

**ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES**

**DETERMINANTS OF EDUCATIONAL
MANAGEMENT INFORMATION SYSTEM IN
AMHARA REGIONAL EDUCATION BUREAU**

**BY
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MAY, 2002

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INFORMATION SYSTEM IN
AMHARA REGIONAL EDUCATION
BUREAU**

**A THESIS PRESENTED TO
THE SCHOOL OF GRADUATE STUDIES
ADDIS ABABA UNIVERSITY**

**IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF MASTER
OF EDUCATION IN EDUCATIONAL PLANNING
AND MANAGEMENT**

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ACRONYMS

ANRS	Amhara National Regional State
AREB	Amhara Regional Education Bureau
DSS	Decision Support System
EMIS	Education Management Information System
ES	Expert System
ESS	Executive Support System
IS	Information System
IT	Information Technology
K.G	Kindergarten
MEDaC	Ministry of Economic Development and Cooperation
MIS	Management Information System
MOE	Ministry of Education
OAS	Office Automation System
REB	Regional Education Bureau
S	Standard Deviation
TPS	Transaction Processing System
TTI	Teacher Training Institute
WEO	Woreda Education Office
ZED	Zone Education Department

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Acknowledgements

I would like to express my heart felt thanks to my advisor professor Seyoum Teferra for his genuine professional and technical guidance and valuable criticisms. I am very grateful to him for his un reserved assistance

My special thanks would also go to all my friends for their morale material and for their technical assistance

My deepest gratitude also goes to my father Shambel Basha Tiruneh Wubetu and my mother Addis Melese and my sister Serk Addis Tiruneh for their major contribution to my success through out my student life.

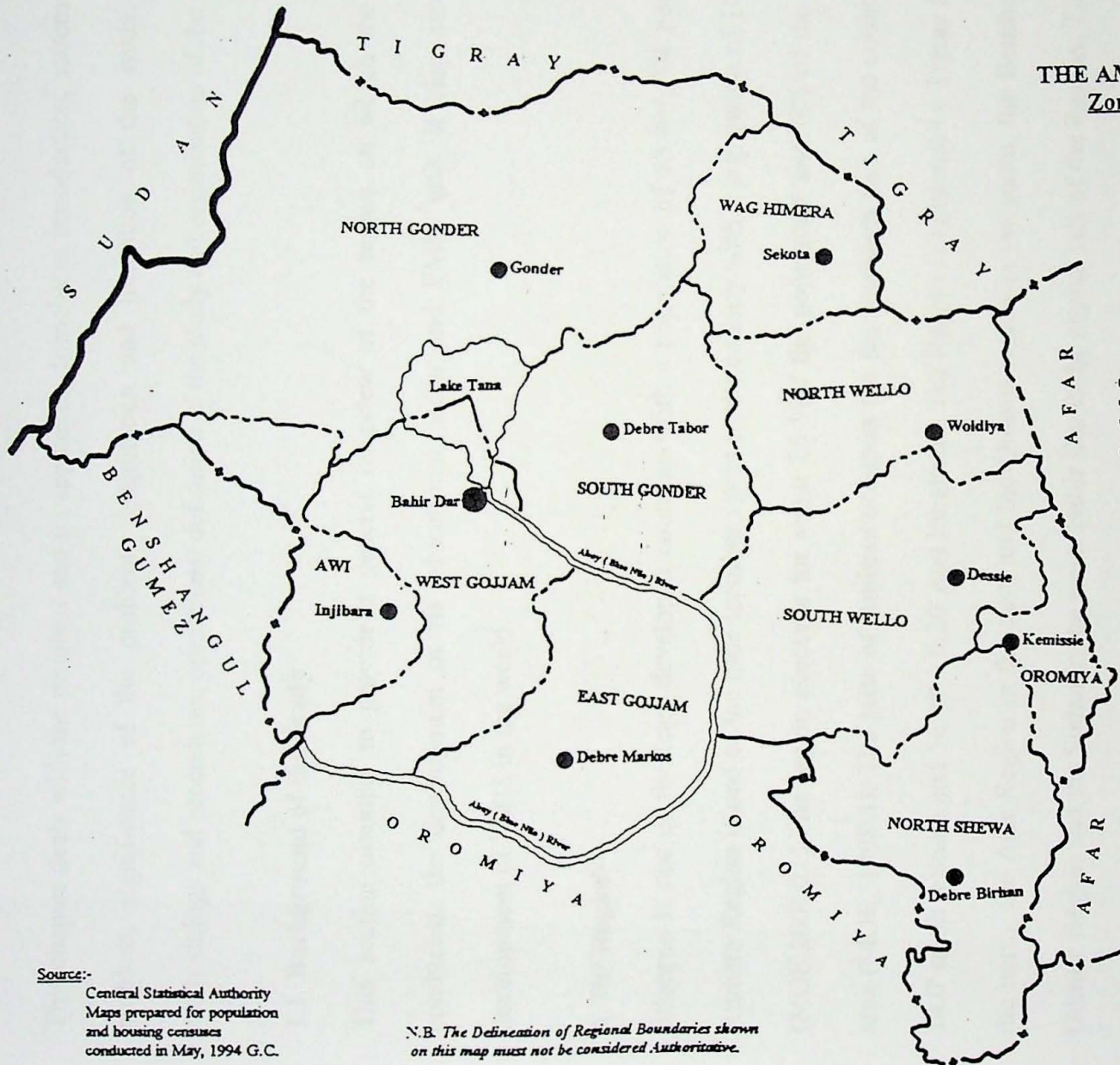
Last but not least, I want to extend my sincere appreciation to Taddese Biru for his unreserved assistance

Abstract

The purpose of the study is to assess the determinants of the educational management information system(EMIS) in the Regional Education Bureau with a particular reference to the Amhara Regional National State (ARNS). The study was conducted in six zones, (24 woredas, 68 schools,). 59 Zone Education Departments (ZEDs) and Woreda Education Offices (WEOs) officials and experts and 80 school principals and unit leaders were used as a subject of the study to obtain the necessary data. Questionnaire, document analysis and unstructured interview were the instruments used for data collection. The data collected through the questionnaires were analyzed using percentage, mean scores, standard deviation, and t- statistics as statistical instruments.

The findings suggest that factors affecting the educational management information system of the Amhara Regional Education Bureau are the professional capacity and awareness of educational officials, experts and school principals at all level of the educational hierarchy, the less reliability, poor organization and integration and mismanagement may have frustrated its functions- not to give the appropriate service to it's users.

Depending on the findings and conclusions it is recommended to make, personnel of every educational administrative levels, aware of educational information in the pre-service as well as in the in-service programmes.



THE AMHARA NATIONAL REGION
Zonal Administrative Division

Legend

- International Boundary
- National Regional Boundary
- Regional Boundaries not Clearly demarcated
- Zonal Boundary

- Regional Center
- Zonal Centers

Scale:- 1:2 500 000

Source:-

Central Statistical Authority
 Maps prepared for population
 and housing censuses
 conducted in May, 1994 G.C.

*N.B. The Delineation of Regional Boundaries shown
 on this map must not be considered Authoritative.*



CHAPTER ONE

THE PROBLEM AND ITS APPROACH

This chapter deals with the problem and its approach. It includes introduction, statement of the problem, significance of the problem, delimitation and limitation of the study, research methodology and procedures, operational definition of the study and organization of the study.

1.1 Background of the Study

This section attempts to provide a general overview of the region on which the study is conducted, the development of its educational sector and EMIS unit. It also assesses the development of EMIS in the world.

A. The Region

Ethiopia is one of the least developed countries with a population of 63,494,704 people. The Amhara Region is one of the nine member states in the country with a population of 16,295,514 (MOE,2001:21).The region accounts for about 25 %of the population and16% of the country's area (MOE, 1998:3). The state of Amhara occupies the northwestern part of the country 9.20' - 14.0' north latitude and 36.20' - 9.20' east longitude. The Region is bordered by Tigray Region in the north, the Afar Region in the east, and the Oromia region in the south, the Benshangul and Gumuz Region and the Sudan in the west. Bahir Dar is the capital city of the Region. The Region has 11 zones (including the three nationality zones) and 113 woredas. Four languages: Amharic, Oromiffa, Himitigna and Awegna spoken in the Region

B. The Education Sector

The education sector in the Region is administered by the education Bureau, under which there are 2917 primary and 79 secondary government schools. In addition there are also 11 primary and two secondary non-government schools. As a result, there are 1,747,312 primary and 120,412 secondary school students enrolled. The enrollment ratio in the Region is 53.3% in primary and 9.5% in secondary schools. On the average there are 71 pupils per class in primary and 79 in secondary schools. Female participation is 49.7 in primary and 8.8% in secondary schools (MOE,2001:21).The participation rate in urban area is by far larger than that of rural areas accounting for 89.25% in the urban and 10.75% in the rural of primary schools, respectively (AREB, 1992:1)

The Region's education management structure has four levels: Regional Education Bureau, Zone Education Departments, Woreda Education Offices and schools. Besides this, the education sector s decentralized functionally (MOE, 1998; 69). The Regions Education Bureaus itself is organized into three departments and three-service units .One of the three services units is the planning and engineering service where the educational management information unit is a subdivision. The development of this unit is described in the next sub-topic.

C. The Development of Educational Management Information Unit in the Region

The education system before 1991 was so centralized and bureaucratic that the education information system at national level was under MOE, which was responsible to collect aggregate data and disseminate the annual educational statistical abstract. The education statistical format was prepared only at the country's capital city-Addis Ababa. But the introduction of the federal structure of administration and the devolution of power to the regions has changed the situation

(Ayalew,2000: 64). Following this Regional States were established among which the Amhara Regional State is one.

The AREB has started to function since 1985 E.C*. to support the decentralization of education, the Ethiopian government has stated on the Negarit Gazeta No*. 26 proclamation No. 41/1993 that regional education bureau (REB) has the responsibility to collect and disseminate the regional statistics (MEDaC, 1999:176). This might have influenced the REB to include educational information unit under planning and engineering service that also extends up to the district level. Hence it is this unit that collects analyses and interprets information on the performance of the education sector in the region. The unit has started collecting data through annual statistical format since 1987 E.C. and the first annual statistical format was published in 1988 E.C (AREB).

The information unit collects data through three mechanisms. One of the mechanisms is collecting data using standard educational statistical format. The statistical format was first developed by MOE. But since 1987 E.C. the format has been adapted according to the need of the region, not excluding the central government's interest (AREB, 1992). The interview with information workers in the REB revealed that the data collected through the statistical format are aggregated by the education management information unit to produce the annual education statistical abstract. The abstract is prepared to pave the way for educational planners and policy makers so that they will be able to attain sufficient educational information. The abstract includes data on the performance of the Region's educational sector relating to kindergartens, primary, secondary, technical and vocational schools and teachers training institutes (AREB, 1992)

* E.C: Ethiopian Colander

* * No: number

The Region's information workers indicated that quarterly or periodic reports are the second kinds of mechanisms that help collect information from every segment of the Region. Furthermore the third mechanism of collecting data is by preparing different formats that can be used to collect information monthly, bi- annually and yearly.

In general, in 1992 and 1993 around 43 data collecting formats were sent to Zone Education Departments (ZED) in order to get up to date information. However, the feedback obtained through the formats was not satisfactory as required. Currently, there are 32 functional data collection formats in addition to the educational statistical format and the quarterly reports (REB, 1993). See appendix II.

D. The development of EMIS in the World.

It is difficult to mention the exact period (time) that people started to utilize information as an instrument for managerial activities; it is assumed that the division of the society by class forced their administrators to collect data/information. This was to gather tax from those classes, which were under their supervision. On top of this, identifying their ability and potential to fight their enemies and to estimate the opposing forces' power encouraged ancestors to give emphasis to information (Mesfin, 1992:1). Societal development had contributed to the complexity of managerial and economic activities. Parallel to this, collecting, processing and utilization of information is becoming a difficult task. So, in a modern society, to have better knowledge of the management of information has become very important.

Nowadays, practice of using information for different purposes such as for the development of industries, education, and trade has increased. Supporting this idea Laudon (1988:62-64) stated

that in the 1950's information was focusing on reducing the cost of routine paper work while in the 1960's -1970's it emphasized on facilitating general reporting requirements; whereas, in the 1970's -1980's it was used to improved and speed up the decision making process. In the 1980's, information had been used as strategic weapon to defeat and frustrates the competition raised between different segments of the world. Nowadays, it is assumed that the world is moving from industrial world to information age where a network of Internet is established. This has brought continents very closer. But when we come to the smallest unit-organization, information serves to ensure the development and prosperity of the organization. Appropriate information helps to forecast the future. On the basis of appropriate information strategic planning is set and things are properly managed.

