribution and collection of filled-in formats can also be handled efficiently, if cluster heads are involved in EMIS and made accountable.* In view of this, the **Government may like to make Cluster Heads accountable for ensuring the complete coverage of schools falling under his/her jurisdiction and also to ensure that formats are correctly filled-in and there are no missing values.** This may not over burden the Cluster Heads as it is only one time activity in a year. In case, if the formats are not correctly filled-in, the same may be sent back to the School Director for necessary corrections. The error free formats thus only be sent to the district level for further checking and onwards submission to provincial level for data feeding. This is expected to help in improving the quality of data as well as also in reducing the time-lag. **If the arrangement found effective, the same may be scaled–up in other districts.** Since Cambodia is having Statistics Law, the same may be optimally utilized in order to ensure complete coverage and also supply of timely information by all the respondents.

The way of improving the quality of EMIS data would be to have an element of sample checking of data for which independent agencies, like education faculty and research scholars in the Universities, NIS, NIE and other such institutions may be entrusted the task. Formats for sample checking and procedure for drawing sample be specifically outlined and developed and the agency engaged be asked to submit detailed report with regards to discrepancy in case of key indicators such as number of schools, enrolment and teachers.

Efforts should be made to involve the community in the data collection work at the lowest, village level as it would ensure timely and correct supply of data.

Every school covered under EMIS should display by any distinct means key indicators on regular basis preferably on its school boards.

Section VII

EMIS SOFTWARE

The Department of Planning may like to re-visit its EMIS software and if need be may like to modify the existing software or like to add additional features *(such as repot module)* **in the light of the requirements at different levels as presented above. This may be treated as a short term activity.**

Over a period of time the number of schools covered under EMIS will increase so as the database itself with each passing year. The Department of Planning may like to use other alternatives such as Oracle at the back-end so as to handle the large database.

At present, the database engine for EMIS is Visual dbase which is being used for data entry purposes only and data processing and analysis is being carried out by using the SPSS software and the final outputs are prepared in the EXCEL which may not be treated as the user friendly.

In the light of the above, the Department of Planning may like to modify EMIS software so as to develop a comprehensive module which can handle all the aspects of EMIS at all levels

as a long-term goal. The software should have all necessary modules such as internal data consistency check, data feeding, graphic, analyzer, report, and other modules.

The software should have provision to add provincial-specific variables as supplementary variables. Not only it should facilitate data feeding but it should also support report generation. This will help provinces to add variables as per their requirements.
The schools containing inconsistent data should be highlighted.

The software so designed should have pre-defined codes presented in a drop-down menu. The software should be menu driven and user friendly and by supported by a user manual.
Top most priority should be given to built-in report generation at all levels. In the absence of built-in report module, it is not be possible for the province and district level officers to use the data collected under the EMIS and in most of the cases the Officers involved at these levels are not exposed to SPSS which is treated as highly technical software.

One of the important activities of EMIS is the transmission of data from the lower to the higher and the highest level. As the data entry will take place at the Provincial level, data can be transmitted either through a CD or an email. In view of small number of schools, it may not be difficult to transmit the data through the emails in the compressed/zip format.

Development of a web enabled EMIS software may be decided in view of the present availability of computers and internet connectivity. The software so developed should be flexible for any eventual modifications.

To reduce the time-lag, data entry through ICR technology may be initiated on pilot basis in a few select districts as it would avoid manual data entry. The Department of Planning itself may like to undertake this exercise. The formats will be required to be modified to meet the special requirements so as the software. Use of ICR as a substitute to manual data entry is expected to take less time and at the same time it would improve quality of data as it would avoid chances of human errors. If successful, the same may be extended to other districts in a phased manner.
Prior to the initiation of data collection process, attempts should be made to engage collectively all the officials in building their capacities in the use of the software. Training

materials and manuals should be provided on definitions, use, meaning, interpretation and methods and techniques of educational planning, analysis of different variables, terms, and the indicators used in the Data Capture Formats.

Section VIII

GENERAL SUGGESTIONS

Data should be disseminated in both print and electronic forms as well as through internet). Access to raw and processed data should be provided to users at all levels.

Across the country the data should be collected on a particular date and the record date (date of reference) should also be the same. The frequency of data obtained from the school may be annual.

EMIS Centre at the central level at the Department of Planning should also be strengthened adequately both in terms of manpower and equipments.

Section IX

ANALYSIS OF DATA

Despite a good number of publications brought out by the Department of Planning, the analysis of information collected under the EMIS is limited only. Practically no analysis is carried out at the provincial and district levels and whatever the limited analysis that has been undertaken is done by the Department of Planning only. **The Department of Planning should immediately initiate efforts to bring out Analytical Report which can present provincial level analysis** similar to the line of NUEPA's Analytical Report which should be given the top most priority. **For the time being there is no other agency at the Central level other than the Department of Planning who can handle the task of data analysis**

efficiently. Needless to mention that the collection of information without adequate analysis will not serve the purpose for which the EMIS is developed.

A team of five officers at the Central level in the Department of Planning may be constituted to prepare and undertake analysis of EMIS data on annul basis which should be published in the form of School Education in Cambodia: Analytical Report. While forming the team, expertise available outside the Department of Planning such as in the Royal University of Phnom Penh and NIE should also be explored. **The Data Analysis team may be intensively oriented and exposed to data analysis tools and techniques in one week workshop which may be organized at NUEPA, New Delhi.** All the indicators falling under different components of universal school education such as universal access, enrolment/coverage, retention and universal quality of education, its analysis and implication for planning school education may be discussed in any such orientation and the officers would be required to work on real life data. EXCEL templates developed by the UNESCO can also be of great help in generating EFA and indicators of internal efficiency of education system. The members of Data Analysis team may also be exposed to enrolment and demographic projections, Cohort module, Sprague's multipliers and Ginni coefficient all which will help them in assessing the education development and also in measuring regional disparities. The exposure to planning tools and techniques would also help officers in fixing the scientific targets under the Education Sector Strategic Plans. During the meeting with the members of the Planning and Aid Coordination Office (PACO), it was realized that the targets under the strategic plans do not have scientific base. **Therefore, it is recommended that the PACO should also be represented in the Data Analysis Team.** Use of computers in data analysis in general and SPSS and EXCEL in particular may also be exposed to officers as the same would help them in undertaking disaggregated analysis of data. In addition, the officers will also be exposed to presentation of indicators in the form of tables, graphs and thematic maps for easy presentation.

For the time being, the Data Analysis Team may focus more on presenting provincial-specific analysis but later they may also like to present district-wise analysis on a few key indicators. *Provincial-specific analysis will help in knowing educational development in different provincials and eventually it would also help them in fixing provincial-specific*

targets. All the provincials are at different stage of educational development and as such there cannot be the same targets or all. In the absence of provincial-specific targets, it would be difficult to set national targets and monitoring of such targets would also be difficult one. Analytical Report can have one chapter each on ECCE, Primary and Secondary education. Within each of these chapters, different components of universalisation may be covered by analyzing and presenting disaggregated analysis of data by boys and girls, rural and urban areas, government and private schools, and by any other disaggregation which is important in view of the situation in Cambodia. In most of the cases, indicators both at the Central as well as Provincial level should be analyzed and presented. All key indicators such as GER, NER, drop-out, retention and completion rates etc should be presented over a period time as the same would be helpful in assessing the progress on different aspects of school education. A module on data analysis may be prepared which will help both the Central as well as Provincial level officers.

Later the National Institute of Education (NIE) may also be entrusted the task of dissemination and analysis of data. As of now NIE's activities focused around teacher training programmes only which are of both pre-service and in-service in nature. Though NIE has a Department of Planning and Management but in practice it is not functional except teaching in its ongoing teacher training programmes. **The Government should give the top most priority to fully develop NIE so that it can play the role like NUEPA is playing in India.** Eventually the NIE would take care of the capacity building needs of the entire country and would develop expertise in all the areas of educational planning and administration including EMIS and data analysis. It can have different academic units such as educational planning, educational administration/management, educational finance, EMIS, higher Education, school and non-formal education, inclusive education, educational policy unit, etc. The Government may like to carefully identify faculty for NIE for which the existing IIEP and NUEPA trained officers exposed to educational planning and management may be given preference. NUEPA was recently instrumental in establishing the State Institutes of Educational Management and Training and would be happy to provide its expertise to develop NIE as a fully functional institution in the area of educational planning and management.

Upon fully developed, the NIE will take care of the capacity building needs of all the provinces in the area of educational planning and administration. The Government may like to initiate efforts for the strengthening of NIE without delay. Side by side, it may also like to develop capacity building programme for its other Central level officers in the areas of educational planning and administration. Training facilities available in the region should be fully explored and utilized and officers identified for the orientation needs to be identified carefully.

Section X

EDUCATION STRATEGIC PLAN MONITORING INDICATORS

A comprehensive set of indicators have been identified under the Education Strategic Plan which are divided into the indicators of Equitable Access, Education Quality and Efficiency and Institutional Development & Capacity Building indicators.

Separate targets have been fixed for different levels of education as well as for boys and girls. The targets have been set out annually in 2004-05 for the period 2005-06 to 2009-10. However, details on the basis of which targets have been set are not presented.

During the discussions with the Officers of the Planning and Aid Coordination Office (PACO), it was informed that no scientific techniques have been utilized to set the targets. It was also mentioned that targets at the Country level only have been set and provincial-specific targets as such have not been set out. In the absence of provincial-specific targets, it is rather difficult to monitor country level targets and also equally difficult is to monitor progress made on different indicators and to initiate corrective measures. *One of the important objectives of monitoring is to identify limitations periodically to take corrective measures to improve the effectives of the programme when the programme is still on.*

Setting targets is not one time exercise. In between the process of monitoring, they can be revised depending upon the actual progress. Needless to mention that targets should be

realistic ones, they be based upon the immediate past and should also be achievable (see for example targets on promotion and repetition rate under ESP). So far as the target on the net enrolment rate is concerned, it should be set out on the basis of outcome of enrolment projection exercises.

A cursory look at the monitoring indicators under the ESP suggests that access to monitor availability of schooling facilities have not been included. Opening of schools is generally linked to population and distance from the habitation to school. In view of the norms of opening of school in Cambodia, indicators such as percentage of habitations/villages having accessed to primary, lower secondary and upper secondary schools should be developed and monitored. As a proxy, number of schools per thousand population can also be considered.

Similarly, retention rate should also be monitored at different levels of education. Correct method of computing Completion rate as described above should be adopted and monitored.

Similarly, Gender Parity Index (enrolment) may also be monitored as the same would highlight participation of girls in educational programmes. Though target on Promotion and Repetition rates have been set but no target as such on drop-out rate has been set. Further, it has been observed that only for Grades I, III and VI, targets have been set out but no targets are set for the remaining grades. It would also be better to compute average repetition and dropout rate for primary and other level of education and the progress be monitored over time.

Section XI

CAPACITY BUILDING EXERCISES

NUPEA would be happy to accommodate two officers from Cambodia (depending upon their qualifications and background) **each year in its ongoing International Diploma in Educational Planning and Administration (IDEPA)** which has already been attended by the Officers from more than 70 countries. However, it may not be possible for the provincial/district level officers *(in view of large number)* to undergo such orientation. For their requirement, special capacity building programmes in the area of **educational**

planning with focus on EMIS and Data Analysis can be developed by NUEPA in case any such request is received from the Royal Cambodia Government. Such capacity building exercises can be arranged either at NUEPA, New Delhi or a team of three faculty members from NUEPA may impart training in Cambodia The following are the suggestive themes which can be exposed to officers during orientation on educational planning with emphasis on EMIS and Data Analysis:

- Educational Planning : Concept and Scope
- Types of Educational Planning
- Methodology of Planning
- Approaches to Educational Planning
- Issues involved in Planning for Education
- Educational Management Information System
- Use of Sample Survey Techniques in Education
- School Mapping: Concept and Methodology
- Micro-Level Planning: Concept and Methodology
- Stock and Flows Indicators
- Efficiency of Education System
- Concept & Measures of Inequalities in Education System
- Projection & Forecasting Techniques: Enrolment, Population and Teacher
- Projections and Scenario-Building and Simulation
- Target Setting

Section XII

SUMMING-UP

In view of the above, the following are the areas where NUEPA, if approached can provide its expertise and technical support. Exact modalities would however be decided by the Vice-Chancellor, NUEPA upon receiving such request from the Royal Cambodian Government. For better understanding of Cambodia's need and possible NUEPA's support to capacity-building exercises in the areas of educational planning with focus on EMIS and data analysis, Vice-Chancellor, NUEPA, New Delhi (India) may be invited to Phnom Penh for

detailed discussion with the Secretary, Ministry of Education, Youth and Sport, Royal Cambodian Government.

Sl. No.	Activity	Possible Support from NUEPA	Nature of the Activity
1	Information on physically challenged children was first time collected during 2007-08 annual school census which is collected by nature of disability. Depending upon the number of such children, inclusive education programmes would be required to design.	NUEPA may provide technical support in designing programmes for physically challenged children in Cambodia	Short-term
2	The Department of Planning may explore possibility in bringing out Provincial Report Cards (PRCs) annually which may present information on all aspects of school education.	NUEPA may provide expertise for bringing out Provincial Report Cards and may depute one technical expert to Cambodia.	Bringing out Provincial Report Cards may be treated as the short term goal
3	Efforts should be made to initiate child-tracking studies so that estimates on completion rates can be generated	If approached, NUEPA may help initiating Child-Tracking Studies by deputing one of its faculty members to Cambodia, if any such request is received	Short-term
4	Department of Planning may explore possibility to bring out District Report Cards	NUEPA may provide expertise for bringing out District Report Cards	Mid-term
5	A team of five officers at the Central level in the Department of Planning may be constituted to prepare and undertake analysis of EMIS data on annul basis which should be published in the form of **School Education in Cambodia: Analytical Report.** The team may be intensively oriented and exposed to data analysis tools and techniques	One week workshop may be organized at NUEPA, New Delhi upon receiving such request from royal Cambodian Government.	Short-term

Sl. No.	Activity	Possible Support from NUEPA	Nature of the Activity
6	The Government should attain the top most priority in fully developing NIE so that it can play the role like NUEPA is playing in India.	NUEPA was instrumental in establishing State Institutes of Educational Management and Training and would happy to provide expertise to develop NIE as a fully functional institution in the areas of educational planning and management.	Long-term
7	Two officers from Cambodia each year may be nominated for International Diploma in Educational Planning and Administration (IDEPA)	NUPEA would accommodate Cambodian officers depending upon their qualifications and background.	Short-term
8	Special capacity building programmes for provincial level officers in the area of educational planning with focus on EMIS and Data Analysis should be arranged	May be developed by NUEPA in case any such request is received from the Royal Cambodian Government	Mid-term

Annexure I

MINISTRY OF EDUCATION, YOUTH AND SPORT
Department of Planning

Terms of Reference

Technical review of EMIS and Statistical Analysis in Cambodia

1. Background

In 2006 the Ministry of Education, Youth and Sport (MOYES) requested Japanese Government to send an expert on educational statistics analysis to strengthen their analytical performance on those statistics, which is one of the weakest areas in the MOEYS. The TOR for this consultancy is attached. JICA has been seeking a suitable consultant for this task since then, but it is not successful so far.

Meanwhile, when a Cambodian delegation headed by H.E. Mr. Mak Vann visited in July 2007 the National University of Educational Planning and Administration (NUEPA) in India, which is one of the most prominent institutes for educational planning and administration in the World, Vice-Chancellor and the faculty of NUEPA, kindly offered that they can support Cambodian MOEYS to strengthen its performance on educational statistics analysis, as well as to strengthen Cambodian EMIS itself. **A presentation on DISE was made before the delegation. NUEPA has successfully developed DISE which is in operational in more than 600 districts of the country** (http://dpepmis.org). District and State Report Cards as well as Analytical Reports based on DISE data has become the regular source of data on elementary education in India. Even school report cards in case of 1.12 million schools have also been made available on internet (http://schoolreportcards.in). The analysis of DISE data produced in the form of Analytical Report is very impressive. DISE has completely eliminated time-lag in availability of educational statistics in India and there are no more data gaps. **The expertise that NUEPA has developed over time in the areas of EMIS and data analysis can be of great help in strengthening EMIS in Cambodia.** It can also be of great help in designing Capacity Building of Cambodian Education Officers in the areas of EMIS and data analysis. In view of a relatively small number of schools in Cambodia and the existence of fairly developed EMIS, intensive technical support could bring about tangible improvements in both EMIS and data analysis in a short span.

UNICEF Cambodia Office, that has been supporting the MOEYS to operate and improve the EMIS, is also interested in possible useful and constructive advices from the Expert from NUEPA, which has established a web-based highly advanced EMIS in India (http://schoolreportcards.in).

MOEYS has therefore requested JICA Education Planning Advisor to support them by inviting initially one of the EMIS/DISE experts from NUEPA to help Cambodia in strengthening its EMIS. The visit of EMIS/DISE expert may be followed by other experts from NUEPA after the need for EMIS and capacity building in data analysis is assessed. JICA envisages long term association with NUEPA in different aspects of EMIS and data analysis.

2. Objectives

The NUEPA Expert is expected to conduct the following tasks:

1) To review the current processes, functions and output of EMIS and identify the areas that needs further upgrading and improvement;

2) To study and understand the current situation of the education sector in Cambodia with a particular focus on the EMIS and monitoring framework and indicators set out in the government's national strategies and plans;

3) To review the existing analysis indicators in terms of better EMIS/monitoring and to propose a possible framework as well as procedure for educational statistics analysis; and

4) To develop a proposal for the strengthening of Cambodian EMIS and educational statistics analysis as well as capacity building in the areas of data analysis and EMIS

3. Expected output

The expert from NUEPA will develop a proposal to strengthen performance of educational statistics analysis and the EMIS in Cambodia The proposal should include situation analysis on the EMIS and educational statistics analysis in Cambodia, identifications of the areas that need further upgrading in terms of both EMIS and educational statistics analysis, possible support that the Expert and NUEPA can provide to address the needs.

4. Schedule

It is expected that the EMIS Expert from NUEPA conducts the study on mutually agreeable dates preferably in the fifth week of August/first week of September 2007. Initially the expert will be required to visit Cambodia for about 7 to 10 days. All the above expected outputs will be submitted to Mr. Sam Sereyrath and Mr. Daisuke Kanazawa through e-mail within two month from the date of visit.

.**5. Contact information**

1) Vice-Chancellor/NUEPA (EMIS/DISE) Expert, 17-B, Sri Aurobindo Marg, New Delhi, India, 110016.
NUEPA, India
Tel: (91)-11- 2-696-3038
Fax: 91-11-2-685-3041
E-Mail: pved@nuepa.org

2) Mr. Sam Sereyrath
Director, Department of Planning, MOEYS, Cambodia
Tel/ Fax: (855) 23 219 257
E-Mail: edu_sr@camnet.com.kh

3) Mr. Daisuke Kanazawa
Education Planning Advisor/JICA Expert
Tel/Fax: (855) 23-726-438
E-Mail: dkanazawa@online.com.kh

Annexure II

Technical Review of EMIS and Statistical Analysis in Cambodia
(15-25 December 2007)
Agenda

Day	Time	Activity
Saturday 15/12/07	19:10	- Arrival at Phnom Penh Airport by PG 935
Sunday 16/12/07		- Document Reading
Monday 17/12/07	8:30 - 9:30	- Meeting with Mr. Sam Sereyrath, Director, Department of Planning
	9:30 - 11:30	- Meeting with Mr. Put Samit and Officers of Planning and Aid Coordination Office
	14:30 - 16:30	- Meeting with Mrs. Kuy Phala, Deputy Director and EMIS Staff
Tuesday 18/12/07	9:00 - 10:00	- Courtesy call to H.E Mr. Nat Bun Roeun, Under Secretary of State, Ministry of Education, Youth & Sport
	10:00 - 11:00	- Courtesy call to H.E Mr. Mak Vann, Secretary of State, Ministry of Education, Youth & Sport
	14:30 - 15:30	- Meeting with Mr. Im Koch, Director, National Institute of Education
	15:30 - 17:30	- Work in Department of Planning
Wednesday. 19/12/07	8:30 - 10:30	- Meeting with Mr. Hiro Hattachi and Mr. Chea Huot, UNICEF Education Phnom Penh
	14:30 - 17:00	- Presentation on DISE by Dr. Arun C. Mehta, Department of Planning
Thursday 20/12/07	8:30 – 9:30	- Visit to PES Kandar
	14:30 - 17:30	- Visit to PES Phnom Penh - Visit to in Phnom Penh: 1 Primary and Secondary Schools in Phnom Penh
Friday 21/12/07	8:30 – 10:30	- Meeting with ESWG members of Education Sector Working Group
	15:00 - 16:00	- Meeting with H.E Mr. San Sithan – Director General, National Institute of Statistics, Ministry of Planning
Saturday 22/12/07	8:30 - 11:30	- National Museum, Royal Palace
Sunday 23/12/07		- Report Writing
Monday 24/12/07	8:30 - 11:30	- Debriefing. Presentation of Report by Dr. Arun C. Mehta in the DoP Meeting Room
	15:00 - 16:00	- Farewell call to H.E Mr. Nat Bun Roeun, Under Secretary, Ministry of Education, Youth & Sport
Tuesday 25/12/07	8:30 - 11:30	- Final Discussion with Director and Deputy Directors of Department of Planning - Wrap up
	14:30 - 17:30	- Leave Phnom Penh at 20:00

Coordinators: Mr. Uy Sathya and Mr. Pong Pitin

Apparent survival rate upto grade V	59.0	Retention rate		A & N ISLANDS

Enrolment* 2005-06

Grade	Total	Girls enrolment	With disability		Repe--tition rate	Drop out rate
			Boys	Girls		
I	905,290	447,400	3,200	2,447	16.3	11.7
II	705,309	346,047	2,354	1,839	11.5	3.6
III	661,741	318,436	2,322	1,707	12.2	7.0
IV	603,743	290,164	2,308	1,556	10.7	7.0
V	534,475	255,692	1,906	1,375	7.8	20.5
VI	515,072	240,093	1,890	1,099	9.3	18.7
VII	446,378	206,067	1,480	1,035	7.5	10.5
VIII	435,502	197,687	1,583	1,073	10.8	
Pry (I-V)	3,410,558	1,657,739	12,090	8,924	**12.1**	**9.7**
U.Pry.	1,396,952	643,847	4,953	3,207		

SC/ST/OBC enrolment

	Primary	U. Pry.
% SC enrolment	14.3	13.4
% SC girls enr.	48.9	46.0
% ST enrolment	34.1	28.9
% ST girls enr.	48.2	45.8
% OBC enr.	45.3	49.4
% OBC girls enr.	48.9	46.1

Average number of days

Number of instructional days	201
Days spent on non-teaching assignments	16

School category	Average classrooms
Pry. only	2.3
Pry + U.Pry	3.7
P+UP+Sec	9.2
U. Pry. only	2.4
U.P. + Sec	4.7
All schools	2.7

Enrolment ratio

GER Primary	131.48
GER U. Pry.	90.77
NER Primary	
NER U. Pry.	57.99

Classrooms/Other rooms

School category	Total classrooms	% good condition	% minor repair	% major repair	Other rooms
Pry. only	82,317	64.1	22.5	13.3	27,125
Pry + U.Pry	11,983	79.8	14.2	6.0	3,077
P+UP+Sec	10,431	91.5	6.9	1.6	3,106
U. Pry. only	22,023	73.3	17.4	9.4	8,547
U.P. + Sec	9,499	71.6	17.9	10.5	3,985

Number of schools by type of building*

Pucca	Partially pucca	Kuchcha	Tent	Multiple type	No building
19,488	5,508	591	48	3,157	4,566
1,580	396	77	9	317	495
733	121	14	0	81	52
5,077	780	68	7	573	2,383
1,091	234	22	2	220	300

Teachers by educational qualification (other than para teachers)

School category	Below secondary	Secondary	Higher secondary	Graduate	Post graduate	M. Phil.	Others	No response
Primary only	1,843	3,258	28,189	15,279	16,169	129	36	1,588
Primary with Upper Primary	302	571	4,032	3,888	3,805	54	13	699
Primary with Upper P. & Sec/Higher	159	342	1,511	3,254	4,234	55	10	1,207
Upper Primary only	221	592	4,367	8,465	11,406	77	14	464
Upper Primary with Sec./Higher Sec.	123	230	1,108	2,825	5,139	67	9	362
Para teachers	804	1,192	16,563	12,431	11,513	137	29	164

Teachers by gender & caste

		Regular teachers			Para teachers			SC teachers		ST teachers	
School category	Total	Male	Female	No res	Male	Female	No res	Male	Female	Male	Female
Primary only	95,258	47,393	17,715	1,383	18,497	10,252	18	6,325	2,161	15,386	4,837
Primary + U.Pry	16,846	7,141	5,687	536	2,057	1,418	7	799	470	1,490	953
P + UP+Sec/HS	11,625	4,746	5,032	994	383	466	4	456	299	413	338
Upper Pry. only	33,498	20,055	5,182	369	5,136	2,752	4	2,777	594	5,858	1,641
U.P. + Sec/HS	11,583	6,955	2,580	328	1,249	471	0	851	273	1,275	385

