

POLICY RESEARCH INITIATIVE

SOMALIA

**Education Management Information
Systems
Status Report**

April 1988

IEES

Improving the
Efficiency of
Educational
Systems

Florida State University
Howard University
Institute for International Research
State University of New York at Albany

United States Agency for International Development
Bureau for Science and Technology
Office of Education
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1.0 INTRODUCTION

1.1 STATEMENT OF THE PROBLEM

The Planning Department of the Ministry of Education and Culture (MOEC) has detected a strong and persistent feeling, not only among educational decision-makers, but also among other governmental and nongovernmental organizations in Somalia that the educational information now used for planning and management is of low quality.

The importance of building a data base for educational planning and management cannot be overstated. However, the quality of the data bank that is created largely depends upon the extent to which the information from which it is drawn is valid, reliable, and up-to-date. This becomes even more critical when decision-makers are faced with the difficult task of conducting both short- and long-range educational development planning under the most stringent financial constraints.

There is growing dissatisfaction among decisionmakers in Somalia with the efficiency of the information network in use with respect to quality, timeliness, and adequacy. Generally speaking, there is very little information about the characteristics and condition of school buildings, teacher qualifications, number of utilized classrooms, and other types of basic information about the educational system. In addition, figures on other equally important areas, such as expenditures, cost, availability, quantity and quality of teaching/learning aids are not accurately reported to planners and decisionmakers at the center of the system.

Contributing to these problems are factors such as:

- Communication between central, regional, district, and school levels is very difficult and frequently results in delays and other inefficiencies (inaccuracies, missing data, etc.) in decisionmaking.
- Regions and districts do not follow a uniform system of data collection and recording.
- There is a lack of fit between the information currently collected and the needs of each level of the educational hierarchy, other ministries, and donor agencies assisting the education sector.

1.2 POLICY AND PLANNING IMPLICATIONS

Because central planners and policymakers do not have adequate and dependable information on the prevailing conditions of the regions and districts, they cannot draw up realistic plans and policies that are consistent with the differing needs of the individual regions or districts. The result is that educational policy is based on national averages despite great regional differences across the country. Where such averages are far from the reality of the actual condition in the regions, the educational objectives are unrealistic and the content and methods of education ill-adapted to the needs of the region or district. Additionally, poor communication among central,

regional, district and school levels consistently undermines the educational systems' planning, policy, and administration initiatives. The low level of importance attached to the way in which decisions are implemented in the field is also an obstacle to program success. It can be argued that educational planning ceases with the publication of the national plan. For instance, only 4% of the last (1982-1986) five-year education development plan activities ever materialized in some form.

The central education services frequently produce circulars and directives, but as these frequently are not relevant to regional situations, they are often either overly vague or too restrictive. In the absence of adequate information and direction, local administrators may not know what measures to adopt in order to address their particular educational problems. The result too often is that some do not take any initiative and simply leave things to run their course according to previous trends; others may take inappropriate actions.

In addition to the MOEC's need for reliable and valid information, such data are also needed by donor agency representatives, who are accountable to their agencies for the results of their assistance. The results of this lack of information may lead to waste of their scarce resources.

The flow of information from the central to the local level (and vice versa) is much too slow to meet the timelines indicated in the MOEC's decision tables. Central level decisionmakers are highly committed to improving the information

communication network of the system. Consequently, the development of a major strategy that will enhance the quality of education is a priority objective explicitly stated in the current Five-Year Plan for 1987-1991. An essential element in this program is the development of an effective system of data management. The Ministry, with the help of UNICEF, conducted school mapping studies in four regions in 1987. Establishment of a computer unit in the Department of Planning with the assistance of the USAID/IEES Project has improved the efficiency of the data recording and management at the central level. Central level staff have also trained regional planners in data recording.

1.3 OBJECTIVES OF THE RESEARCH INITIATIVE

Before attempting to take corrective measures that might prove inappropriate, the Ministry of Education and Culture decided to carry out a diagnostic study of the situation in order to identify the primary factors underlying the problems inherent in the educational data system presently in use. This research will enable policymakers to develop an Educational Management Information System (EMIS) which will promote decisionmaking on the basis of a comprehensive organization and analysis of data.

The intention of this study is to evaluate the existing EMIS from the grassroots level to central administration. The processes by which data are

organized, coordinated, and transmitted across levels of the educational system is also assessed. Essentially, this research is conducted for the purpose of: (a) studying the impact of the education data management system on educational policy formulation and planning activities; and (b) providing relevant background information and up-to-date educational data so that education planners and decisionmakers can analyze alternatives, as well as formulate systematic operational procedures, policy recommendations and appropriate strategies for enhancing the quality of education. Specifically, the objectives of this research are to identify:

- the type and sources of information planners and decisionmakers presently use,
- the major problems planners and decisionmakers usually have in using education data (i.e., adequacy, timeliness, accuracy, quality, training needs of some or all data users/givers, etc.); and
- the types of data that planners and decisionmakers say that they would like to have but do not have at present.