As mentioned earlier, information system contributes to make effective decision in different sectors. In developing countries the education sector has benefited by increasing the provision of exchange of information among countries; that is, by fostering the flow of information and mitigating barriers to share any advancement of experiences. This is to say that regions, countries and international organizations are cooperating to improve the exchange of information to have access to knowledge, skill and experiences, which help to improve ways of doing things and handling challenges. It has to be recognized as a resource and must be managed equally with other resources. Information management team in the AREB is responsible for the proper organization of information within and outside the education system.

This team also exists in the MOE. It carries out yearly school censuses and publishes yearly statistical bulletin. Even-though, the information system is established, its efficiency, effectiveness and relevance to serve the purpose is not known.

That is why the study focuses on the management of information in order to meet the need of users as well as to contribute to the quality of education by providing appropriate or relevant information to prepare strategic planning, decision-making and other managerial functions.

1.2 Statement of the Problem

No effective decision can be made and implemented to solve any problem of education unless complete and accurate information is available. This implies that lack of adequate information can affect every decision made at very level of the sector. So it seems wise to manage information as equally as other resources. The writer has also chosen to study about determinants of EMIS in AREB.

The purpose of the study is therefore to investigate the determinants of EMIS in AREB. It also suggests possible solution for the problems that and impedes the organization from having the necessary information. Accordingly, at the end of this study the following basic questions are expected to be answered.

1. What is the status and training of educational information personnel?
2. Are the necessary facilities and equipment available?
3. Is the information system integrated and organized?
4. Is the information/data gathered reliable?
5. Is the Region's EMIS efficient and effective?

1.3 Objectives of study

The Study tries to:

1. investigate the contribution of the educational information system in the region's administrative decisions
2. assess the efficiency and effectiveness of the information system

1.4 Significance of the Study

The management aspect of information in the Education system has not yet been studied in the Amhara Regional Education Bureau (AREB). Therefore, the study is expected to manifest its importance in treating the following points:

1. This study will point out the major factors that are affecting the EMIS or it will reveal the status of EMIS in the region.
2. It may help to create awareness among decision-makers at every level of the sector. In addition it makes managers be alert to take timely measures.
3. It may be an additional information source and will help to increase the scope of knowledge in this area of study.
4. The recommendation made might be used as an alternative among the possible options made for the prevailing problem.
5. The study will be used as a stepping-stone or springboard to others who want to be engaged in further study.

1.5 Delimitation of the Study

The EMIS of Amhara National regional State (ANRS) is selected to be studied for three reasons: first, every educational level of the region is assumed to be relatively well equipped in terms of facilities equipment and trained man power. Secondly, due to its proximity it is found to be much easier to collect the required data from the sample population (REB, ZED, WED and Schools),

which could have been difficult if not impossible, had samples been taken from other regions of the country. However, this does not mean the results obtained in this study cannot be used to draw inferences that can be applied to other regions of the country. Out of 11 Zones, 113 Woredas, 81 Secondary and 2877 Elementary Schools, only six Zones (54.55%), 24 (21.24%) Woredas, 24 (29.63%) Secondary, 48 (1.67%) primary and 24 K.G schools are the area of the study. Also the respondents are delimited to office heads, experts, school principals, unit leaders and department heads. The study is also delimited to the management aspect of educational information. In addition it is further delimited to the development and use of information (formal) with in the organization.

1.6 Limitation of the Study

The first limitation of the study is the failure to get other similar studies either at national or regional level, which could have been pertinent to the research generalization. The second restriction is the shortage of materials that are directly related to the educational management information system(EMIS) in Ethiopian as well as other countries context. As a result, the writer is forced to use limited number of materials. The third restriction is the new organizational structural change that is being under taken in the Region, which has diverted the attention of the public employer in the Region. This had its own significant influence on the respondents in not giving serious attention to the questionnaires they were filling in.

1.7 Research Methodology and Procedures of the Study

This study uses descriptive survey method of research on the assumption that it could describe the current general feature and help to reveal the status of the existing situation of the EMIS of REB.

1.7.1 Source of Data

To undertake this study review of related literature, periodicals and documents are referred to. In addition to this, primary data were collected from different levels of the sector's personnel in the national regional state using sampling techniques. On top of this, personal observation made by the writer in the target area is good source of data to create meaningful information for the study.

1.7.2 Instruments for Data Collection

In order to have pertinent information for this study, first, questionnaires were developed as the main instrument for collecting data. Second, an interview was employed as an instrument. The interview was held with experienced and knowledgeable workers in order to have more information to the study. Third, document analysis was another instrument of data collection. The REB's five-year plan, educational statistics annual abstract, quarterly reports and training manuals were referred. Lastly, the data collected through questionnaire and interview were also supplemented by the writer's personal observation.

1.7.3 Sampling Techniques and Sample Population

In order to make the study manageable, the writer has delimited the study to six zones. These zones are selected based on stratified sampling techniques, Zones are categorized in to two groups by the geographical location: the East and West of the region. Among the six zones, two of them were from the East/North Shoa, South Wello and selected from the western part of the region are: East Gojjam, and North Gondar. Each Zone was selected purposefully depending on the large size of schools in it. But the capital city Bahir Dar of the region is also included, and

Awi Nationality Zone was selected randomly among the three nationality zones. In addition, four Woredas were selected randomly from each sample zone.

From the sample Woredas 68 schools/17 Secondary, 34 Primary and 17 KGs and two institutes /were selected from Government and non-government schools /. Among these schools, KGs and primary schools were chosen randomly, whereas secondary schools are selected using availability-sampling techniques. Debre Birhan and Dessie Primary Teachers' Trainings were also selected using purposive sampling technique and four respondents from each side are taken randomly

Before the actual sample survey was carried out a pilot survey was conducted to evaluate the validity of the set of tentative questionnaires to both school personnel and educational experts. For this purpose one Primary and Secondary schools were selected randomly from South Gonder.

Regarding respondents, 14 heads and experts of the education bureau and 68 heads and experts of ZED and WEO/ four from each Zone, two from each Woreda/96 school principals and unit leaders/22 secondary, 44 elementary, 22 KGs and 8 from institutions /were selected. The heads and principals of each administrative level in the sample population were selected using availability sampling techniques but the rest of the respondents are selected randomly.

To collect data through interview from each sample ZED and REB plan and engineering service heads were selected using purposive sampling technique and two schools (Primary and Secondary) from each geographical location-east and west-are chosen randomly.

In general, 182 respondents were used in the study. Then the final copies were distributed to the respondents as depicted in Table 1:

Table 1: Distribution of the Respondents

Personnel	N. Gonder	S. Wollo	Awi	E.Gojjam	BhairDar	N.Showa	AREB	Total
1. AREB department heads and experts	-	-	-	-	-	-	14	14
2. Zone heads and experts	4	4	4	4	4	4	-	24
3. Woreda heads and officials	8	8	8	8	8	8	-	48
4. School principals unit leaders	16	20	2	16	16	20	-	96
Total	28	32	20	20	28	32	14	182

1.7.4 Procedure of the Study

Two types of survey questionnaires were prepared; one for heads and experts of REB, ZED, WEO and one for the school principals and unit leaders or department heads. Both of the questionnaires comprise structured (close ended) and unstructured (open ended) items. The two types of questionnaires were first prepared in Amharic then translated into English. Also the questionnaires were to be pre tested. Hence, change was expected on the questionnaires due to the pilot test that will be made. To collect further information, interviews were conducted with heads, planning and engineering service of REB, and ZED. For this purpose unstructured interview method was employed. The interview was also prepared in Amharic and then, translated into English and checked by language experts to have better communication. Also to supplement the above statistical data obtained, the researcher conducted personal observation.

1.7.5 Method of Data Analysis

The Study tries to examine both qualitative and quantitative aspects of the determinants of EMIS in the region using both descriptive and statistical techniques. Among the various statistical techniques that can be used for analyzing the findings of the study are mean, percentage, Standard deviation and t-test. These four statistical tools were employed for the analysis of data gathered through questionnaire.

1.8 Operational Definition of Key Terms

Information is “data that have been processed and that have meaning”(Schulthis, 1994: G-9)

Information System is “ the network of all communication methods with in an organization: a means of providing information for decision making, evaluation of results and knowledge about an organization and its environment through the acquisition transmission processing storage, manipulation and conversion of data” (Good, 1973:300).

Management Information System: is “comprehensive and coordinated set of information subsystem which are rationally integrated and which transform in a variety of ways to enhance productivity in conformance with managers styles and characteristics on the basis of established quality criteria” (Scott, 1986:97).

Management is “planning, organizing, leading and controlling the work of organization member and of using all available resources to reach stated organization goals” (Stoner, 1998:7).

System is “ a group of components that interact to achieve a purpose” (Kroenke, 1989:19).

Information worker/personnel is a “general term for an individual working in the information field.” (Keenan, 1996:149).

Data: “is raw, unanalyzed number and facts about events” (Stoner, 1987: 613)

Subsystem is “ a part of a system that performs specialized tasks related to the overall objectives of the total system” (Schuchthis, 1995:38).

1.8 Organization of the Study

This study comprises four chapters. The first chapter, the introductory part, includes background of the study, statement of the problem, significance, delimitation and limitation of the study, research methodology and procedures and definition of key terms. The second chapter deals with the review of related literature. The third chapter is presentation and analysis of the findings. Finally, summary, conclusions and recommendations are presented.

REVIEW OF RELATED LITERATURE

This chapter examines all the necessary information pertinent to the improvement of EMIS. So all the theoretical frame works that are necessary to conduct this study are included.

2.1 Information Versus Data

Different authors have expressed the two terms i.e., data and information in different ways. Among those writers, Hussein (1977: 25) defined information as “the output and data as input.” Whereas Stoner (1987: 613) stated “data are raw, unanalyzed number and facts about event, information in contrast, results when data are organized or analyzed in some meaningful ways.” Kronenke (1989: 14) has considered information as knowledge derived from data. Data in turn is seen as recorded facts or figures. According to Ross (1990: 2) the transformation of data to information involves assembly, storage, processing, evaluation and dissemination. Assembly is gathering relevant information and in processing, the data is summarized and edited. In evaluation, the usefulness of the data is seen. Finally, the evaluated information is disseminated. According to Burch (1989: 4)”, information consists of data, images, text, documents and voice often inextricably intertwined but always organized in a meaningful context.” This depicts that information is more than number. Campbell (in Mesfin, 1992: 3) keeps saying that “data are raw facts, unassembled and frequently unrelated to one another and information are collection of related pieces of data, only by processing of the data in some way do we obtain information.” In general, data are basic raw materials or inputs in the process of generating information. So, data are not directly used for decision or action. But information is an increasingly valuable resource or commodity required by management functions. Kanter (1977: 7) confirmed this, that “information is now considered

as resource on the level of money, material, facilities and people.” Information is used for different purposes and information systems are established accordingly.

2.2 Information System

In any organization there are different communication or information networks, which are established for different purposes. Chandan (1997: 458) listed six types of information system. They are:

- Transaction Processing System (TPS)
- MIS
- Decision Support System (DSS)
- Executive Support System (ESS)
- Expert System (ES)
- Office Automation System (OAS)

When we see the purposes of these groups, the TPS records the transaction between two organizations. In the case of MIS, it provides vital information about the organization. In the DSS, managers get information about specific semi structured and unstructured problems which need a unique decision, whereas, executive support system is external and internal information used by top executives of an organization for longer age planning. Experts System (ES) includes experience of experts; appropriate knowledge related to a specific knowledge and users interface-tools that help users to interact with the system (Chandan, 1997: 458). As Gupta (in Chandan, 1997: 46) stated office automation system includes “word processing, desktop publishing, E. Mail, video conferencing and facsimile transmission.” But according to Kroenke (1989: 81), there are five types of IS. They are: TPS, MIS, ESS, DSS and OAS. TPS is used for structured operational and to a lesser degree management control applications. MIS is used for semi structured management control application and to lesser degree, operational and strategic planning applications. DSS is used or unstructured decision

making whether that occurs at the operational management of planning levels. ESS is used for structured management and strategic planning whereas OAS serves office correspondence and communication.

Among the different types of information systems, this study emphasizes on the MIS of the education sector.

2.3 The Need of Management Information System

According to Chandan (1997: 452). "MIS is a formal method of collecting timelines and accurate information in a presentable form in order to facilitate effective decision making." It also promotes the achievement of organizational goals and objectives. Supporting this idea, Scott (1986: 33) said that the importance of MIS is to enhance productivity in several ways, enabling tasks to be carried out more efficiently, and supplies the organization with early warning. It saves the organization before the problems flood over it and helps to perform development-oriented activities. Moreover, it facilitates the organization's normal management processes and promotes managers' ability to deal with unanticipated risks.