STATE ELEMENTARY EDUCATION REPORT CARD : 2005-06

Total districts	2	Dist. covered	2	State code	35	A & N ISLANDS	
Primary cycle	1 - 5	Upper primary cycle	6 - 8	Ratio of P. to U.P. schools/sections		2.20	
Initialised entities				Number of schools		287	
No. of blocks/taluks	9	Number of CRC's	40	Number of villages		242	
Basic data : 2001							
Total population in (000's)	356	% Urban population	32.70	% 0 - 6 Population		12.57	
Decadal growth rate	26.94	Sex ratio	846	% SC population	0.00	% ST population	8.30
Overall literacy rate	81.3	Male literacy rate	86.3	Female literacy rate		75.2	

Area (Sq. Km)

8,249

Key data: Elementary education

	Primary only	Primary with Upper Primary	Prim. with U. P. & Sec./H.	Upper Primary only	U. P. with Sec./H. Sec.	No response	Total
Government schools	160	47	54	2	15	6	284
Private schools	1	1	1	0	0	0	3
Govt. schools: Rural	154	43	43	2	12	0	254
Private schools: Rural	1	1	0	0	0	0	2
Enrolment in Govt. sch.	11,726	9,955	21,713	400	3,167	0	46,961
Enrolment in Pvt. sch.	64	645	628	0	0	0	1,337
Enr. in Govt. sch. : Rural	9,933	8,897	13,570	400	1,843	0	34,643
Enr. in Pvt. sch. : Rural	64	645	0	0	0	0	709
Government teachers	669	644	1,383	28	183	0	2,907
Private teachers	8	24	28	0	0	0	60

Performance indicators	Primary only		Pry. with U.Pry		P+UP+Sec/HS		Upper P. only		U.P. + Sec/HS		All Schools	
	04-05	05-06	04-05	05-06	04-05	05-06	04-05	05-06	04-05	05-06	04-05	05-06
% Single-classroom schools		5.0		2.1		0.0		0.0		0.0		3.1
% Single-teacher schools		9.9		2.1		0.0		0.0		0.0		5.9
% Schools with SCR > 60		0.0		4.2		0.0		0.0		0.0		0.7
% Schools with pre-primary		22.4		35.4		38.2		0.0		0.0		26.5
% Schools with common toilets		37.9		29.2		40.0		0.0		40.0		35.9
% Schools with girls toilets		55.9		62.5		90.9		50.0		80.0		63.8
% Sch. with drinking water facility		79.5		81.3		98.2		100.0		80.0		81.9
% Schools with ramp		6.2		2.1		7.3		0.0		6.7		5.6
% Enr. in single-teacher schools		2.8		0.1		0.0		0.0		0.0		0.7
% No female tch. schools (tch>=2)		24.2		6.3		1.8		0.0		6.7		15.3
% Enr. in schools without building		0.6		0.1		0.0		0.0		1.9		0.3
%Enr. in sch. without blackboard		10.8		20.4		16.8		0.0		3.1		15.1
Avg. no. of teachers per school		4.2		13.9		25.7		14.0		12.2		10.3
% Enrolment in Govt. schools		99.5		93.9		97.2		100.0		100.0		97.2
% Girls enrolment		48.9		48.2		48.1		49.5		47.6		48.3
Pupil-teacher ratio (PTR)		17		16		16		14		17		16
Student-classroom ratio (SCR)		19		25		22		31		19		22
% Schools with <=50 students		53.4		8.3		0.0		0.0		20.0		34.5
% Schools with PTR > 100		0.6		0.0		0.0		0.0		0.0		0.3
% Female teachers		52.2		49.7		54.0		42.9		51.4		52.4
% Schools established since 1994		25.5		8.3		3.6		0.0		13.3		17.1

Incentives: Number of beneficiaries (Previous academic year)

Type of Incentive	Primary		Upper Primary	
	Boys	Girls	Boys	Girls
Text books	9657	10541	5625	6019
Uniform	1590	1417	1005	866
Attendance	428	374	351	280
Stationery	1036	954	799	653

Examination results (Previous academic year)

	V Boys	V Girls	VIII Boys	VIII Girls
% Passed	98.49	99.20	92.02	93.52
% Passed with > 60%	32.59	37.00	14.66	18.27

Transition rate P. to U.P.		Total grossness	
GPI : Primary grades	0.97	Primary	21.81
Enrolment in pre-primary	2,030	U. Primary	33.57

DISTRICT ELEMENTARY EDUCATION REPORT CARD : 2005-06

District	ANDAMANS	State	ANDAMAN & NICOBAR ISLANDS	Primary cycle	1 - 5	U. primary cycle	6 - 8

Data reported from

Number of blocks/taluks	6	Number of Clusters	32	Number of villages	195	Number of schools	243

Basic Data, 2001

Total population (in 000's)	314	% 0 - 6 population	12.5	% Urban population	37.0	Sex ratio	844	Sex ratio 0-6	960
Decadal growth rate	30.1	% SC population	na	% ST population	0.9	Overall literacy	82.5	Female literacy	76.6

Key data: Elementary Education

School category	Total schools*		Rural schools*		Total enrolment*		Rural enrolment*		Teachers*	
	Govt.	Private	Govt.	Private	Govt.	Private	Govt	Private	Govt.	Private
Primary only	140	1	134	1	10,215	64	8,422	64	600	8
Primary with upper primary	37	1	33	1	8,634	645	7,576	645	538	24
Primary with upper primary & sec/higher sec.	47	1	36	0	20,247	628	12,104	0	1,297	28
Upper primary only	1	0	1	0	218	0	218	0	13	0
Upper primary with sec./higher secondary	11	0	8	0	2,725	0	1,401	0	152	0
No response in school category	4	0	0	0	0	0	0	0	0	0

Performance indicators	School category					Enrolment*					
	P. only	P + UP	P+sec/hs	U.P. only	UP+sec	Grade	2001-02	2002-03	2003-04	2004-05	2005-06
% Single classroom schools	5.0	0.0	0.0	0.0	0.0	I					5,083
% Single teacher schools	9.2	2.6	0.0	0.0	0.0	II					5,033
% Schools with SCR > 60	0.0	2.6	0.0	0.0	0.0	III					5,565
% Schools with pre-primary sections	22.7	42.1	37.5	0.0	9.1	IV					5,188
% Schools with common toilets	40.4	34.2	37.5	0.0	54.5	V					5,306
% Schools with girls toilets	60.3	78.9	97.9	100.0	100.0	VI					5,659
% Schools with drinking water facility	85.1	92.1	100.0	100.0	100.0	VII					5,966
% Schools with blackboard	87.2	86.8	85.4	100.0	100.0	VIII					5,576
% Enrolment in Govt. schools	99.4	93.0	97.0	100.0	100.0	Total Pr.					26,175
% Enrolment in single-teacher schools	2.7	0.1	0.0	0.0	0.0	Total U.P					17,201
% No female teacher schools (tch>=2)	23.4	5.3	0.0	0.0	0.0						
% Enrolment in schools without building	0.4	0.1	0.0	0.0	0.0						
%Enrolment in schools without blackboard	9.6	18.1	16.1	0.0	0.0						

Transition rate		GER / NER	2003-04	2004-05	2005-06
Prim. to U. Prim					
Primary Level		GER (Primary)			71.4
Retention rate		NER (Primary)			56.3
		GER(U.Prim)			76.3
GPI	0.98	NER(U.Prim)			46.0

SC/ST Enrolment	Primary	Upper primary	OBC Enrolment	Primary	U. Primary
% SC enrolment	0.046	0.006	% OBC Enrolment	0.000	0.000
% SC girls to SC enrolment	58.3	0.0			
% ST enrolment	0.963	0.866	% OBC girls to OBC Enrolment	0.0	0.0
% ST girls to ST enrolment	53.6	47.0			

Flow rates			
Grade	R.R.	D.O.R.	P.R.
I			
II			
III			
IV			
V			
I - V			
VI			
VII			
VIII		#	#

Enrolment of children	All	With disability	
Grade	Girls	Boys	Girls
I	2,514	25	21
II	2,515	29	17
III	2,774	34	33
IV	2,561	36	18
V	2,583	32	23
VI	2,666	44	22
VII	2,834	28	19
VIII	2,624	19	23
Total	21,071	247	176

Indicators	School category				
	P. only	P + UP	P+sec/hs	U.P. only	UP+sec
% Girls	49.2	48.2	48.4	49.5	48.7
Pupil-teacher ratio (PTR)	17	17	16	17	18
Student-classroom ratio (SCR)	19	25	22	36	20
% Schools with <= 50 students	51.8	7.9	0.0	0.0	18.2
% Schools with PTR > 100	0.0	0.0	0.0	0.0	0.0
% Female teachers	52.8	51.4	51.1	46.2	53.3
% Schools established since 1995	24.1	2.6	2.1	0.0	18.2

Classrooms/Other rooms	Classrooms					No. of schools by type of building*					
School category	Total classrooms	% good condition	% minor repairs	% major repairs	Other rooms	Pucca	Partially Pucca	Kuccha	Tent	Multiple Type	No Building
Primary only	541	51.6	29.6	18.9	201	70	33	22	0	14	2
Primary with upper primary	377	38.5	40.2	21.3	113	10	0	2	0	22	2
Primary with U.P. & sec/higher	950	64.5	30.3	5.2	360	25	1	0	0	21	0
Upper primary only	6	100.0	0.0	0.0	0	1	0	0	0	0	0
Upper primary with sec./higher sec	136	54.4	26.5	19.1	74	8	1	0	0	2	0

Position of teachers by educational qualification (other than para teacher)

School category	Below secondary	Secondary	Higher secondary	Graduate	Post graduate	M. Phil.	Others	No response
Primary only	12	56	389	114	28	1	1	5
Primary with upper primary	0	26	207	223	82	1	0	14
Primary with Upper primary & sec/higher	10	71	351	564	199	7	20	95
Upper primary only	0	0	0	8	1	0	0	0
Upper primary with sec./higher secondary	2	11	16	81	36	0	2	2
Para-teachers	1	0	7	8	8	0	0	0

Examination results (Previous academic year)		
Terminal grade	% Passed	% Passed with >60%
V boys	98.7	34.5
V girls	99.6	38.2
VIII boys	92.4	14.7
VIII girls	93.6	17.9

Gender and caste distribution of teachers*

School category	Avg. No. of Tchs.	Regular teachers				Para-teachers			SC teachers		ST teachers		%Teachers recvd. in-service training	
		Total	Male	Female	No res	Male	Female	No res	Male	Female	Male	Female	Male	Female
Primary only	4.3	608	283	319	4	0	2	0	0	2	3	7	41.7	32.7
Primary with upper prim.	14.8	562	258	285	10	5	4	0	0	2	3	2	24.0	24.6
Prim.with U.P.&Sec/H.S	27.6	1325	566	673	78	4	4	0	1	2	4	7	18.4	13.9
Upper Primary only	13.0	13	5	4	0	2	2	0	0	0	0	0	28.6	50.0
U. Primary with Sec./H.S.	13.8	152	69	79	2	0	2	0	0	0	1	1	18.8	4.9

Enrolment by medium of instructions

% Total Grossness	Primary	Upper Primary
	21.1	39.7

Category	Hindi	Bengali	English	Tamil	Telugu
P. only	3026	3490	2774	530	384
P + UP	3311	4044	1341	298	284
P+sec/hs	8123	3627	5944	2340	841
U.P. only	137	81	0	0	0
UP+sec	1115	276	740	165	429

% Schools recvd. (Previous year)		Incentives : Number of beneficiaries (Previous academic year)				
School dev. grant	T L M grant	Incentive Type	Primary		Upper primary	
			Boys	Girls	Boys	Girls
90.1	75.2	Text books	8961	9936	4985	5521
78.9	65.8	Uniform	928	847	457	419
85.4	60.4	Attendance	18	16	6	8
100.0	100.0	Stationery	278	292	165	165
72.7	45.5					

= not applicable na = not available * Some totals may not match due to no response in classificatory data items

Final Report
(September 5th, 2012)

Technical Review of EMIS and Statistical Analysis in Ghana

REPORT

Submitted to

Director General
Ghana Education Service
Government of Republic of Ghana

By
Dr Arun C. Mehta
(Email: arunmehta@nuepa.org)
Professor & Head
Department of Educational Management Information System
National University of Educational Planning & Administration (NUEPA)
17-B, Sri Aurobindo Marg, New Delhi – 110016 (INDIA)
Website: www. nuepa.org

Technical Review of EMIS and Statistical Analysis in Ghana

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Technical Review of EMIS and Statistical Analysis in Ghana

Executive Summary

1. BACKGROUND

1.1 A Ghana delegation led by Acting Deputy Director General, Ghana Education Service visited India in January 2012. Subsequently, the Director General of the Ghana Education Service, Government of Ghana, requested NUEPA, New Delhi to depute its expert in the areas of EMIS and Data Analysis to help Ghana in strengthening its EMIS. Accordingly, the Vice-Chancellor, NUEPA, New Delhi deputed Dr. Arun C. Mehta, Professor and Head, Department of EMIS to Ghana. The main objectives of the visit were as follows:

1) To review the system setting, current processes and outputs of the EMIS in Ghana;
2) To study and understand the current situation of the education sector in Ghana with a particular focus on the EMIS and monitoring framework and indicators set out in the government's national strategies and plans;
3) To review the existing analysis indicators as well as procedures for educational statistics analysis; and,
4) To provide technical advices based on findings from the above studies to improve the EMIS in Ghana.

1.2 The present report is based on the wide-range discussions held with different Officers and presentations made by EMIS Officers of the Ministry of Education and intensive field visits to four Regional Directorates and eight districts

2. EMIS IN GHANA

2.1 A number of attempts are made to improve the coverage, quality and consistency of educational data amongst which the Ministry of Education and UNESCO Institute for Statistics joint initiative to strengthen EMIS in Ghana is the most prominent and recent one. EMIS located in the Ministry of Education is doing excellent work and should be further strengthened both in terms of equipments and professionals.

2.2 Despite significant achievements, there is still further scope of reducing the time-lag as well as improving the coverage, quality, consistency, sharing, dissemination and use of educational statistics which are briefly presented below:

3. DATA CAPTURE FORMAT

3.1 At present five Data Capture Formats, are in use which is part of the Annual School Census. Though the formats in use are comprehensive, still there may be a few region and district-specific variables which are required to be added in formats for flexibility may be provided to the Regional Directorate's to identify and add supplementary variables in the existing formats. Information on the supplementary/additional variables need not be transmitted to the national level.

3.2 The first page of the DCF in case of all schools is printed from the software at the national level along with other items. It's also print school code which is unique and has been assigned to all school covered under EMIS. This is significant achievement and EMIS unit should ensure that they be not changed.

3.3 District and Regional Directors developed their own formats to collect information on quarterly basis. They are of the view that EMIS data is one year old and they need up-to-date information for distribution of text-books, exercise-books, uniforms etc. Regions and the Districts may not be encouraged to have parallel collection of information. All efforts may be focused on to further strengthening of present EMIS.

4. ROLE OF CIRCUIT SUPERVISIORS

4.1 It is recommended that a place be identified in the district so that Circuit Supervisors can sit there and are always available to schools. They may be made accountable through a Government Order to ensure that coverage of schools under Annual School Census is complete and the formats are correctly filled-in by the school HM and there are no blank entry and data provided by the schools is consistent and true to the extent possible.

4.2 The best Government school within in circuit schools having better infrastructure should be identified. The school identified may be named as Circuit Resource Centre (CRC). The Circuit Supervisors may be asked to sit in the CRC and should always be available to schools falling under its jurisdiction. This will provide not only a

platform to Teachers/HMs to meet on regular basis and discuss the academic issues of common interest but will also provide Circuit Supervisors, a place to sit.

4.3 Efforts should be made to develop a Data Repository Unit (DRU) at the national level, may be in the GES to maintain database of all regions. Advisory Unit on Decentralized Education Management located in the GES (with the help of the EMIS) may be assigned this responsibility.

5. COVERAGE

5.1 A few Private schools have not been covered under EMIS. During the field visit, the Mission got an impression that districts do not own Private schools as much they own Public schools. To create awareness about the Annual School Census, advertisements can be given in News Papers and other modes be explored for wider publicity of Annul School Census. A letter from the Director General, GES may be addressed to all the Private Schools in this regard. To ensure that data from all private schools is obtained, an abridged format may be commissioned specially for such schools.

5.2 It is recommended that the MoE/GES may come out with annual publication presenting region as well as nation-specific indicators on regular basis which may be named as *EMIS Flash Statistics*.

6. FLOW OF INFORMATION

6.1 As of now it seems that the EMIS activities developed under the Ministry of Education/National EMIS is highly centralized in the nature. There is limited reverse flow of information from top to the bottom.

6.2 It is recommended that the existing EMIS unit with all the modern software and hardware and computer professionals exclusively for the work relating to EMIS be strengthened in all the regions which may be treated as the short term activity.

6.3 To further improve the quality of data, through especially designed format, officers involved in EMIS at all levels should certify that data is free from inconsistencies and errors and hence it be merged into the national database maintained at the MoE.

6.4 Random sample checking of EMIS data by an independent agency may be initiated in at least two districts in each region responsibility of which may be entrusted to other Government departments/institutions, like GSS, IEPA, GIMPA.

7. COMPUTER HARDWARE

7.1 May be the hardware is not a major issue at the national level but the same is found to be one of the major areas of concern which is true for all the regions across Ghana. In none of the districts visited, neither the computer hardware is found to be adequate nor were the same across four regions found to be functional. The computer virus is said to be one of the biggest problems being faced by the EMIS. The HWs are not put under the Annual Maintenance Contract resulting into inordinate delay in making the computers functional. Funding for EMIS in general and HWs in particular is told to be inadequate and not available on time. Largely, UPS are available but found non-functional. EMIS room in most of the districts is not properly developed and is not fitted with the modern gadgets. ACs have been found in a few places but are generally not being used because of lack of funds for the electricity consumption. In the absence of internet connection, it is not possible for the District EMIS to transmit data and other relevant material to the national EMIS nor the national level EMIS officers could able to communicate with the districts. It is therefore recommended that EMIS room located at the district level be renovated at the earliest with all modern fitting and computer HW and SW and necessary budget may be provided well in time.

7.2 In the event of formatting of the Computers, the entire existing database is lost and the districts have to start a fresh. In none of the districts, complete EMIS database is available. The districts may be given adequate instructions as how to take up the back-up of the EMIS data on regular basis and software be redesigned to meet this requirement.

7.3 Someone from the National EMIS visit district each year before the commencement of data entry for the needful to ensure smooth data entry and visit again to collect database when data entry is over. In longer term, it is viable for the national EMIS team to visit all the 170 districts personally. To avoid this, expertise at the district

level needs to be developed. Instead of visiting each district annually, it is recommended use of software like 'team builder' so that even without visiting districts, needful is done by the national EMIS while sitting in their office but for that purpose internet connectivity is must.

7.4 National Information Technology Agency may be approached to provide hassle free internet connectivity to both the District Regional Directorates. Till such time, districts may be provided internet though the modems which may be treated as an easy option.

8. EMIS STAFF

8.1 Perhaps one of the most important limitations which significantly affecting the present EMIS is the lack of technical staff available for EMIS work at all levels. Even though adequate staff is available but since most of them are not technical they feel handicapped in handling EMIS. University graduates having technical degrees can be identified and posted to work for EMIS. For example, the Director, Kumasi, Municipality Education Office identified a technical graduate from outside the education department and put him to look after maintenance of the HWs who is designated as IT Officer.

8.2 Frequent changes/transfers of EMIS staff is another major problem being faced by EMIS in view of which it is suggested that who so ever join EMIS unit should be made to work for at least a period of five years.

8.3 Irrespective of the level, it is recommend that a capacity building plan is carefully developed by the national level to ensure that proper orientation, both technical as well as EMIS data analysis, utilization, indicators and its implications in planning, is planned to ensure that in a phased manner all the EMIS staff at district, directorate and national level are trained..

9. DISSEMINATION & PUBLICATIONS

9.1 Through the EMIS initiatives, not only the time-lag in availability of educational statistics in Ghana is reduced but the necessary statistics is also made available at the National, Regional and District levels which are significant achievements.

9.2 As of now EMIS data is being disseminated and used mostly at the national level by the EMIS Division, Ministry of Education which is limited in the nature. However, it is not bringing out publications on regular basis based on the EMIS data even though it has all relevant statistics both at the district and regional levels..

9.3 Instead, districts used to bring out *Annual District Performance Report*. The ADPR is based on the set 'EXCEL Templates' provided by the national EMIS which is common to all districts. On the other hand, Regional Directorates brings out *Regional Education Sector Performance Report* which presents a variety of region-specific indicators as well as district-specific indicators on key parameters. School-age child population, enrolment, staff, number of schools by category, and key performance indicators are presented separately by type of institutions. Gross Enrolment Rate, Gender Parity Index, Net Enrolment Rate, Transition Rate, PTR, pupil-trained ratio, percentage of trained teachers, SCR, percentage of public schools having sanitation facility and potable water etc. is been presented in the ADPR. However, one of the other important indicators, dropout rate is not being disseminated through the ADPR which has got serious implication for universal school enrolment.

9.4 In addition to ADPR and ADEOP reports, EMIS also generate *'School Profile'* of each of the schools covered under EMIS each year and provide it to districts which they send it to schools. The School Profiles are supposed to be discussed at different forums with the stakeholders. The Circuit Supervisors may be trained to analyze the School Profiles which in turn explain to the school HM, teachers, members of the community, parents and other stakeholders and officers at the grassroots level. Further, it is recommended that community be also involved in the process of EMIS as they can play important role in obtaining quality data.

9.5 A set of about 10 key indicators may be identified and shared with all concerned including the Community. It is further, recommended that School Profile be displayed in prominent place in the schools which would also eventually help in improving the quality of data.

9.6 It is recommend that the School Profiles be made available 'on-line', like the school report cards in India and the responsibility to develop such as website may be entrusted to the proposed Data Repository Unit (DRU) located in the GES.

9.7 As has already been mentioned, the national EMIS division used to generate School Profile at the national level and send it back to schools through districts and Circuit Supervisors. This is significant achievement and should be further strengthened to ensure that all schools (Public as well as Private schools) receive it on time which can be displayed in schools. A few variables, such as grade-wise number of disabled children, retention rate and flow rates, such as drop-out, repetition and promotion rates may be added to the existing 'School Profiles' which may be treated as the short-term goal.

9.8 As a mid-term goal, the proposed DRU/GES in collaboration with the EMIS at the national level may explore possibility to bring out District Report Cards in the line of report cards being brought out by NUEPA annually. The Programmers engaged in the EMIS activities at the national level will be playing an important role in designing and bringing out District Report Cards.

9.9 The proposed Data Repository Unit at GES in consultation with the EMIS Division at the national level should develop annual dissemination and publications plan *indicating titles of publication, coverage, level at which information would be presented, month by which it would be published, how many copies would be printed, to whom publications would be dispatched, when would it be made available on-line* on above lines and time-frame for regular and timely publication of data highlighting clearly types of publications, their coverage and the level at which data will be disseminated. This may be done for both the national as well as for regional level publications. As a short term goal, it should make available its publications on-line.

9.10 The annual publications may include Regional Report Cards (RRCs) which present information on all aspects of school education. Bringing out the Regional Report Cards may be treated as the short term goal. Till the Regional Report Cards are brought out, the DRU at GES and EMIS Division at the national level should

continue to bring out its existing reports in the form of publications which may be further strengthened by including new variables such as Retention Rate.

9.11 Efforts should be made to present the data analysis at the time of release of EMIS data in a function to be jointly organized by the EMIS at the national level (MoE) and GES starting 2012-13. This is expected to create awareness and generate demand for the EMIS data which would eventually help in improving the quality of data.

10. QUALITY & RELIBAILITY OF EMIS DATA

10.1 Based on the information available through the Annual School Census, a variety of indicators are generated at district and national levels and have found place in ADPR and Report on Basic Statistics but since all the private schools are yet to be covered under EMIS, the same may not be treated as the complete one.

10.2 The way of improving the quality of EMIS data would be to have an element of sample checking of data for which independent agencies, like research scholars in the Universities, and other such institutions/government offices, like IEPA, GIMPA, GSS may be entrusted the task. Formats for sample checking and procedure for drawing sample be specifically outlined and developed and the agency engaged be asked to submit detailed report with regards to discrepancy in case of key indicators.

11. EMIS SOFTWARE

11.1 The software adopted in Ghana was originally not developed for Ghana but is customized to meet its requirements. In view of the changes in the Data Capture Format, the software also need modificatins, to do that, a team of three UIS technical officers are coming to Ghana from Montreal so that the SW is made to use during the 2012-13 annual data collection. The EMIS Division of the MoE fully depends upon the UIS. In the light of the above the EMIS, MoE may like to re-visit its EMIS software and if need be may like to modify the existing software or like to add additional features *(such as repot module)* in the light of the requirements at different levels as presented above. This may be treated as a short term activity.

11.2 A reporting module was recently developed by the Advisory Unit on Decentralized Education Management, GES and attached to the existing EMIS database which will definitely help in ensuring use of EMIS data at the district level which is also

expected to enhance ADEPs and ADPRs reporting systems is considered a welcome development. To ensure that district EMIS officers do not face problem in using the attached module, GES has also developed a manual which the users will found useful.