2.0 METHODOLOGY

With financial and technical assistance from IEES, the MOEC is conducting a comprehensive study of the content, quality, availability, sources and end users of educational data. To accomplish these objectives, the Education Management Information System (EMIS) research initiative is carried out in three phases: (a) a

review of the current status of the system and the relevancy of data currently available to decisionmakers at each level; (b) an examination of issues relating to training, incentives and disincentives, equipment, and administrative support needed by planners and decisionmakers at each level of the educational hierarchy; and (c) a mapping of the data flow through the school, district, region, and central levels of the education system. The methodology used to carry out each of these phases is described below.

2.1 STUDY OF EDUCATIONAL DATA AVAILABLE TO DECISIONMAKERS

This phase of research involves reviewing the perceived relevancy of data currently available to decisionmakers at each level. The reasons for the lack of timeliness and absence of important information (e.g., unit cost data) are systematically explored. The methodology consists of two components: (a) a review of available literature review and (b) the collection of information from relevant ministry personnel, through interviews and direct observations by Planning Department personnel.

2.1.1 Review of Literature

This component consists of an examination of published MOEC data, reports published by other (both governmental or nongovernmental) organizations and unpublished data avail-

able to educational decisionmakers. Also included in the analysis is an examination of data quality, as well as publication and delivery systems.

To ensure that the documents were analyzed in a systematic and consistent fashion, a document review form was used in conducting the data analysis. (See *Appendix D.*) This procedure enabled the reviewer to record information about the nature and type of statistics reported, as well as the funding source, agency/office who conducted the research, the way the documents were distributed, and so forth.

2.1.2 Interviews and Observations

The steps involved in this component involved conducting informal discussions with members of the Planning Department and other MOEC personnel to determine reasons for the lack of timeliness and absence of important information.

2.2 IDENTIFICATION OF INFORMATION NEEDS OF DECISIONMAKERS

The research in this phase involved the administration of two questionnaires: (a) a data quality questionnaire, designed to ascertain the opinions of decisionmakers regarding the quality and availability of information; and (b) a decisionmakers' information needs questionnaire to identify the data users, their primary sources of information, their importance, problems with the data, as well as additional data needed.

2.2.1 Pretest

Prior to administering to the target population, each of the questionnaires was translated into Somali and pretested. Revisions were then made on the basis of pretest results and enumerators were trained in interviewing techniques.

2.2.2 Administration of Questionnaires

The questionnaires on data quality was administered to 4 director generals, 12 directors, 1 personal service contractor, 2 regional education officers, 1 World Bank country representative and 20 headmasters in August 1987. Of those, only 14 people returned the questionnaire. The purpose of the questionnaire was to determine attitudes among ministry staff at various administrative levels and in other agencies about the quality of data available within the Ministry of Education and Culture.

The survey of the opinions of key Ministry of Education decisionmakers was undertaken by administering the questionnaire to eleven Ministry of Education decisionmakers, including all four director generals (Educational Development, Administration of Personnel, Schools and Nonformal Education), and seven of the twelve department directors. These were briefed regarding the reasons why the survey was being conducted, its objectives, and the implications of the results

for future planning and decisionmaking alternatives.

The procedure followed was for enumerators to interview each of the decisionmakers. However, in some cases, the questionnaires were delivered to decisionmakers, who later filled them out and returned them. In a few cases, the enumerators went back to the respondents after they had returned the questionnaires and asked them to fill in the questions which had been omitted. Questionnaires were returned by all eleven respondents.

2.3 MAPPING OF THE DATA FLOW

The purpose of this phase of research activity is to map the flow of data through the school, district, region, and central levels of the educational system. In order to carry out this part of the study, two questionnaires were developed for administration to Headmasters and Regional/District Education Officers.

The questionnaires were designed to gain information about the type of data which is collected, how it is used and analyzed, the type of support (training, transportation, etc.) which is received from Central and Regional Administration, and problems encountered with the MOEC questionnaires which they are requested to fill out each year (such as the Annual Statistical Questionnaire).

2.3.1 Pretest

Each of the questionnaires were pretested in 6 urban and 3 rural primary schools, 2 DEOs and 2 REOs in the regions of the Lower Shabelle, Middle Shabelle and Banadir. Revisions were made on the basis of pretest results.

2.3.2 Sample Selection

A total of 42 schools in six regions (Awdal, Northwest, Togdheer, Bay, Bakor, and Gedo) were randomly selected for inclusion in the study.

2.3.3 Selection of Enumerators

The enumerator team was selected and consisted of members of the Planning Department, Statistics Division, and well as Central and Regional/District Inspectors.

2.3.4 Administration of Questionnaire

The data flow questionnaires were designed to be administered in the form of interviews by enumerators. It was decided that in no case would the questionnaire be left by the enumerator to be filled out by the respondent. Detailed interview procedures were developed, along with the interview protocol. A series of training workshops was carried out in each of

the selected regions, and enumerators gained actual practice in conducting the interviews prior to going into the field.

3.0 FINDINGS

3.1 STUDY OF EDUCATIONAL DATA AVAILABLE TO DECISIONMAKERS

As previously noted, the first step in the analysis of educational data available to decisionmakers was to review literature published by the Ministry of Education and Culture and other relevant ministries, as well as other donors. In addition, unpublished documents and computer data bases were also reviewed.