Nowadays, the education system has grown in size and complexity. As a result of this, the activities performed are becoming out of the scene of operation. It is possible to say that to monitor, control, following up every activity performed in all the sub units of the education system is a difficult task. To mitigate these problems, EMIS is established to collect pertinent data regularly at a fixed intervals of time, to store the data collected for easy retrieval and to provide decision makers with appropriate information in order to meet the regular and urgent need of them. Organization like AREB adopt MIS not only to become more efficient, save money and reduce work force but also to keep a breast with this competitive world. (Laudon, 1988: 102). As Burch (1989: 7) states, "information also helps an organization to operate

smoothly.” Therefore, the EMIS can play an important role in gathering relevant information that help keep up the unity and harmony of an organization. That is why it is considered as social glue that holds the organization together. In general, EMIS is concerned with its tasks and responsibilities, policy, design, structure, managers of the organization. All these issues are discussed as follows.

2.3.1 Tasks and Responsibilities of the EMIS

According to MOE (1998: 70) one of the major tasks of planning and engineering service in the region's education bureau is identifying the information needs of the bureau and then collecting, analyzing and interpreting the data gathered on the performance of the education sector in the region. In addition to this, MOE (1998: 71) further stated “statistical section of planning and engineering service distributes annual school questionnaire to all schools in the region and collects data every year.” On the same page MOE illustrates the responsibilities of the IS is for collecting, organizing, analyzing and finally producing statistical report. Lastly, those who participate in collecting data process are school Directors and Woreda, Zone and Region Statisticians. School Directors fill the annual school questionnaires, while the others (woreda, zone, region) statisticians aggregate the data to produce information (MOE, 1998: 72). On top of this, the Ethiopian Education sector responsibilities by level in the management of information are:

- MOE: Collect, compile and disseminate information on education
- REB: Collect, compile and disseminate statistical data on education.
- ZED: Compile statistical data and report to the region.
- WED: Collect information and data on education and compile and submit to zonal office (Derebssa in Amare, 1998: 73).

2.3.2 Educational Information Policy

When we come to see the term policy, it is any guideline or directive to make decision or it is a device that can be prepared by single or group of people to achieve the desired goal (Ayalew, 2000:5). Organizations have to establish regulations or rules to manage information

as they do for other resources. So, “information policy establishes unified rules and guidelines for sharing, dissemination, acquiring, standardizing, classifying and inventorying information through out the organization (Laugon, 1988: 648). Laudon (1988) further explained in the same page that information policy lays out specific procedures by which organizations’ units share information, how information can be disseminated and who has the responsibility for updating and maintaining it. In addition to this, information policy also sets down standards for security. Not only this, it also includes technical standards for software, computer hardware, telecommunication and other devices that process and transmit information. To indicate the seriousness of the problem Laudon (1988: 648) pointed out that “developing countries that are moving towards the information age in a policy vacuum is a risky venture.” Understanding the prevailing problem Getachew(in Zenebework, 2000: 70) also said that “information technology as an explicit and major component of the policy. The policy should spell out the what, where, and how of the adoption and utilization of this new technology in the countries development context.”

Indeed, at various levels of decision-making, it is important to specify the responsibilities to clearly defined roles and list down priorities accordingly. This enhances the coordination of efforts and then it avoids gaps in information flow and wastage of resources. Even information policy enhances in minimizing ad hoc action made by the organization. To emphasize the importance of information policy, Jenkins (1997: 11- 1) said, “when no policy is established technicians make decisions they are not qualified to make.” This by itself indicates that unless otherwise there is a policy people may not know where to go even they might not know their priority areas to their goal.

2.3.3 Design and Development of EMIS

The EMIS can best be designed with the participation of employees especially decision-makers. Moreover, the involvement of stake-holders/parents teachers, school principals, officials/ contribute to have relevant information as well as meet the needs of different organizations. In support of this idea, Award (1992: 92) stated that “the first step in the system development life cycle is the identification of a need,” in order to satisfy all potential users. This by itself brings collaboration and sharing of work, whenever we design an EMIS, several methods may be used. Some of the methods listed by UNESCO (1980: 126-127) are:

- survey of users requirements using questionnaire
- interviewing users
- study papers, books etc published by users
- attending seminars
- observing users at work place
- meeting users periodically
- study documents used by users
- studying organizations annual reports and other publications
- attending technical meetings with in the institution at which projects and problems may be discussed.

All these points help to increase the relevance of information gathered. Even knowing the interests of managers or allowing them to participate in the design of EMIS increases the efficiency and effectiveness of the information system. Hussein (1977: 173) keeps on saying that,” the major roles in the development of information system are played by the system user and data processing specialists, to provide the appropriate information to its seekers.” According to Burch (1989: 53), the feasibility requirements for the information system are technical, economic, legal operational and schedule feasibility. All of them indicate that the design of the EMIS has to go with the technology we have, the economic background of the organization/country. Also, there must not be conflict between the EMIS and the organization

at large i.e., their responsibility has to be clearly stated. In addition to his, the EMIS design should consider the organizational environment.

2.3.4 Organizational Structure and Information

The size of the organization's hierarchy has its own influence on the management of information. Scott (1986: 9-11) confirms that information flows vertically, horizontally and laterally. But the hierarchy of an organization can affect its information system because as the hierarchy of the organization increases it becomes more complex. the complexity in turn makes the information system more difficult to design, mere costly to implement and operate. Moreover, the complexity increases the opportunities for making more errors in processing the data. At each hierarchy, information summary is very important because managers cannot observe and utilize all the details of the organizational units. Each hierarchy serves as 'filter stations' not to over load managers with unnecessary information so that they can make relevant decision (Scott, 1986: 10).

2.3.5 Managers and EMIS

The environment in which we are performing activities demands well-informed managers. Certainly, managers must know what to do and how to do their jobs. external and internal access to information creates an early warning signal which helps to anticipate threats and risks. Supporting this idea, Burch (1989: 19) said that "good managers are the initiators of change: they are the leaders, the monitors, the innovators, the asset allocators, the ones who say go or not go." To perform all these tasks, managers have to be provided with quality information. MIS must provide information to managers with three levels of responsibilities; namely: operational control management control and strategic planning. These three levels of responsibilities are basically the domain of supervisory level, middle management level and top level of managerial hierarchy respectively (Kroenke, 1989: 81).

The managerial level differs with respect to the type of decision made. In the lower level of management, decisions are repetitive and structured whereas in the top management, it focuses on goals and strategies which are non-recurring. This is the reason why there is quite different information at the various levels of management's. Emphasizing the importance of information OECD (1979: 21) said that "no matter how skilled an individual may be, how sophisticated the techniques at his disposal or how perceptive his judgment lack of adequate information will seriously prejudice him and impair the effectiveness of any decision he has to make." Therefore information by itself is highly strategic tool to make quality decision. To manage this strategic tool, it is advisable to plan, control and organize its production and consumption.

2.3.5.1 Planning EMIS

Nowadays teachers, educators, students, parents, professionals, planners and the population at large need information. All these categories of people use information in both their private and official activities. Effective and meaningful planning can take place on the basis of adequate accurate and timely information.

Whenever we plan, EMIS requires high involvement of users and producers of information. Planning is assumed to be every body's job to reach its desired goal. Similarly development of EMIS needs planning to equip EMIS with facilities and to have well trained manpower according to the nature of the organization. Therefore, forecasting before hand is a very basic idea to introduce development in the organization as well as to increase the service provision (Award, 1992: 94-95).

Planning increases productivity control and facilitates the implementation of the desired outcomes. Indeed, it makes implementation rapid with limited error. It also helps to make the

most rational use of resources. Information itself is capital investment and it must be planned in order to improve its quality.

2.3.5.2 Organizing Information

To start with its definitions, Kroenke (1989: 11) expresses that “organizing is the process of dividing work into tasks and coordinating those tasks to achieve one or more objectives. Organizing often refers to the assignment of work to group of people and the creation of line authority among those groups.” As we all know different users have different requirements, these again call for proper data/information organization/integration and storage capability. This is one of the core functions of EMIS. So, organization needs information systems both to organize its internal activities and facilitate the creation and delivery of products since information is part and parcel of the products.

To sum up, people organize information for a number of reasons as confirmed by Kroenke (1989: 69). The major ones are:

- to accomplish task-subtasks are integrated to create a whole.
- to reduce or eliminate duplication of tasks,
- to create center of responsibility,
- to formalize authority and
- to provide a framework for conflict resolution.

Thus, when we organize activities of organizations, first, job is divided into subtasks and the results of subtasks are integrated to create a whole. Second, specific task and duties are assigned to specific people, departments or other groups so that work is not duplicated. Third, when tasks are identified and assigned to specific individual or groups, then that individual is accountable. Fourth, when work is assigned to individuals or groups and when they are related to one another in some recognized way then, stability is created. Fifth, since the organization establishes stable centers of responsibility, the employee can determine who must approve what, this eliminates time-consuming and frustrating vacillation. Last but not least, it

provides a framework for conflict resolution that is, an organization provides channels by which conflict can be resolved (Kroenke, 1989: 69)

2.3.5.3 Controlling Information

One of the managerial functions of information management is controlling. This controlling is defined by Schultheis (1995: 342) as “involving the observation of activity, the comparison of that activity to intended results and the implementation of corrective activity.” Thus, controlling enables the manager to identify whether the organization’s performance is towards achieving the set of objectives or not. In addition to this, Schultheis (1995: 39) said that “good information system also have internal standards to ensure that data are processed accurately.” So, standards help to check whether the system is performing properly or not. If it is properly controlled, it promotes the accessibility of feedback on how effectively resources are being utilized in order to achieve the expected results/goals. Every planned activity must not be left to its end. It has to be evaluated, monitored or correction measures have to be taken as it is on implementation activities are not to be out of sight.

2.3.6 Educational Data Collection

In most cases, educational data are collected to generate meaningful information. This helps to understand the status of the educational system so that the concerned managerial bodies of all levels can take proper measures.

2.3.6.1 Responsibilities of Each Educational Management Level in Data Collection

At a school level teachers are required to record students’ performance or achievement, discipline, attendance and the like to share information with parents, school principals, school committee, teachers’ association and among themselves. The school principal also aggregates the data gathered by each teacher. All of them are not only accountable to the reliability of the

data that they have collected but also for updating it regularly (Ross, 1990: 39). As you move upwards of the organizational hierarchy, the data needed becomes to be general and specificity decreases. Regional and provincial officials do not require detailed information of each school's daily operations as school principals do. Educators at different level have different responsibilities at the same time they do have various information needs of the system as a whole not a single school (Ross, 1990: 17-45).

2.3.6.2 The Scope of Data Collection

The number, kind and item of data to be collected depends upon the capacity of the educational management information system. The availability of trained manpower and the technology introduced limits the type and amount of information to be gathered. Developing countries tried to solve such problems collecting, storing and transmitting by being very selective in their choice and use of indicators (MEDAC, 1999: 160). In some cases, they decrease the amount of paper to be used and the types of the format in order to decrease cost. This forces them to limit themselves to collect limited kind of information that may not be ample enough to do the job. Any way Ross (1990: 100) tells us "the first issue to be decided before any data are collected, is the scope of the data collection." Finally Ross (1990: 191) advised us "the collection of too many data for too many units may be counter productive because it may result in delays in the final reporting of results."

2.3.6.3 Data Collection Instruments

Data collection activities are divided into two: yearly and periodic data collection. The yearly data is based on school census just to know the real situation of schools and its aggregate results is published in statistical yearbook. It was used to control and for (account) purpose. But starting from 1980, the data collected are utilized as a tool for planning evaluation and educational research purposes. In the case of surveys, data are collected regularly depending

on the available resources and the area covered. The regular data collection-survey varies from two to six or seven years. Though it covers a few selected area it helps to get more information than the census type (Ross; 1990: 45).

Concerning periodic data collection Kemmerer (1994: 51) has stated two obvious criteria for deciding at what intervals these data should or reasonably be collected. They are the life of the data and the cost of collecting and analyzing data or in other words, how long does a particular type of data remain tolerably accurate?

As Ross (1990: 50) clearly identified the types of data collected in the survey type are:

- on teachers characteristics, facilities, equipment etc,
- the teaching learning process,
- curriculum evaluation studies
- student achievement in core subjects,
- evaluation of large-scale reform programmes

2.3.6.4 Indicators used to Collect Data

Establishing standards based on current knowledge acquired can play an important role in collecting data to decrease redundancy or duplication of efforts. According to Mumane (in Ross, 1990: 72), “every society has certain explicit or implicit measures or status indicators of educational quality”. Supporting this, Tegegn (1998: 101) stated that” indicators are like a guide to educational planners and decision makers.” In addition to this, Jeanie Oakes (in Tegegn, 1998: 101) defines, “indicators as a statistic that tell something about the performance or health of the education system.” Based on these definitions, Tegegn (1998) on the same page concludes that” indicators in an education system point out the extent of some identified aspect of education.” According to Johnstone (in Tegegn, 1998: 101) the purpose of employing indicators are:

- to monitor changes in education system such as change in enrollment ratio over time. If the change is negative, it demands corrective action before it gets worse.
- aid planners in planning-choosing those indicators that are useful to them.
- facilitate research into an education system. Because unfavorable change leads to further research to gain further in depth knowledge about the problem.