11.3 Because of the lack of technical expertise, the database is not being maintained at the District and the Regional Directorate levels. The full set of the database is available only at the national level and districts are having only one year data. The EMIS at present is developed in such as fashion that as it seems that it is highly a centralized system. The district EMIS is so dependent on the national EMIS that every year just before the commencement of the data entry, someone from the national level visits the district to make the modifications in the software. Let the EMIS at the national level develop a dedicated webpage for the EMIS activities where the modified software patches can be provided which can be downloaded by the district EMIS to make modifications in the software on its local machine.

11.4 In the light of the above, the EMIS Division of the MoE may like to modify EMIS software so as to develop a comprehensive module which can handle all the aspects of EMIS at all levels as a long-term goal. The software should have all necessary modules such as internal data consistency check, data feeding, graphic, analyzer, report, and other modules. Till such time, the present EMIS software is further modified and strengthened to meet the challenges as specified above.

11.5 To reduce the time-lag, data entry through Intelligent Character Recognition (ICR) technology may be initiated on pilot basis in a few select districts as it would avoid manual data entry. If successful, the same may be extended to other districts in a phased manner which may be treated as a medium term activity.

12. GENERAL SUGGESTIONS

12.1 Across the country the data should be collected on a particular date and the record date (date of reference) should also be the same. At present, last Friday of November is the date of reference of the EMIS data which may be changed to November 30th each year. Each region to specify a week/fortnight during which the data will be collected across the region for which special campaigns through print and electronic

media, advertisements in local newspapers and FM radio, SMS should be launched just before launching the collection of EMIs data. Private schools may be the focus of all such campaigns. The frequency of data obtained from the school may be annual.

12.2 EMIS Division at the National level located in the Ministry of Education should be strengthened adequately both in terms of manpower and equipments and possibilities be explore for their capacity building in the areas of data analysis, technical aspects of EMIS software and use of indicators in education planning.

12.3 In the absence of projected population, districts till recently were facing problems as they do not have expertise in making population projections which is a technical exercise. In view of urgent requirement, as a temporary solution, the Advisory Unit on Decentralized Education Management provided EXCEL Templates, which is very simple to use. Anyone having basic computing skills can project population. In this direction, it is advised to strengthen the Regional Directorates also.

13. ANALYSIS OF DATA

13.1 There are several training institutes in Ghana (IEPA, GIMPA, institutes in University of Education etc.) which can be entrusted the task of capacity build in the areas of EMIS, educational planning and data analysis and utilization. It is happy to observe that Advisory Unit on Decentralized Education Management of GES is trying to coordinate these institutes to provide comprehensive training programmes. If required, some of these institutions can be strengthened and entrusted the task of capacity building in the areas of educational planning and management.

13.2 The mission couldn’t see printed regular publications based on the EMIS data either at the regional or district levels except Annual District Performance Report and Regional Education Sector Performance Report. Whatever, the little analysis is undertaken that too is not made available in the public domain. However, extensive analysis of EMIS data in the form of tables, charts, maps etc. is undertaken at the national level which is presented in the form of Basic Statistics and Planning Parameters for Basic Education which is comprehensive in nature and presents all the crucial indicators separately for different types of schools.

14. CAPACITY BUILDING PLAN

14.1 NUPEA would be happy to accommodate two officers from Ghana each year in its ongoing International Diploma in Educational Planning and Administration. Special capacity building programmes in the area of educational planning with focus on EMIS and Data Analysis can be developed by NUEPA in case any such request is received from the Ghana Government.

15. The EMIS Master Plan

15.1 The SPIMPR, Ministry of Education developed EMIS Master Plan: 2010-11 presenting major challenges which the present EMIS is facing in Ghana which are categorized into three areas, namely Institutional, System and Technical challenges. Subsequently with respect to each of these challenges, recommendations have been made. If implemented, it would have far reaching implications for EMIS in Ghana.

15.2 In view of the detailed comments made in the present document, whatever is required for strengthening EMIS in Ghana has been recommended in Master Plan but road plan to achieve such goals has not been specified. The Ministry of Education and GES may like to re-look in to the recommendations in the light of the observations presented in this report and may also like to prepare a road map for the same which should include time-frame for each of the activities specified. It may also specify role of different agencies at the national, regional and district level.

16. POLICY NOTE ON WEB-BASED EMIS

16.1 A policy note on web-based centralized database for EMIS prepared by the Ministry of Education was made available to the Mission which is found to be comprehensive in nature as it highlights major areas of concerns which has also been highlighted in the present report. The objective of this policy note is to propose the way forward on how to establish enabling management environment for districts through the reformation of the EMIS process in Ghana.

16.2 The Mission is of the view that on-line web-based application for the EMIS in Ghana may not be able to succeed immediately because of the serious hardware problems and absence of technical expertise at all levels. In the first attempt, adequate hardware with necessary software, along with external hard disks/pen drives, UPS,

internet connectivity, ACs etc. should be provided to the district EMIS. All the hardware provided to the EMIS team should have an annual maintenance contract in the absence of which many of the computers across Ghana are just lying unused. The present EMIS has serious difficulties mainly because of the hardware problems and software limitations. As suggested above, the Mission is of the view that at present there is no alternative to further strengthen the existing EMIS by providing additional features such as, reporting module for both district and regional levels. The existing EMIS software has limitations because of which EMIS team at the national level has to visit district twice a year; all such limitations in the application should be removed on the priority basis.

16.3 The EMIS team at the national level completely depends on the UIS and if the web-based EMIS is implemented as suggested in the policy note, the EMIS team at the national level would have to totally depend on outside venders and consultants. On-line application may succeed after the programmers at the national level engaged in the EMIS are able to write the software themselves, and have software maintenance capabilities.

In view of the above observations, it is suggested that the entire exercise of strengthening EMIS in Ghana be undertaken in a phased manner, such as:

(i) EMIS units across Ghana be strengthened optimally which may be considered as a short term activity;

(ii) Second priority be given to internet connectivity for which NITA may be approached to provide hassle free internet at all levels;

(iii) UIS be approached to suitably remove all limitations in the existing EMIS software which may be treated as the top most priority; and

(iv) Develop capacity building plan for all officers not only to take care technical and SW aspects but also in the area of data analysis and its use in planning at district and regional levels.

16.4 In the short term, the goal should be to improve the present EMIS application but as a long term goal, when adequate HWs are made available across Ghana and professionals are also available for EMIS, one can go for web-based data processing

for EMIS. In view of the problems that the District EMIS is facing with regard to database back up, time-series database, visits of the national EMIS official twice a year to districts and absence of reporting module, the idea of web-based structure mooted in the policy note, if implemented can resolve many of these limitations. In the light of the above, it is recommended that proposed policy plan of action may be implemented in one of the regions on pilot basis. If successful, the same may be upscale to remaining regions. In the mean time, possibilities may be explored to provide ready to use tables on-line for which a dedicated web page be developed. The webpage so developed may also have provision for downloading of raw data which can be used by researchers for empirical studies. The districts may also download and use database through their EMIS software. Ready-to-use tables which are required to develop ADPR can also be made available. Since the EMIS unit at the national level is having times-series database, the same may also be made available on-line so that time-series reports can also be generated. For developing such a webpage, rather than hiring a consultant, computer professionals may be appointed/hired who should be exclusively available for development and maintenance of webpage so developed. The webpage may be developed in Dot-Net/ SQL/PHP.

17. SUMMING-UP

17.1 NUEPA, if approached can provide expertise and technical support in the area of software development, use and analysis of EMIS data. Exact modalities may however be decided by the Vice-Chancellor, NUEPA upon receiving such request from the Ghana Government. The Indo-African Institute of Educational Planning is coming up soon in Burundi and the Ghana Government may like to approach it in due course of time for capacity building of its EMIS and other officers.

Abbreviations

AMC	Annual Maintenance Contract
ADEOP	Annual District Education Operational Plan
ASC	Annual School Census
AUDEM	Advisory Unit on Decentralized Education Management
CS	Circuit Supervisor
DCF	Data Capture Format
DISE	District Information System for Education
DRC	District Report Cards
FCUBE	Free, Compulsory and Universal Basic Education
EFA	Education for All
EMIS	Education Management Information System
ESP	Education Strategic Plan
GER	Gross Enrolment Ratio
GES	Ghana Education Service
GIMPA	Ghana Institute of Management and Public Administration
GoG	Government of Ghana
GPI	Gender Parity Index
GSS	Ghana Statistical Services
HR & SW	Hardware & Software
IAIEPA	Indo-African Institute of Educational Planning
ICR	Intelligent Character Reading
IDEPA	International Diploma in Educational Planning & Administration
IEPA	Institute of Educational Planning and Administration
IIEP	International Institute for Education Planning
JICA	Japan International Cooperation Agency
MDA	Ministry Department and Agencies
MEO	Metropolitan/Municipality Education Office
MoE	Ministry of Education
NER	Net Enrolment Ratio
NITA	National Information Technology Agency
NFE	Non formal education
NUEPA	National University of Educational Planning and Administration
RESPR	Regional Education Sector Performance Report
RR	Retention Rate
SPSS	Statistical Packages for Social Sciences
SRIMPR	Statistics, Research, Information Management and Public Relations
TR	Transition Rate
TOR	Terms of Reference
UIS	UNESCO Institute for Statistics
USAID	United States Aid for the International Development

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Section I

BACKGROUND

A Ghana delegation led by Acting Deputy Director General, Ghana Education Service (GES) visited India in January 2012. During their visit to India, the delegation visited the *National University of Educational Planning and Administration (NUEPA), New Delhi* and had interaction with its faculty on different aspects of educational planning and management. NUEPA has successfully developed *District Information System for Education* (DISE) which is in operational in all the districts of the country (www.dise.in). Like other publications, the analysis of data produced in the form of *Analytical Report* was found impressive by the delegation. The delegation was of the view that NUEPA's expertise can be of great help in strengthening EMIS in Ghana as well as in designing Capacity Building programmes for Ghana's Officers in the areas of EMIS and data analysis. Subsequently, the Director General of the Ghana Education Service (GES), Government of Republic of Ghana, requested NUEPA, New Delhi to depute its expert in the areas of EMIS and Data Analysis to help Ghana in strengthening its EMIS. Accordingly, the Vice-Chancellor, NUEPA, New Delhi deputed Dr. Arun C. Mehta, Professor and Head, Department of EMIS to Ghana. Japan International Cooperation Agency (JICA) provided all financial and logistical support to this mission. The GES and Ministry of Education (MoE), Ghana envisages long term association with NUEPA on different aspects of EMIS and Data Analysis. The main objectives (detailed TOR is annexed) of the visit were as follows:

1) To review the system setting, current processes and outputs of the EMIS in Ghana;

2) To study and understand the current situation of the education sector in Ghana with a particular focus on the EMIS and monitoring framework and indicators set out in the

• Prepared by Dr. Arun C. Mehta, Professor & Head, Department of EMIS, National University of Educational Planning & Administration (NUEPA), New Delhi, India.

government's national strategies and plans;

3) To review the existing analysis indicators as well as procedures for educational statistics analysis; and,

4) To provide technical advices based on findings from the above studies to improve the EMIS in Ghana particularly focusing on the following points:

   a). What need to be considered on system designing for enabling the upgraded EMIS described in the draft policy note based on lessons learnt from Indian experiences;

   b). What are necessary steps to be taken for the above upgrading exercises;

   c). What need to be improved in terms of contents of the School Census Report and any additional modes of publications could be suggested to promote use of EMIS data; and

   d). Organizational arrangements for capacity development on data analysis skills of MoE and GES officers as well as on facilitating more use of data for educational planning and management.

The present report is based on the wide-range discussions held with different Officers and presentations made by EMIS Officers of the Ministry of Education and intensive field visits to four Regional Directorates namely, Greater Accra, Eastern, Ashanti and Central Regions during August 27 to September 5, 2012 details of which is annexed. During the field visits, eight districts, namely Accra MEO, Dangme East, East Akim, Afram Plains, Kumasi MEO, Amansie West, Cape Coast and Upper Denkyira West MEO were visited. Discussion with the Regional Directors (Ashanti Region), Statistics Officers and Data Entry Operators of both Regional as well as the District EMIS Offices helped immensely in understanding the entire process of EMIS/Annual School Census. Throughout the field visits, Mr. Sulemana Yusif, Statistics Officer, GES, Greater Accra Regional Office and Mr. Herbert Gorman, Programmer, EMIS, MoE, Accra accompanied and participated actively in discussion.

Section II

EMIS IN GHANA

The EMIS in Ghana is being maintained by the Ministry of Education. In view of the limitations in educational statistics, a number of attempts are made to improve the coverage,

quality and consistency of educational data amongst which **the Ministry of Education (MoE) and UNESCO Institute for Statistics (UIS) joint initiative to strengthen EMIS in Ghana is the most prominent and recent one.**

Up to 1987, data upto the pre-tertiary education was collected and processed manually resulting into delay in release of results. As an integral part of the massive education reform launched in 1987, the UNESCO/UNDP *Project for Strengthening Education Planning* took off in 1988 resulting in computers being procured and software application developed (Dbase III/IV) for data processing. However, it was later realsied that in view of only four computers being procured for MIS work, the same was found to be inadequate and since the data processing was centralised which resulted in the Headquarter‘s staff being over-burdened and delay in release of data.

Later in 1997, the Education Management Information System (EMIS) project was launched as an integral part of the Free, *Compulsory and Universal Basic Education* (FCUBE) *Programme* (Pilot Phase: February 1997 to August 1999 & Second Phase: January 2001 to March 2002). During these phases, EMIS was piloted in 10 Regional Education Offices, and 26 of the then 110 District Education Offices, questionnaires for pre-tertiary institutions was revised; coding system improved with each school given a unique code; computers and their accessories as well as software application (Microsoft Access/SQL/Visual Basic) for capturing data and generating reports were installed in these sites; four officers from each of the 36 sites were trained in basic and intermediate computer skills as well as analysis of statistical data.

However, a number of problems were faced amongst which the most prominent ones was the lack of programming tool (Microsoft SQL); lack of routine maintenance of the computers; and inability to keep trained staff in the regions and districts. In view of the limitations, the *Education Sector Plan* (ESP) took note of the importance of the EMIS and proposed strategies for its enhancement and expansion. The Ministry took advantage of the *UNESCO Institute for Statistics* (UIS) Capacity Building Project in Ghana to acquire UIS EMIS application which was expected to meet its EMIS requirements.

The UIS customised its web-based aplication for use in Ghana and it was supposed to provide Technical support and was expected to fully transfer the application to Ghana with local expertise for future modifications under the arrangement. The customised off-line UIS EMIS pacakge in Ghana is in use since 2007. All the levels of education, such as, Pre-school Primary School, Junior Secondary School, Senior Secondary School, Technical/Vocational Institutes, Colleges of Education (now tertiary), Non-Formal Education, Polytechnics and Universities were initially covered under EMIS. The frequency of data collection is annual. All the schools are required to fill-up one copy of format which is required to be sent to the EMIS section located in the office of the Director District Education through the Circuit Supervisor (CS) for checking, editing, data entry and analysis.

A cursory look at the formats suggests that all the variables required for developing an efficient education plan are found place in the format. In addition, to number of institutions, enrolment by sex and grade, teachers, school profile, physical infrastructure, management, financial data, textbooks etc., information is also being collected on a number of special variables such as, population, girls education, school health, HIV/AIDS, special education, ICT in education. Enrolment ratio, percentage of girls in educational programmes, percentage of trained teachers, pupil/teacher ratio, and pupil-classroom ratio are some of the indicators being generated which is being used by the Ministry of Education, Ghana Education Service, Parliamentary Select Committee, Ministry Department's and Agencies (MDA's), Development Partners, UN Agencies, Institutions & Civil Society Organisations, NGO's and researchers and students.

Data processing in all Metro, Municipal and District Offices, Capacity Building, giving technical support to field staff, production of Statistical Digest *(not shared with the Mission)*, meeting international obligations, providing special requests (NGO's, researchers, universities and others), collaboration with other MDA's are said to be some of the major achievements of the present EMIS in Ghana.

EMIS located in the Office of the Director, Statistics, Research, Information Management and Public Relations (SRIMPR) in its Division of EMIS in the Ministry of Education is doing excellent work and should be further strengthened both in terms

of equipments (computer software and hardware) and professionals. EMIS team in Ghana has a rich experience. **Across the Republic of Ghana, EMIS through the Annual School Census is very popular and it has covered all of its 10 Regional and 170 Districts which is not a mean achievement.** Despite significant achievements, there is still further scope of reducing the time-lag as well as improving the coverage, quality, consistency, sharing, dissemination and use of educational statistics which are briefly presented below:

Section III

DATA CAPTURE FORMAT

At present five Data Capture Formats (DCFs), one each for Basic Education, Senior Secondary, Technical and Vocational Education, Teachers Training and College Education are in use which is part of the Annual School Census (ASC). Though the formats (under EMIS) in use are comprehensive in nature, still **there may be a few region and district-specific variables which are required at the region/district level, provisions for which may be made in the software to tackle additional/supplementary variables both for data entry as well as for the report generation** for which flexibility may be provided to the Regional Directorate's to identify and add supplementary variables in the existing formats. (*for example if a region/district has a provision to provide scholarships to its students and wants to know how many children received it, information on such variables is not being collected through the Annual School Census as it is specific to the region/district only and not applicable to other regions/districts. Such variables may be identified by the individual regions/districts and not at the national level).* Information on the supplementary/additional variables need not be transmitted to the national level. All the items in the present formats are pre-coded and the first page of the DCF in case of all schools are printed from the software at the national level which are then provided to Regional Directorates for distribution to schools through District EMIS and Circuit Supervisors (CS).

Circuit Supervisors arranged meeting at the Circuit Centers in groups and provide some sort of orientation to Schools Head Masters (HMs) who are the respondents of Annual School

Census across Ghana. During such orientations, Statistics Officers of district EMIS is also available and wherever possible, Regional Directorate's (EMIS) officers also available. In a few districts, School HMs are asked to bring all the relevant records/registers with them to fill-up the information on the stop but this practice is not being followed across districts. In remaining districts, the DCFs are collected by the relevant Circuit Supervisors which is then passed onto the district EMIS. Before that, the Circuit Supervisors are supposed to thoroughly check the filled-in formats but in most of the cases, it is routine in nature and passed on the formats to the relevant district EMIS officer. In a few cases, since the DCFs are not received on time and they are received much later after the data is submitted to the national EMIS, these formats are sent to Accra for data entry which should be discouraged. In such cases, database, if available at the district level is different than at the national level, which is treated as final one but the same is generally not available with the district and regional levels.

During the field visits, both the District and Regional Directors informed that in addition to the Annual School Census through EMIS, they have also developed their own formats to collect information on a few key variables on quarterly basis. These local formats are developed by the District and Regional Directorates and vary from region to region. However, one of the districts visited informed that the parallel collection of information is discontinued in their district as it has created a number of problems with respect to the coverage, consistency and reliability of data but other districts still continue with the same and collect the data on quarterly basis and use it for local use. The information collected through the local formats are generally not transmitted to MoE/GES and in a few cases not even transmitted to the Regional Directorate assuming that the same will not be used as the Regional Directorate have got access to the EMIS data. The districts are of the view that since the EMIS data is one year old and they need up-to-date information on enrolment, teachers, trained teachers etc. they collect and use the same for distribution of text-books, exercise-books, uniforms etc. On the other hand, EMIS data is being used by the district to develop *Annul District Performance Report* but for the actual use instead of using EMIS data, district use data which is collected through its own formats. **So far as the possible, the Regions and the Districts be discouraged to have parallel**

collection of information and all efforts be focused on to further strengthening EMIS data across Ghana.

Section IV

ROLE OF CIRCUIT SUPERVISIORS

In addition to the EMIS activities, Circuit Supervisors are engaged in a number of other activities and are supposed to visit schools once in week. The Circuit Supervisors are supposed to be available in the Circuit Centers but in most of the cases, such centers are not yet made operational in view of which it is recommend that **a place be identified in the district so that Circuit Supervisors can sit there and are always available to schools.** In addition, **the Circuit Supervisors may be made accountable through a Government Order issued from the MoE/GES to ensure that coverage of schools under Annual School Census is complete.** In addition, the Circuit Supervisors should also certify that they have distributed EMIS formats to all schools including the Private schools falling under their jurisdiction. Further, they should also be made accountable to ensure that all the formats are correctly filled-in by the school HM and there are no blank entry and data provided by the school is consistent and true to the extent possible. Circuit Centers in Ghana is the lowest level at which through checking of filled-in DCF can only be ensured. In India, similar arrangement has helped immensely in improving the coverage, quality and consistency of EMIS data and if implemented, definitely will also help in further strengthening EMIS in Ghana.

On an average a Circuit Supervisor has up to 25 public schools under their jurisdiction. **The best public school within these schools having better infrastructure, better teachers and leadership should be identified.** Along with the School HM, the Circuit Supervisors can provide academic leadership to all the schools falling under its jurisdiction/Circuit Centers. The school identified may be named as Circuit Resource Centre (CRC). The Circuit Supervisors may be asked to sit in the CRC and should always be available to schools falling under its jurisdiction. In this way, the resources available in the CRC can be shared by all the schools under its jurisdiction and teachers once/twice in a month can assemble in

the CRC School to share their experiences which can be of help to other schools also. **This will provide not only a platform to Teachers/HMs to meet on regular basis and discuss the academic issues of common interest but will also provide Circuit Supervisors, a place to sit**. At present, the Circuit Supervisors are supposed to report to the districts on weekly basis.

In view of the above, it is recommended that Circuit Supervisors are made accountable for EMIS by issuing Government Order from the MoE/GES and a school having better infrastructure be identified and termed as CRC (Circuit Resource Centre) and Circuit Supervisors be asked to sit in CRC. While identifying the best school, distance from other schools located within the CRC is kept in mind as school teachers and HMs will be required to visit CRC on regular basis for sharing issues of common interest. In due course of time, CRC Schools can be further strengthened and provided with at least one computer which can also be used for EMIS data entry and other relevant activities, such as printing of school report cards/school profile, printing of DCFs etc. in long term.

In one of the Regions, namely Central Region, the collection and data entry in case of Senior High schools and Technical and Vocational institutions and Colleges of Education is being maintained by the Directorate. The Directorate has taken a considered decision to collect the information at their own in view of only a few such institutions at the district level. Other Directorates may also like to follow the Central Region provided that they have the technical expertise. This Directorate also maintain database of all of its 17 districts which is unique as none of the other Directorate's visited, maintain EMIS database of its districts. It is also of the interest to know that EMIS formats are being distributed through the Regional Directorates to the districts but after the data entry is over, districts directly send the database to the national EMIS which in turn provide a few district-specific selected tables to Directorates in the 'Excel Format' which is common to all Directorates. This clearly shows that the **database is generally not available both at the District and Directorates' level which is considered to be the one of the important limitations of the present EMIS. Efforts should be made to develop a Data Repository Unit (DRU) at the national level,** may be in the GES to maintain database of all regions across 170 districts for which it should be technically strengthened and necessary HW & SWs be provided. **Advisory Unit**

on Decentralized Education Management (AUDEM) located in the GES may be given the responsibility of developing such a Data Repository Unit (DRU) with the help of the EMIS (MoE). The DRU may also be entrusted the responsibility to analyze the EMIS data, disseminate it and bring out the publications annually presenting both the region-specific as well as district-specific indicators. Being a Data Repository Unit, regions and districts may approach it for the database in the event of loss of database at that level.

Section V

COVERAGE

For assessing the level of educational development and progress towards EFA goals, it is essential to analyze and present the overall picture. Whatever is the little analysis that is undertaken and presented in the *Annual District Performance Report* (ADPR) and *Regional Education Sector Performance Report* (RESPR) confines mostly to public schools. **Though comprehensive data under EMIS is being collected both from the Public and Private schools but most of the crucial indicators are presented only Public schools.** During the field visits to districts, it was informed that all Private schools have not been covered under EMIS as many of such schools do not supply data. In addition, the new Private schools which have come up recently are also not covered under EMIS, as a few of them started functioning without registration. During the field visit, **the Mission got an impression that district do not own Private schools as much they own Public schools.** Whenever, they mention number of schools, they report only the Public schools in view of which **it is recommended that special efforts are made to ensure that all schools including Private schools are covered in the coming Annual School Census**: 2012-13. To create awareness about the Annual School Census, advertisements can be given in News Papers and other modes such as FM Radio, SMS etc can also be explored for wider publicity of Annul School Census. In addition, **a letter from the Director General, GES may be addressed to all the Private Schools informing that it is there duty to co-operate District EMIS Officers and supply complete information within the stipulated time.** Information from all the Private schools is crucial to assess the status of universalisation of education. For example, presenting enrolment ratio separately for Private schools will unable to present the complete

coverage of child population unless enrolment in private schools is also considered in computing the enrolment ratio. This is also true in case of the other indicators such as promotion, drop-out and repetition rates which are not been computed. Therefore, **in all the forthcoming publications, it would be better to have published crucial indicators by considering data of both the Public and Private schools together and wherever necessary, separately for Public and Private Schools.** It is recommended that the MoE/GES may come out with annual publication presenting region as well as nation-specific indicators on regular basis which may be named as *EMIS Flash Statistics*. To ensure that data from all private schools is obtained, an abridged format may be commissioned specially for such schools.