3.1.1 Published Ministry of Education and Culture (MOEC) Data

A total of 30 documents were examined, of which 14 were produced by the MOEC (either independently or in conjunction with a donor agency or advisor). An additional eight documents were produced by other Ministries and donor agencies. Eight were produced on an *ad hoc* basis, in response to a specific problem or request for information.

The majority of these documents (67%) were published between 1984 and 1985 and the remaining 33% were published between 1965 and 1983. It should be noted that it was not possible to locate and review every document produced by the MOEC during this period. The documents included in this study represent only a sample of a large body of literature

relevant to the education sector. However, every effort was made to locate and obtain as many of these reports as possible. Educational data reported in the documents by type and frequency are summarized in Table 1. (See following page.)

A total of 23% of the studies reviewed were financed by USAID/IEES. The majority (90%) of the education documents were focused solely on the education sector, while about 10% were more general reports on the overall economy, with limited discussions on the relationship between education and development.

Table 1 reveals that teacher characteristics, such as qualifications and work experience were given consideration in only 6 (20%) of the studies. The most frequently occurring statistic reported was student enrollment by primary and secondary level (14 documents), followed by teacher supply (8).

Studies also reviewed which described the use of facilities, by component, including: classrooms (6), furniture (2), and schools (1). Other topics covered by these reports included projected manpower (1), projected teacher demand (3), examination results (1), student and teacher attendance (1), teacher training (4), and teacher student ratios (4). The documents reviewed in this study are available to everyone, regardless of who they are or with which governmental/nongovernmental agency they are affiliated.

TABLE 1***Number of Studies Available by Category of Information**

	Student Enrollment	Teacher Supply	Teacher Qualification
Area of analysis:			
Overall	19	11	6
Primary	14	8	2
Secondary	14	8	3
Vocational/Technical	19	6	0
Nonformal	7	2	0
Level of aggregation:			
Grade	5	1	0
Subject Area	2	0	1
Geographic Area	5	4	1
Age	2	1	0
Sex	7	1	0

n = 30

* Numbers are not additive, since some studies fall into more than one category.

The Ministry of Education publishes several education reports on a regular basis. The most frequent of these is the quarterly document which highlights the most salient activities that the ministry departments have carried out during the quarter. Copies of this document are submitted to both the party and the government in order to fully acquaint them with the services provided by the Ministry and to keep them informed of the status of current activities. However, necessary comments and corrective feedback have yet to be seen.

Another important document published by MOEC is the annual statistical abstract which embodies quantitative basic data such as enrollment by level, grade, age group, region, and sex. National examination results and educational expenditures by item are also reported. This document is the most widely circulated MOEC publication and is distributed to all ministries and nongovernmental agencies.

A vital MOEC publication that should be mentioned is the five-year educational development plan. Among other things, this document reports the educational policy, overall objectives, and delineates strategies by which target objectives are to be reached. It is usually delivered to other ministries for whom the information is pertinent.

The plan is used as the basis for formulating the nation's educational programs and policies. It also serves as a yardstick against progress toward educational goals is measured.

For example, prior to developing the current Five-Year Plan (1987- 1991), an analysis of previous five-year development plans (1982-1986) was made. The 1982-1986 plan called for a program to implement the national policy of universal free primary education. Its goal, as evidenced by available statistics, was not reached. In fact, only 37% of the planned new intake, 48% of forecasted enrollment, and 29% of planned construction of classrooms was achieved.

3.1.2 Quality of Documents Reviewed

Most of the documents (whether they are annual reports or *ad hoc* studies published by other government or non-governmental bodies) that contain quantitative educational statistics used data from a MOEC publication.

Although most documents cite MOEC as their source of information, inconsistencies in data are not unusual. There is a substantial amount of variation in the educational statistics cited among various reports. These discrepancies are even more evident when educational data are compared to data from sources other than MOEC.

3.1.3 Production and Distribution of Documents

The main obstacles faced in the production and distribution of documents are those of inadequate supplies and facilities necessary for adequate

reproduction. Moreover, problems of distributing reports to remote areas are enormous and reports rarely reach their intended destination. These, as well as other problems, such as administrative inefficiency at the production plant and at the institution level, tend to limit availability of documents to the target population.

3.1.4 Unpublished Data

The MOEC collects and utilizes a large amount of data which is not published in the form of a formal report. These data are frequently used to provide information to *ad hoc* requests and account for many of the MOEC estimates which are quoted by other ministries and donors. Examples of data of this type include information gathered in the school mapping study, the annual headmasters' questionnaire, and primary and secondary school examinations.

Recently, much of this information has been computerized using spreadsheet software. These data form the basis of the initial stages of a Ministry of Education computer data base which is now being developed. The use of the computer in tabulating and analyzing these data has made a great difference in the time and effort required to respond to requests for information.

The quality of the information comprising this data base is contingent upon the accuracy of the data that is fed into the system. The Ministry is currently attempting to improve the accuracy of this information by providing training to

headmasters, central inspectorate and other MOEC staff in record keeping and administrative techniques, as well as in procedures for filling out questionnaires and responding to information requests which they receive each year. It is hoped that as proficiency in these areas continues to grow, the quality of the information available to decision-makers will increase, and educational decisionmaking can become a more systematic process.