In addition to Tegegn, Oakes (in Preedy, 1997: 17) has suggested that there are five types of information that indicators can provide at the operational level. These are:

- Performance information in relation to the achievement of goals and objectives.
- Information on the features of the system that are most important in achieving particular goals and objectives
- Policy relevant information
- Problem oriented information on central features of the system

These five points can be obtained through the evaluation of the system by selecting the (appropriate indicators that go with the priority areas of the organization. In general, Ross (1990: 72) divided indicators into three classes: educational inputs, educational out-puts and educational processes: According to Kemmerer (1994: 50) indicators are used to collect data based on inputs, processes, output and outcomes.

2.3.6.5 Information Format

Information format is a common method of collecting data for an information system. The data collected through this medium must satisfy the need of the decision-maker to increase the relevance of the data. Well-designed forms with instructions that are easy to understand are needed to serve the purpose. At all the design stages, the forms should be tested with a sample group of people in order to minimize error. In most cases, errors are observed as a result of poor instruction or from forms being filled out by a person who is not properly motivated and who may not bother to pay proper attention to correctly fill forms (Hussein,

1977: 155) . Supporting this, Ross (1990: 82) said that “an important part of translating interests into information is that the format of the information must suit the requirements of the decision-makers.”

In general properly designed forms are helpful in making the sequence of items logical and decreasing the amount of time and effort required (Jenkins, 1997: 16-17).

2.3.6.6 Difficulties to be encountered

For different reasons several problems may occur in collecting data. Ross (1997:78) has listed down the obstacles that one may encounter in collecting data. They are:

- data with limited value are collected,
- in both developed and developing countries stakeholders/students teachers and parents/have the least access to educational data,
- data collected are full of errors due to inaccurate data collection and analysis.
- donor agencies do not consider the interest of others in data collection,
- Integration is not made between the sector and others in having common data,
- attempt is made to collect data related to ethnicity but the analysis made is not published,
- indicators that are not related to decision-making are in data collection,
- no information on unit expenditure on subject matter knowledge of teachers, no information on timing and tracking.

Kemmerer (1994: 46) also suggests the most serious problems that he has observed from the literature are:

- redundancy: the same data are collected by more than one unit in the same office
- inaccuracy: poor instrumentation, mathematical errors in aggregation and the like.
- irrelevance: emphasis is given on the collection of data rather than on the needs of users. Also, use a set of indicators that has little relevancy.
- lack of timelines: the data are not available whenever needed. On top of this, they are not available in a form to make decision.

2.4 Training

Among the various resources required for an organization, the most important one is the human resource. Material resource alone does not bring development to the school or to educational bureau unless the quality and professional competence of employees is improved. This idea was supported by Harbeson (in Forjolla, 1993: 108) that the human resource is active agent who can exploit the natural resource to build social, economic and political organization. In addition to this, Shultz (in Seyoum, 1996: 40) said that "... investment in human capital is a critical element in economic growth." So, one way of ensuring the competence of employees is the continued effort of an organization to update its employees through training. Also pearce II et. al. (1989: 425) confirmed that "training is conducted inorder to improve productivity, improve the quality of performance, reduce in efficiency, minimize accidents, reduce turn over and absenteeism and make sure employees' skills keep pace with innovations in the equipment and techniques they work with." Thus, people must be indoctrinated in new taught and new skills. Even highly trained professional such as doctors find that they must periodically take refresher courses to keep abreast with this changing world (Pigors, 1981: 283).

The same to other organizations, the education information system workers need training to reach the objectives of the system. But before a training programe is carried out, training need assessment should be made in order to know the area of deficiencies (Mamoria; 1980: 28). Osterle (1993: 244) recommended that the "IS has the task of educating employees in the IS and user departments to be able to use design and decide about their information processing resources". Therefore, training and retraining of EMIS personnel and users of the system must be one of the functions of the organization.

2.4.1 EMIS Personnel

To start with, the need of employees training is to: increase productivity or to improve employees performance, meet future personnel needs, prevent obsolescence, and enabling employees to the work in more effective way (Mamoria: 1989, 256). Similarly Blum (1984: 251) confirmed that training is a continuous process. Refresher courses help to cope up with the rapidly changing world. They permit the continual introduction of new and improved work method. So, EMIS personnel get the chance to acquaint themselves to the new technology introduced. Today's knowledge may not serve the coming days. Considering this Jenkins (1997: 13-1) said "skills can quietly become obsolete." As we all can imagine the initial training that each personnel has for the position he/she holds is not adequate enough to do the job since our contemporary world is affected by the rapid development of science and technology. This requires continuous on-the-job training to carry out duties and responsibilities as per the organization's new interest. Similarly, those personnel who are assigned in the area of EMIS need (to) have continuous on-the-job training so that they can acquaint themselves with new methods and techniques of doing their job. Refreshing EMIS personnel is not enough but training information users is also important. Every information producer and consumer needs opportunities for on-the-job trainings so that they can do their job as desired.

2.4.2 Users and Producers

Equal importance is not given to the training of EMIS users. It is frequently neglected, policy makers, managers or principals at all levels cannot understand the theoretical framework of EMIS unless they are oriented about the education information system. They may not be able to introduce change in the system. Also, they may not select the appropriate indicators to know how the organization is approaching to meet the stated objectives. Without training of

users, it is unlikely that investments in the EMIS are justified since the data simply will not be used to guide decisions (Kemmerer, 1994: 54).

The need for training is not limited to the IS department. Training should be made available to all clients or users. This not only provides the needed training but also helps create good will relationship between the IS and the rest of the organization (Jenkins, 1997: 13-3). As a result of this, cooperation between users and EMIS personnel will be created. In addition, the effectiveness and efficiency of the IS will be increased.

2.4.3 Managers (Principals)

Managers are responsible for planning, organizing, coordinating and directing the activities of the entire organization. Especially to make informed decision principals or managers at different levels of the organization have to get training about educational information system. As Stoner (1989: 612) indicates, there are varieties of training approaches that managers can use. On the job training, job rotation, working on series of jobs, internship and apprenticeship are the important ones. It is also possible to train them outside the work place. This type of training is known as off-the-job training. All these help to avoid or decrease deficiencies of managers and enable them to be acquainted with new findings.

2.5 Equipment and Facilities

Not only trained manpower is needed but also having well-designed building and office equipment have their own contributions in decreasing the burden of the workers and keeping up the quality of information produced. An information system requires space for housing its collection, to accommodate its users and provide adequate and convenient workspace for its staff (Abebe, 1993: 101). Because of this, variety of equipment and furniture which enable the information system accomplish its activities are also required. Equipment is not only

needed to produce but also keep the product safely. In addition equipment and facilities help to keep documents systematically and thereby making it possible to make use of whenever needed. Thus, the life of information stored will be prolonged. Dickson (1994: 192) assumed that "the more the facilities are diversified and updated, the more varied and efficient the services and supply of information will be." Equipment can be manual as well as automated.

2.6 Efficiency Versus Effectiveness of EMIS

Efficiency is maximizing the educational output with minimum possible inputs. There are two aspects of efficiency: internal and external efficiency. Internal efficiency deals with the production of information with minimum possible time and cost. Whereas, external efficiency is concerned with how the education MIS meets the need of information by the external systems. Internal efficiency is also classified into two: technical efficiency and economic efficiency. Technical efficiency is when the same amount of inputs are used to produce maximum output. In the case of economic efficiency maximum output is produced at a least cost (Nebeyu, 2000: 29). When we see the term effectiveness, it is the ability to reach the desired goal. Koontz (1989:8) expresses effectiveness as "the achievement of objectives." Therefore, the EMIS is used not only to produce much information with in small data but also to produce quality information that enable the managers to control, organize and plan their activities.

2.6.1 Integration of EMIS

In any organization different subsystems are coordinated in order to have better flow of information. On top of this, necessary or relevant information to managerial decision will be available timely whenever needed. Supporting this, Fering (1987: 92) said that, "to produce information that is consistent, accurate and economical it is necessary to have the systems and subsystems integrated." So, the unification of subsystems in terms of flow of information

within a system is referred to as integration. This brings compatibility between systems and subsystems in order to achieve not only effectiveness but also efficiency (Hussein, 1977: 22). Moreover, it creates a sense of organization solidarity and a climate of creativity (Burch, 1989: 147). Burch (1989) further explained on the same page that “a free flow of information facilitates better working relationship, increase understanding, precludes barrier building and supports smoother operation.”

According to Hussein (1977: 23), integration of subsystems is categorized into three: horizontal, vertical and functional and longitudinal. Horizontal integration is information flow between adjacent offices that is sharing and exchange of data and information between the subsystems whereas vertical integration is information flow between the levels of management to perform the different functions of operation. Longitudinal integration is interested not only in the organization's current status but also in keeping its past records and predicting its future fate.

Menberu (2001: 31) wrote the disadvantages of disintegration by saying that “the proliferation of different isolated and stand-alone data processing storage and the like systems would soon prevent data sharing across institutional and system boundaries.” Whereas, Scott (1986: 84) indicates “integration of information systems is one of the key concepts associated with a management information system.” But it has its own advantage and disadvantages. Its advantages are better flows of information within an organization, forcing managers to share the information generated, providing more timely, complete and relevant information and integration. This makes information processing more efficient even though integration increases complexity and this made system design difficult and needs more equipment (Scott, 1986: 84-89). Also Assefa (2001, 16-17) lists down advantages of integration of information as follows.

- provides flexible information system
- create easy and quick reporting
- it provides reliable information system
- locally produced information will be available
- good opportunity for research activity and intellectual exercise will be created

2.6.2 Decentralization Versus Centralization

In decentralized MIS decision-making activities of data collection are delegated to sub units. This permits faster adaptation of changes in the environment. The opportunity given to decide on the amount and kind of information to be collected permits subsystems to collect additional information to the interest of the upper decision making levels. Decentralizing MIS has its own advantages: it does not have the burden of providing regions with massive amount of information and it can be tailored to the needs of each decision (Scott, 1996: 12). The advantages of decentralized data processing are: it gives local autonomy and user control, it is responsive to user needs, it reduces telecommunication cost and immediate access to decentralized databases gives opportunity for career paths within users functional area. But its disadvantages are loss to central management control, hardware and software will be incomparable, failure to follow standard system and the duplication of staff and effort would be increased (Schuthis, 1995: 711). Thus, in decentralized information system there is no redundancy of data.

In the case of centralized MIS, data or information is stored centrally (Schultheis 711, 1995). Besides this, Scott (1986:11) explained that in centralized information, top managers suffer from information overload that is to say that much information communication is made between decision-makers. Due to this, managers face problems to be quick enough to make timely decision. Of course, the size of the organization matters. When the organization is

small, it is possible to give quick decision even though it is centralized but not in a large organization because it has larger number of hierarchy through which the information must pass. This may even lead to the distortion of information. According to Schutheis (1995: 711) the advantages of centralized data processing are:

- economic of scale,
- access to large scale capacity,
- more professional operation and management,
- multiple access to common data,
- better recruitment and training of specialized personnel,
- control of data processing expense

But its disadvantages are lack of users control and limited responsiveness. Thus, centralization helps to control data processing expense and it is believed that it has the ability to control the cost of centralized MIS. As Burch (1997: 904) said, nowadays professionals agree, “it is technologically feasible to centralize or decentralize to any extent one can imagine. The key to successful implementation of either approach or a hybrid is however proper alignment of the information system with the particular organization it serves.” Indeed, the development of IT has helped to have decentralization with in centralization and the vice versa is true. This practice does not bring the loss of data (Burch, 1997: 904-906). As a result of this the MIS can function effectively and efficiently.

2.6.3 Effective MIS

According to Chandan (1997: 463), an effective MIS is designed in such a manner, that:

- supplies, complete, accurate and timely information,
- identifies and quantifies the interrelated operational and performance variables.
- facilitates control of costs by integrating the financial and production data to generate measures of cost effective performance,

- identifies the separate needs of all units,
- able to present information in a presentable form to reduce the time required for action,
- provides flexibility

Above all, the expression written by Assefa (2201:3) confirms, "Information technology can make a difference." The technology introduced must be appropriate to the situation to use them effectively. Further more, every body has to acknowledge the importance IT on top of considering information as a resource. Having the appropriate IT, helps to promote and store information, process and disseminate information in cost effective manner with in a possible minimum time.

2.6.4 Method of Gathering Information

The way of gathering information may determine the efficiency and effectiveness of EMIS. Kemmerer (194:51) said, "the cost of collecting data depends not only on how often it must be collected but also on the methodology utilized." This is to say that, data that changes rapidly in the short run is collected annually whereas data that do not change rapidly are collected with in an established standard. It is not necessary to collect data on the entire population. It is possible to use survey type to collect data such as outcome data that are not changed rapidly. This activity not only saves time but also makes the work manageable and decreases cost.