Section VI

FLOW OF INFORMATION

As of now it seems that the EMIS activities developed under the Ministry of Education/National EMIS is highly centralized in the nature. There is limited reverse flow of information from top to the bottom. The formats are printed at the national level and through the Regional Directorates and districts and Circuit Centers/Supervisors, they reach schools and through the same channel they reach back to District level for data entry and analysis. In most of the cases the Regional level data is not available at their level; thus minimizes chances of data utilization at the Regional Directorate's level. **The data entry has been decentralized to the district level but in most of the districts visited a functional EMIS could be seen.** In view of the above, **it is recommended that the existing EMIS unit with all the modern software and hardware and computer professionals exclusively for the work relating to EMIS be strengthened in all the 10 Regional Directorates and Metropolitans/Municipalities/Districts (MMDs) of Ghana which may be treated as the short term activity.** To further improve the quality of data, through a especially designed format, officers involved in EMIS at all levels (such as district and regional directors) should certify that data is free from inconsistencies and errors and hence it be merged into the national database maintained at the MoE.

If planning exercises are decentralized to the level of MMDs, the same would generate demand for data and that would eventually improve data utilization at all levels. Upon decentralization, the MoE/GES will oversee the management and organization of EMIS operations at the national level and would focus more on dissemination and analysis of data. The EMIS would also arrange training of MMD level officers in the use of EMIS software and data analysis on continuing basis. It would continue to make efforts that would help in improving the quality of EMIS data as quality of data cannot be improved in one go. **Random sample checking of EMIS data by an independent agency may also be initiated in at least two districts in each region** responsibility of which may be entrusted to other Government departments (like Ghana Statistical Services) and Education Departments located in the Universities. The responsibility to provide technical and software support to EMIS Units in all the regions/districts of Ghana may be exclusively taken up by the National EMIS (MoE).

Local Data for Local Consumption

Field visit to four Regional Directorates/eight districts helped a lot in understanding the flow of information, data entry, use and dissemination of EMIS data. Discussions with the District EMIS Officers, reveals interesting information. For example, for immediate requirements, they first collect information on the priority basis quarterly through a local format and arrange its data entry by using the EXCEL and generate information on number of schools, teachers and enrolment. The formats designed at the local level vary from district to district; however most of the information they collect is of the same nature and being also collected as a part of the Annual School Census (EMIS).

The information so generated is immediately used at the district level and in some cases it is also sent to the Regional Directorates. Only upon the completion of this task, data entry of EMIS gets started; thus causing delay in making available information. It is of interest to note that because district wants to use the latest information on key indicators as they think EMIS data is old, they first completes data entry of local data. **It is also of interest to note that two parallel systems are going on but both are being handled by the same EMIS Officers at the district level.** Had the EMIS software supports both the data entry and

report generation, it would have avoided duplicity of efforts. Since the EMIS is scientific and official one, it should only continue. **The National EMIS may provide flexibility to districts to first undertake the data entry of key variables to facilitate their urgent need; thereafter data entry of remaining variables can be undertaken as this would help them in avoiding duplicity of efforts.** If duplicity is avoided, report module is made part of the existing EMIS software; the same would help in reducing time-lag in the availability of data which is about six to eight months. It was unfortunate to know from the district and regional directorate EMIS officers that they use only data collected by themselves and EMIS data is being used only for the reporting purposes.

Section VII

COMPUTER HARDWARE

Since the EMIS in Ghana is computerized, effective implementation of the same largely depends upon the type of computer hardware and software made available and also technical persons involved in the management and organization of EMIS across the country. During the field visit to four Regional Directorates and eight districts, and also discussions with the EMIS team at the national level helped immensely in assessing the status of hardware available and officers involved in EMIS across Ghana. **May be the hardware is not a major issue at the national level but the same is found to be one of the major areas of concern which is true for all the regions across Ghana.** This is true for district level EMIS located in the Office of the District Director of Education. It has been observed that **in none of the districts visited, neither the computer hardware is found to be adequate nor the same across the four regions were found to be functional.** In some cases, personal laptops were being used for EMIS work.

Both at the District and Regional Directorate levels, the computer virus is said to be one of the biggest problems being faced by the EMIS teams across Ghana. No where antivirus SWs have been provided which resulted into formatting of computers frequently. In none of the districts visited, all the computers were functioning. The **HWs are not put under the Annual Maintenance Contract (AMC) resulting into inordinate delay in making the**

computers functional. Funding for EMIS in general and HWs in particular is told to be inadequate and not available on time. This may be treated as one of the significant challenges in keeping up-to-date database across Ghana both at the District and Regional Directorate levels. Largely, UPS are available but generally found non-functional because of the battery which has not been replaced. In most of the districts, UPS is down for at least one or more years; thus influencing effective maintenance of EMIS across Ghana. **Generally,** EMIS **room in most of the districts is not properly developed and is not fitted with the modern gadgets**. ACs have been found in a few places both at the District and Regional Directorate's level but are generally not being used because of lack of funds for the electricity consumption. In addition, continuous electricity supply is another major problem being faced by the EMIS across districts.

In view of the above, it is recommended that EMIS room located at the district level in the Office of the District Director be renovated at the earliest possible with all modern fitting and computer HW and SW. It should also have proper electric wiring. In most of the districts, internet connection is not available and in some other districts, the EMIS uses modem. Even though connecting switch is provided by the EMIS at the national level, generally it has not seen being used except in one of the districts visited. **In the absence of internet connection, it is very difficult for the District EMIS to transmit data and other relevant material to the national EMIS located at Accra nor the national level EMIS officers could able to communicate with the districts.** During the field visits, it was told and seen that **in the event of formatting of the Computers, the entire existing database is lost and the districts have to start a fresh. In none of the districts, complete EMIS database is available** neither on EMIS PCs nor in external hard disks or pen drives in view of which **it is recommended that all the districts be provided with the external storage devices.** Rather, the districts may be given adequate instructions as how to take up the back-up of the EMIS data on regular basis.

When the computers are formatted, at the time of next annual school statistics, as has already been mentioned that the data feeding is taking place a fresh and since the district is not having the backup of the EMIS database and also not having the technical expertise, **someone from the National EMIS visit district each year before the commencement of**

data entry for the needful so as to ensure smooth data entry. In longer term, **it may not be viable for the national EMIS team to visit all the 170 districts personally, first to make the computers operational for data entry and then to take copy of the database.** To avoid this, **expertise at the district level needs to be developed for which a careful capacity building planning is chalked out by the national EMIS and GES.** Instead of visiting each district annually, it is recommended use of software like 'team builder' so that even without visiting districts, needful is done by the national EMIS while sitting in their office but for that purpose internet connectivity is must. **National Information Technology Agency (NITA) may be approached to provide hassle free internet connectivity to both the District EMIS as well as Regional Directorates. Till such time, all districts may be provided internet though the modems which may be treated as an easy option.**

Section VIII

EMIS STAFF Perhaps **one of the most important limitations which significantly affecting the present EMIS is the lack of technical staff available for EMIS work across Ghana** including that at the national level. Even though adequate number of EMIS staff such as Statistics Officers (SOs) and Data Entry Operators are available both at the district and the regional directorate levels but since most of them are not technical they feel handicapped in handling EMIS, especially the technical aspects of EMIS. The EMIS staff is never being properly trained to look after technical aspects of the EMIS nor most of them posses' technical qualification. Most of the SOs is found to be having graduates but majority of them dose not posse's technical degrees. EMIS staff, such as the Statistics Officers, is identified from within the education department and generally the positions are not open to outsiders. If extended to outsiders, University graduates having technical degrees can be identified and posted for the EMIS work. For example, the **Director, Kumasi, Municipality Education Office (MEO) identified a technical graduate from outside the education department and put him to look after maintenance of the HWs who is designated as IT Officer.** In view of the above, it is therefore recommended that whenever, there are vacancies for EMIS available, the same is filled-up by identifying persons having technical degrees/background. Even, **teachers those who have technical qualification from within**

the education department can be identified and be given the responsibility of EMIS. However during the field visit, it was informed that such teachers are not eager to work for EMIS because of the longer working hours and also because of the fact that promotional avenues are limited. **One of the other major limitations of the EMIS is frequent changes/transfers of EMIS staff** and the district EMIS has to start a fresh when someone new join the EMIS team in view of which **it is suggested that who so ever join EMIS unit should be made to work for at least for a period of five years.**

Irrespective of the level, **it is recommend that a capacity building plan is carefully developed by the national level** to ensure that proper orientation, both technical as well as EMIS data analysis, utilization, indicators and its implications in planning, is planned to ensure that in a phased manner all the EMIS staff at district, directorate and national level are trained.

Section IX

DISSEMINATION & PUBLICATIONS

Through the EMIS initiatives, not only the time-lag in availability of educational statistics in Ghana is reduced but the necessary statistics is also made available at the National, Regional and District levels which are significant achievements. As of now EMIS data is being disseminated and used mostly at the national level by the EMIS Division, Ministry of Education which is limited in the nature. However, it is not bringing out publications on regular basis based on the EMIS data even though it has all relevant statistics both at the district and regional levels. As has been reported, the EMIS data is being shared by all the stakeholders as and when such request is received from the data users. Instead, districts used to bring out *Annual District Performance Report* (ADPR) which it submitted to the Headquarters through Regional Director. The ADPR is based on the set 'EXCEL Templates' provided by the national EMIS which is common to all districts. In addition to the EMIS data, the ADPR also use school mapping and monitoring reports, internal budget books, DFID and Government of Ghana (GoG) Work Plans, Annual Staff Census data and other sources. Similarly, the Regional Directorates brings out *Regional*

Education Sector Performance Report (RESPR) which disseminates district-specific information. RESPR is primarily based on Education Strategic Plan (ESP), Annual District Education Operational Plan (ADEOP), Annual District Education Performance Reports, Ghana Statistical Service and Education Management Information System. RESPR presents a variety of region-specific indicators as well as district-specific indicators on key parameters.

School-age child population, enrolment, staff, number of schools by category, and key performance indicators are presented separately by type of institutions. Gross Enrolment Rate (GER), Gender Parity Index (GPI), Net Enrolment Rate (NER), Transition Rate, PTR, pupil-trained ratio, percentage of trained teachers, SCR, percentage of public schools having sanitation facility and potable water etc. is been presented in the ADPR. However, **one of the other important indicators, dropout rate is not being disseminated through the ADPR which has got serious implication for universal school enrolment.** In addition to ADPR, EMIS also make available 'District Profiles' which is comprehensive in nature and in fact, the ADPR are largely based on the district profiles provided by the national EMIS, MoE.

In addition to ADPR and ADEOP reports, EMIS also generate *'School Profile'* of each of the schools covered under EMIS each year and provide it to districts which they send it to schools. In addition to School Profiles, district also bring out *'School Report Cards'* which is based on the local data collected on quarterly basis technical support of which till recently was provided by the USAID but in the absence of the updated software, the same in most of the districts has been discontinued. The School Profiles are supposed to be discussed at different forums with the stakeholders. **The Circuit Supervisors may be trained to analyze the School Profiles which in turn explain to the school HM, teachers, members of the community, parents and other stakeholders and officers at the grassroots level.** Further, **it is recommended that community be also involved in the process of EMIS** as they can play important role in obtaining quality data. **A set of about 10 key indicators may be identified and shared with all concerned including the Community. It is further, recommended that School Profile be displayed in prominent place in the schools** which would also eventually help in improving the quality of data. As of now

School Profiles are being created and provided by the EMIS at the national level and that too is in the off-line mode. **It is recommend that the School Profiles be made available 'on-line', like the school report cards in India** and the responsibility to develop such as website may be entrusted to the proposed Data Repository Unit (DRU) located in the GES.

As has already been mentioned, the national EMIS division used to generate School Profile *(School Report Cards)* at the national level and send it back to schools through districts and Circuit Supervisors. This is significant achievement and should be further strengthened to ensure that all schools (Public as well as Private schools) receive it on time which can be displayed in schools. School Profile presents raw data and indicators as well as a few charts on key variables/indicators such as, grade-specific enrolment and repeaters, physical facilities, total teachers, trained teachers etc. **A few variables, such as grade-wise number of disabled children, retention rate and flow rates, such as drop-out, repetition and promotion rates may be added to the existing 'School Profiles' which may be treated as the short-term goal.** It would be better to decentralize the creation of school profiles to the Regional Directorate's level as it would help in making available 'school profiles' on time. **As a mid-term goal, the proposed DRU/GES in collaboration with the EMIS at the national level may explore possibility to bring out District Report Cards in the line of report cards being brought out by NUEPA annually.** Each district can have one page where information on all aspects of school education can be presented. If required, NUEPA will be happy to provide expertise in this direction. The Programmers engaged in the EMIS activities at the national level will be playing an important role in designing and bringing out Regional as well as District Report Cards.

In the light of the above observations, **the proposed Data Repository Unit (DRU) at GES in consultation with the EMIS Division at the National level should develop annual dissemination and publications plan** *indicating titles of publication, coverage, level at which information would be presented, month by which it would be published, how many copies would be printed, to whom publications would be dispatched, when would it be made available on-line* on above lines and time-frame for regular and timely publication of data highlighting clearly types of publications, their coverage and the level at which data will be

disseminated. This may be done for both the national as well as for regional level publications. As a short term goal, it should make available its publications on-line.

The annual publications may include **Regional Report Cards (RRCs) which present information on all aspects of school education. Bringing out the Regional Report Cards may be treated as the short term goal.** Thus data concerning each region may be presented in one sheet details of indicators and variables which are to be disseminated through the Regional Report Cards that may be identified by the proposed DRU in consultation with the EMIS at the national level and other data users and stake holders. The Regional Report Cards may include information regarding kindergarten, Primary as well as Junior High Schools on one sheet. **NUEPA may provide expertise for bringing out the Regional Report Cards and may depute one of its technical experts to Ghana.** Report Cards such as this need to be designed in such a manner so that they not only reflect progress towards achieving EFA goals but also provide a clear insight as to the emerging realities with respect to the planning and management of basic education in Ghana. **Till the Regional Report Cards are brought out, the DRU at GES and EMIS Division at the national level should continue to bring out its existing reports in the form of publications which may be further strengthened by including new variables such as Retention Rate** which presents information about the retaining capacity of the system which is calculated by using enrolment data over a period of 6 years. In addition, grade-to-grade promotion, repetition and drop-out rates may also be computed and disseminated through the EMIS publications which presents information regarding transition during two years but the same failed to present information about the retaining capacity of the system which can be known only if enrolment in Grade 6 (minus repeaters) is linked to enrolment in Grade 1 six years back. This is the standard method being used elsewhere and is different than the Survival Rate which is based upon a set of assumptions amongst which continuation of current promotion, repetition and drop-out rates throughout the evolution of cohort are the most crucial one. On the other hand, completion rate is being calculated by relating number of primary graduates to relevant single-age '11' population. However, the best way of obtaining information about completion rate would be to initiate child-tracking studies which allow tracking of students those who enter into the education system (Grade

1) in a year. These students are then tracked from year to year until they reach Grade 6 over a period of 6 years. Those who complete Grade 6 are termed as 'completers' and are linked to Students in Grade 1 through which true completion rate of students those who complete Primary level in 6 years can be obtained. However, the students be tracked until the last remained in the system. Through such analysis, students who complete Primary level in 6 years as well as in 7, 8 and more years can be estimated. The completion rate through child-tracking can also be undertaken for the previous cohorts based upon the class registers available in the schools. Completion rates for different cohorts would be helpful in assessing progress towards retaining capacity of the system. Special formats can be designed for tracking students from one class to another.

In addition to the educational indicators, basic data such as literacy rate, number of districts in directorate, number of villages, total population, percentage of rural and urban population, child population in different age groups, annual population growth rate, sex ratio etc. should also be presented as the background information in the Regional Report Cards. Information regarding out-of-school children should also be presented in report cards, if available. NUEPA's State Report Cards may be referred in identifying new variables a copy of which is annexed.

Efforts should be made to present the data analysis (to begin with region-specific and national analysis) **at the time of release of EMIS data in a function to be jointly organized by the EMIS at the national level (MoE) and GES starting 2012-13.** All those who are interested in school education may be invited (including Government Officers, NGO's and Development Partners) to attend the release function. This will create awareness and is expected to generate demand for the EMIS data which would also help in improving the quality of data.

Section X

QUALITY & RELIBAILITY OF EMIS DATA

As the data respondents are primarily school HMs they need intensive training to better understand and comprehend the importance of EMIS and the ways and means for

completing the several instructions of data collection. This would also be of great help in improving the quality of data. Based on the information available through the Annual School Census, variety indicators are generated at district and national levels and have found place in ADPR and Report on Basic Statistics but since all the private schools are yet to be covered under EMIS, the same may not be treated as the complete one. Such type of training may be imparted through the District level EMIS and other officers as the regional level officers may not be able to devote sufficient time. The **officers at the district level should also be exposed to use and analysis of EMIS data and its importance in educational planning.** The EMIS formats should contain written instructions.

As has already mentioned that the Circuit Supervisors be made responsible for EMIS work. The responsibility of thorough checking of the filled-in formats should be entrusted to the Circuit Supervisors as in view of a large number of schools at the district level, thorough checking of filled-in format is not possible. *On the other hand, there are only 5-25 schools per circuit and it is the only level where thorough checking of formats can be ensured because of only a few schools. Distribution and collection of filled-in formats can also be handled efficiently, if* Circuit Supervisors *are involved in EMIS and made accountable.* In view of this, the **Government may like to make Circuit Supervisors accountable for ensuring the complete coverage of schools falling under his/her jurisdiction and also to ensure that formats are correctly filled-in and there are no missing values.** This may not over burden the Circuit Supervisors as it is only one time activity in a year. In case, if the formats are not correctly filled-in, the same may be sent back to the School HM for necessary corrections. The error free formats thus only are sent to the district level for further checking and data feeding. This is expected to help in improving the quality of data as well as also in reducing the time-lag.

The way of improving the quality of EMIS data would be to have an element of sample checking of data for which independent agencies, like research scholars in the Universities, and other such institutions/government offices, like Ghana Statistical Services may be entrusted the task. Formats for sample checking and procedure for drawing sample be specifically outlined and developed and the agency engaged be asked to

submit detailed report with regards to discrepancy in case of key indicators such as number of schools, enrolment and teachers.

Section XI

EMIS SOFTWARE

As has already been mentioned that the Ministry took advantage of the *UNESCO Institute for Statistics* (UIS) Capacity Building Project in Ghana to acquire UIS EMIS application which is expected to meet its EMIS requirements. The UIS customised its web-based aplication for use in Ghana and provided an off-line application. It is supposed to provide technical support and is expected to fully transfer the application to Ghana with local expertise for future modifications under the arrangement. The customised UIS EMIS pacakge in Ghana is in use since 2007. However, it may be observed that initially the software was developed in the French so it was not possible for the EMIS team to make modificatins. Off late, it has been informed that the UIS has now changed it's software into English. The software adopted in Ghana was originally not developed for Ghana but is customized to meet its requirements. **In view of the changes in the Data Capture Format, the software also need modificatins, to do that, a team of three UIS technical officers are coming to Ghana from Montreal so that the SW is made to use during the 2012-13 EMIS data collection.** *The EMIS Division of the MoE fully depends upon the UIS. Needless to mention* that the source code of the UIS EMIS is not shared with the EMIS Ghana, in the absence of which even expertise available at the local level, no modifications can be made by the EMIS team. In the light of the above **the EMIS, MoE may like to re-visit its EMIS software and if need be may like to modify the existing software or like to add additional features** *(such as repot module)* **in the light of the requirements at different levels as presented above. This may be treated as a short term activity.**

Over a period of time the number of schools covered under EMIS will increase so as the database itself with each passing year. As of now, Ghana has a total of about 25,000 schools. The EMIS at the national level may like to explore other alternatives such as Oracle at the back-end so as to handle the large database. At present, the database engine for EMIS is

SQL and the final outputs are prepared in the EXCEL which may not be treated as the user friendly. Till recently, the EMIS software did not have the basic reporting module in the absence of which it was not possible for the district EMIS Officers to optimally utilize the EMIS data by themselves. **However, a reporting module was recently developed by the** Advisory Unit on Decentralized Education Management, **GES and attached to the existing EMIS database which will definitely help in ensuring use of EMIS data at the district level which is also expected to enhance ADEPs and ADPRs reporting systems is a welcome development. To ensure that district EMIS officers do not face problem in using the attached module, the unit has also developed a manual which the users will found useful.**

The Regional and the District EMIS officers are totally dependent on the national EMIS located in Accra. Because of the hardware problems, as specified above, and also because of the lack of technical expertise, **the database is not being maintained at the District and the Regional Directorate levels.** The full set of the database is available only at the national level and districts are having only one year data, if there computer is not formatted recently else they are supposed to start the entire operations a fresh. The EMIS at present is developed in such as fashion that as it seems that it is highly a centralized system which is against the basic principle of a good EMIS. For example, the district EMIS is so dependent on the national EMIS that **every year just before the commencement of the data entry, someone from the national level visit the district to make the modifications in the software so that data entry gets started.** The Mission is of the view that because of the software limitations, districts are not in a position to keep database of more than one year. It is not viable for the national EMIS to visit each district every year to make modifications. Even though that the district EMIS officers are not technically trained but if the written instructions are provided as how to modify the software, they themselves will able to do that. **Let the EMIS at the national level develop a dedicated webpage for the EMIS activities where the modified software patches can be provided which can be downloaded by the district EMIS to make modifications in the software on its local machine.** In India, this practice is being followed and found to be useful which is reflected in the quality of data been produced each year across 600+ districts. Alternatively, in place

of visiting each of the 170 districts across Ghana, the EMIS team at the national level identifies one officer each at the Regional Directorate levels' and train them in software with focus on initialization of software and report generation. As has already been specified that the national EMIS team can do the software modifications on the district EMIS computer by taking the remote of their computers by using the software such as 'Team Viewer'.

It may also be observed **that neither the regional-specific database is created from the software nor region-specific reports can be generated.** The limited data that they have is made available to them in the EXCEL format by the national EMIS team. As has already been mentioned that though the reporting module is attached recently to EMIS database but in the absence of database at the district level, the same in a few districts couldn't be utilized optimally. In such cases, EXCEL Templates have been provided to them by the national EMIS so as to compute indicators covering different aspects of universal enrolment which takes a lot of time. In the event of formatting of computers, which is common across districts, the districts re-do the whole exercise which is time consuming. **In the light of the above, the EMIS Division of the MoE may like to modify EMIS software so as to develop a comprehensive module which can handle all the aspects of EMIS at all levels as a long-term goal.** The software should have all necessary modules such as internal data consistency check, data feeding, graphic, analyzer, report, and other modules. Till such time, the present EMIS software is further modified and strengthened to meet the challenges as specified above. However, **the top most priority should be assigned to built-in report generation module at all levels.** In the absence of built-in report module, it is not possible for the regional directorates and district level EMIS officers to use the EMIS data optimally.

The software should have provision to add region/district-specific variables as supplementary/additional variables. Not only it should facilitate data feeding but it should also support report generation by using the same EMIS software. This will help Directorates to add variables as per their requirement. The schools containing inconsistent data should be highlighted for that purpose **a separate module to check the consistency of data may be added to the existing EMIS software.** A few checks have been provided in the existing EMIS software. The software should be supported by a user manual.

As has already been specified above that one of the other important activities of EMIS is the transmission of data from the lower level to the higher and the highest level. As the data entry will take place at the district level, data can be transmitted either through a CD or an email to both the Regional Directorates and EMIS at the national level. **In view of small number of schools, it may not be a difficult task to transmit the data through the e-mails in the compressed/zip format** provided that the District EMIS has facility to download data from the software and have got internet connection.

Development of a web enabled EMIS software depends upon availability of computers, internet connectivity and technical expertise especially at the national level (for detail comments on on-line software, please refer to a section on policy note on web-based EMIS application in subsequent section).

To reduce the time-lag, data entry through Intelligent Character Recognition (ICR) technology may be initiated on pilot basis in a few select districts as it would avoid manual data entry. This is quite possible as Ghana has only a total of 25,000 schools. The EMIS at the National level/GES may like to undertake the pilot. The formats will be required to be modified to meet the special requirements so as the software. Use of ICR as a substitute to manual data entry is expected to take less time and at the same time it would improve quality of data as it would avoid chances of human errors. If successful, the same may be extended to other districts in a phased manner. This may be treated as a medium term activity.

Prior to the initiation of data collection process, attempts should be made to engage collectively all the officials in building their capacities in the use of the software. Training materials and manuals should be provided on definitions, use, meaning, interpretation and methods and techniques of educational planning, analysis of different variables, terms, and the indicators used in the Data Capture Formats.

Section XII

GENERAL SUGGESTIONS

Data should be disseminated in both print and electronic forms as well as through internet. Access to raw and processed data should be provided to users at all levels. Across the country the data should be collected on a particular date and the record date (date of reference) should also be the same. **At present, last Friday of November is the date of reference of the EMIS data which may be changed to November 30th each year.** Each region to specify a week/fortnight during which the data will be collected across the region for which special campaigns through print and electronic media, advertisements in local newspapers and FM radio, SMS should be launched just before launching the collection of EMIs data. Private schools may be the focus of all such campaigns. The frequency of data obtained from the school may be annual.