3.2 IDENTIFICATION OF INFORMATION NEEDS OF DECISIONMAKERS

As indicated in the methodology discussion, this phase of research involved the administration of two questionnaires: (a) a data quality (DQ) questionnaire, designed to ascertain the opinions of decisionmakers regarding the quality and availability of information; and (b) a decisionmakers' (DM) information needs questionnaire to identify the data users, their primary sources of information, problems with the data, as well as additional data needed.

Appendices A-C contain the analysis of the questionnaire of decisionmakers information needs; Appendix A depicts the number of responses in each category for each question, Appendix B contains the average responses to each question, and Appendix C depicts the percent of responses by category.

Appendix D presents the statistical analysis of the data quality question-

naire. A summary of these analyses is presented in the discussion below.

3.2.1 Data Sources

The most frequently listed sources of information used by decisionmakers (DM, question 5) are depicted on Table 2. (*See following page.*) As illustrated on this table, reports from REO/DEO, data from headmasters and statistical surveys were the most frequently used sources. None of the respondents checked donor studies as a source of data used by their office. However, it should be noted that many of the studies funded by other donors are published as MOEC documents. This question does not ask respondents to specify how often each of these documents are used.

The responses to questions regarding the sources of data considered to be "most useful" are reported on Table 3. (*See following page.*) As indicated in Table 3, when decisionmakers were asked about sources of information they found most useful, (DM, question 6), 4 listed data from the Regional Education Office, 6 from the Planning Office and 1 from other MOEC sources.

Although question 7 on the DM questionnaire was intended to elicit actual names of documents found to be most useful, respondents listed the department issuing the reports, rather than document titles. This question produced similar, but slightly different results than the responses to RM, question 6. A total of 3 out of 11 respondents indicated that they found the most useful documents to be

those in Regional Offices, 7 out of 11 listed Planning Department reports and 1 reported other MOEC sources. For DM, question 15, an open-ended question which asks with whom decisionmakers consult before making decisions, 7 of 10 listed Regional Officers and Directorate General for Schools, while 3 listed the Planning Department.

3.2.2 Importance and Use of Data

Table 4 (*on the following page*) depicts the attitudes of the respondents to the decisionmakers' about the importance of possible uses and sources general categories of data. As illustrated on Table 4, a high proportion of respondents ranked all categories given as important.

Regarding the importance of various data sources, the number of responses receiving extremely important or very important ratings in each category were as follows: statistical analyses, 7 out of 10; personal experience, 3 out of 10; conversations with MOEC staff, 2 out of 5. The mean ratings for statistical analyses, personal experiences and conversations with others were 1.6, 1.8 and 3.0 respectively (with 1 being the highest rating and 4 being the lowest).

Question 6 on the data quality questionnaire asks decisionmakers to rate the importance of specific types of educational information. The results of these ratings were then compared to the analysis of information presently available to decisionmakers. The

TABLE 2
Data Type Inventory

	1	2	3	4	5	6	7	No.
	Estimate based on personal exper.	Statistical survey	Data from headmaster	Reports from REO/DEO	Donor studies	Other specify	Do not use data of this type	
a) Student enrollment distribution	0	2	5	2	0	0	1	10
b) Student characteristics (Sex, Age, etc.)	1	0	0	2	0	0	0	2
c) Student performance on promotional examination (one grade to next)	1	2	4	2	0	0	1	10
d) Student performance on national leavers exams	0	0	0	1	0	0	0	1
e) Student drop-out rate	1	1	5	2	0	0	0	9
f) Teacher assignment placement	0	1	0	1	0	0	0	2
g) Teacher supply	0	0	0	2	0	4	1	7

TABLE 2 (Continued)

	1	2	3	4	5	6	7	No.
	Estimate based on personal exper.	Statistical survey	Data from head-master	Reports from REO/DEO	Donor studies	Other specify	Do not use data of this type	
h) Future demand for teachers	0	0	0	0	0	0	0	0
i) Teacher background/training	0	1	3	3	0	1	0	8
j) Teacher performance	0	0	1	1	0	0	0	2

TABLE 3**Data Sources**

Question No.	Question Content/ Category	Number of Responses	No.
DM-6	Most Useful Sources of Information:		11
	Regional Education Officers	4	
	Planning Department	6	
	Other MOEC Sources	1	
DM-7	Most Useful Documents Consulted:		11
	Regional Education Officers	3	
	Planning Department	7	
	Other MOEC Sources	1	

TABLE 4

Data Importance Ratings by Use and Source

Question No.	Question Content/ Category	Importance Ratings %*				
		1	2	3	4	N
DM-4	Data Use:					
a	Describe educational status	7	2	1	0	10
b	Program monitoring	7	3	1	0	11
c	Trends in education	8	2	0	1	11
d	Projections	8	1	2	0	11
e	Other	1	0	0	0	1
DM-11	Importance of Data Sources:					
a	Personal experience	3	1	2	0	6
b	Conversations MOEC staff 40	2	1	1	1	5
c	Conversations others	0	2	1	2	5
d	Statistical analyses	7	1	1	1	10

***1 = extremely important**

3 = somewhat important

2 = very important

4 = not at all important

results of this comparison are depicted on Table 5. (*See following page.*) An examination of this table reveals that the types of information which were ranked highest on importance, i.e., student enrollment (1.17) and teacher supply (1.17), were also the most frequently occurring categories of studies (19 and 11 studies respectively).