The advantage of survey type of data collection has been stated by Ross (1990: 59): the collection of data from all schools is an expensive operation. For many indicators, data can be collected more effectively and more cheaply through survey samplings. As decision-makers require information on input, processes, out put and outcomes appropriate method has to be selected for each type. Thus to be efficient and effective the data to be collected annually and

periodically should be identified according to the data need of the decision makers at different level of the EMIS. On top of this, the training status of personnel and users of information can bring a difference in the effectiveness and efficiency of information management.

2.6.5 Necessity of Maintenance

The information gathered must be compatible with the changing world-with technological and organizational environment. Every time the methodology used and the information policy applied have to be revised according to the interest, knowledge and technology we have. Supporting this idea, Hussein (1997: 142) said, “the information system must be regularly evaluated to ensure that it is relevant and performing according to expectations and specifications. If not then the system must be modified.” Also as Assefa (2001: 20) indicated the “scope of maintenance does not necessarily mean correction of defects. This is only one among the three major types of maintenances. The other two types of maintenance are adaptive maintenance and perfective maintenance,” Hence it is necessary to monitor and evaluate the information system due to the changing requirement of the user, the need for integration and technological obsolesce.

Emphasizing the necessity of maintenance, Hussein (1977: 142-149) said that “most information operates in changing environment to go with such condition information systems must be regularly evaluated to ensure that it is relevant and performing according to expectation and specification/” The need for maintenance arises due to three factors: institutional needs, the need from the outside system and the need of the data processing organization (Hussein 1977: 147).

2.6.6 Characteristics of Good Information

To say that the information produced by the MIS is appropriate David (1989:18) has listed down points that are used as criteria. They are: pertinence, timeliness, accuracy, reduced uncertainty and elements of surprise-contain something that a person did not know. Also according to Chandan (1997: 453-454), the criteria for good information to make decision are: understandable, relevant, complete, available, reliable, concise, timely and cost effective. Burch (1989:5) assumes that "the quality of information rests solidly on three pillars-accuracy, timeliness, and relevancy." Therefore, as the quality of information increases, the EMIS is attaining its objectives or goal and then managers get the chance to make better decisions.

2.7. Experience of Other Countries

The development of EMRS especially in the education sector of developing countries, has been stimulated by the assumption that education managers lack information to do their jobs and the provision of good information will stimulate good management (Mendelsohl, 71:1996). In most countries, the emphasis of the school census has always been on quantitative aspects of the educational on top of this in several countries the school form is not longer annual. For instance, the Argentina and Botswana students enrolment is assessed three times a year. Also the responsibility for the school census is generally located either with the statistical offices or the planning department of the MOE. In Sweden it is the central Bureau of statistics - a multi sectorial agency - that has the responsibility for educational statistics computation. Additionally, various specialized departments' of the MOE collect data i.e., in many countries the primary and secondary departments send their own questionnaire to schools under their control (Ross, 37-46:1990). In both the industrialized and developing countries parents, teachers and students have least access to educational data. More over too many data of limited utility are often collected as a result of bad planning. They do not considered fully the

need of decision makers. In some countries basic statistics were provided at all decision making levels concerning qualitative information. However there were very few attempts to gather information about educational process and outcomes.(Rass, 57-37:1990). Besides this, in the same pages, Ross (1990) said that, the responsibility of data collecting in Kenya about teaching staff are collected by the central bureau of statistics of the ministry of planning and economic development, the planning and statistics units of the ministry of education, the teachers' service commission, the inspectorate and the 8.8.4 bureau. Whereas the national examination council provides examination results in terms of percentage. In addition schools are also ranked by average achievements. These information are reported back to district and schools. (Ross,159:1990)•The same as Kenya, in the Syrian Arab Republic, Several units of the MOE are engaged in gathering and disseminating data. But in Finland in addition to Syria, it has setted up a special information group to coordinate the educational information activities in the MOE. In the case of Japan, a wide range of information agencies that includes private agencies are participating in data collection, agencies are participating in data collection (Fering, 73:1980).

Kemmerer (46:1994) Confirmed that in many “ developing countries the regular collection of data are stimulated in part by the demand of external agencies,” There are countries which are applying survey method of collecting data. For example in Chile, students in 4th and 8th grades in primary schools are tested in several times in core subjects such as Spanish, Mathematics and the natural science and social science. But in India education survey is tested grade V and VII students only in English and mathematics. In some countries sixth, ninth and twelfth grade are tested. However, due to lack of resources these activities are not undertaken at regular intervals (Ross, 49-52:1990)

Indonesia has a centralized system of education. The center for Information (pusat informatika) has been given the primary responsibility of coordinating educational data collection and processing at the national level. Questionnaire is developed which is sent annually to every school in Indonesia. The questionnaire data are summarized, and possibly analyzed at the district and provincial levels. Questionnaire from pusat informatika has contributed in decreasing the number of separate requests for new data from schools (Chapman, 1997:242).

In Jordan, due to the awareness of the importance of relevant reliable and timely information in education planning and management at all level of the education system the National center for Education Research and development (NCERD) was created as an autonomous institution operating under the umbrella of the higher council for science and Technology. The school census data were collected each year. Data collected by different departments remained at different location. (Chapman, 1997:274). In Colombia, for gathering and distribution of data the National Administrative statistics Department (DANE) is used. Forms are processed by school principals and the heads of school and the data are then collected and computerized by the DANE. The information processed analyzed and distributed by the MOE but there are not enough resources available for any of these activities (Faustor , 223:1995).

In general most countries faced problem associated with a lack of congruence between data availability, information needs and utilization capacity (Ross, 66:1990).

2.8 Summary

Information consists of data image, text, documents and voice, which are organized in a meaningful way. In any organization there are different information networks such as Transaction processing system, management information system, Decision support system, Executive support system and office automation system. MIS is distinguished from other systems by its emphasis in supporting of management decisions. It provides vital information about the organization. In general it is a formal method of collecting timelines and accurate information in a presentable form in order to facilitate effective decisions making and enhances productivity and enable tasks to be carried out more efficiently.

The EMIS can best be designed with the participation of employees especially decision makers. Moreover, the involvement of stakeholders contributes to meet the information needs of the organization. Thus, the first step in the system development life cycle is the identification of need in order to satisfy all the potential users.

Managers are the leaders, the monitors the innovators, the asset locators, the one who say go or not go. To perform all these tasks the managers have to be provided with quality information to make quality decisions. To manage this strategic tool information managers are responsible for planning organizing, coordinating and directing the data information produced in the entire organization.

Material resource alone does not bring development in to educational offices unless the quality and professional competence of employees are improved. Hence training is conducted in order to improve productivity, improve the quality of performance, reduce the inefficiency, minimize accidents, reduce turnover and absenteeism and make sure employees skills keep pace with innovations in the equipment and techniques they work with. So information workers must be indoctrinated in new taught and new skills. As a result the information system has the task of educating employees in the information system and users or managers.

Educational data are collected to generate meaningful information in order to understand the status of the educational system so that the concerned managerial bodies of all levels can take proper measures. As one moves upwards of the organization hierarchy, the data needed becomes to be general and specifically decreases. But the number kind and item of data to be collected depends up on the capacity of the EMIS that is, the availability of trained manpower and the technology introduced limits the type and amount of information gathered. Data collection activities are divided into two : yearly and periodic data collection. The yearly data is based on school census but survey data are collected regularly depending on the available resources and the area covered. Information format is a common method of collecting data for an information system. The data collected through this medium must satisfy the need of the decision makers.

An information system require space for housing its collection, to accommodate its users and provide adequate convenient work space for its, staff. Because of this, variety of equipment and furniture which enable the information system accomplish its activities are also required.

To produce information that is consistent, accurate and economical. It is necessary to have the systems and sub systems integrated that bring comparability between systems and subsystems to achieve not only effectiveness but efficiency. Also, the way of gathering information, the methodology used and the information policy applied, the knowledge and technology we have determines the efficiently as well as the effectiveness of the educational information system.

CHAPTER THREE

PRESENTATION AND ANALYSIS OF THE DATA

This chapter deals with the description of the respondents, analysis and interpretation of the data. Hence, it is assumed that all the relevant data and information gathered have been analyzed and the basic questions raised are appropriately answered. So it seems essential to have a brief look at the background information of the respondents before going deep into the analysis part. Therefore, the general characteristics of the sample population are presented hereunder.

3.1 Characteristics of Sample Population

The data collected through the questionnaires are organized in tabular forms. Whereas, the information gathered through interview and observation is described qualitatively in a way that can be used to supplement and fill the gaps in the quantitative data.

Table 2 : Number or Percentage of Returned Questionnaires

Respondents	Distributed	Returned	Valid number	%
AREB officials and experts	14	14	14	100
ZED officials and experts	24	22	22	91.7
WEO officials and experts	48	41	37	77.1
School principals and unit leaders	96	87	80	83.3
Total	182	164	153	84.1%

The data used in the study were collected from 77 education officials (at AREB, ZED and WEO) while 87 questionnaires were gathered from schools, out of which only eleven were not filled appropriately. That is, seven from schools and four from WEO were discarded. Thus 153 out of 164 returned questionnaires (about 84%) were used for the analysis.

Table 3: Characteristics of the Respondents**3A: Gender, sex and Qualification**

1. Gender	Educational Officials and Experts								School	
	REB		ZED		WED		Total		Personnel	
	F	%	F	%	F	%	F	%	F	%
Male	14	100	22	100	37	100	73	100	52	65
Female	-	-	-	-	-	-	-	-	28	35
Total	14	100	22	100	37	100	73	100	80	100
2. Age										
20 and below	-	-	-	-	-	-	-	-	-	-
21-25 years old	-	-	-	-	-	-	-	-	-	-
26-30 years old	-	-	2	9.1	4	10.8	6	8.2	11	13.7
31-35 years old	1	7.1	5	22.7	6	16.2	12	16.4	12	15
36-40 years old	5	35.8	7	31.8	9	24.3	21	28.8	22	27.5
41-45 years old	1	7.1	5	22.7	12	32.5	18	24.7	26	32.5
46 and above	7	50	3	13.7	6	16.2	16	21.9	9	11.3
Total	14	100	22	100	37	100	73	100	80	100
3. Educational level										
Below 12 th grade	-	-	-	-	-	-	-	-	-	-
12 complete	-	-	-	-	5	13.5	5	6.8	16	20
TTI graduate	-	-	2	9.1	12	32.5	14	19.2	23	28.7
College Diploma	1	7.1	-	-	11	29.7	12	16.5	20	25
B.A/B.Sc	11	78.6	19	86.4	3	8.1	33	45.2	16	20
M.A/MSc	2	14.3	1	4.5	-	-	3	4.1	3	3.8
Others (12 + 1, 12+ 3)	-	-	-	-	6	16.2	6	8.2	2	2.5
Total	14	100	22	100	37	100	73	100	80	100
4. Filed of study										
EdAd	2	14.2	3	13.6	5	13.5	10	13.7	9	23.1
Pedagogies	5	35.7	5	22.7	-	-	10	13.7	11	28.2
Statistics	1	7.2	-	-	-	-	1	1.4	1	2.6
Others	6	42.9	14	63.7	32	86.5	52	71.2	18	46.1
Total	14	100	22	100	37	100	73	100	39	100

As can be calculated from Table 3, out of 153 respondents only 18.3%(all from the schools) are females. This indicates the in existence of females in both the leaderships and expert positions in all REB, ZED and WEO. This may be accounted for the influence of the tradition of the society on females.

Regarding the qualification of the respondents, the table reveals that about 21%(32) 36%(55) are degree and diploma holders respectively. However, out of these administrative staff members only closer to 12 % (19) of the respondents have studied school administration. The majority of

the respondents (87.6%) are not acquainted with management theories through formal training except the knowledge they have accumulated while serving at different administration levels.