EMIS Division at the National level located in the Ministry of Education should be strengthened adequately both in terms of manpower and equipments and possibilities be explore for their capacity building in the areas of data analysis, technical aspects of EMIS SW and use of indicators in education planning.

To compute enrolment based indicators, age-specific projected population is required at all levels, such as, district, regional and national levels. The projected population is supposed to be provided by the Ghana Statistical Services which is still to release projected child population. In the absence of projected population, districts till recently were feeling handicapped as mostly they do not have expertise in making population projections which is a technical exercise. In view of urgent requirement, as a temporary solution, the Advisory Unit on Decentralized Education Management (AUDEM) located in GES, provided EXCEL Templates, which is very simple to use. Anyone having basic computing skills can project population by using these template provided they have the basic population figures over two census years. In this direction, it is advised to strengthen Regional Directorates also who can also project district-specific population themselves for all of its districts.

Section XIII

ANALYSIS OF DATA

There are several training institutes in Ghana, such as Institute of Educational Planning and Administration (IEPA) at Cape Coast University, Ghana Institute of Management and Public Administration (GIMPA), and some institutes in University of Education which can be entrusted the task of capacity build in the areas of EMIS, educational planning and data analysis and utilization. **It is happy to observe that Advisory Unit on Decentralized Education Management is trying to coordinate these institutes to provide comprehensive training programmes**. If required, some of these institutions can be strengthened and entrusted the task of Educational Planning and Management which should meet the requirements of district, directorate and also that of the national level. Eventually, it would take care of the capacity building needs of the entire country. In addition, a few of these institutions may be encouraged to undertake studies exclusively based on EMIS.

The mission couldn't see printed regular publications based on the EMIS data either at the regional or district levels. Little data analysis is undertaken through the *Annual District Performance Report* and *Regional Education Sector Performance Report* both of which mostly presents only data and have little analysis. Whatever, the little analysis is undertaken that too is not made available in the public domain as they are in the report form and being used for internal consumption. However, extensive analysis of EMIS data in the form of tables, charts, maps etc. is undertaken at the national level which is presented in Basic Statistics and Planning Parameters for Basic Education in Ghana which is latest available for 2011/12 which is comprehensive in nature and presents all the crucial indicators separately for different types of schools. The Basic Statistics prepared by the EMIS, Ministry of Education is comprehensive in nature and impressive as it covers most of the parameters required in assessing the status of school education region-wise.

Section XIV

CAPACITY BUILDING PLAN

NUPEA would be happy to accommodate two officers from Ghana (depending upon their qualifications and background) **each year in its ongoing International Diploma in Educational Planning and Administration (IDEPA)** which has already been attended by the Officers from more than 70 countries. However, it may not be possible for the regional directorate/district level officers *(in view of large number)* to undergo such orientation. For their requirement, special capacity building programmes in the area of **educational planning with focus on EMIS and Data Analysis** can be developed by NUEPA in case any such request is received from the Ghana Government. Such capacity building exercises can be arranged either at NUEPA, New Delhi or a team of three faculty members from NUEPA may impart training in Ghana. Apart technical aspects, the following are the suggestive themes which can be exposed to officers during orientation on educational planning with emphasis on EMIS and Data Analysis:

- Educational Planning : Concept and Scope
- Types of Educational Planning
- Methodology of Planning
- Approaches to Educational Planning
- Issues involved in Planning for Education
- Educational Management Information System
- Use of Sample Survey Techniques in Education
- School Mapping: Concept and Methodology
- Micro-Level Planning: Concept and Methodology
- Stock and Flows Indicators
- Efficiency of Education System
- Concept & Measures of Inequalities in Education System
- Projection & Forecasting Techniques: Enrolment, Population and Teacher
- Projections and Scenario-Building and Simulation
- Target Setting

The EMIS Master Plan

The SPIMPR, Ministry of Education developed EMIS Master Plan: 2010-11 presenting major challenges which the present EMIS is facing in Ghana which are categorized into three areas, namely Institutional, System and Technical challenges. Subsequently with respect to each of these challenges, recommendations have been made. If implemented, it would have far reaching implications for EMIS.

During the field visits to Regional Directorates, it was informed that funds for the EMIS activities are generally not available on time in view of which the EMIS Master Plan recommends timely release of sufficient budget funds to support the Annual School Census. To further, reduce the time-lag in school data, the master plan recommends that the school census aims to produce its final data for the previous school year by end of March but how it will be made to operational is not specified. Further, the Master Plan advocates Ministry/GES's ability to improve use of data for evidence-based planning which is very much required. Various modes are suggested through which it envisages data dissemination.

With regard to systems solution, it specifies number and type of computers be made available at national, regional and district level EMIS for which it recommends dedicated budget. Last part of its recommendations focus more on database and software capacities amongst which strengthening of EMIS staff on the application software administration module with sustained training is emphasized. As a medium term solution, it further recommends that the Ministry, in collaboration with partners, needs to ensure that a web-based reporting interface for school census is developed.

The Master Plan also recommends redesigning of exiting EMIS format, adjust the data entry module and the database structure to the new information needs; pilot two regions to manage the printing, dissemination and collection of the EMIS formats, ensure that GES supplies a budget to cover the printing and transport costs for the circuit and district officers; and review the feasibility of extending this to other regions.

Further, the master plan emphasis that accurate and comprehensive data depends on the kind of data verification processes built in. To ensure coverage, it mentions an updated listing of

all schools be prepared (School Directory), for both public and private schools, It is essential to ensure complete coverage of the School Census. In this direction, it is also recommended that all questionnaires are verified for internal consistency against the knowledge of the Circuit Supervisor upon reception from the school. Some of the other significant recommendations which may have far reaching consequences for EMIS are:

- Build automated reporting modules; ensure that the reporting templates are based on information needs assessment of the Ministry, GES, districts and schools;
- EMIS Schools Profile designed for the first time in 2010/2011 should be an annual affair and ensure that the EMIS Schools Profile has its own linked website;
- Train Regional and District Statistics Officers on basic data;
- Create an online query facility for data users to produce customized tables;
- Place annual census reports on the Ministry's website; and
- Place annually a limited Excel database of key indicators of school-level aggregates online for data-manipulation by civil society, researchers and development partners.

In view of the detailed comments made in the present document, whatever is required for strengthening EMIS in Ghana has been recommended but road plan to achieve such goals has not been specified. The Ministry of Education and GES may like to re-look in to the recommendations in the light of the observations presented in this report and may also like to prepare a road map for the same which should also have time-frame for each of the activities specified. Is may also specify role of different agencies at the national, regional and district level.

Section XV

OBSERVATIONS ON POLICY NOTE ON WEB-BASED CENTRALISED DATABASE FOR EMIS

A policy note on web-based centralized database for EMIS prepared by the Ministry of Education was made available to the Mission which is found to be comprehensive in nature as it also highlights major areas of concerns which is also highlighted in the present report.

The objective of this policy note is to propose the way forward on how to establish enabling management environment for districts through the reformation of the EMIS process in Ghana. It first describes the present process of EMIS and highlights the major areas of concern which also gives an impress that the present EMIS in Ghana is highly centralized in nature. Only the EMIS team at the national level has got access to the central database to analyze the EMIS data over a period of time i.e. time-series. It also highlights absence of networking between districts, regions and HQs because of which the web-based EMIS application is being used in off-line mode in Ghana.

The policy note thereafter highlights challenges in the present EMIS which are quite similar to the areas of concerns mentioned in the present report. In addition, it also highlights problems being faced by the districts to extract the data for ADPR even though reporting module for the districts has been added to EMIS. However, population (school-age) and other similar database couldn't be connected to the EMIS database as they are on different platforms.

In order to overcome the limitations, the policy note, thereafter proposes a web-based centralized database with following as its main features:

- Central database is put in as server with a web-based interface so that each district office is able to access it to enter school census data through internet;
- Districts which have difficulty in accessing internet should come to some districts nearby where there is internet access or come to regional capitals to access the central database;
- Central database should also be equipped with reporting modules so that district offices can quickly extract required data; and
- EMIS team at the HQ maintains the central database, makes necessary adjustments on data, and gives help-desk services to districts.

The Mission is of the view that on-line web-based application for the EMIS in Ghana may not be able to succeed immediately because of the serious hardware problems and absence of technical expertise at all levels. In the first attempt, adequate hardware with necessary

software, along with external hard disks/pen drives, UPS, internet connectivity, ACs etc. should be provided to the district EMIS. All the hardware provided to the EMIS team should have an annual maintenance contract in the absence of which many of the computers across Ghana are just lying unused. The present EMIS has serious difficulties mainly because of the hardware problems and software limitations. As suggested above, the Mission is of the view that at present there is no alternative to further strengthen the existing EMIS by providing additional features such as, reporting module for both district and regional levels. The existing EMIS software has limitations because of which EMIS team at the national level has to visit district twice a year; all such limitations in the application should be removed on the priority basis.

The EMIS team at the national level completely depends on the UIS and if the web-based EMIS is implemented as suggested in the policy note, the EMIS team at the national level would have to totally depend on outside venders and consultants. On-line application may succeed after the programmers at the national level engaged in the EMIS are able to write the software themselves, and have software maintenance capabilities. The policy note has given example of such experiments and DISE in India is also said to have adopted such system which is factually not correct. It may be corrected that DISE is an off-line system and software is developed in-house at NUEPA. DISE software is installed in more than 600 districts and data entry is also taking place at this level which in turn is transmitted to the State EMIS either through the CD or e-mail. By using another SW at state level, the State EMIS then merge district data into the state database which is then submitted to the national level through CD with proper certification by the State Project Director. All this could happen because of the strong technical team available at the national level which can modify the SW as its own and does not depends upon outside software consultants/programmers for day-to-day modifications.

In view of the above observations, it is suggested that the entire exercise of strengthening EMIS in Ghana be undertaken in a phased manner, such as:

(i) EMIS units across Ghana be strengthened optimally which may be considered as a short term activity;

(ii) Second priority be given to internet connectivity for which NITA may be approached to provide hassle free internet at all levels;

(iii) UIS be approached to suitably remove all limitations in the existing EMIS software which may be treated as the top most priority; and

(iv) Develop capacity building plan for all officers not only to take care technical and SW aspects but also in the area of data analysis and its use in planning at district and regional levels.

In the short term, the goal should be to improve the present EMIS application but as a long term goal, when adequate HWs are made available across Ghana and professionals are also available for EMIS, one can go for web-based data processing for EMIS. In view of the problems that the District EMIS is facing with regard to database back up , time-series database, visits of national EMIS twice a year to districts and absence of reporting module, the idea of web-based structure mooted in the policy note, if implemented can resolve many of these limitations. In the light of the above, it is recommended that proposed policy plan of action may be implemented in one of the regions on pilot basis. If successful, the same may be upscale to remaining regions. **In the mean time, possibilities may be explored to provide ready to use tables on-line for which a dedicated web page be developed.** The webpage so developed may also have provision for downloading of raw data which can be used by researchers for empirical studies. The districts may also download and use database through their EMIS software. Ready-to-use tables which are required to develop ADPR can also be made available. Since the EMIS unit at the national level is having times-series database, the same may also be made available on-line so that time-series reports can also be generated. For developing such a webpage, **rather than hiring a consultant, computer professionals may be appointed / hired who should be exclusively available for development and maintenance of webpage so developed.** The webpage may be developed in Dot-Net/SQL/PHP.

Section XVI

SUMMING-UP

In view of the above, the following are the areas where NUEPA, if approached can provide its expertise and technical support. Exact modalities would however be decided by the Vice-Chancellor, NUEPA upon receiving such request from the Republic of Ghana Government. For better understanding of Ghana's need and possible NUEPA's support to capacity-building exercises in the areas of educational planning with focus on EMIS and data analysis, Vice-Chancellor, NUEPA, New Delhi (India) may be approached to depute its faculty members to Accra for detailed discussion with the Director General, Ghana Education Service and Officers of the Ministry of Education, Ghana. In addition, all the officers from Ghana who has undergone six months International Diploma in Educational Planning and Administration (IDEPA) at NUEPA, New Delhi may be involved in EMIS and data analysis. The **Indo-African Institute of Educational Planning** (IAIEPA) is coming up soon in Burundi and the Ghana Government may like to approach it in due course of time for capacity building of its EMIS and other officers.

Possible Support from NUEPA for Strengthening EMIS in Ghana

Sl. No.	Activity	Possible Support from NUEPA	Nature of the Activity
1	The Department of Planning may explore possibility in bringing out Regional Report Cards (PRCs) annually which may present information on all aspects of school education.	NUEPA may provide expertise for bringing out Regional Report Cards and may depute one technical expert to Ghana.	Bringing out Provincial Report Cards may be treated as the short term goal
2	GES/MoE may explore possibility to bring out District Report Cards	NUEPA may provide expertise for bringing out District Report Cards	Mid-term
3	A team of five officers at the National level in the MoE/GES may be constituted to prepare and undertake analysis of EMIS data on annul basis which should be published in the form of **School Education in Ghana: Analytical Report.** The team may be intensively oriented and exposed to data analysis tools and techniques	One week workshop may be organized at NUEPA, New Delhi upon receiving such request from the Government Republic of Ghana.	Short-term
4	Two officers from Ghana each year may be nominated for International Diploma in Educational Planning and Administration (IDEPA)	NUPEA would accommodate Ghana officers depending upon their qualifications and background.	Short-term
5	Special capacity building programmes for Regional/District level officers in the area of educational planning with focus on EMIS and Data Analysis should be arranged	May be developed by NUEPA in case any such request is received from Government of Republic of Ghana.	Mid-term
6	School Profiles of individual school be made available on-line for which a dedicated web-page may be developed which may also provide users to download raw school-specific data for further intensive use. This will promote demand for EMIS data.	NUEPA, if approached will provide technical knowhow of developing such a webpage.	Mid-term

Annexure I

Ghana Education Service
Terms of Reference

Technical review of EMIS and Statistical Analysis in Ghana

1. Background

A Ghanaian delegation headed by Mr. Stephen Adu, Acting Deputy Director General of the Ghana Education Service (GES) visited in January 2012 the National University of Educational Planning and Administration (NUEPA) in India, which is one of the most prominent institutes for educational planning and administration in the World. Vice-Chancellor and the faculty of NUEPA, especially Prof. Arun C Mehta kindly offered that they can support the Ministry of Education (MOE) in Ghana and the GES to strengthen its performance on educational statistics analysis, as well as to strengthen Ghana Education Management Information System (EMIS) itself.

A presentation on District Information System for Education (DICE) was made for the delegation. NUEPA has successfully developed DISE which is in operational in all districts of the country. District and State Report Cards as well as Analytical Reports based on DISE data has become the regular source of data on elementary education in India. Even school report cards have also been made available on internet (http://schoolreportcards.in). The analysis of DISE data produced in the form of Analytical Report is very impressive. DISE has completely eliminated time-lag in availability of educational statistics in India and there are no more data gaps.

The expertise that NUEPA has developed over time in the areas of EMIS and data analysis can be of great help in strengthening EMIS in Ghana. It can also be of great help in designing capacity development of EMIS officers in the MOE as well as planning and statistics officers of the GES in the areas of EMIS and data analysis. In view of a relatively small number of schools in Ghana and the existence of fairly developed EMIS, intensive technical support could bring about tangible improvements in both EMIS and data analysis in a short span.

Meanwhile, the MOE and the GES are currently seeking a possible intervention to upgrade the existing EMIS to enable its data entry and provision of data though web-based technologies in view of rationalizing the data collection process and the arrangement of management information provision especially to district education offices. More details can be referred in the attached draft policy note. The MOE and the GES has therefore requested the JICA Expert to support them by inviting an EMIS/DISE expert from the NUEPA (Prof. Arun C Mehta) to provide necessary technical advices to improve the EMIS in Ghana.

2. Key tasks

The NUEPA Expert is expected to conduct the following tasks:

- To review the system setting, current processes and outputs of the EMIS in Ghana;
- To study and understand the current situation of the education sector in Ghana with a particular focus on the EMIS and monitoring framework and indicators set out in the government's national strategies and plans;
- To review the existing analysis indicators as well as procedures for educational statistics analysis; and,
- To provide technical advices based on findings from the above studies to improve the EMIS in Ghana particularly focusing on the following points:
- What need to be considered on system designing for enabling the upgraded EMIS described in the draft policy note based on lessons learnt from Indian experiences;

- What are necessary steps to be taken for the above upgrading exercises;
- What need to be improved in terms of contents of the School Census Report and any additional modes of publications could be suggested to promote use of EMIS data; and,
- Organizational arrangements for capacity development on data analysis skills of MOE and GES officers as well as on facilitating more use of data for educational planning and management.

3. Expected output

The expert from NUEPA will develop a technical advisory report to strengthen the EMIS in Ghana and capacity on educational statistics analysis. The proposal should include situation analysis on the EMIS and educational statistics analysis in Ghana, identifications of the areas that need further upgrading in terms of both EMIS and educational statistics analysis, specific technical advices on the above-mentioned four points.

4. Schedule

It is expected that the EMIS Expert from NUEPA conducts the consultancy on mutually agreeable dates preferably in August/September 2012. The expert will be required to visit Ghana for about 10 days. All the above expected outputs will be submitted to Dr. Dominic Pealore and Mr. Daisuke Kanazawa through e-mail within one month from the date of visit.

5. Payment

Airfare for a return economy class ticket between Delhi and Accra, remuneration, DSA for the duration of the trip to Ghana, and other necessary expenses such as visa fees and other transportation costs will be paid by Japan International Cooperation Agency (JICA) according to its standard. Remuneration will be paid at submission of the final outputs.

6. Contact information

1) Prof. R. Govinda
Vice Chancellor
NUEPA
17-B, Sri Aurobindo Marg, New Delhi, India, 110016.
Tel: (91)-11- 2-696-3038
Fax: 91-11-2-685-3041
E-Mail: rgovinda@nuepa.org

2) Dr. Arun C. Mehta
Professor and Head
Department of EMIS
NUEPA
17-B, Sri Aurobindo Marg, New Delhi, India, 110016.
Tel: (91)-11- 2-685-3037 mobile: 00-9868184981
Fax: 91-11-2-685-3041
E-Mail: arunmehta@nuepa.org/acmehta100@gmail.com

3) Dr. Dominic Pealore
Director, SRIMPR, MoE
Tel: +233-244610466
E-Mail: dpealore@hotmail.com

4) Mr. Daisuke Kanazawa
Advisor to GES on Decentralised Education Management/JICA Expert
Tel: +233-246836329
E-Mail: kanazawad-gh@hotmail.co.jp (end)

Annexure II

GHANA EDUCATION SERVICE HEAD QTRS

Technical Review of EMIS and Statistical Analysis in Ghana

(27th August to 5th September 2012)

Agenda

Day	Date	Region	Station	Remarks
1	Sunday 26th August 2012	Arrival in Ghana		
2	Monday 27th August, 2012	Greater Accra	1. Headquarters – Formalities - Director General of GES - Mr. Adu - Dr. Pealore - Chief Director of MOE 2. EMIS Team Presentation on: - Annual School Census and its reporting - System details of EMIS - EMIS Master Plan 3. NITA Presentation on DA network.	
3	Tuesday 28th August, 2012	Greater Accra	1. Regional Office of GAR 2. Accra MEO 3. Dangme East	
4	Wednesday 29th August, 2012	Eastern	1. Regional Education Office 2. East Akim 3. Afram Plains	Night halt at Nkawkaw
5	Thursday 30th August, 2012	Ashanti	1. Regional Education Office 2. Kumasi MEO 3. Amansie West	Night halt at Kumasi
6	Friday 31st August, 2012	Central	1. Regional Education Office 2. Cape Coast MEO 3. Upper Denkyira West MEO	Night halt at Cape Coast
7	Saturday 1st September, 2012	Report writing		
8	Sunday 2nd September, 2012	Report writing		
9	Monday 3rd September, 2012	Greater Accra	Report writing	
10	Tuesday 4th September, 2012	Greater Accra	Presentation of preliminary observations to - Chief Director of MOE - Director General of GES - Mr. Adu - Dr. Pealore - EMIS Team - NITA - USAID	
11	Wednesday 5th September, 2012	Departure		

Apparent survival rate upto grade V	59.0	Retention rate		A & N ISLANDS

Enrolment* 2005-06					Repe--tition rate	Drop out rate
Grade	Total	Girls enrolment	With disability			
			Boys	Girls		
I	905,290	447,400	3,200	2,447	16.3	11.7
II	705,309	346,047	2,354	1,839	11.5	3.6
III	661,741	318,436	2,322	1,707	12.2	7.0
IV	603,743	290,164	2,308	1,556	10.7	7.0
V	534,475	255,692	1,906	1,375	7.8	20.5
VI	515,072	240,093	1,890	1,099	9.3	18.7
VII	446,378	206,067	1,480	1,035	7.5	10.5
VIII	435,502	197,687	1,583	1,073	10.8	
Pry (I-V)	3,410,558	1,657,739	12,090	8,924	**12.1**	**9.7**
U.Pry.	1,396,952	643,847	4,953	3,207		

SC/ST/OBC enrolment	Primary	U. Pry.
% SC enrolment	14.3	13.4
% SC girls enr.	48.9	46.0
% ST enrolment	34.1	28.9
% ST girls enr.	48.2	45.8
% OBC enr.	45.3	49.4
% OBC girls enr.	48.9	46.1

School category	Average classrooms
Pry. only	2.3
Pry + U.Pry	3.7
P+UP+Sec	9.2
U. Pry. only	2.4
U.P. + Sec	4.7
All schools	2.7

Average number of days	
Number of instructional days	201
Days spent on non-teaching assignments	16

Enrolment ratio	
GER Primary	131.48
GER U. Pry.	90.77
NER Primary	
NER U. Pry.	57.99

Classrooms/Other rooms					Other rooms
School category	Total classrooms	% good condition	% minor repair	% major repair	
Pry. only	82,317	64.1	22.5	13.3	27,125
Pry + U.Pry	11,983	79.8	14.2	6.0	3,077
P+UP+Sec	10,431	91.5	6.9	1.6	3,106
U. Pry. only	22,023	73.3	17.4	9.4	8,547
U.P. + Sec	9,499	71.6	17.9	10.5	3,985

Number of schools by type of building*					
Pucca	Partially pucca	Kuchcha	Tent	Multiple type	No building
19,488	5,508	591	48	3,157	4,566
1,580	396	77	9	317	495
733	121	14	0	81	52
5,077	780	68	7	573	2,383
1,091	234	22	2	220	300

Teachers by educational qualification (other than para teachers)								
School category	Below secondary	Secondary	Higher secondary	Graduate	Post graduate	M. Phil.	Others	No response
Primary only	1,843	3,258	28,189	15,279	16,169	129	36	1,588
Primary with Upper Primary	302	571	4,032	3,888	3,805	54	13	699
Primary with Upper P. & Sec/Higher	159	342	1,511	3,254	4,234	55	10	1,207
Upper Primary only	221	592	4,367	8,465	11,406	77	14	464
Upper Primary with Sec./Higher Sec.	123	230	1,108	2,825	5,139	67	9	362
Para teachers	804	1,192	16,563	12,431	11,513	137	29	164

Teachers by gender & caste		Regular teachers			Para teachers			SC teachers		ST teachers	
School category	Total	Male	Female	No res	Male	Female	No res	Male	Female	Male	Female
Primary only	95,258	47,393	17,715	1,383	18,497	10,252	18	6,325	2,161	15,386	4,837
Primary + U.Pry	16,846	7,141	5,687	536	2,057	1,418	7	799	470	1,490	953
P + UP+Sec/HS	11,625	4,746	5,032	994	383	466	4	456	299	413	338
Upper Pry. only	33,498	20,055	5,182	369	5,136	2,752	4	2,777	594	5,858	1,641
U.P. + Sec/HS	11,583	6,955	2,580	328	1,249	471	0	851	273	1,275	385

Enrolment by medium of instructions*						% Schools received	
School category	Total enrolment*	Hindi	English	Others	Gujarati	TLM Grant	SD Grant
Primary only	2951929	2901903	8997	36869	4160	76.3	75.1

STATE ELEMENTARY EDUCATION REPORT CARD : 2005-06

Total districts	2	Dist. covered	2	State code	35	A & N ISLANDS			
Primary cycle	1 - 5	Upper primary cycle	6 - 8	Ratio of P. to U.P. schools/sections	2.20				
Initialised entities				Number of schools	287				
No. of blocks/taluks	9	Number of CRC's	40	Number of villages	242				
Basic data : 2001									
Total population in (000's)	356	% Urban population	32.70	% 0 - 6 Population	12.57				
Decadal growth rate	26.94	Sex ratio	846	% SC population	0.00	% ST population	8.30		
Overall literacy rate	81.3	Male literacy rate	86.3	Female literacy rate	75.2				