Likewise, there were only three reports dealing with availability of textbooks--the category which received the lowest ranking on the importance scale (2.92). Of course, there is no way of determining the extent to which the importance ranking was influenced by the respondents' familiarity with the type of data they were asked to rank. That is, it is possible that some types of data are perceived to be more important than other types because they are more readily available and more frequently used.

3.2.3 Data Quality

Both the data quality and the decisionmakers' questionnaire contain items dealing with the quality of data. A statistical analysis of the responses to questions on the data quality questionnaire is found in Appendix B.

In response to the questions on the data quality questionnaire concerning the accuracy of the data, decisionmakers generally reported a higher amount of error in the data which they use than they considered acceptable. The mean percent of reported error was 21.3%, while the mean acceptable error was 9.9%. On a scale of one to four, with one being "ex-

tremely accurate" and 4 being "not at all accurate," the mean rating of the accuracy of educational data was 2.92 (slightly above the "somewhat accurate" category). All of the respondents felt that, relative to other demands, improving the quality of educational data was extremely important.

Table 6 (*on the following page*) depicts respondents' ratings of data quality (question 20 on the decision-making questionnaire). As illustrated, 2 out of 10 people rated data quality as "excellent," 5 considered data to be of "good" quality, 3 ranked the data to be "fair," and 1 person considered the data to be poor. The mean response was 2.2. (*See Appendix B.*)

These findings are somewhat contradictory to the results of the examination of available documents, in which a number of data inconsistencies were identified. However, it must be kept in mind that some of the documents in the literature review were published a number of years ago (33% were published between 1965 and 1983 and 67% between 1983 and 1985). In addition, respondents to the decisionmaker questionnaire were not asked about specific documents, but rather were asked to give their overall perception of the quality of educational data available to them. Respondents to the decisionmakers' questionnaire were not given specific criteria, on which to rate the data. The literature review, on the other hand, involved examining documents for inconsistencies in data across sources, as well as the overall quality of the reports.

TABLE 5

Importance Ratings* of Data Type

Type of Data	Mean	Standard Deviation	Number of Reports** Available
Student enrollment	1.17	.39	19
Teacher supply	1.17	.39	11
Teacher background/ qualifications	2.17	.94	6
Education costs	1.42	.79	3
Availability of textbooks	2.92	.29	3

***1 = extremely important**

2 = very important

3 = somewhat important

4 = not at all important

**** number of respondents = 14; number of reports reviewed = 30**

TABLE 6
Data Quality

Question No.	Question Content/ Category	Data Quality Rating* %				No.
		1	2	3	4	
DM-20	Quality of Educational Data	2	5	2	1	10

***1 = excellent**

2 = good

3 = fair

4 = poor

When decisionmakers' views of data quality were elicited, by asking about specific data problems which they experience, however, the responses were somewhat different. These results are described below.

3.2.4 Data Problems

Table 7 (*on the following page*) depicts the extent to which respondents regard various data issues to be serious problems which they experience with educational data (DM, question 18). The problems having the highest number of extremely serious or very serious rankings include: timeliness (8 out of 8); accuracy (8 out of 10) and not sure how to interpret (10 out of 10). The mean response rate for each of these categories is 1.2, 1.3, and 1.5 respectively.

A total of 70% of the respondents believe that a lack of adequate training in making the best use of educational data in their job is major constraint they face (DM, question 9). Concerning the most serious problems with available data (DM, question 10), 50% stated that data is not up-to-date, while 40% feel that data is not available in the form needed.

In response to an open-ended question (DM, question 8) asking what could be done to improve the quality of the information about the education system available to decisionmakers, 9 of the 11 respondents listed the need for capacity building in the area of data management at both central and regional levels as highly essential to improving data quality, while 2 decisionmakers called for the im-

provement of coordination among ministry departments and between the central and regional levels.

To the DM question regarding what type of information decisionmakers do not have but would like to receive (DM, question 12), 3 out of 10 of the respondents would like to know the exact number of the Ministry of Education employees, and 5 out of 10 expressed the need for more regular and comprehensive information, particularly on issues related to:

- number of textbooks, preferably by grade, subject, level and lifetime;
- promotion examination results; and
- background information on the prevailing local conditions under which schools function, particularly primary schools.