3B: Experience

1. Current post	Educational Officials and Experts								School	
	REB		ZED		WED		Total		Personnel	
	F	%	F	%	F	%	F	%	F	%
Team leader	6	42.9	6	27.3	15	40.6	27	37	-	-
Section Service head	1	7.1	4	18.2	9	24.3	14	19.2	-	-
Expert	7	50	12	54.5	-	-	19	26	-	-
Head WEO	-	-	-	-	13	35.1	13	17.8	-	-
School principal	-	-	-	-	-	-	-	-	59	73.7
Unit leader	-	-	-	-	-	-	-	-	21	26.3
Total	14	100	12	100	37	100	73	100	80	100
2. Total Years of service										
0-5 years	-	-	-	-	-	-	-	-	3	3.8
6-10 years	-	-	2	9.1	6	16.2	8	11	6	7.5
11-15 years	-	-	4	18.2	8	21.6	12	16.5	15	18.8
16-20 years	5	35.7	7	31.8	7	18.9	19	26	26	32.3
21-25 years	2	14.3	4	18.2	9	24.4	15	20.5	19	23.8
26-30 years	7	50	2	9.1	4	10.8	13	17.8	9	11.3
31 and above	-	-	3	13.6	3	8.1	6	8.2	2	2.5
Total	14	100	22	100	37	100	73	100	80	100
3. Service Rendered in schools as										
Principal	1	7.7	4	18.2	4	10.8	9	12.3	21	26.2
Unit leader	1	7.7	2	9.1	5	13.6	8	11	16	20
Department head	2	15.4	5	22.7	8	21.6	15	20.5	9	11.3
Principal & unit leader	3	23	2	9.1	6	16.2	11	15.1	8	10
Unit leader & Dept head	2	15.4	3	13.6	8	21.6	13	17.8	16	20
Principal, unit leader & dept head	4	30.8	6	27.3	6	16.2	17	23.3	10	12.5
Total	13	100	22	100	37	100	73	100	80	100
4. Service rendered in the current education office										
0-5 years	5	35.7	9	40.9	15	40.5	29	39.7	32	40
6-10 years	9	64.3	8	36.4	13	35.1	30	41.1	27	33.7
11-15 years	-	-	5	22.7	9	24.4	14	19.2	15	18.8
16 and above	-	-	-	-	-	-	-	-	6	7.5
Total	14	100	22	100	37	100	73	100	80	100
5. Service in the current post										
1-3 years	2	14.3	10	45.5	10	27	22	30.1	28	35
4-7 years	8	57.1	5	22.7	16	43.3	29	39.8	31	38.7
8 and above year	4	28.6	7	31.8	11	29.7	22	30.1	21	26.3
Total	14	100	22	100	37	100	73	100	80	100

As shown in Table 3, out of the total respondents 47.7%(73) are office workers in REB, ZED and WED serving as team leaders, service heads and experts. Whereas, 52.3%(80) of the respondents are school principals, unit leaders and department heads. Also most of the respondents are found to be older than 35 years with more than 5 years work experience. In addition almost all REB, ZED and WEO officials and experts have passed through school leadership serving as school principal, unit leader and/or department head. More over 60%(92) of the respondents have stayed in the same level of education offices for more than six years. On top of this, nearly 67% (103) of the respondents have rendered services in the current post for more than three years. This has turned out to be of much help in providing quality information to the investigation made on the EMIS of the Region.

In summary, based on the general characteristics of the sample, it is hoped that the respondents would provide relevant information that would help make inferences about the population from which they are drawn.

3.2 Analyses and Interpretation of Data

3.2.1 Educational Status and Training of Educational Information Personnel

The first objective of the study focuses on the investigation of the status and training of educational information personnel in the Region's Education Bureau which are basic inputs for the quality of educational information and which in turn contribute to quality of education as well as efficiency.

As discussed in detail in chapter two, the effectiveness or productivity of employees is found to largely depend on the qualification they have. That is, by further investment on education and training, it is possible to enhance human capital (Hendry, 1995).

As discussed in detail in chapter two, the effectiveness or productivity of employees is found to largely depend on the qualification they have. That is, by further investment on education and training, it is possible to enhance human capital (Hendry, 1995).

Hence, in view of assessing the training status of employees at every educational administrative levels (REB ZED, WEO and school) personnel's were asked about their pre service and in service training. The result obtained is expected to reveal their abilities to produce the expected quality information.

It is assumed that the more qualified and the large the number of skilled labour force, the better would be the service. Because of this, the pre-service qualification usually qualifies a person to be employed for a job. But as was observed those who do not qualify for the job is assigned due to different reasons. In this regard, an interview was held with the Region's education information unit staff member seeking information about the qualification of EMIS workers. The interview revealed that while first-degree holders who have specialized in Mathematics and statistics administer the Regional Bureau's information unit 12th grade complete workers administer the ZED's and WEO's information unit. Furthermore, in addition to the management of information, the same persons prepare the Woredas educational plan. But contrary to what is being practiced general qualification requirement for REB are MA/MSc or BA/BSc, while it is B.A/Diploma for ZED and Diploma for WEO particularly for planning and pedagogical functions (MOE, 1998).

Table 4: Pre-service Training

Did you take any course on information management in your pre service training?	Educational Officials & Experts								School Personnel	
	REB		ZED		WEO		Total			
	F	%	F	%	F	%	F	%	F	%
Yes	2	14.3	4	18.2	6	16.2	12	16.4	10	12.5
No	12	85.7	18	81.8	31	83.8	61	83.6	70	87.5
Total	14	100	22	100	37	100	73	100	80	100

As shown in Table 4, the responses of the two groups (i.e., the officials and personnel) to the questions raised are similar. That is, nearly 84% (61) and 88% (70) of officials and school personnel, respectively confirmed that they did not take any course on information management in their pre service training implying that the proportion of those who had prior exposure to information management very low (14,4%). The other group of respondents(school personnel) may be science teachers who have been trained in Addis Ababa University in the faculty of science. Because it is there that information technology is given as a minor subject for those who major in mathematics and physics. In addition, the second-degree graduates might have the chance to take the course in either at domestic or external training institutions.

It is thus possible to generalize that most of the employees, especially those who hold the top chairs in the Region's educational administrative levels, have not taken the course in their pre-service training. It is also possible to conclude that the curriculum prepared for teacher training institutions do not include educational information. This by itself may lead one to the conclusion that universities, colleges and other training institutes, which are producing teachers and schools administrators, have not looked into the importance of information management.

Organizations achieve their purposes by adding some value to their resources, the people they employ, by providing in-service or on the job training in order to enable them to perform better and empower them to use their abilities (Armstrong, 1999)

To check whether the REB has attached some value to its EMIS workers, respondents were asked to give their views on the effort made on employees' development as presented here under.

As indicated in Table 5 all of the respondents (100%) at every hierarchy of the regions administrative category admitted that they did not get the opportunity for a long term training in EMIS. But in the case of short-term trainings about 33 % (51) of the sample population said that they have participated in short term trainings on the collection utilization and storage of educational information. Even though, the majority of the respondents (66.7%) confirmed that they are excluded from participating in EMIS trainings. The participation of few individuals in the training by itself is an indication of the effort being made by the concerned departments to orient the employees on EMIS.

Among those have taken the training, there seems to be differences in their evaluation of the training provided, For instance, while the majority of the total respondents (72.8%) claim that the training given was not satisfactory only those respondents from zone Education Departments (66.7%) have appreciated the training to have been satisfactory for the task underway. This may be due to their participation on computer programmes. On the other hand, significant number of respondents from the total sample population (58.8%) rated the effectiveness of the training as average while the other 29.4% rated it as low.

Table 5: In-service Training

1. Did you participate in a long term training on EMIS ?	Officials and experts								School personnel	
	REB		ZED		WEO		Total			
	F	%	F	%	F	%	F	%	F	%
Yes	0	0	0	0	0	0	0	0	0	0
No	14	100	22	100	37	100	73	100	80	100
Total	10	100	22	100	37	100	73	100	80	100
2. Do you participate in short term training on collection, storage & utilization of information?										
Yes	6	42.9	9	40.9	17	45.9	32	43.8	19	23.8
No	8	57.1	13	59.1	20	54.1	41	56.2	61	76.2
Total	14	100	22	100	37	100	73	100	80	100
3. Do you think that the training given is satisfactory for the task underway ?										
Yes	1	16.7	6	66.7	2	11.8	9	28.1	5	26.3
No	5	83.3	3	33.3	15	88.2	23	71.9	14	73.7
Total	6	100	9	100	17	100	32	100	19	100
4. The effectiveness of the training is rated as										
High	-	-	2	22.3	1	5.9	3	9.4	3	15.8
Average	4	66.7	4	44.4	13	76.5	21	65.6	9	47.4
Low	2	33.3	3	33.3	3	17.6	8	25	7	36.8
Total	6	100	9	100	17	100	32	100	19	100
5. Availability of text books or other printed materials on educational information										
The organization does not have relevant books	2	14.3	16	72.7	30	81.1	48	65.7	53	66.3
Although books are available the situation does not invite reading	5	35.7	4	18.2	5	13.5	14	19.2	13	16.3
Books are available and there is as well a conducive environment for reading	7	50	2	9.1	2	5.4	11	15.1	14	17.4
Total	14	100	22	100	37	100	73	100	80	100
6. Whom do you think are those who should be given training on information management ?										
Teachers	-	-	2	9.1	3	8.1	5	6.9	7	8.8
Head teachers	-	-	2	9.1	10	27	12	16.4	8	10
Record officers	-	-	-	-	5	13.5	5	6.8	5	6.3
Statisticians at Woreda, Zone and Bureau levels	2	14.3	4	18.2	3	8.1	9	12.3	11	13.7
Any worker	12	85.7	14	63.6	16	43.3	42	57.6	49	61.2
Total	14	100	22	100	37	100	73	100	80	100

An open-ended question was also included to identify and explore the reason why employees did not participate in short term trainings. According to the responses given the following are identified as the major reasons.

1. particularly those highly posted people are favored. Consequently, subordinates could not get the chance to participate

2. mostly those who are working in the educational information unit are selected.
 3. no opportunity is created to provide training for employees in their respective offices.
- Giving the opportunity to only few selected individuals/ sections repeatedly is a serious problem identified by most of the respondents.

As can be seen in Table 5, the higher proportion of the school principals and education officials (66.3% and 61% respectively) revealed that their offices do not make books or printed materials available.

This by itself indicates that workers do not have the opportunity to read books during their spare time. It seems that no attempt is being made to raise the awareness of educational personnel about EMIS. It could have been possible to organize trainings workshops on forums for sharing the knowledge and experience from those who have prior training and rich experiences with little expense (i.e., without expending much on transport and berdiem). Thus schools Woredas and Zones are not made to be training centers for the employees. Generally, training is not only to develop the competence of employees and improve their performance, but it is to help workers grow within the organization so that its future needs for human resources can be met from within (Armstrong, 1999). Linking both pre-service and in-service trainings help for the professional advancement of employees in the area of educational information.

Asked about their participation in discussions related to EMIS, 71.2% of the education officials (REB, ZED and WEO) noted that they have participated in discussions on educational information (Table 6). Similarly 71.3% of school principals and unit leaders have also answered positively. In contrast, 28.8% of the total sample population answered negatively. This implies

that issues related to educational information are part of the agenda of the various meetings and/or discussions.

Table 6: Conferences

1. Did you participate in discussion on educational information in conferences of which you were a member?	Educational officials and experts								School personnel	
	REB		ZED		WEO		Total			
	F	%	F	%	F	%	F	%	F	%
Yes	11	78.6	17	77.3	24	64.9	52	71.2	57	71.3
No	3	21.4	5	22.7	13	35.1	21	28.8	23	28.7
Total	14	100	22	100	37	100	73	100	80	100
2. Were resolutions passed regarding educational information?										
Yes	11	100	13	76.5	19	79.2	43	82.7	49	86
No	-	-	4	23.5	5	20.8	9	11.3	8	14
Total	11	100	17	100	24	100	52	100	57	100
3. How practical are the resolutions passed?										
Wholly practical	-	-	2	15.4	-	-	2	4.6	3	6
Partially practical	3	27.3	2	15.4	14	73.7	19	44.2	12	25
Minimally practical	8	72.7	6	46.2	5	26.3	19	44.2	21	43
Not wholly practical	-	-	3	23	-	-	3	7	13	27
Total	11	100	13	100	19	100	43	100	49	100

Respondents were further asked about the resolutions passed regarding educational information.

The majority of respondents from REB, ZED and WEO (82.7%) agreed that resolutions were passed. Especially all the REB respondents (100%) supported the idea. But the responses of a good proportion of the respondents revealed that the resolutions passed on conferences were either partially or minimally made practical.

As stated above, resolutions were frequently passed on the collection, storage and utilization of educational information; however, the decisions being taken are more nominal than practical. This is due to either the failure to see the immediate benefit of the data collected or the inability to observe its contribution to the improvement of the education system. From this it may not be wrong to conclude that in most cases, decisions are passed on matters without considering their practicability. Moreover, no one would be penalized for not implementing the issues on decisions

that have been passed. Decision makers seem to decide or set alternative decisions without giving due considerations as to how to implement and evaluate them. Hence, the decision making process in general can be taken to be a habitual action rather than being a conscious and targeted endeavor.

1.2.2 Information processing Equipment and Facilities

This section deals with the second basic question of the study. It attempts to analyze the responses of the two groups of respondents, namely REB, ZED and WEO officials and experts on the one hand and that of school principals and unit leaders on the other, regarding the availability of the necessary facilities and equipment for the collection and production of information.

As discussed in chapter two the existence of equipment and appropriate room contributes not only in decreasing the burden of information workers but also improves the quality of information as well as protects it from any damage. In addition, the availability of space/room and the existence of appropriate furniture and equipment help to keep the information produced safely. In this regard, the assessment made on the sample educational administrative categories is presented below.