Area (Sq. Km) 8,249

Key data: Elementary education

	Primary only	Primary with Upper Primary	Prim. with U. P. & Sec./H.	Upper Primary only	U. P. with Sec./H. Sec.	No response	Total
Government schools	160	47	54	2	15	6	284
Private schools	1	1	1	0	0	0	3
Govt. schools: Rural	154	43	43	2	12	0	254
Private schools: Rural	1	1	0	0	0	0	2
Enrolment in Govt. sch.	11,726	9,955	21,713	400	3,167	0	46,961
Enrolment in Pvt. sch.	64	645	628	0	0	0	1,337
Enr. in Govt. sch. : Rural	9,933	8,897	13,570	400	1,843	0	34,643
Enr. in Pvt. sch. : Rural	64	645	0	0	0	0	709
Government teachers	669	644	1,383	28	183	0	2,907
Private teachers	8	24	28	0	0	0	60

Performance indicators	Primary only		Pry. with U.Pry		P+UP+Sec/HS		Upper P. only		U.P. + Sec/HS		All Schools	
	04-05	05-06	04-05	05-06	04-05	05-06	04-05	05-06	04-05	05-06	04-05	05-06
% Single-classroom schools		5.0		2.1		0.0		0.0		0.0		3.1
% Single-teacher schools		9.9		2.1		0.0		0.0		0.0		5.9
% Schools with SCR > 60		0.0		4.2		0.0		0.0		0.0		0.7
% Schools with pre-primary		22.4		35.4		38.2		0.0		0.0		26.5
% Schools with common toilets		37.9		29.2		40.0		0.0		40.0		35.9
% Schools with girls toilets		55.9		62.5		90.9		50.0		80.0		63.8
% Sch. with drinking water facility		79.5		81.3		98.2		100.0		80.0		81.9
% Schools with ramp		6.2		2.1		7.3		0.0		6.7		5.6
% Enr. in single-teacher schools		2.8		0.1		0.0		0.0		0.0		0.7
% No female tch. schools (tch>=2)		24.2		6.3		1.8		0.0		6.7		15.3
% Enr. in schools without building		0.6		0.1		0.0		0.0		1.9		0.3
%Enr. in sch. without blackboard		10.8		20.4		16.8		0.0		3.1		15.1
Avg. no. of teachers per school		4.2		13.9		25.7		14.0		12.2		10.3
% Enrolment in Govt. schools		99.5		93.9		97.2		100.0		100.0		97.2
% Girls enrolment		48.9		48.2		48.1		49.5		47.6		48.3
Pupil-teacher ratio (PTR)		17		16		16		14		17		16
Student-classroom ratio (SCR)		19		25		22		31		19		22
% Schools with <=50 students		53.4		8.3		0.0		0.0		20.0		34.5
% Schools with PTR > 100		0.6		0.0		0.0		0.0		0.0		0.3
% Female teachers		52.2		49.7		54.0		42.9		51.4		52.4
% Schools established since 1994		25.5		8.3		3.6		0.0		13.3		17.1

Incentives: Number of beneficiaries (Previous academic year)

Type of Incentive	Primary		Upper Primary	
	Boys	Girls	Boys	Girls
Text books	9657	10541	5625	6019
Uniform	1590	1417	1005	866
Attendance	428	374	351	280
Stationery	1036	954	799	653

Examination results (Previous academic year)

	V Boys	V Girls	VIII Boys	VIII Girls
% Passed	98.49	99.20	92.02	93.52
% Passed with > 60%	32.59	37.00	14.66	18.27

Transition rate P. to U.P.		Total grossness	
GPI : Primary grades	0.97	Primary	21.81
Enrolment in pre-primary	2,030	U. Primary	33.57

DISTRICT ELEMENTARY EDUCATION REPORT CARD : 2005-06

District	ANDAMANS	State	ANDAMAN & NICOBAR ISLANDS	Primary cycle	1 - 5	U. primary cycle	6 - 8

Data reported from

Number of blocks/taluks	6	Number of Clusters	32	Number of villages	195	Number of schools	243

Basic Data, 2001

Total population (in 000's)	314	% 0 - 6 population	12.5	% Urban population	37.0	Sex ratio	844	Sex ratio 0-6	960
Decadal growth rate	30.1	% SC population	na	% ST population	0.9	Overall literacy	82.5	Female literacy	76.6

Key data: Elementary Education

School category	Total schools*		Rural schools*		Total enrolment*		Rural enrolment*		Teachers*	
	Govt.	Private	Govt.	Private	Govt.	Private	Govt	Private	Govt.	Private
Primary only	140	1	134	1	10,215	64	8,422	64	600	8
Primary with upper primary	37	1	33	1	8,634	645	7,576	645	538	24
Primary with upper primary & sec/higher sec.	47	1	36	0	20,247	628	12,104	0	1,297	28
Upper primary only	1	0	1	0	218	0	218	0	13	0
Upper primary with sec./higher secondary	11	0	8	0	2,725	0	1,401	0	152	0
No response in school category	4	0	0	0	0	0	0	0	0	0

Performance indicators	School category					Enrolment*					
	P. only	P + UP	P+sec/hs	U.P. only	UP+sec	Grade	2001-02	2002-03	2003-04	2004-05	2005-06
% Single classroom schools	5.0	0.0	0.0	0.0	0.0	I					5,083
% Single teacher schools	9.2	2.6	0.0	0.0	0.0	II					5,033
% Schools with SCR > 60	0.0	2.6	0.0	0.0	0.0	III					5,565
% Schools with pre-primary sections	22.7	42.1	37.5	0.0	9.1	IV					5,188
% Schools with common toilets	40.4	34.2	37.5	0.0	54.5	V					5,306
% Schools with girls toilets	60.3	78.9	97.9	100.0	100.0	VI					5,659
% Schools with drinking water facility	85.1	92.1	100.0	100.0	100.0	VII					5,966
% Schools with blackboard	87.2	86.8	85.4	100.0	100.0	VIII					5,576
% Enrolment in Govt. schools	99.4	93.0	97.0	100.0	100.0	Total Pr.					26,175
% Enrolment in single-teacher schools	2.7	0.1	0.0	0.0	0.0	Total U.P					17,201
% No female teacher schools (tch>=2)	23.4	5.3	0.0	0.0	0.0						
% Enrolment in schools without building	0.4	0.1	0.0	0.0	0.0						
%Enrolment in schools without blackboard	9.6	18.1	16.1	0.0	0.0						

Transition rate		GER / NER	2003-04	2004-05	2005-06
Prim. to U. Prim					
Primary Level		GER (Primary)			71.4
Retention rate		NER (Primary)			56.3
		GER(U.Prim)			76.3
GPI	0.98	NER(U.Prim)			46.0

SC/ST Enrolment	Primary	Upper primary	OBC Enrolment	Primary	U. Primary
% SC enrolment	0.046	0.006	% OBC Enrolment	0.000	0.000
% SC girls to SC enrolment	58.3	0.0			
% ST enrolment	0.963	0.866	% OBC girls to OBC Enrolment	0.0	0.0
% ST girls to ST enrolment	53.6	47.0			

Flow rates			
Grade	R.R.	D.O.R.	P.R.
I			
II			
III			
IV			
V			
I - V			
VI			
VII			
VIII		#	#

Enrolment of children	All	With disability	
Grade	Girls	Boys	Girls
I	2,514	25	21
II	2,515	29	17
III	2,774	34	33
IV	2,561	36	18
V	2,583	32	23
VI	2,666	44	22
VII	2,834	28	19
VIII	2,624	19	23
Total	21,071	247	176

Indicators	School category				
	P. only	P + UP	P+sec/hs	U.P. only	UP+sec
% Girls	49.2	48.2	48.4	49.5	48.7
Pupil-teacher ratio (PTR)	17	17	16	17	18
Student-classroom ratio (SCR)	19	25	22	36	20
% Schools with <= 50 students	51.8	7.9	0.0	0.0	18.2
% Schools with PTR > 100	0.0	0.0	0.0	0.0	0.0
% Female teachers	52.8	51.4	51.1	46.2	53.3
% Schools established since 1995	24.1	2.6	2.1	0.0	18.2

Classrooms/Other rooms	Classrooms					No. of schools by type of building*					
School category	Total classrooms	% good condition	% minor repairs	% major repairs	Other rooms	Pucca	Partially Pucca	Kuccha	Tent	Multiple Type	No Building
Primary only	541	51.6	29.6	18.9	201	70	33	22	0	14	2
Primary with upper primary	377	38.5	40.2	21.3	113	10	0	2	0	22	2
Primary with U.P. & sec/higher	950	64.5	30.3	5.2	360	25	1	0	0	21	0
Upper primary only	6	100.0	0.0	0.0	0	1	0	0	0	0	0
Upper primary with sec./higher sec	136	54.4	26.5	19.1	74	8	1	0	0	2	0

Position of teachers by educational qualification (other than para teacher)

School category	Below secondary	Secondary	Higher secondary	Graduate	Post graduate	M. Phil.	Others	No response
Primary only	12	56	389	114	28	1	1	5
Primary with upper primary	0	26	207	223	82	1	0	14
Primary with Upper primary & sec/higher	10	71	351	564	199	7	20	95
Upper primary only	0	0	0	8	1	0	0	0
Upper primary with sec./higher secondary	2	11	16	81	36	0	2	2
Para-teachers	1	0	7	8	8	0	0	0

Examination results (Previous academic year)		
Terminal grade	% Passed	% Passed with >60%
V boys	98.7	34.5
V girls	99.6	38.2
VIII boys	92.4	14.7
VIII girls	93.6	17.9

Gender and caste distribution of teachers*			Regular teachers				Para-teachers			SC teachers		ST teachers		%Teachers recvd. in-service training	
School category	Avg. No. of Tchs.	Total	Male	Female	No res	Male	Female	No res	Male	Female	Male	Female	Male	Female
Primary only	4.3	608	283	319	4	0	2	0	0	2	3	7	41.7	32.7
Primary with upper prim.	14.8	562	258	285	10	5	4	0	0	2	3	2	24.0	24.6
Prim.with U.P.&Sec/H.S	27.6	1325	566	673	78	4	4	0	1	2	4	7	18.4	13.9
Upper Primary only	13.0	13	5	4	0	2	2	0	0	0	0	0	28.6	50.0
U. Primary with Sec./H.S.	13.8	152	69	79	2	0	2	0	0	0	1	1	18.8	4.9

Enrolment by medium of instructions	% Total Grossness	Primary	Upper Primary
		21.1	39.7

Category	Hindi	Bengali	English	Tamil	Telugu
P. only	3026	3490	2774	530	384
P + UP	3311	4044	1341	298	284
P+sec/hs	8123	3627	5944	2340	841
U.P. only	137	81	0	0	0
UP+sec	1115	276	740	165	429

% Schools recvd. (Previous year)		Incentives : Number of beneficiaries (Previous academic year)				
School dev. grant	T L M grant	Incentive Type	Primary		Upper primary	
			Boys	Girls	Boys	Girls
90.1	75.2	Text books	8961	9936	4985	5521
78.9	65.8	Uniform	928	847	457	419
85.4	60.4	Attendance	18	16	6	8
100.0	100.0	Stationery	278	292	165	165
72.7	45.5					

= not applicable na = not available * Some totals may not match due to no response in classificatory data items

Status of Educational Management Information System in Iraq and Suggestions for Improvement

REPORT

Submitted to

UNESCO Iraq (in Jordan)

By

Dr Arun C. Mehta

Professor & Head

Department of Educational Management Information System

National University of Educational Planning & Administration (NUEPA)

17-B, Sri Aurobindo Marg, New Delhi – 110016 (INDIA)

Website: www. nuepa.org

Status of Educational Management Information System in Iraq and Suggestions for Improvement[•]

BACKGROUND

Like other countries, Iraq has a tradition of collecting data on different aspects of education and has developed a set of about seven formats which are in use. Through these formats, information is collected from early-childhood (Kindergarten) education to higher education. During the recent war, most of the records have been destroyed and the country remains practically with rudimentary data whose quality is often questioned. In the absence of reliable and timely data, UNICEF conducted a nation-wide survey on school statistics in 2003-04 to collect first hand information major finding of which were published in 2005. Information about number of schools, enrolment, repetition rate etc. was collected through the survey. Since this was only one time activity, it will not be repeated and hence there is a strong need to collect, analyze and assimilate educational statistics as well as to strengthen the EMIS in Iraq.

During the presentations in the Workshop on EMIS and Education Statistics jointly organized by the UNESCO and UNICEF, the participating officers highlighted a number of limitations in the present information system with reference to school education in Iraq some of which are briefly presented below:

- Lack of understanding of the basic concepts, standards, terms and definitions of different educational indicators;
- Lack of capacity building exercises at different levels;

[•] Prepared by Dr. Arun C. Mehta, UNESCO Consultant (NIEPA, New Delhi, India) for the Workshop on EMIS and Educational Statistics for the Officers of Iraq, Dead Sea, Amman, Jordan, 03 to 15 April, 2006

- The respondent, Principal/Head Master do not understand the importance of collection of information on school education and do not correctly know filling up of the statistical formats;
- Non-availability of tools for data storage, preservation and retrieval;
- Difficulty in linkages and coordination and communication: Lack of communication between lower and higher levels of administration;
- Inadequate staff for EMIS work;
- Collection of data from the remote schools is a problem in view of the alarming security and restricted mobility;
- The officers involved in EMIS lack practical experience and do not understand the importance of data collection and its use in planning;
- There is also lack of understanding about the techniques of planning in perspective (medium and long-term planning);
- Lack of computers at lower levels;
- Planning and statistics staff have little or no experience in use of computers;
- Those who collect data have no role in planning and implementation of educational programmes;
- Lack of strong feedback mechanism;
- Late supply of filled-in formats by the schools; etc.

The Data Capture Formats (DCF) are developed at the national level in the Ministry of Education and are provided to all the Directorates. The Directorates distribute the DCF to all the schools through the district administration. The School Principal is the respondent and is responsible to fill and supply the completed data collection instruments directly to the Directorate. The frequency of data collection is annual but because of war, statistics for 2004 and 2005 could not be generated. The Directorates have adequate computer hardware and software but data entry hardly takes place at that level. However, the Directorate is required to check the completed formats and pass it on to the Ministry of Education for data entry. The data entry in the MOE is handled by its Computer

Centre. The district administration is not playing any role so far collection and dissemination of school statistics is concerned. It may also be noted that only big directorates have district as a unit of administration but the same is not true in case of the small directorates. Baghdad has six directorates due to its relatively large size. After the completion of data, the Planning Department of the MOE uses and disseminates the statistics. Use of Computers is sporadic and highly limited in the Computer Centre. EMIS software has not been installed so far impeding seriously the scientific collection, assimilation, collation and analysis of data.

In one of the presentations during the workshop, it was mentioned that UNESCO has developed EMIS software and the same would be made operational soon. But not much detail was provided and the software for strengthening of EMIS in Iraq was also not demonstrated. Instead, EMIS software used in two other countries (Syria and Sudan) were explained. In the light of the above, and in absence of EMIS software for Iraq, the following points may be considered while initiating the process of strengthening EMIS in Iraq which are based upon the successful implementation of computerized EMIS in India and other Asian countries such as Thailand, Myanmar, Viet Nam, etc.

SUGGESTIONS FOR IMPROVEMENT

PLANNING FOR STRENGTHENING EMIS

- While planning for the strengthening EMIS and developing software for it, successful experiments in the neighbouring region should be explored and reviewed.
- Efforts should be made to strengthen Directorates of Education in all the Governorates. Similarly, Computer Centre (EMIS Unit at the national level) at the MOE level should also be strengthened adequately both in terms of manpower and equipments.

- Initially, an EMIS Unit in all the Directorates should be established with at least one System Analyst, one Computer Programmer and one Data Entry Operator. Later, similar units should also be established at the district level. The EMIS unit in the Directorate should be provided all the modern computer hardware and software exclusively for the work relating to EMIS. It should also be provided Internet Connection. However, development of a web enabled EMIS software should be decided in view of the present availability of computers and internet connectivity. The software so developed should be flexible for any eventual modifications.

- The strengthening of EMIS should have an element of Sample checking of data (on 5 per cent basis) for which agencies outside the Directorate may be entrusted the task. Formats for sample checking and procedure for drawing sample be specifically outlined and developed.

- The EMIS package should have a strong element of dissemination. Without dissemination, data is unlikely to be utilized optimally and if this is so, data quality will be highly sub-standard and it could hardly be improved. Data should be disseminated in both print and electronic forms as well as through internet and in Compact Disk (CD). Access to raw and processed data should be provided to users at all levels.

- The MOE should develop a plan and log-frame for regular and timely publication of data highlighting clearly types of publication, their coverage and the level at which data will be disseminated. It should not be handled in ad-hoc manner. The Governorates should also be given some freedom and autonomy to bring their own publications containing district and sub-district level data. Other publications such as Governorate Report Cards and District-level Data Sheets are important possibilities for wider dissemination of data at sub-national and grassroots level. Cards such as these need to be designed in such manners that they not reflect progress towards achieving the EFA goals but also provide a clear insight as to the

emerging realities with respect to the planning and management of basic education in Iraq.

- Prior to the initiation of data collection process, attempts should be made to engage collectively all the officials in building their capacities in the use of the software. Training materials and manuals should be provided on definitions, use, meaning, interpretation and methods and techniques of educational planning, analysis of different variables, terms, and the indicators used in the Data Capture Formats.
- As the data respondents are primarily school headmasters. They also need training to better understand and comprehend the importance of EMIS and the ways and means for completing the several instructions of data collection.
- The EMIS so developed should ensure flow of information- bottom to the top and vice-versa. However, for ensuring the quality of data at this level it is an imperative to organize periodic meetings and discussion with all the possible stakeholders of educational database.

DATA CAPTURE FORMATS (DCF)

- Revise and re-look into the existing formats. The Data Capture Formats should be developed in close coordination and consultation with stakeholders following participatory processes. The Directorate of Education in different Governorates should play the lead role in this direction. Educational Planners, Policy Makers, Administrators etc. should also be consulted. Pilot testing of formats should be made before the finalization of the Data Capture Formats.

- The format should contain only core variables which are common to all the Governorates and it should be coded scientifically.

- Efforts should be made to involve the community in the data collection work at the lowest, village level. It will also help in improving the quality of data. Every school covered under EMIS should display by any distinct means key indicators on regular/daily basis.

FLOW OF INFORMATION

- One of the important limitations in the existing system is that information flow only in one direction from lower to the top level. Hardly, any feedback is provided to schools – the basic unit of data collection. Similarly, the Directorates, districts and sub-districts should also be provided feedback. At each of these levels accountability should be ensured for timely and correct supply of data.

- As of now data is collected from school and verification and data checking are carried out at the Directorate which is then passes the filled-in formats to the MOE for data feeding. In view of maintaining consistency, the formats are returned to the Directorate which in turn sends them to the lower level for necessary corrections. This is highly centralized and time consuming procedure and needs to be decentralized to the extent possible. It is recommended that Governorate level administration should oversee the data entry and the district administration should be strengthened to take charge of EMIS related tasks.

- Districts should be considered and should be reorganized as administrative units for the use of EMIS and for planning the school education. All data and information should be analyzed at district and sub-district levels. District as a unit of planning in a decentralized and participatory planning mode is highly recommended.

- Across the country the data should be collected on a particular date and the record date (date of reference) should also be the same. The

frequency of data obtained from the school may be annual but a few monitoring variables may be identified on which information can be collected bi-annually or quarterly.

COMPUTERISATION AND DEVELOPMENT OF SOFTWARE

- Process of computerized EMIS across the country should be initiated in a decentralized mode for which comprehensive planning covering all the administrative, non-administrative and technical aspects concerning EMIS should be covered.

- By using the powerful database management software, such as, Oracle, software should be developed on a priority basis. The software so designed should have pre-defined codes presented in a drop-down menu.

- The software so designed should be menu driven and user friendly and by supported by a user manual. If connectivity available, EMIS group of users should be formed to share problems of common nature. The EMIS manager at the MOE level will respond on-line to queries of the users.

- The software should have all necessary modules. Top most priority should be given to built-in report generation at all levels. It should have internal data consistency check, graphic, analyzer, report, data feeding and other modules. The schools containing inconsistent data should be highlighted.

- The software should have provision to add governorate–specific variables as supplementary variables. Not only it should facilitate data feeding but it should also support report generation. This will help Governorate to add variables as per their requirements.

- Initially data feeding can be undertaken at the Governorate level in the Directorates. The concerned District and sub-district level officers, should

be made available at the time of data feeding will ensure on-line validation of data.

- One of the important activities of EMIS is the transmission of data from the lower to the higher and the highest level. If the computers are installed at the lowest possible level, such as school, then the software should take care of automatic transmission of data. If not, alternative mode of transmission should be explored. As the data entry takes place at the Governorate level, data can be transmitted either through a CD or an email. In view of small number of schools, it may not be difficult to transmit the data through the emails in the compressed/zip format.

Development of a Framework for NFE (AES) MIS in Southern Sudan

Mission Report

March 22nd to April 09, 200

Prof. Arun C Mehta

NUEPA, New Delhi (India)

Juba Antenna Office
UNOCHA Compound
JUBA, South Sudan

CONTENTS

Annexure

Abbreviations

AED	Academy for Educational Development
AES	Alternative Education System
ALP	Accelerated Learning Programmes
BALP	Basic Adult Literacy Programme
CGS	Community based Girls Schools
DCF	Data Capture Format
EFA	Education for All
EMIS	Educational Management Information System
GER	Gross Enrolment Ratio
GoSS	Government of Southern Sudan
ICT	Information and Communication Technology
IEC	Intensive English Course
IRI	Interactive Radio Instruction
LIFE	Literacy Initiative for Empowerment
MIS	Management Information System
MoEST	Ministry of Education, Science and Technology
NER	Net Enrolment Ratio
NFE	Non-Formal Education
PES	Post Enumeration Survey
UNESCO	United Nations Educational, Scientific Cultural Organization
UNFPA	United Nations Fund for Population Activities
UNICEF	United Nations Children's Fund
UIS	UNESCO Institute for Statistics
USAID	United States Agency for International Development
WFP	World Food Programme
WHO	World Health Organization

Development of NFE (AES) MIS in Southern Sudan

1. Mission Objectives

The main objective of this Mission (March 22 to April 09, 2010) were to conduct a fact-finding mission with the aim of identifying institutional structures, defining a conceptual framework, and drafting of a NFE-MIS Development Work Plan for Southern Sudan in support of the Southern Sudan LIFE Project, UNESCO, Juba Antenna. The outcome of the Mission will form the basis for the preparation of a diagnostic study as a part of the NFE-MIS development process plan in Southern Sudan. Before the Mission was mounted, electronically shared documents were reviewed and during the Mission, discussions with the key stakeholders from both the Government and Development Partners were arranged. It is expected that a report on the existing situation and capacity needs for NFE-MIS development in Southern Sudan will be prepared and also a Consultative meeting with the key stakeholders in a Workshop mode will be organised.

2. The Mission Report

The Mission Report is largely based upon the Consultative Meetings held with a number of stakeholders/officers both from the Government and Development Partners (mostly held prior to the Workshop on NFE MIS) and information obtained from a number of background papers and reports. Discussion held during the 2-day Workshop on NFE (AES) MIS also provided important inputs. Meeting with the following officers were arranged by the UNESCO, Juba Antenna which helped immensely in developing understanding of the EMIS in Southern Sudan in general and NFE/AES MIS in particular. The detailed Mission schedule is annexed.

- Mr. Chadrack Chol Director General, Directorate of Planning and Budgeting
- Mr. Edward Kokole Jumo, Director General, Quality Promotions Innovation
- Mr. Kuol Atem, Director of Alternative Education Systems
- Mr. Fahim Akbar, AED-Juba in EMIS Section and his colleagues

- Director AES, Ministry of Education, Central Equatoria State -Juba
- Mr. Victor Hakim Michel, Inspector of Statistics, Department of Planning and Budgeting, Central Equatoria State –Juba
- Mr. Abraham Lado Isaac, Director Basic Education, Central Equatoria State -Juba
- Mr. Lokong Francis, Monitoring and Supervision Specialist (AES) and Inspectors in the Department of AES
- Ms. Grace Akukwe, Chief of Party, Southern Sudan Technical Assistance Programme
- Mr. Odwee Jonathan, Consultant, SSCCSE
- Mr. Mark Otwavi Odufa, Acting Director, Southern Sudan Centre for Statistics & Evaluation
- Ms. Yuki Nakamura, JICA
- Mr. Nelson Odur, Deputy Director, Alternative Education Systems (AES), GoSS
- Mr. George Alexandratos, Project Officer, LIFE, Juba Antenna, UNESCO Office
- Ms. Eunice Smith, Chief, Juba Antenna, UNESCO Office

3. List of Documents Referred

- The next Generation of Literacy Statistics: Implementing the Literacy Assessment and Monitoring Programme (LAMP), UIS
- Alternative Education Systems: Implementation Guide, MoEST, GoSS
- Thematic Working Group Report on AES, 2009, MoEST
- Public Service Reforms Implementation Frame Work Manual, 2009, Ministry of Labour, Public Services and Human Resource Development, GoSS
- Final Report of the Consultancy Services to ensure Long Term sustainability I the Use of Education Statistics, 2009, AED
- AES and Formal Education EMIS Format
- Policy Framework for the Ministry of Education, Science and Technology: 2006/2007, GoSS
- PowerPoint Presentation for Census, Statistics and Evaluation, 2009, Southern Sudan Centre for Census, Statistics and Evaluation, GoSS
- Pastoralist Rapid Assessment Report, 2008, MoEST, GoSS

- Education Statistics for Southern Sudan: 2009, National Statistical booklet, MoEST, Goss

4. Status of Education in Southern Sudan

Since EMIS is the only source of information on formal education in GoSS, based on it a brief analysis is made with regard to status of school education in general and primary education in particular which consists of Grades 1 to 8. It is needless to mention that only few indicators which have got implication for assessing the EFA initiatives have been briefly analyzed. The EMIS reported **a Gross Enrolment Ratio at** Southern Sudan **level to be 72 percent and a NER that of 48 percent which clearly reveals that a good number of children of age group 6 to 13 years were out-of-school in 2009 and hence a good scope of AES/ALP programmes.** State-specific analysis reveals that NER is a low as 37 percent in the State of E. Equatoria followed by 40 percent in W. Equatoria, 42 percent in C. Equatoria and Lakes etc. The highest 60 percent is observed in Upper Nile even which also indicates that about 40 percent children of age 6 to 13 years are yet to be brought under the education fold which has got serious implication for universal primary education. Another point of concern is wide gap between NER of male (55 percent) and female (40 percent) population which clearly shows that **majority of girls of age group 6 to 13 are out-of-school and without bringing all of them under the umbrella of education, the goal of universal primary education cannot even be dreamt of.** NER in case of girls is as low as 25 percent in case of Western BG State; thus showing that 75 percent girls of age group 6 to 13 years in the state are yet to be enrolled in primary classes.