The remaining 2 respondents did not indicate what type of information they would like to have, but rather responded that they would like to be consulted more by top executives in the ministry on matters that concern their department and other departments whose job is related to theirs in some way. In other words, instead of receiving more information, they are more interested in providing input into the decisions. (*See Table 8.*)

When decisionmakers were asked how often they base their decisions on the examination of specific educational

TABLE 7**Data Problems**

Question No.	Question Content Category	Number of Responses Seriousness Ratings*				Number Responding
		1	2	3	4	
DM-18	Educational Data Problems:					
a	Timeliness	6	2	0	0	8
b	Accuracy of data	8	1	1	0	10
c	Mistakes in analysis	3	3	2	0	8
d	Results not clear	4	2	0	1	7
e	Not clear how data were analyzed	4	2	0	1	7
f	Not sure how to interpret	3	3	0	0	6
g	Other	0	0	2	0	2

***1 = extremely serious problem**

3 = somewhat of a problem

2 = very serious problem

4 = not a problem

TABLE 8**Information Decisionmakers Would Like to Have**

DM-12	Information Don't Have but Would Like to Have:		10
a			
b	Exact number of MOEC employees	3	
c	Total number of textbooks by grade, level and conditions	1	
d			
e	More reports on the conditions rural schools	2	
f			
g	Promotion examination results	2	
h	Consultation with MOEC superiors	2	
i			
DM-15	Primary People Consulted:		10
	Planning Department	7	
	Regional Education Officers/ and D. G. for Schools	3	

data (DM, question 14), 7 checked "always" and 4 checked "most of the time."

With regard to the involvement of decisionmakers and their staff in the process of statistical analysis and interpretation (DM, question 16), 2 out of 11 decisionmakers report that they do the statistical analysis and interpretation themselves, 7 do the interpretation, but have the analysis done by a staff member, and 1 has a staff member do both the analysis and interpretation. No one checked the response indicating that they did not use statistical data.

In response to DM, question 17, which asks who uses data analyzed in the respondent's department, none reported that the data was used only by the decisionmaker. Of the 11 respondents, 2 indicated that both they and the people in their office use the data, 1 that the data is widely available to anyone who wants to see it, and 7 indicated that no statistical analysis is conducted in their unit. (Note that this seems to contradict the responses to question 16.)

A total of 7 out of 10 decisionmakers reported that they have hand calculators (DM, question 21), while only 1 has access to computers or knows how to use them. All respondents expressed interest in learning to use a microcomputer.

4.0 CONCLUSIONS

From the findings presented above, we can conclude the following about the attitudes of decisionmakers in the study:

- Most decisionmakers either consult the Regional Education Offices, Planning Department staff, or documents available in their department.
- Most decisionmakers consider improvements in capacity building in the area of data management at both central and regional levels to be highly essential and all respondents in the survey want to receive training in the use of microcomputers.
- Most decisionmakers consider training in all areas of data collection and analysis to be sorely lacking and would welcome additional training that might be provided.
- Decisionmakers would like to have more information about textbook availability, promotion examination results, and the condition of schools. Decisionmakers, particularly in the MOEC Planning Department, report a need for information about teacher retention, qualification, and performance.
- The most serious problems decisionmakers have with data is untimeliness, accuracy, and unavailability of data in the form needed. Decisionmakers report that the inability to get data in time to use the information for planning purposes has contributed to the inability to adequately address educational problems.
- There is a strong need for information-sharing among the various

agencies/ministries, such as the Ministry of National Planning, Ministry of Labor, Ministry of Education and Culture, and others.

The system's lack of adequate, relevant, and dependable educational data is attributed to:

- *Organizational inefficiencies.* In collecting information, central level statisticians use the services of headmasters, inspectors, and sometimes teachers, none of whom are trained as statisticians. The situation is further exacerbated by the fact that the recipients dislike filling out questionnaires and view the request as a laborious task with no immediate utility;
- *Lack of adequate training, particularly at regional and district levels.* Education officers at regional, district, and school levels are understandably ill-prepared to report information that they feel might negatively reflect upon their performances.
- *Lack of equipment.* Outside the central office, a lack of hand calculators and equipment has been a major contributor to inaccuracy in data, particularly in remote regions.

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**APPENDIX A-1: Decisionmakers Questionnaire
Number of Responses by Category**

APPENDIX A-1

Decisionmakers Questionnaire Number of Responses by Category

QUESTION	N	1	2	3	4	5
Q3A	10	7	2	1	0	
Q3B	11	8	3	0	0	
Q3C	11	8	2	0	1	
Q3D	11	9	1	1	0	
Q3E	1	1	0	0	0	
Q4A	10	7	2	1	0	
Q4B	11	7	3	1	0	
Q4C	11	8	2	0	1	
Q4D	11	8	1	2	0	
Q4E	1	1	0	0	0	
Q11A	6	3	1	2	0	
Q11B	5	2	1	1	1	
Q11C	5	0	2	1	2	
Q11D	10	7	1	1	1	
Q14	11	7	4	0	0	0
Q16	11	2	7	1	1	0
Q17	11	0	2	1	7	1

APPENDIX A-1 (Continued)

QUESTION	N	1	2	3	4	5
Q18A	8	6	2	0	0	
Q18B	10	8	1	1	0	
Q18C	8	3	3	2	0	
Q18D	7	4	2	0	1	
Q18E	7	4	2	0	1	
Q18F	6	3	3	0	0	
Q18G	2	0	0	2	0	
Q20	10	2	5	2	1	