Looking at Table 7, one can easily observe that 69% of the total respondents confirmed the availability of separate information processing section room. It has to be emphasized that the proportion of educational offices having no information processing section are quite large (30.1%) on the other hand, a close look at each of the educational administrative categories reveals the wide gap between educational officials and school personnel.

Table 7: Information Processing section

Is there information-processing section in your organization?	Educational officials and experts								School personnel	
	REB		ZED		WEO		Total			
	F	%	F	%	F	%	F	%	F	%
Yes	14	100	20	90.9	31	83.8	65	89	41	51.3
No	0	0	2	90.1	6	16.2	8	11	39	48.7
Total	14	100	22	100	37	100	73	100	80	100

This implies that as one goes down the administrative hierarchy, the availability of separate data processing rooms decreases. That is, a significant number of schools (48.7%) lack a separate room for processing and sorting information.

Most of the data processing can be done by hand using traditional tools such as pencil, paper and filing tray. However, purely manual methods are time consuming. As a result, various mechanical methods, such as typewriters, desk calculators and duplicators, were developed to improve efficiency (Milner, 1981). But now to increase the efficiency and quality of information equipment have been improved from mechanical to automation. The type of equipment used (either manual, mechanical or automation) depends mainly on the social and economic development of a country. Also the amount of information (data) determines the kind of equipment we are going to use.

Accordingly, attempt is made to assess the capacity of the REB in fulfilling the necessary information processing equipment. As Table 8 shows 57% and 59% of REB and ZED officials and experts, respectively, affirmed that information processing equipment are partially available in their offices. But respondents from WEO and schools personnel (67.6% and 45%, respectively) completely denied the existence of such equipment. These, therefore, imply that the first two top educational administration levels in the Region's education hierarchies are relatively in a better

position in terms of information processing equipment as compared to the grass root levels of educational institutions, i.e., WEOs and schools.

In addition, those respondents who responded that there is no information processing equipment were further asked to indicate their reasons. Hence, nearly 41% of the officials from REB, ZED, and WEO revealed that it is the combined effect of the shortage of money and less attention given to the acquisition of the necessary equipment that have been the main factors for the problem. Whereas, shortage of money and lack of attention independently were reported to have aggravated the problem of acquisition of information processing equipment in the schools. It is thus possible to conclude that while the main serious problem at schools level is the shortage of money, lack of awareness of managers may have contributed in not having sufficient equipment at ZED and REB levels.

In the case of quality of equipment, 53.8% of REB officials and experts have confirmed that the equipment they are using are of medium quality. While in the remaining three educational administrative categories (ZED, WEO and school) respondents claim that their equipment are of less quality.

In about 77% of the cases, REB information processing equipment are available on demand in the REB, while the majority of the respondents responded that equipment are not available on demand in ZED, WEO and schools. Even the effort made to repair equipment was not as expected as indicated by both groups of respondents (65.8%, 74.3% of officials and school principals respectively). The main reasons for the failure to maintain the equipment on time are identified to be shortage of money, unavailability of technicians and being an item of lesser

priority. Nevertheless, from the responses of those who confirmed that the equipment available were repaired on time, it might be possible to say that there are some managers who are aware of the importance of maintaining information processing equipment.

According to Table 8, all the respondents of REB and ZEDs unanimously answered the availability of computers at their offices. Nearly 34% of the schools have also reported to own computers. However, contrary to expectation, all WEO officials revealed that they own no computer. Regarding the uses of computers, schools indicated that in nearly 26% and 19% of the cases of computers are used for training and word processing purposes while they remain idle in 22% of the cases. Whereas, the ZED mainly use computers for word processing (36.4%), the REB seems to use more widely (42.9%), namely for the purpose of training, data and word processing. On the otherhand all segments of the educational administrative hierarchy did not indicate the use of computers to access the Internet.

As observed, computers are introduced to the second cycle secondary schools in the fiscal year 2001/02. Also the opening of private schools, especially K.G., have led to the introduction of computers to the Region's in their response to schools. Furthermore, as indicated above, various educational offices are using computers for different purposes. In their responses to an open-ended question those schools who are not using their computers identified the following to be the main reasons why computers are shelved: lack of equipment necessary for computer operation (such as stabilizers), unavailability of computer trainers and rooms for the training.

Regarding the use of computers the literature states that information systems need not be computer based but often offices are. If a manual system can perform a task efficiently and

without error, there may be little reason to use computers. However, as the volume of work grows, procedures increase in complexity and improvement can be gained by introducing computer assistance (Senn, 1987). It should not be forgotten that computer complement rather than replace individuals. However, the advancement in information technology has a goal of minimizing the cost of information processing and improving the usefulness of information (Voich, 1975).

Table 8: Information Possessing Equipment

1. Are information-processing equipment available?	Educational Officials and experts								School personnel	
	REB		ZED		WEO		Total			
	F	%	F	%	F	%	F	%	F	%
Wholly available	5	35.7	3	13.6	-	-	8	11	8	10
Partially available	8	57.2	13	59.1	12	32.4	33	45.2	27	33.8
Not available	1	7.1	6	27.3	25	67.6	32	43.8	45	56.2
Total	14	100	22	100	37	100	73	100	80	100
2. The reason why information equipment is not available										
shortage of money	-	-	3	50	7	28	10	31.3	19	42.2
less attention	-	-	-	-	9	36	9	28.1	15	33.3
both shortage of money and less attention	1	100	3	50	9	36	13	40.6	11	24.5
Total	1	100	6	100	25	100	32	100	45	100
3. The quality of information processing equipment										
high quality	3	23.1	2	12.5	-	-	5	12.2	4	11.4
medium quality	7	53.8	6	37.5	3	25	16	39	8	22.9
less quality	3	23.1	8	50	9	75	20	48.8	23	65.7
Total	13	100	16	100	12	100	41	100	35	100
4. Are information processing equipment available on demand ?										
Yes	10	76.9	7	43.8	4	33.3	21	51.2	11	31.4
No	3	23.1	9	56.2	8	66.7	20	48.8	24	68.6
Total	13	100	16	100	12	100	41	100	35	100
5. Are information processing equipment repaired on time ?										
Yes	5	38.5	6	37.5	3	25	14	34.2	9	25.7
No	8	61.5	10	62.5	9	75	27	65.8	26	74.3
Total	13	100	16	100	12	100	41	100	35	100
6. Reasons why information processing equipment are not repaired on time										
Lack of technicians	1	7.7	-	-	-	-	1	2.4	3	8.6
Shortage of money	2	15.4	4	25	5	41.7	9	22	5	14.3
The equipment can not be repaired	-	-	2	12.5	-	--	2	4.8	1	2.9
Less attention	-	-	1	6.3	4	33.3	5	12.2	7	20
Shortage of money is less attention given	4	30.8	5	31.2	3	25	12	29.3	9	25.6
Shortage of money lack of technicians and less attention	6	46.1	4	25	-	-	12	29.3	10	28.6

Total	13	100	16	100	12	100	41	100	35	100
7. Is computer available?										
Yes	14	100	22	100	-	-	36	49.3	27	33.8
No	-	-	-	-	37	100	37	50.7	53	66.2
Total	14	100	22	100	37	100	73	100	80	100
8. Purpose for which computers are used:										
Training	-	-	-	-	-	-	-	--	7	25.9
Word processing	1	7.1	8	36.4	-	-	-	-	7	25.9
Data processing	1	7.1	3	13.6	-	-	9	25	5	18.5
Internet	-	-	-	-	-	-	4	11.1	1	3.7
Does not give service	-	-	-	-	-	-	-	-	2	7.4
Data and word processing	1	7.1	7	31.8	-	-	-	-	6	22.2
Training and word processing	5	35.8	1	4.6	-	-	8	22.2	1	3.7
Training, data and word processing	6	42.9	3	13.6	-	-	6	16.7	3	11.1
							9	25	2	7.4
Total	14	100	22	100	-	-	36	100	27	100

To sum up as the writer has observed private computer training centers are emerging in most towns of the zones. Besides, also secondary schools are becoming computer centers. But one can easily observe that the norm of managing computers is not developed as such. As said by most respondents, rather than using computers for complex functions, people are using them mainly for word processing purposes putting typewriters aside. This is to say that computers are not being used for data base management as expected.

1.2.2 Integration and organization

This section deals with the third basic question of the study. Here an attempt is made to interpret and analyze the view of respondents in order to find out the answer for the question raised. The mobilization of human and material resources in the system has to be done well to achieve the desired objective. Similarly, the organization and integration of educational information is an input for the effectiveness as well as the efficiency of the educational information system.

Thus, by asking respondents about the availability of human and material resources an effort is made to interpret the prevailing situation as follows.

Respondents from REB, ZED and WEO (78.6%, 54.5%, 70.3% respectively) confirmed the existence of organized information base. However, 43% of school personnel did not accept its existence. Relatively good attention was given to information bases, which are above the school level in the hierarchy. Schools (source of data) did not have organized information bases compare to others. Milner (1981) supporting the existence of organized information system said that current information would often be required in the future, just as historic information is often needed in the present. Consequently, safe storage and efficient retrieval information is necessary.

Table 9: Collection and Storage

1. Is there on organized information base?	Educational officials and experts								School personnel	
	REB		ZED		WEO		Total			
	F	%	F	%	F	%	F	%	F	%
Yes	11	78.6	12	54.5	26	70.3	49	67.1	32	40
No	3	21.4	6	27.3	11	29.7	20	27.4	43	53.8
I don't know	-	-	4	18.2	-	-	4	5.5	5	6.2
Total	14	100	22	100	37	100	73	100	80	100
2. Are information well organized as to be available on demand?										
Yes	8	57.1	7	31.8	13	35.2	28	38.4	33	41.3
No	6	42.9	11	50	15	40.5	32	43.8	43	53.7
I don't Know	-	-	4	18.2	9	24.3	13	17.8	4	5
Total	14	100	22	100	37	100	73	100	80	100
3. The necessary educational information are kept										
In EMIS section	4	28.6	6	27.3	8	21.6	18	24.7	16	20
In concerned department	6	42.9	7	31.8	19	51.4	32	43.9	19	23.7
in the hand of individual person	1	7.1	-	-	6	16.2	7	9.6	12	5
in a library	-	-	-	-	-	-	-	-	3	3.8
in all of the above	3	21.4	5	22.7	4	10.8	8	10.9	7	8.7
in EMS and in concerned ones	-	-	4	18.2	-	-	8	10.9	9	11.3
in school principles	-	-	-	-	-	-	-	-	14	17.5
Total	14	100	22	100	37	100	73	100	80	100
4. If the necessary information are kept in the hands of individual had it a problems in loss of information as a result of individual departure?										
Yes	1	100	4	66.7	4	57.1	9	64.3	7	58.3
No	-	-	2	33.3	3	42.9	5	35.7	5	41.7
Total	1	100	6	100	7	100	14	100	12	100

According to 57.1% of the REB respondents, information are well organized as to be available on demand. In contrast, 50% 40.5% and 53.7% of ZED, WEO and school respondents respectively

do not look at it positively. Therefore it may be possible to conclude that in most of the region's administrative levels the availability of information on demand is not satisfactory. But the establishment of an effective filing system is a prerequisite for the efficient operation of the organization as a whole as well as offices within the organization (Milner, 1981)

In the case of information storage 33%, 22.22% and 12.4% (as calculated) of the total population confirm that the necessary information are kept in concerned departments in educational management information units and in the hand of individual person respectively. On the other hand 61.5% of respondents who said information is kept in the hands of individual has assured us that due to the departure of individuals for different reasons caused for the loss of information. But other materials such as chair, table and the like are registered. Schoderbek (1980) confirm us that data can be stored retrieved updated and again filed. At the same time they are marketable commodity that can be purchased at a higher cost.

As observed in education offices most of the materials are registered as property. But data are not considered as property or resource. So it is possible to say that, in most of the educational administrative levels, there are information bases but they are not as such organized. As a result, information are not obtained on demand. In addition individuals departure is sometime the cause of loss of information. All these points enable to conclude the non-existence of trained personnel in managing information.