Low enrolment ratio is because of low New Intake Rate which is as low as 21 percent; meaning that **79 percent children of age-6 are yet to be brought under the education fold without which the goal of universal primary education is not likely to be achieved for which concerted efforts are required to ensure that they all join education system.** Another area of concern is the high percentage of overage and underage children which is as high as 30 percent in case of male and 17 percent in case of female population.

Preliminary analysis of data further reveals a high 52:1 Pupil-Teacher Ratio and that of 129: 1 Student-Classroom Ratio which by all means is very high and may be it is difficult for teachers to manage pupils in the classrooms. However, both the PTR and SCR are quite comfortable in case of secondary education. **The analysis further reveals that GER in case of secondary education is as low as 6 percent** at GoSS level and in case of few states, such as Jonglei, Unity and Northern BG is as low as 2 percent all which clearly reveals that the majority of children of age group 14 to 17 years is out of the system may be a few of them are enrolled in the primary grades.

Low enrolment at secondary level may also be because of high drop out rate at primary level of education. **The Intake Rate at secondary level is reported to be as low as 5 percent and that of Net Intake Rate, almost zero percent which is a serious area of concern and need immediate attention.** On the other hand, it has been observed that 49 percent primary schools are without drinking water and toilet facilities in schools which is otherwise a must for all schools.

Another area of concern is very low percentage of trained primary school teachers which is reported to be 13 percent at Southern Sudan level and in a few states, even much lower than at the GoSS level which may affect the classroom transactions adversely and thereby the **Capacity Building of teachers should be accorded the top most priority** without which the quality of education is not expected to improve. **Institutional arrangements are to be created to meet the training (in-service) needs of both the primary as well as secondary teachers across the** Southern Sudan**.**

The **analysis of data further reveals a very high dropout (24 percent) and repetition (10 percent) rate at primary level of education which has also got serious implication for universal primary enrolment.** The low dropout rate is also reflected in the low primary completion rate which is reported to be as low as 12 percent. **The data on transition from primary to secondary level needs to be re-looked into as in** many states, it is reported to be more than 300 percent which is by all means not possible or may be because of the low coverage during the previous year i.e. 2008 which is also true

for flow rates in secondary classes which in many grades reported to be negative. **The EMIS may like to avoid publishing such type of unconvincing statistics which may create confusion amongst the users.**

Since it was for the first time that efforts were made to collect information on AES programmes, the coverage of the same under the EMIS is said to be incomplete. However, the available statistics reveals useful information about the AES programmes. The National Statistics Booklet: 2009 reveals a clientele population of 217,239 of which 11,910 are of the age group 5 to 10 years. The highest number of AES centers is being run by the EDC. On the other hand, C. Equatoria had has the highest number of (198) AES centers amongst all the 10 states of Southern Sudan. In most of the states, AES centers have a comfortable pupil-teacher ratio. As per the EMIS data, a large number of learners repeated AES Grades. The total number of learners those who dropped out was as high as 31,874.

The brief analysis that has been presented above clearly reveals many areas of serious concerns and immediate attention is required to meet all these concerns. The Directorate of Planning and Budgeting may like to undertake disaggregated analysis of data i.e. state-specific to find out reasons of low enrolment and high incidence of drop out without which no intervention can me made to improve participation of children and also there stay in the system. During the brief meeting with **the Director General of Planning and Budgeting, MoEST, it was observed that the Ministry is aware of all these concerns and is trying its level best to improve upon the current situation.**

5. Sources of Information

Though EMIS is regular source of information on education in SS, there are a few other agencies/surveys which also collect information on educational variables from time to time amongst which the Southern Sudan Census of Statistics and Evaluation is the most prominent ones. Possibilities should be explored so that officers engaged in the Census operations are also involved in the affairs of the MIS for both formal as well as NFE programmes. The most recent Census in the Southern Sudan was

conducted in 2008 full results of which are still awaited. During the discussion, it was pointed out that the EMIS also uses child population generated by the Census authorities for computing a variety of indicators. However, since the enrolment based indicators are to be computed annually, the same required annual child population which is not available in the ready to use form and one has to project the same. To make it more effective, **Census authorities may be approached to undertake projection exercise so that not only child population of the formal education groups is made available annually but the same is also made available for the AES age groups which vary from programme to programme.**

The following are the few educational variables on which information was collected in 2008 Census and the next one is expected to be conducted some time in 2018. The Directorate of Planning and Budgeting may like to approach the Census authorities with a request to add more educational variables and also a few concerning AES which at present is totally missing. Since the Census reaches to each and every boma/village of the country, there may not be having any other complete enumerating better and more comprehensive than the Census one. Apart Census, another major household survey (Sudan Household Health Survey) was jointly conducted by a number of agencies including UNICEF, WFP, UNFPA, WHO, USIAD etc) in 2006 which also have a few variables concerning education but none about the AES. The Directorate of Planning and Budgeting may like to approach them with a request to add more educational variables including AES in any future household survey of this nature.

Educational Variables in Census (2008) : *Can read and write with understanding a simple sentence (literacy status), ever attended, never attended or currently attending, for those currently attending what is the grade and level that is attending and for those currently and previously attending school, what is the highest level of completed.*

Educational Variables in Household Health Survey (2006): *Primary school percentage of children of primary school entry age attending Grade 1, primary school net attendance ratio, gender parity in primary education, secondary school net*

attendance ratio, secondary school age children attending primary schools, children reaching Grade 5 and adult literacy.

6. Alternative Education Scheme

The Department of AES in the Directorate of Planning and Budgeting, Ministry of EST developed the following seven models of alternative education each of which is designed to take care the need of a specific target group to ensure that all participate in education programmes including people in cattle camps and girls, who have not attended schools like mainstream children. By and large AES in Southern Sudan is not considered to be 'non formal' education because it has developed various forms of formal learning of curriculum through the alternative modes of delivery but uses the curriculum of formal education in a condensed time-frame to allow students to catch up with their counterpart age cohort children enrolled in the formal schools by using different sets of textbooks. Within the above framework, the following programmes have been developed: accelerated learning programmes (ALP), community based girls schools (CGS), basic adult literacy programme (BALP), intensive English course (IEC), interactive radio instruction (IRI), pastoralist education and agro-forestry education. **Any MIS, unless otherwise covers all the type of programmes and centers providing such programmes across the Southern Sudan disseminating comprehensive information on all the aspects of AES at different administrative levels (GoSS, State, County, Payam and Centre), will be treated as incomplete even though developing such a system for AES is the most challenging one** as the non-formal education sector is not as organized as the formal education sector is. Despite concerted efforts in a number of countries, such a MIS for non-formal education programmes is yet to be fully developed and sustained. The recent efforts made in this direction in the Southern Sudan are significant.

7. The MIS in Southern Sudan

The Educational Management Information System (EMIS) of Government of Southern Sudan (GoSS) is located in the Department of Data and Statistics of the Office of the

Directorate of Planning and Budgeting, Ministry of Education, Science and Technology (MoEST) which take cares of both the formal as well as Alternative Education System. The EMIS was established in 2007 and is supported by the UNICEF and technical assistance is being provided by the Academy for Educational Development (AED). A Team of six officials are said to be fully associated with the EMIS work but **except one Deputy Director from the Department of Data and Statistics, none of the other officials from GoSS is actively involved in EMIS on day to day basis.** The data concerning formal Primary and Secondary Education under the EMIS is available for the last four years staring 2006 but it was for the first time in the year 2009 that the process of collecting information about Alternative Education System (AES) was initiated and made available through a publication titled "Education Statistics for Southern Sudan 2009: National Statistical Booklet" which is brought out by the Directorate of Planning and Budgeting, MoEST, GoSS. The process of collection of data for the year 2010 with mid-June 2010 as its date of reference both in case of the formal and AES programmes has already been started for which EMIS has designed the formats which in turn will be printed at the GoSS level and will be provided to the State Ministry of Education so that they reach all schools and AES centers.

Within the present environment, collecting data and making available in the published form is not a mean achievement. It may be observed that in many advanced countries, the data concerning formal education system is outdated and detailed disaggregated data is not available. However in the Southern Sudan, data on most of the aspects of universal school/basic education required for efficient education planning is available at the disaggregated level which is considered an impressive achievement in a short span of 4-5 year. EMIS in Southern Sudan is still in the project mode and is being funded by the Development Partners in view of which it is hoped that the GoSS will ensure its continuity and the efforts made for it will be sustained in years that follow.

During the discussion with EMIS team, it was observed that **coverage in case of formal Primary and Secondary education is almost complete but the same is not true for AES.** It has also been mentioned during the discussion that **complete directory both in**

case of the formal education and AES is not available in ready to use form in the absence of which no assessment is made about the coverage of schools/centers under the EMIS. But the number of Primary and Secondary schools covered under the EMIS over a period of times gives an impression that the same has improved significantly and may be only a few formal schools are yet to be covered under EMIS but the same is not same for the AES programme. As has already mentioned that only one year data i.e. 2009 is available for AES and in view of a variety of programmes being offered and also in the absence of complete Centre Directory**, it is not possible for the time being to make assessment of the coverage of AES centers under EMIS in Southern Sudan**.

The "Education Statistics for Southern Sudan 2009: National Statistical Booklet" presents data both at GoSS and State level in case of all the 10 states and the same has been presented for the last three years. Because of the scope of the publication, the County-specific data has not been presented in the Statistical Booklet but during the discussion it was mentioned that the same can be extracted from the EMIS data-set and can be made available, if there is any such demand in soft/hard format. The Statistical Booklet presents a variety of indicators falling under different components of universalisation of primary education. **Hope, EMIS will come out with the Analytical Report based on 2010 year data** (see sample report at http://www.dise.in) **which may contain GoSS as well state-specific analysis with regard to all the indicators falling under the overall goal of universal primary and secondary education.** In view of the limited competency available time being in GoSS towards use, analysis and interpretation of educational data and indictors, **EMIS may also like to initiate activities towards capacity building of Officers of the Directorate of Planning and Budgeting to ensure that the data generated by it is optimally used in planning exercises by the officers those who are responsible for the same within the Directorate.** During the discussion, it was mentioned that some modules have already been developed by EMIS and the same will soon be utilized during the capacity building exercises in this direction.

The developed EMIS Format at the GoSS level reaches to School Head Master and AES Centre Head, who are the respondents of data collection under EMIS. Many of the AES Centers are located in the Primary schools in view of which they are also the respondents

of the AES centers. It was also mentioned that training is arranged at the State level where county level officers are imparted training towards filling-up of the EMIS Formats. The County level officers, in turn train Payam level officers and they in turn train the respondents.

In view of the prevailing condition at the GoSS level, the above analysis clearly shows that **EMIS located in the Directorate of Planning and Budgeting has contributed significantly towards strengthening of not only that of the formal education MIS but also that of the Alternative Education System MIS all which need to be sustained in the years that follow** and also needs to be further strengthen so as to ensure that the coverage is complete, data is optimally disseminated and use in planning exercises, efforts are initiated to make it ensure that capacity of officers within and outside the Directorate of Planning and Budgeting to use data is enhanced. **With this in view, a few points are presented which are suggestive in the nature** and most of which confines to the AES MIS and is based on the outcome of the discussion that the Consultant held with a variety of the officers including the development partners he met both at the GoSS and State level.

8. Duplicity of Efforts

During the stay at Juba the UNESCO Consultant also visited the Department of Planning and Budgeting, Central Equatoria State –Juba and had a long discussion with Mr. Victor Hakim Michel, Inspector of Statistics. During the discussion, **the Inspector of Statistics pointed out that in addition to the EMIS format and data collection through it, the Department of Planning and Budgeting of the Central Equatoria State –Juba has also evolved a system of data collection through which it collects information about both the formal Primary and Secondary education.** For this purpose, it has developed a Data Capture Format which is very much similar to the EMIS format. The Inspector of Statistics is of the view that EMIS format is much more comprehensive and detailed one than the one developed by the Department of Planning and Budgeting. **However, since the coverage under the EMIS is not complete, the Department doesn't use the statistics collected by the EMIS.**

Second, since the information collected under its system is available much earlier than the EMIS data; the department doesn't have any option but to use its own statistics. Thirdly, **information collected by the Department is available at all disaggregated levels such as, County and within the county by Payam, it is more relevant and hence the same is used to send the same to the Ministry**.

The Inspector of Statistics, Department of Planning and Budgeting, Central Equatoria State – Juba send its Data Capture Format through its machinery to the Head Master/Teacher and collect the filled-in formats through the same machinery but do not impart training to the Head Masters who are the respondents which may affect the quality of data adversely. At the same time, Inspector of Statistics is well aware of the fact that some training is imparted to County and Payam level functionaries under EMIS who in turn impart training to the Head Masters/Teachers. Despite all these limitations, the statistics generated by the Department of Planning and Budgeting is being used instead of one collected through the EMIS. However, so far no such efforts are made by the department to collect information about the AES and as such no format has been developed.

The Directorate of Planning and Budgeting, GoSS may like to avoid duplicity of efforts and ensure utilization of statistics collected under EMIS for all the practical purposes. During the visit we tried to find out County and within the County, Payam-wise information collected under the EMIS, but no such information neither in hard or soft form could be seen available with the Inspector of Statistics, Department of Planning and Budgeting, in the Central Equatoria State – Juba may be because of which the State is force to evolve, collect and use its own statistics which should be avoided. The EMIS, Directorate of Planning and Budgeting, GoSS may like to conduct an in-depth study to find out actual reasons which has got serious implications for EMIS activities if the same is also true for remaining 9 states of the GoSS.

In the light of the above, it is suggested that the raw data collected through the EMIS should be made available to the office of the Department of Planning and

Budgeting in each state and the department be strengthened to handle, use and analyze the data. For example, the Department of Planning and Budgeting, Central Equatoria State –Juba has positions of a Statistical Officer and 2/3 positions of Statisticians but none of them except the Inspector of Statistics was in position in the absence of which smooth handling and utilization of data cannot ensured. Even if the state-specific EMIS raw data is made available to the users, still there is no guarantee that the same will be optimally utilized as the Department of Planning and Budgeting is having only one Data Entry Operator/Computer Operator.

State Ministry of Education
Central Equatoria State (JUBA)
Key Education Information

	Number of Schools		**Enrolment**		**Teachers**	
	EMIS 2009	State Department of Planning and Budgeting, 2009/10	EMIS 2009	State Department of Planning and Budgeting, 2009/10	EMIS 2009	State Department of Planning and Budgeting 2009/10
Primary	431	435	**138934**	**135644**	4083	3971
Secondary	45	49	**15880**	**12510**	615	689

- Source: Education Statistics for Southern Sudan: 2009, National Statistical Handbook, MoEST, GoSS and unpublished data provided by the Department of Planning & Budgeting, State Ministry of Education, Central Equatoria State (JUBA)
- It may be observed that the state data is much latest (2009/10) than the EMIS data (2009). At the GoSS level, EMIS data is available only at the State level, while State data is available at County and within the county, Payam level. Number of schools from both the sources is quite comparable but the same is not true for enrolment and teachers. Though enrolment from the State sources is much lower than reported by the EMIS; the Inspector of Statistics of Central Equatoria State is of the view that the statistics collected by the Department is more reliable. While going through the repetition and dropout rates generated by the State, once gets the idea that the same is not computed by using the standard methods. Barring the hard copy of the National Statistical Handbook, the Inspector of Statistics doesn't possess any County and Payam-wise EMIS data. All the positions in the Department are lying vacant and needs to be filled-in before any new initiative is planned.

In the light of the above, it is suggested that **an in-depth study should be undertaken by the Directorate of Planning and Budgeting to assess availability of staff in each state in the Department of Planning and Budgeting in each of the 10 states as they are the potential users of rich data being collected and maintained by the EMIS.** In view of the requirement, the in-depth study may also recommend the number of staff (by type, qualification, experience etc) required in case of each of the 10 states in the

Department of Planning and budgeting which may also include review of the same at other levels, such as County and Payam levels because the same is key to issues concerning quality and utilization of data so collected under the EMIS.

9. Ownership

The UNESCO Consultant had a very long and useful discussions with the Director of AES, Directorate of Planning and Budgeting, GoSS as well as with the Inspectors in the department and Specialist (Monitoring and Evaluation) looking after AES. **As it seems from the discussion that there is a clear lack of ownership for the EMIS data at lower levels partially because of which EMIS data is not optimally being utilized within the department.** The **other important point which has been observed is the complete in-availability of EMIS data either in the soft or in the raw form and the disaggregated data is not at all available to any of the lower officials of the department.** Even though EMIS is open to share both raw and soft data, the officials do not come forth for the same which may be because of a number of reasons predominantly it is the case of ownership without which neither the AES MIS data be fully collected nor the chances of utilization of the same is also remote. There is also a general feeling that most of the data is accessible only to the higher ups and the officers looking after different AES programmes have got limited access to the data of the programme for which they are made responsible. None of them at lower level have access to the complete set of data other then the hard copy of the National Statistics Booklet which too contain statistics only at the GoSS and State levels. **Needless to mention that for monitoring of the AES programmes, availability of disaggregated data is non-negotiable**. It may also pertinent to observe here that though AES Director is of the opinion that information requirements of AES is shared with the EMIS and on the basis of which EMIS has designed and developed the Data Capture Format for AES programmes and got the data collected in which the Inspectors of the department were also involved but still the coverage of AES centers under EMIS is far from complete which may also be because of the fact that it was for the first time that such a effort was made to collect information about the AES programmes.

The another possible reason of lack of ownership may be because of the fact that the **officials involved in the AES programmes are not sure about the sustainability of the EMIS efforts and they fear that in the absence of UNICEF support, it may collapse.** However, a number of concrete suggestions were given by the AES Inspectors which if considered may help us in further improving the EMIS efforts in general and for AES programmes in particular.

To ensure sustainability of efforts, slowly in a phased manner, the responsibility of maintaining MIS may be wholly entrusted to the officers within the Directorate of Planning and Budgeting for which a capacity building plan needs to be evolved carefully. At this stage, we are not of the view that a separate parallel system be developed to cater the information need of AES. What we are advocating is that EMIS has contributed significantly in strengthening EMIS in GoSS in general and AES in particular and hence be further strengthened so as to make it complete and comprehensive and this should be done by involving wholly the Department of AES in EMIS affairs right from the planning to implementation stage which can be done in a number of ways which is briefly presented below. **Without active participation of the AES staff, no meaningful AES MIS can be developed, even if developed utilization of data cannot be ensured.**

10. Need Assessment

As has already been specified above that there is a need to make AES MIS more relevant according to need and requirement of the officers working at the GoSS, County, Payam and Centre levels as the AES programme is supposed to be monitored by officers responsible at all these levels. While doing that it may be kept in mind that the basic objective of developing such an MIS for AES is to facilitate monitoring at all these levels so that corrective measures can be undertaken while the programme is still going on. With this in view, **UNESCO should facilitate undertaking of a need assessment and situational analysis study with an intention to identify gaps in the existing EMIS with reference to AES programmes which should ultimately be used in further refining the AES programmes/format**.

At the GoSS level, it is not an easy task to identify data needs of all the states in view of which an **in-depth study of need assessment should be undertaken by involving both the officers of the Department of AES at GoSS level as well officers from all the states responsible for the implementation and monitoring of AES programmes**. To conduct such an in-depth need assessment and situational analysis, the officers of AES (Inspectors, Deputy Director, Director etc.) in the Department of AES should take the lead as the same will also help them in feeling ownership to the whole effort. However, UNESCO may like to provide financial support to any such activity. Naturally, EMIS located in the Directorate of Planning and Budgeting will take active participation in any such consultative efforts as ultimately it will help them in further strengthening of there efforts. **It would perhaps for the first time at the Southern Sudan level that all stakeholders will sit together and discuss the information requirements of the Alternative Education Scheme programmes and also discuss the modalities as how to ensure complete coverage and quality of data so generated.** They will also get an opportunity to suggest flow of information (in view of existing arrangements at all levels) and also data requirements at all these levels.

The **consultative meeting would also able to discuss and decide how information will flow and what would be the feedback mechanism and also who will monitor what and at what level.** Every bit of information need not be transmitted to all higher levels but there are a few variables which can be monitored at more than one level. The consultative group may also discuss corrective measures that would be required to be initiated in view of the feedback received from the higher levels and what would be the follow up action. For this, **a critical review of the existing arrangements right from the GoSS level to Centre level should be undertaken in view of the responsibilities assigned to all concerned at all these levels.** Following this methodology, a comprehensive plan for the monitoring of AES programmes can be designed which will ultimately help in improving the effectiveness and efficiency of the AES programme across the Southern Sudan.

In view of the outcome of the consultative meeting, the next important step would be to re-look into the existing AES format and flow of information. A detailed time-frame, if developed will ensure smooth collection and timely availability of information at all desired levels. Inspectors in the Department of AES, Directorates of Planning and Budgeting are of the view that an efficient (timely collection and availability of data at all desired levels, decentralized data feeding and utilization, no data gaps: data is available on aspects of AES programmes, time-series data is available, comprehensive in nature etc.) AES MIS is very much required but the same in its existing form may be of little use and hence it may thoroughly be revisited and revised according to the need of AES programmes at all administrative levels. They are also of the view that AES format of data collection should be redesigned by following the participatory approach with the support from the UNESCO and AES staff at all levels and the gaps identified, if any should be incorporated in the revised AES format.

A priory it looks that there is ample scope of further improvement in the existing AES MIS format. In its existing form data entry may not be user-friendly (may take more time in data feeding) for which the questionnaire may be made simpler and each and every item and its sub-items, if any should be coded so as to ensure fast retrieval at any desired level. To the extent possible, 'unknown' option may be avoided. Needless to say that the format so re-designed should be used across the GoSS.

11. Directory of AES Centers/Programmes

It is a general feeling that the exiting coverage under EMIS for AES is not complete which is largely because of the fact that it was for the first time that such an effort was ever made to develop such an information system for AES programmes. It has also been observed that the Inspectors of the Department of the AES at the GoSS level were also involved in the process of data collection and also to ensure that AES Format reaches to all the AES centers. Despite their involvement, if the coverage is not complete, it is an area of major concern. This is largely because of the fact that Centre and School Directory is not readily available. With improved coverage of Primary and Secondary

schools each year under EMIS, it can be safely be assumed that most of the schools have already been covered under the EMIS but the same is not true for AES centers in view of which **the first exercise that would be useful to ensure coverage of AES Centers would be to prepare a complete Directory of AES centre across the GoSS.** The Inspectors of the Department of AES at GoSS level and officers involved in AES at the State level may play a leading role in preparing such a Directory of AES Centers which may not be difficult task to develop. It is said that AES Teachers are paid by the Government and the exiting salary records may be the starting point to develop such a Directory of AES Centers which should be supplemented by the inputs from the Inspectors of Department of AES at GoSS and other (state, county and payam levels) levels. The AES Inspectors and other Officers at GoSS level be assigned one state each for this purpose. The vacant positions, if any should be filled up on the priority basis at all levels. However, it is the State level AES Officers who has to play a leading role in preparing a complete directory of AES Centers. **While preparing Directory care should be taken to ensure that all types of AES Programmes/Centers, whether located in school or other places (such as under tree, community place etc.), supported by Government or Community are included in the Directory to ensure that it represents all the AES programmes and do not confine and concentrate on to only one type of programme.** The AES Centre Directory, if so developed may be used by the EMIS to ensure that AES format reach all Centers; that would eventually the first major step towards strengthening NFE MIS in GoSS. The next major important step towards that direction would be to ensure smooth flow of information and that would be the key to timely availability of data.