**APPENDIX A-2: Decisionmakers Questionnaire
Number of Responses by Category**

APPENDIX A-2

Decisionmakers Questionnaire Number of Responses by Category

QUESTION	N	1	2	3	4	5	6	7
Q5A1	10	0	2	5	2	0	0	1
Q5A2	2	0	0	0	2	0	0	0
Q5B1	10	1	2	4	2	0	0	1
Q5B2	1	0	0	0	1	0	0	0
Q5C1	9	1	1	5	2	0	0	0
Q5C2	2	0	1	0	1	0	0	0
Q5D1	7	0	0	0	2	0	4	1
Q5D2	0	0	0	0	0	0	0	0
Q5E1	8	0	1	3	3	0	1	0
Q5E2	2	0	0	1	1	0	0	0
Q5F1	9	1	1	3	4	0	0	0
Q5F2	2	0	0	1	1	0	0	0
Q5G1	8	1	0	1	1	0	5	0
Q5G2	0	0	0	0	0	0	0	0
Q5H1	9	1	1	1	3	0	2	1
Q5H2	1	0	1	0	0	0	0	0

**APPENDIX B: Decisionmakers Questionnaire
Average Responses**

APPENDIX B

Decisionmakers Questionnaire Average Responses

QUESTION	N	AVERAGE
Q3A	10	1.4
Q3B	11	1.3
Q3C	11	1.5
Q3D	11	1.3
Q3E	1	1.0
Q4A	10	1.4
Q4B	11	1.5
Q4C	11	1.5
Q4D	11	1.5
Q4E	1	1.0
Q11A	6	1.8
Q11B	5	2.2
Q11C	5	3.0
Q11D	10	1.6
Q13	11	1.5
Q14	11	1.4
Q16	11	2.1

APPENDIX B (Continued)

QUESTION	N	AVERAGE
Q17	11	3.6
Q18A	8	1.2
Q18B	10	1.3
Q18C	8	1.9
Q18D	7	1.7
Q18E	7	1.7
Q18F	6	1.5
Q18G	2	3.0
Q20	10	2.2

**APPENDIX C-1: Decisionmakers Questionnaire
Percent of Responses by Category**

APPENDIX C-1

Decisionmakers Questionnaire Percent of Responses by Category

QUESTION	N	1	2	3	4	5
Q3A	11	82	18	0	0	-
Q3B	11	73	27	0	0	-
Q3C	11	73	18	0	9	-
Q3D	11	82	9	9	0	-
Q3E	1	100	0	0	0	-
Q4A	11	82	18	0	0	-
Q4B	11	64	27	9	0	-
Q4C	11	73	18	0	9	-
Q4D	11	73	9	18	0	-
Q4E	1	100	0	0	0	-
Q11A	6	50	17	33	0	-
Q11B	5	40	20	20	20	-
Q11C	5	0	40	20	40	-
Q11D	10	70	10	10	10	-
Q14	11	64	36	0	0	0
Q16	11	18	64	9	9	0
Q17	11	0	18	9	64	9

APPENDIX C-1 (Continued)

QUESTION	N	1	2	3	4	5
Q18A	8	75	25	0	0	-
Q18B	10	80	10	10	0	-
Q18C	8	38	38	25	0	-
Q18D	7	57	29	0	14	-
Q18E	7	57	29	0	14	-
Q18F	6	50	50	0	0	-
Q18G	2	0	0	100	0	-
Q20	10	20	50	20	10	-

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**APPENDIX C-2: Decisionmakers Questionnaire
Percent of Responses by Category**

APPENDIX C-2

Decisionmakers Questionnaire Percent of Responses by Category

QUESTION	N	1	2	3	4	5	6	7
Q5A1	10	0	20	50	20	0	0	10
Q5A2	2	0	0	0	100	0	0	0
Q5B1	10	10	20	40	20	0	0	10
Q5B2	1	0	0	0	100	0	0	0
Q5C1	9	11	11	56	22	0	0	0
Q5C2	2	0	50	0	50	0	0	0
Q5D1	7	0	0	0	29	0	57	14
Q5D2	0	0	0	0	0	0	0	0
Q5E1	8	0	12	38	38	0	12	0
Q5E2	2	0	0	50	50	0	0	0
Q5F1	9	11	11	33	44	0	0	0
Q5F2	2	0	0	50	50	0	0	0
Q5G1	8	12	0	12	12	0	62	0
Q5G2	0	0	0	0	0	0	0	0
Q5H1	9	11	11	11	33	0	22	11
Q5H2	1	0	100	0	0	0	0	0
Q5I1	8	12	12	0	50	0	25	0

IEES PROJECT

Type of Education data reported (check all that apply)

(A)	Student enrollment	Teachers supply	Teachers qualification	Other teachers charac- teristics
Overall	_____	_____	_____	_____
by level	_____	_____	_____	_____
primary	_____	_____	_____	_____
secondary	_____	_____	_____	_____
voc/tech	_____	_____	_____	_____
nonformal	_____	_____	_____	_____
by grade	_____	_____	_____	_____
by subject area	_____	_____	_____	_____
by geograph- ical area	_____	_____	_____	_____