12. Printing and Distribution of Formats

In view of the total number of AES Centers, the formats be printed (+ 5/10 percent extra as a normal practice) at the GoSS level and with the help of the Inspector(s) identified for a state, it be made available and reach in the office of the State AES located in the Department of Planning and Budgeting in each state. Since the State level AES Officers would have participated in the Consultative meeting proposed above they are expected to have good acquaintance with the NFE MIS format. In addition, **it is suggested that the**

AES Officials in collaboration with the EMIS, impart training to all the State AES Officials at the Southern Sudan level to ensure that there is common understanding of different concepts and definitions as the same would also help immensely in improving the quality of data so collected.

13. Date of Reference

As a standard practice across the World, educational data is collected on a particular date (date of reference), it is suggested that the **Department of AES should specified a date (with an objective to obtain an average picture) on which data should be recorded across Southern Sudan.** It may also like to specify a week/fortnight during which data from all the AES Centers across the Southern Sudan level is collected (on record date) as the same will also help in creating awareness amongst all the stakeholders of AES programmes.

14. Frequency of Data collection

Unlike formal education sector, **the frequency of data collection for AES prorammes may vary and depending upon the nature of a AES programme, may be more than once in a year and this along with the other modalities, may be decided in the consultative meeting** under the impression that AES MIS so developed would be used as a monitoring tool to take corrective measures at different levels with main objective to improve the effectiveness of a AES programme.

15. Unique Identification Code

If not already given, the EMIS will identify and **give a unique Identification Code to each AES Centre (as per Directory) by following standard procedure (state/county/payam/type of NFE programme/centre) and the same will remain forever.** The centre and level (administrative) specific codes will help in ensuring that the desired information is made available at all required levels eventually this will help us making available the entire database at the disaggregated levels such as County and Payam level which is one of the major limitations in the existing MIS.

Even though EMIS is ready to share raw data, there may be few takers largely may be because of the lack of competency in handling raw data for which there is a need to carefully design a Capacity Building programme. **The Department of AES at the GoSS level should take lead in this direction to ensure that data so collected through the MIS is optimally utilized in planning and strengthening of AEE Centers cross the GoSS.**

A priory, it seems lack of active coordination between EMIS and Department of AES at the GoSS level or apparently the same is not visible. **The Department of AES should make institutional arrangements to make it sure that they are the equal partners in the whole process of AES-MIS development.**

It seems that within the Department of AES, no one is at present is assigned the responsibility to co-ordinate with the EMIS on day to day basis. The Department of AES should have competency within to ensure that AES MIS is developed as per its need and requirement. Moreover, it may also like to ensure that, it is able to use data, analyze and interpret so that they can provide inputs while plan and design such programmes in future. As it seems that it has got limited competency in handling all these aspects concerning utilization of data.

16. Dissemination Plan

Adequate dissemination of data is the key to utilization of statistics eventually which may also lead us in improving the quality of data so collected. As of now only limited data is being disseminated and that too by the EMIS; the Department of AES, GoSS level as it seems do not play any major role in bringing out the publication. **It is suggested that the Department of AES, GoSS should design publications concerning AES programmes and in future so far possible all the publications concerning NFE programmes should be brought out by it** naturally with the active support from the EMIS all which will help in creating environment of ownership.

17. Additional Support

In the beginning, the existing officials within the Department of AES may not be able to handle all the tasks specified above for that purpose a careful capacity building plan for the existing officials may need to be developed. The Capacity Building as well as strengthening of the Department of AES in all the states should be undertaken to ensure timely collection of data as well as utilization of statistics so collected. The UNESCO may like to support any such activity to ensure that data collected under AES MIS is optimally utilized at all levels.

The steps suggested above may ensure strengthening of AES MIS and its utilization. However, there is need to institutionalized the same within the Department of AES both at GoSS and State levels. To begin with, **it is suggested that a separate Cell within the Department of AES may be created which can be named as the Data Processing and Utilization Cell (DPUC).** Among other activities, the **DPUC may also be entrusted the reasonability to keep liaison and coordination with the EMIS so as to ensure smooth strengthening of AES MIS.** Officers from within the Department of AES may be entrusted the responsibility of DPUC. The in-charge DPUC may also be assisted by a Computer Programmer, a Data Entry Operator and a Statistician. Similarly, the State Departments of AES should also be strengthened so as to ensure timely data collection, utilization and its use in planning and monitoring of ASE/NFE programme without which not much change is expected.

18. Flow of Information

Once AES Format reached to schools/centers, the next important task is to obtain the correct information within the stipulated time frame from the School Head Master. **Training to Head Master/Teacher in filling-up of the format is the key to quality of data which should be given the top most importance** which may be arranged at the Payam level with the active involvement of Payam Coordinator (Education). All the Payam Coordinators may be trained at the County level with the active involvement of County Director (Education) and In-charge (AES). The County Officer may be trained at

the State level by the active involvement of both the State and GoSS AES Officers. As has already mentioned that the each Inspector and other Officers in the Department of AES will be made in-charge/responsible of a state and the concerned state in-charge would be made available at the time of training in the filling–up of the ASE format at the state level. However, **the prime responsibility of imparting training at the County level would be that of the County level officer who will train Payam level officers**.

19. Collection & Checking of Filled-in Formats

At each level the filled-in formats needs to be thoroughly checked and authenticated by the concerned officer. For example, the **Payam level Officers be made accountable to ensure that filled-in formats have been received from all the centers falling under his/her jurisdiction and the data reported is correct and internally consistent and there are no missing values on 100 percent basis.** At the County level, 25 to 30 percent of the filled-in formats may be thoroughly checked before the same is passed on to the State level. In case if inconsistency in data is noticed, the county level officer will contact Payam level officer. The Payam level Officer is not supposed to alter any information and in case if some missing items are observed they should contact over phone the concerned School Head Master who is the respondent and has filled up the AES format and clarify the issue.

20. Sample Checking of AES Data

Apart from checking filled-in formats at all specified levels, **EMIS should also envisage possibility of involving a third party for checking of data on sample basis by an independent agency n**ot involved in the planning and management of AES programmes. **The Office of the South Sudan Centre of Census or similar such organization or someone from the University Department of Education can be approached** for this purpose (PES) as the same will throw light not only on the quality of AES data but asked to look into the coverage aspects. All these majors, if initiated will help us in establishing creditability of MIS data in general and AES data in particular.

21. Data Entry

By all means, the ideal place at which the data entry should take place is the County level but **within the prevailing situation and availability of facilities and competencies of the available staff, it is not advisable to switchover the data entry from the present GoSS level (under EMIS) to the County level.** However, **possibilities should be explored to ensure arrangement of data entry at least at the State level** which may be located in the Office of the Inspector of Statistics for which its office needs to be strengthened both in terms of facilities and professionals without which no meaningful decentralized data entry can be envisaged. If decentralized at this level, it will further improve the quality of data and would also ensure detailed analysis of the data and its use in planning.

As has already been mentioned that data entry under EMIS is presently taking place at the GoSS level, which if decentralized will need modifications in the existing software to meet the requirements at the state level. EMIS may like to explore possibility in this direction and in the event of the software modification, emphasis should be lay down on report module so that all the desired reports are generated at the State level by County and Payam levels. **The national AES database should also be made available to the proposed "Data Processing and Utilization Cell"** (DPUC) so as to ensure optimal utilization of information. DPUC will be able to generate State as well as County specific reports and within the county, Payam-specific reports. **EMIS may like to conduct a workshop of all stakeholders both from the GoSS and States to identify a set of core AES indicators and the same should form part of the any modified AES MIS software.** The software will facilitate reports on these indicators at any level i.e. State, County and Payam levels.

22. Workshop on NFE MIS in Southern Sudan

During the Mission, a 2-day Workshop on NFE (AES) MIS for Southern Sudan was organized during March 30 and 31, 2010 (Venue: Oasis Camp, Juba) which was opened by Mr. Chadrack Chol, Director General, Directorate of Planning and Budgeting, MoEST, GoSS. Mr. George Alexandratos, Project Officer, LIFE, Juba Antenna,

UNESCO Office welcomed the Chief Guest Mr. Chol and all Participating Officers and also highlighted the objectives of the Workshop. He also briefly introduced Prof. Arun C. Mehta, UNESCO Consultant and Professor and Head, Department of EMIS, NUEPA, New Delhi (India) who conducted the Workshop. A list of officers those who participated along with the Workshop Schedule is annexed.

In his brief opening remarks, the Chief Guest Mr. Chol emphasized the need of EMIS and importance of quality data in the overall development of the GoSS. He referred 'go to school initiate' and a call by the President of Southern Sudan to the citizens in 2006 in response of which enrolment in primary schools increased by 3 to 4 times in a short span of 4 to 5 years. In this regard, he mentioned that education is getting only 6 percent of the total budget which is not a right percentage even though a few of the African Countries gets more than 10 percent of the total budget. He said the country is fighting a war but of different nature; it is a war against poverty and hunger. He proudly said that country is only five years old but it has an effective EMIS even though many of the developed countries do not have the same. He wished that the deliberations in the Workshop would be fruitful and declared open the Workshop.

Day-1: Prof. Arun C Mehta, UNESCO Consultant presented different themes which were to be covered in the Workshop in detail and thereafter participants introduced each other. In the morning session, the UNESCO Consultant introduced the concept of an EMIS and emphasized the need of developing a computerized management information system. By taking a number of examples, he presented characteristics of an efficient educational management information system. In the afternoon session, a detailed demonstration was given on to the School Report Cards (www.schoolreportcards.in) and District Information System for Education (www.dise.in) which has been successfully implemented in India which covers more than 1.29 million schools imparting elementary education across 633 districts spread over 35 States. In the last session of the day, a detailed presentation was made on 'role of diagnosis in educational planning' and through examples, the Consultant emphasized the need of undertaking a diagnosis exercise which may help in identifying locations and focus groups that need attention. In this regard, he emphasized importance of an efficient EMIS both in case of the formal as well as non-formal

education systems. At the end of the day the participating officers look satisfied as they were perhaps for the first time exposed to such a detailed technical and scientific discussion on management information system that reiterated importance of an efficient MIS in the overall development of education in Southern Sudan.

Day-2: In the first session; the Participating Officers were divided into two groups to work on the existing AES format. They were asked to review contents and suggest modifications, if any so that it can meet the requirements of all those who are involved in the affairs of AES programme at different levels. Participants from both the groups worked intensively for more than 1.5 hrs and provided a number of suggestions which are briefly summarized below. The participants were of the view that so far as possible the option (in most of the questions), 'unknown' be deleted from all the questions. In the physical address of the centre, boma/village name may also be added. In addition to the type of classroom a NFE centre has, information on type of building should also be added. In case, if a hall is hired for the NFE Centre, rent paid may also be added. On the question on centre funding organization/agency, only those agencies be listed which funds AES programme and not all development partners and NGO. In this regard, they were of the view that so far they know, JICA do not fund AES programme and hence may be deleted from the list of the agencies. In the programme implementing organization, MoEST may also be added as one of the agency. Further, the participants were of the view that in a question on how many terms are in a full programme year, the option should restrict from 1 term to 4 terms only. So far as the school hours are concerned, the morning and afternoon option may be re-designed i.e. 7 Am, 8 AM, 9 AM, ... 18 PM. Similarly, suggestions were also given about the periods per day and duration of periods all which should be considered at the time of revision of the NFE MIS format. **Needless to mention that the suggestions provided were not exhaustive in nature and more can be obtained through more intensive consultation with all concerned.** The participating officers were of the view that **such type of consultative meetings by involving all the stakeholders both at the GoSS and State level be arranged to further revise and finalize the Data Capture Format.** Once revised, it

was suggested that the Department of AES may like to pilot it before the same is provided to States for data collection.

It was also mentioned that the **unit of data collection under the NFE MIS is Centre** and hence **data from all such centers should be obtained.** If in a school, more than one type of AES programmes are functioning then all such centers are to be covered and need not restrict to only one format for all centers.

The Consultant cautioned that variables which have got nation-wide implications may only be kept in the format; however provisions should be made in the software to meet any additional state-specific requirements. These additional (supplementary) variables are to be identified by the State AES department, they are to be incorporated in the format and data be collected, feed and use at the State level and need not to be transmitted to the GoSS level.

The consultant also **emphasized need of training in filling-up of the NFE format at different levels and of the view that without intensive training of the Centre Heads/Head Masters, the quality of data cannot be improved which is a continuous process and cannot be improved overnight.** He also lay down a framework of capacity building plan so that officers involved in the AES programmes at all levels be imparted training in the filling–up of the NFE format and also its utilization.

The Consultant was of the opinion that whatever is suggested for strengthening of NFE/AES MIS should be implemented in a phased manner for which a time bound programme be prepared by the Department of AES, GoSS.

The role of the Payam level officers were also stressed in length and it was suggested that they may be made accountable for the coverage and quality of data which can is possible to check only at this level. The officer at the Payam level should ensure that data from all the NFE Centers falling under his/her jurisdiction has been received and there are no missing values and data is consistent to the extent possible. They may also be asked to check the filled-in formats on 100 percent basis. However, it was suggested that at the County level, the Officer In-charge AES programme, may be asked to check the

filled-in formats on 25 to 30 percent basis and the at State level, 10 percent basis. However, it was advised that at the GoSS level, Post Enumeration Survey of NFE/AES MIS data may be initiated by an independent agency. **In this regard, it was suggested that the Census authorities may be requested to undertake the random sample checking of NFE data on 5 percent basis each year** and present its report to the Directorate General of Planning and Budgeting in view of which EMIS may be advised to initiate corrective measures during the collection of data in the following year. The Consultant reiterates that improving quality of data is a continuing process and dissemination of data through a variety of modes can also play an important role in this direction for which the Department of AES should develop a dissemination plan. In a phased manner, the States Department of AES should also develop such plans and come out with their own publications. Possibilities of data dissemination through all modes (hard and soft copies, CDs, on-line and off-line and processed and raw centre-specific data should be explored.)

To further improve the quality of NFE data, **it was advised for the time being to decentralize the process of data entry at the state level but ultimately when situation improves the same may be decentralized even to the level of County level**. In this direction, it is advised that **on an experimental basis the data entry of AES 2010 be undertaken at the state level initially in case of two states and if found successful, the same may extended to all the remaining eight states of Southern Sudan during the 2011 data collection** for which the EMIS may like to modify its software so that data entry as well as reports are generated at the state level. At present, data entry of both the formal and AES programmes is being taking place at the GoSS level on the basis of which the EMIS bring outs Statistics Booklet and provide data in a CD to states in the form of 'EMIS data and Ed* Assist 2009' which contains data of only formal education sector and that too only for one year. **EMIS my also like to present the AES data from the next year onwards and may also like in exploring possibility of providing data for more than 1 year in a CD and if possible, for the last five years. The Report module in the existing CD is limited and EMIS may like to add a number of additional indicators falling under the ambit of Universal Primary education**.

However, in view of the available competency (ICT etc) in GoSS, the efforts made by the EMIS in providing processed data in a CD format are praiseworthy but slowly it may like not only to decentralized the process of data entry but also develop competency at the GoSS and state levels to enhance capacity building in the area of data processing and analysis at these and lower levels in a phased manner and in active partnership with the Department of AES, GoSS.

In the last session of the day, the UNESCO Consultant presented a framework of indicators and discussed a variety of indicators falling under different components of universal primary education. He picked up a number of examples from the EMIS Statistical Booklet and explained the meaning and interpretation of each of the indicator used. He also shared one of his works on 'framework for NFE indicators' which were appreciated by the participating officers a few of them were of the opinion that with minor modifications, the same can be adopted in the Southern Sudan.

In the brief closing session, the Consultant thanked all the Participating Officers for active participation and said that this is not the end but beginning of the long association which will help in promoting the use of educational data in the Southern Sudan. In this context, **he invited them to NUEPA, New Delhi for more intensive courses on EMIS and Data Utilization for which the GoSS may like to approach the Vice-Chancellor, NUEPA so that special training can be arranged at New Delhi.** He also requested GoSS/UNESCO to **depute 2-3 officers each year for the intensive training on educational planning through a 3-month International Diploma in Educational Planning and Administration being conducted at NUEPA, New Delhi** for the last more than 25 years. He requested GoSS to chalk out Capacity Building programme carefully so that environment for data utilization in a decentralized mode by adopting participatory planning approach with a provision of developing Annual Work Plans both at the GoSS and Sate levels is created in the South Sudan which is the need of the day. On behalf of the Vice-chancellor, NUEPA, New Delhi (India) he assured full support to the GoSS initiatives in this direction.

Annexure 1

Developing a Non Formal Education Management Information System in Southern Sudan (March 22nd to April 9th 2010)

Schedule of Activities

Day and Date	Time	Activity	Purpose and Discussion Points
Monday, March 22, 2010	1.00 PM	Arrival, Khartoum Airport	
Tuesday, March 23, 2010	9.00 AM	Meeting Mr.Saadou Moumouni, Administrative Officer, UNESCO-Sudan, Khartoum	Security Briefing and Logistics
	10.00 AM till Evening	Central Registration and Preparation of ID	
Wednesday, March 24, 2010	8.30 AM	Departure from Khartoum to Juba	
	1.15 PM	Arrival in Juba Camp	Transfer to Hotel: RA International Mango
	4.00 PM	Meeting with Mr. George Alexandratos, Project Officer, LIFE	Briefing about the NFE MIS and Expectations from the Consultant (NFE MIS)
	4.45 PM	Meeting with Ms. Eunice Smith, Chief, Juba Antenna, UNESCO Office	Recent Development in Southern Sudan and Need and Importance of NFE MIS in the current environment in GoSS
Thursday, March 25, 2010	9.00 AM	Meeting with Kuol Atem, Director of Alternative Education Systems (AES), Ministry of Education Science and Technology	Detailed discussion about the status and need of strengthening AES MIS in Southern Sudan

Day and Date	Time	Activity	Purpose and Discussion Points
	9.45 AM	Meeting with Mr. Fahim Akbar, AED-Juba in EMIS Section of the MoEST and his other colleagues in EMIS	Detailed discussion about the EMIS: For\mal and AES MIS
	11.50 AM	Visit to Central Equatoria State -Juba and meeting with Director AES, Ministry of Education	Discussion status of AES in the state and need of strengthening AES-MIS
	2.30 PM	Visit to Department of Planning and Budgeting, Central Equatoria State – Juba and meeting with Mr. Victor Hakim Michel, Inspector of Statistics	Detailed discussion about the status of MIS: Formal and AES and use of EMIS data in planning
	3.45 PM	Meeting with Mr. Abraham Lado Isaac, Director Basic Education, Central Equatoria State -Juba	Brief meeting about the use of EMIS data and need of strengthening AES MIS
	4.30 PM	Meeting with Ms. Grace Akukwe, Chief of Party, Southern Sudan Technical Assistance Programme	Detailed discussion about the Technical Assistance programme and usefulness of using EMIS data in planning both in case of formal and AES
Friday, March 26, 2010	9.30 PM	Visit to Department of AES and meeting with Inspectors of AES and Mr. Lokong Francis, Monitoring and Supervision Specialist (AES), Ministry of Education, Science and Technology	Detailed discussion about flow of AES information and its use I the Department of AES
	11.45 AM	Visit to JICA Office, Juba and meeting with Ms. Yuki Nakamura	Discussed activities of JICA and explore possibility of

Day and Date	Time	Activity	Purpose and Discussion Points
			enhancing use of EMIS data and capacity building
Saturday, March 27, 2010	10.00 AM till evening	Reading of background material provided by the Project Officer, LIFE Project, UNESCO	Understanding on going activities with regards to MIS in GoSS
Sunday, March 28, 2010		In the Hotel	Workshop Preparation
Monday March 29, 2010	9.30 AM	Meeting with Mr. Odwee Jonathan, Consultant and Mr. Mark Otwavi Odufa, Acting Director, Southern Sudan Centre for Statistics & Evaluation (SDSD)	Discussed the issues concerning Census 2008 operations in general and educational variables in particular
	12.30 PM	Meeting with Mr. Chadrack Chol Director General, Directorate of Planning and Budgeting, MoEST, GoSS	Courtesy Call
	01.15 PM	Meeting with Mr. Edward Kokole Jumo, Director General, Quality Promotions Innovation, MoEST, GoSS	Courtesy Call
	03.00 PM	Meeting with Mr. Nelson, Deputy Director, Alternative Education Systems (AES), GoSS	Issues concerning Workshop on NFE MIS
	4.00 to 5.30 PM	Workshop Preparations and reading various reports	
Tuesday, March 30, 2010	9.00 AM to 5.00 PM	Conducted Workshop on NFE MIS	Detailed Workshop Schedule is attached along with list of participants
Wednesday, March 31, 2010			
Thursday, April 01, 2010	9.00 AM to 5.00 PM	Review of Background Material	
Friday, April 02, 2010		Review of Background Material	
Saturday, April 03, 2010		Drafting Mission Report	
Sunday, April 04, 2010		Drafting Mission Report	
Monday, April 05, 2010		Sharing the draft Report with Mr. George Alexandratos, Project Officer	

Day and Date	Time	Activity	Purpose and Discussion Points
		LIFE, UNESCO Juba	
Tuesday, April 06, 2010		Finalization of the Mission Report	
Wednesday, April 07, 2010		Travel to Khartoum from Juba	
Thursday, April 08, 2010		Meeting with Director UNESCO Sudan and presentation of the Mission Report	
Friday, April 09, 2010		Departure to New Delhi	

Annexure 2

Workshop on Developing a Framework for Non-Formal Education (AES) MIS in Southern Sudan

Oasis Camp, Juba: March 30 and 31st, 2010

Day One

- Opening Session: Opened by Director General, Directorate of Planning and Budgeting, Ministry of Education, Science and Technology
- Self Introduction by Participants
- Introduction to Workshop
- Introduction to Management Information System
- Introduction to School Report Cards and District Information System (DISE)
- Role of Diagnosis in Education Planning and Information Requirements

Day Two

- Group Work on AES Format and Presentation by Participants
- Review of Current Status of MIS and Developing Framework for ASE/NFE MIS in Southern Sudan
- Indicators of Educational Development and Demonstration by taking Real Life Examples from the EMIS Statistical Booklet
- Brief Summing up of the Workshop

Annexure 3

UNESCO JUBA ANTENNA (LIFE PROJECT)
LIST OF PARTICIPANTS FOR THE NFE-MIS WORKSHOP IN JUBA
Date 30 March, 2010

	Name	Title / Organization	Telephone/E-mail Contact	Signature
1.	DAVID GATH	(IBIS) Oracle DBA.	0955023262	
2	Moses Kong	EMIS	0919843554	
3.	DENG CHOL DENG	EMIS	0927855342	
4	Abdur Razzak	Sr. Area Manager (Education)	0917394475 Razzak.borno@gmail.com	
5	Shadrack Chol	MOEST. Goss	0907205154	
6	VICTOR HAKIM	SMOE-CES	0910603045	
7	Deng Aluak Deng	SSCCSE Goss	091110341	
8	LAZERO FRANCO	SMOE-CES	0122465138	
9	OKOT JOHN ONEKA	ACROSS	0955113994	
10	Abraham Lado Isaac	D/Primary Ed CES	0914122733	
11	Dr. JONATHAN ODWE	SSCCSE	0924780514	
12	Anthony J. Christopher	SSCCSE	0971220534	
13	ISAAC MUSORE	EDC/SSIRI	0927635885	
14	Simon Logoye	EDC/SSCRI	0911574237	
15	Atsushi NASHIMOTO	Associate Reintegration officer / UNHCR	nashimot@unhcr.org	

UNESCO JUBA ANTENNA (LIFE PROJECT)
LIST OF PARTICIPANTS FOR THE NFE-MIS WORKSHOP IN JUBA
Date 3[illegible] March, 2010

	Name	Title/ Organization	Telephone/E-mail Contact	Signature
1-	David Gathu Mwangi	IBIS	0955023252	[illegible]
2-	VICTOR HAKIM	SMOE-CES	0910603045	[illegible]
3-	Deng Aluak Deng	SSCCSE	0911103411	[illegible]
4-	Richard Aubayo	SSCCSE	092682C551	[illegible]
5-	LAZERU FRANCO	SMOE-CES	0922465138	[illegible]
6-	Anthony J. Christopher	SSCCSE	0911220534 anthony_Lo@yahoo	[illegible]
7.	Dr. JONATHAN ODWEE	SSCCSE	0920780514	[illegible]
8.	Atsushi NASHIMOTO	Associate Reintegration Officer, UNHCR	nashimot@unhcr.org	[illegible]
9.	Abraham Lado Isaac	D/primary CES	0914122733	[illegible]
10	MOSES KENS	EMIS	0919843564	[illegible]
11.	DENG CHOL DENG	EMIS	0927855342	[illegible]
12.	ISAAC MUSALE	EDC/SSIRI	0927635885	Musa
13.	Okot John Oneka	Settlement Admin / ACROSS	0955113994	[illegible]
14	Abdur Razzak	St. Area Manager BRAC	0917394478[illegible]	[illegible]
15	Simon Logoze	EDC/SSIRI	0911579232	[illegible]
16.	Dr EVA NDERU	TAP/AED	enderu@aed.org 0955314857	[illegible]
17	Dr. Grace Akukwe	TAP/AED COP	gakukwe@aed.org 0957152332	[illegible]
18	Maree Melican	DCOP/EDC-SSIRI	0477116990	MMelica