(B) Availability of textbooks

overall	_____
by grade	_____

(C) Projected teachers demand

overall _____

by grade _____

by subject
area _____

by geograph-
ical area _____

(D) Facilities use

classrooms _____

furniture _____

(E) Educational costs

nationally _____

by region _____

by district _____

by school _____

aggregate _____

by type of _____

cost _____

other _____

(describe) _____

Document name: _____

Sponsoring agency, (Bureau/Department (where paid for document)): _____

Who conducted the research: _____

Describe reason document was produced (**be specific**): _____

Intended audience for document: _____

How was document distributed/made available: _____

Limitation on how document was distributed? _____

Relationship of education data portion to overall document (**describe**):

(check) REO _____ DEO _____

INFORMATION SURVEY FOR REO/DEO

General Information

1. Name _____

2. Male _____ Female _____

3. Region _____

4. District _____

5. Highest level of education completed (Check only one)
_____(a) University Degree 1 yr. _____ 2 yrs. _____ 3 yrs. _____
_____(b) Teacher Training Diploma
_____(c) Secondary School Certificate
_____(d) Other (specify) _____

6. Number of years you have been a REO/DEO _____

Data Distribution/Collection

7. What equipment is available to you for data collection and reporting (check any that apply)?

____(a) Calculator

____(b) Adding machine

____(c) Other (specify) _____

____(d) None

8. What questionnaires were you asked to distribute during this school year? (check all that apply)

____(a) Annual statistical questionnaire

____(b) Yearly report of teachers

____(c) Special survey

____(d) Other (Specify) _____

____(e) None

**IF THE REO/DEO DID NOT RECEIVE ANY QUESTIONNAIRES DURING THIS SCHOOL YEAR ;
SKIP QUESTIONS 9-10.**

9. To whom do you distribute questionnaires?

____(a) DEO

____(b) Headmaster or Principal

____(c) Teachers

____(d) Other (Specify) _____

10. For each type of questionnaire which you received during this school year, state what you think was the purpose of the questionnaire?

Type of Questionnaire	Purpose
(a) Annual statistical questionnaire	_____
(b) Yearly teachers' report	_____
(c) Other (Specify)	_____

Annual Statistical Questionnaire

QUESTIONS 11-20 REFER TO THE ANNUAL STATISTICAL QUESTIONNAIRE. IF THE REO/DEO DID NOT RECEIVE THE ANNUAL STATISTICAL QUESTIONNAIRE DURING THIS SCHOOL YEAR, SKIP QUESTIONS 11-20.

11. How do you distribute questionnaires?

- ____(a) By Transport
- ____(b) Other (Specify) _____

12. How do you collect the questionnaires?

- ____(a) By Post
- ____(b) By Transport
- ____(c) Other (Specify) _____

***Note to interviewer: Do not read the choices to the respondents for questions 13, 15,16, 17, and 25**

*13. What type of training is provided to survey respondents in filling out the questionnaire?

____(a) Group training workshop

____(b) Individual face-to-face instructions

____(c) Written instructions

____(d) Other (Specify) _____

____(e) None

Data Processing

14. What proportion of the figures on the teacher's yearly report and statistical questionnaire did you have an opportunity to check before you sent it in? **(Check only one)**

____(a) All

____(b) Some

____(c) None

*15. How do you check the figures reported to you? **(Check all that apply)**

____(a) Verifying calculations

____(b) On-site visits

____(c) Comparing with previous year records

____(d) Other (Specify) _____

*16. After the data have been collected, how do you summarize the information?
(Check all that apply)

____(a) Regional-level

____(b) District-level

____(c) School-level

____(d) Grade-level

____(e) Class-level

____(f) Teacher information

____(g) Student information

____(h) Other (Specify) _____

____(i) Do not summarize information

*17. For what purposes do you use the data collected in the Annual Statistical Questionnaire?
(Check all that apply)

____(a) Regional administration

____(b) Placement and transfer of teachers and other staff

____(c) Distribution of textbooks and materials

____(d) Calculating school dropout and transfer

____(e) Other (Specify) _____

____(f) Do not use statistical data

18. How useful do you find the information collected in the Annual Statistical Survey?
(Check only one)

____(a) Extremely useful

____(b) Very useful

____(c) Somewhat useful

____(d) Not useful (state why) _____

19. What problems have you had in collecting and summarizing the information on the Annual Statistical Survey? (Check all that apply.) For each category that you check, list the question number, where applicable.

Question Number(s)

____(a) I don't understand the questions _____

____(b) Headmasters don't understand the questions _____

____(c) Questions do not apply to your situation _____

____(d) Questionnaire is too long _____

____(e) Other (Specify) _____

20. What questions should be added that are not currently asked?

General Data Collection

IF THE RESPONDENT IS A DEO SKIP QUESTIONS 21 - 22

21. Do you publish an annual regional statistical summary?

yes _____ No _____

22. If yes, to whom do you distribute the report?

_____ (a) DEOs

_____ (b) Headmasters/Principals

_____ (c) Central Administration

_____ (d) Other regional authorities

_____ (e) Other (specify) _____

23. How many staff members do you have available for collecting and summarizing information?

24. Is the number of staff members available for collecting and summarizing information sufficient?

Yes _____ No _____

25. What type of assistance do you receive from central administration in collecting and summarizing data?

____(a) Transport

____(b) Training

____(c) Advising

____(d) Collecting information

____(e) Other (Specify) _____

____(f) Do not receive assistance.

26. What recommendations do you have for improving data collection?