As it is observed from Table 10, about 62.1% of the total respondents replied that due to un conducive environment to make use of the information gathered. Even though it is not conducive to make use of it, school principals were the most consumers among the school community as of

51.3% of school respondents answered. But in the case of educational officials high and middle level managers use out of the organized information but at Woreda, middle level officials are the most users. This might be because woreda officials have direct contact with that of schools to answer any human and material requests. There are situations in which the user may not be fully aware of the many information sources and services potentially available (Ferning, 1980). Also the information service may not be responsive to the requirement of the users. Any way for different reasons, high and middle level officials have better knowledge about the information than principals

Table 10: Utilization of information

1.Is there conducive condition for teachers and workers to make use of the information gathered ?	Educational officials and Experts								School Personnel	
	REB		ZED		WED		TOTAL			
	F	%	F	%	F	%	F	%	F	%
Yes	5	35.7	8	36.4	10	27	23	31.5	35	43.8
No	9	64.3	14	63.6	27	73	50	68.5	45	56.2
Total	14	100	22	100	37	100	73	100	80	100
2. Who would make the most use out organized information in your school ?			School Personnel							
			KG		Primary School		Secondary School		Institution	
			F	%	F	%	F	%	F	%
school principals			9	52.9	1.5	38.4	13	76.4	4	57.1
unit leaders			2	11.8	10	25.6	2	11.8	-	-
department heads			1	5.9	4	10.3	1	5.9	2	28.6
teacher			4	23.5	1	2.6	1	5.9	1	14.3
all of the above			1	5.9	6	15.4	-	-	-	-
Nobody			-	-	3	7.7	-	-		
Total			17	100	39	100	17	100	7	100

3. Officials who make the most use out of organization information are	Educational officials and Experts							
	REB		ZED		WED		Total	
	F	%	F	%	F	%	F	%
a high level officials	4	28.6	6	27.3	13	35.1	26	35.6
middle level officials	1	7.1	5	22.7	17	46	23	31.6
Lower level officials	1	7.1	-	-	-	-	1	1.3
middle and lower	2	14.3	1	4.5	3	8.1	5	6.8
high and middle	5	35.7	6	27.3	1	2.7	7	9.6
both high middle and lower level	1	7.1	4	18.2	3	8.1	11	15.1
Total	14	100	22	100	37	100	73	100

Regarding the inclusion of EMIS in the Region's educational structure at all levels of administration, the responses of the respondents are summarized below in Table 11.

Table 11: Structure

1. Is EMIS included in the structures?	Educational efficacies and Experts								School	
	REB		ZED		WEO		Total		Personnel	
	F	%	F	%	F	%	F	%		
Yes	14	100	20	90.9	33	89.2	67	91.8	44	55
No	-	-	2	9.1	4	10.8	6	8.2	36	45
Total	14	100	22	100	37	100	73	100	80	100
2. Are the required manpower assigned to undertake the task ?										
Yes	14	100	20	100	30	90.9	64	95.5	13	29.5
No	-	-	-	-	3	9.1	3	4.5	31	70.5
Total	14	100	20	100	33	100	67	100	44	100
3. Is the person assigned capable of performing the task?										
Yes	11	78.6	9	45	9	24.3	29	40.9	19	43.2
No	3	21.4	11	55	28	75.7	42	59.1	25	56.8
Total	14	100	20	100	37	100	71	100	44	100

It was reported by the majority of respondents (72.5%) that information system is included in the structure. In the case of schools nearly half of the school respondent's denied the inclusion of it. This is because record officers are not included in the first and second cycle primary schools structure (MOE, 1988). Concerning manpower about 69% of the total respondents affirmed that the required manpower is assigned. However, school respondents revealed the inavailability of the required manpower. The professional abilities of the REB nearly 78% of bureau workers were

confident about the information of workers' ability while ZED, WED and schools respondents (55%, 75.7%, 56.8% respectively) were not confident to say information workers are skilled enough to manipulate the work.

The most salient point observed from the above data is that with out any consideration of the number of student and teachers of the first and second cycle primary schools have not record officer in their school's structure. Even though, it is true that when organizations are small, operating departments can perform their own personnel functions. But as the organizations grow and become complex, these activities are centralized under the top management staff members to take advantage of economic scale and for a better coordination (Voitch, 1975)

Interviewed held with the REB's statisticians revealed that the training status of statisticians are almost 12th grade complete. Thus, from the questionnaire and interview held it is clear that information workers of ZEDs, WEOs and schools are competent enough neither to coordinate nor capable of performing the task in order to meet the information need of the region stakeholders

Table 12: Planning

Is the man power and material requirement of the IS embodied in the school overall plan ?	Educational offices Experts								School personnel	
	REB		ZED		WEO		Total			
	F	%	F	%	F	%	F	%	F	%
Yes	13	92.9	14	63.6	15	40.5	42	57.5	34	42.5
No	1	7.1	8	36.4	22	59.5	31	42.5	46	57.5
Total	14	100	22	100	37	100	73	100	80	100

92.9%, 63.6% of respondents of REB and ZED respectively confirm that, the manpower and material requirement were included in their over all plan. Whereas 59.5% and 57.5% of WEO and schools respondents replied that manpower and material need were not embodied in the over

all plan. This may show that WEO and schools may expect every thing to come from REB and ZED that also implies that things are centrally managed by the REB or ZED. On the other hand, WEO and school managers are not giving attention or emphasis for educational information.

REB and ZEDs may have better knowledge about information than woredas and schools. Because they are using computers and also their pre service and in-service training may have increase their exposure to the importance of information. Generally, looking at both responses made regarding inclusion of material and manpower requirement, schools and WEOs (44.4%) do not give attention to it. The style of management which they adopt is management by crisis or fire fighting. They simply deal with crisis or problems, as it comes along and attempt to get it solved on a day-to-day basis (Milner, 1981). Because of this, we can summarize that the effort made to improve or to fulfill material and human requirement is very low.

Table 13: Integration of information

Is there any attempt to integrate computer information system so far?	Educational Offices and Experts								School personnel	
	REB		ZED		WEO		Total			
	F	%	F	%	F	%	F	%	F	%
Yes	8	57.1	12	54.5	-	-	20	27.4	7	8.8
No	6	42.9	10	45.5	37	100	53	72.6	73	91.2
Total	14	100	22	100	37	100	73	100	80	100

Table 13 suggests that REB and ZED accounted for 57.1% and 54.5% respectively felt that attempt is made to integrate computer information system while in WEO and schools effort is not made. This is because, discussed in Table 8, computer was not available in woreda offices and at school level- computers were introduced in this fiscal year for training purpose.

As observed, in the REB integration of computers within the office was underway to connect the computer system in different departments. However, connections were not made between ZEDs.

The only effort made to connect ZEDs was the exchange of information through floppy diskette such as EDDAT programme. Also fax, telephone line and postal services were used to transmit information in urban areas

It is clear that information ties together all the components of an organization because information is the lifeblood of any system (Charles, 1980). In light of this idea, the education bureau has introduced computer technology. At the sometime the REB has started connecting information networks between departments within its offices. This may contribute to a better flow of information on top of this, computer-based information system has the potential to be flexible enough to respond to the information need of individual manager (Barwell, 1993) So, in the coming years well informed decision may be made by educational managers.

3.2.4 Reliability of the information gathered

This section addresses the fourth objective of the study, which deals with the reliability of the data gathered. The reliability of information is highly related to the source of the information and the method used to collect (Workineh, 2001). Similarly the main sources to information in the education sector are schools, that is school principals. These school principals attitudes or ability determines the reliability of the education information produced. Thus, to answer the question raised in the basic question about the reliability of educational information, the problem in data collection will be analyzed using the data collected through the questionnaire about the educational statistical format.

To look into the problem, the respondents are grouped into two, the educational officials and school personnel. The educational officials are those respondents who are working in REB, ZED

and WEO and assumed to be data consumers and school personnel are school principals, unit leaders and department heads that are considered as sources of data. The classification of all respondents in to these groups may help to identify the problems prevailing in data collections and utilization. In order to assess the perceptual differences between the two rating groups, the responses of educational officials and school workers are tested by two-tailed t- test at 0.01 and 0.05 level of significance

The corner stone of yearly data collection is the school census. It describes the education situation in the region at a given point in time. Its result is usually presented in a statistical yearbook known as educational statistical format. Its emphasis has always been on quantitative aspects. In some countries such data are collected more than once in a time. For example, Botswana assesses its educational system in a year where the responsibility for collecting data is either the statistical office-planning department or conducted by a specialized departments (Ross, 1990)

In the case of Amhara Region, the data is collected by the Statistics Unit, which is headed by planning and Engineering service (MOE, 1988). Thus, this study tries to investigate the reliability of the information collected through the educational statistical format based on the responses of the two groups of respondents.

According to Table 14, about 49% of the total respondents approved the use of the educational format about 32% of the respondents disapproved its use. Moreover 19.12% of the total respondents refrained from giving their opinions. From this, it might be possible to conclude that significant number of respondents do not have any exposure to the educational format.

Table 14: Educational Statistical Format

How do you in general rate the educational statistical format?	Strongly agree 5		Agree 4		No opinion 3		Disagree 2		Strongly disagree 1		Mean score		t Statistics
The format prepared to collect data contains all the necessary information	F	%	F	%	F	%	F	%	F	%	Educational Officials & Experts	School personnel	
	19	12.42	73	47.71	31	20.26	24	15.69	6	3.92	3.55	3.43	0.75
Subsequent evaluation is made on the format by the users	20	13.10	48	31.37	19	12.42	59	37.9	87	5.23	4.57	3.09	0.05
It is only the head teacher who fills the format	12	7.84	37	24.18	32	20.92	58	37.91	14	9.15	3.43	2.73	1.28
It is simple or read and fill the format	21	13.73	88	57.52	10	6.54	26	16.99	8	5.23	4.11	3.6	0.28
The format is filled by schools every years	58	37.91	55	35.95	18	11.76	15	9.80	7	4.57	4.81	3.74	1.7
October is a convenient month to fill and collect the format	28	18.30	45	29.41	22	14.38	48	31.37	10	6.54	3.51	3.39	0.75
Those who filled the format inappropriately will be held responsible	13	8.50	32	20.92	29	18.95	70	45.75	9	5.88	3.48	2.88	0.67
The format is mostly carefully filled	38	24.84	60	39.22	11	7.18	38	24.84	6	3.92	3.73	3.88	3.47**
After the data are aggregated and analyzed they will be sent to each zone, woreda and school by REB	28	18.30	42	27.45	25	25	51	33.33	7	4.58	3.65	3.28	0.08
Works of educational offices worker use of the complied data as necessary	21	13.73	49	32.03	31	20.26	46	30.07	6	3.92	3.78	3.18	0.53
The information compiled buy REB is analyzed in such a way was to make proper decision	19	12.42	45	29.41	49	32.03	35	22.88	5	3.3	4.03	3.06	2.63*
Information workers at REB are so effective that they can interpret and analyse the crude information so collected	10	6.54	38	24.84	74	48.37	27	17.65	4	2.6	3.76	3.08	1.31
Total agreement perceived	287	15.63	612	33.33	351	19.12	446	27.02	90	4.9	3.87	3.28	1.03

Note: Two-tailed t- test

Difference significant at * 0.05 and ** 0.01

A high score indicates a stronger agreement

For the details see appendix 1&2

As indicated above, a good proportion (31.92%) of the total sample populations have no positive attitude towards the educational statistical format. Those groups of people may be those who were not allowed to participate in the designing of the format. Their information needs might have not been considered. However as revealed by the mean scores, both groups of respondents rated the statistical format to be satisfactory. In this regard, educational officials mainly indicated that the educational statistical format is filled by schools every year, subsequent evaluation is made by end -users, and the information compiled is used for proper decision making (with mean scored of 4.81,4.57and 4.03, respectively). On the other hand, school personnel in their part emphasizes that the format is mostly carefully filled, it is filled in them every year, and that it contains all the necessary information (with mean score 3.88,3.74 and 3.43,respectively)

Comparing the mean scores of the two groups, one can see that the educational officials have a slightly higher mean score than school workers. This indicates a favorable attitude towards educational statistical format or the degree of agreement given by the educational officials was much better than that of school principals and unit leaders. Thus, it is possible to conclude that the educational statistical format has good support form educational officials. But it has lower support form school principals and unit leaders. This therefore is likely to be the cause for the less reliability of educational data.

The two groups are observed to have perceptual differences in their views regarding only two issues: how carefully the format is filled and the way the information complied is analyzed and used for proper decision. But in the remaining eight issues, there is no significant difference between their mean scores.

As indicated in Table 15, about 53 % of the educational officials (REB, ZED, and WEO) confirmed that the information obtained from the educational format is serving to allocate budget, to maintain and construct schools as well as to assign teachers/workers. But nearly 29% of the school principals and unit leaders believed that the information-compiled by the format is used for assigning workers or teachers. This leads one to conclude that with the view of securing more teachers and additional budget, those who fill the format especially school principals may exaggerate the data they give. Hence, this does not only make managers to decide based on wrong information, but it also makes the data gathered is unreliable. The respondents were also asked to pin point the problems that are observed in the format. The respondents listed down more than twenty problems. But the main constraints observed by the respondents were:

1. less (attention) is given to statistical format.
1. filling the statistical format before registration of students was completed made it difficult to give the full data of new entrants.
2. using the statistical format without any revision for a long period of time
3. those who did not have the awareness about information are made to fill the format.
4. school principals exaggerate the data to please their bosses and hold their position
5. discussion forums were not prepared to solve prevailing problems.
6. the objectives of collecting census data were not made clear to school principals

Table 15:use of Educational Statistical Formats

What is the use of information obtained from the educational statistical format?	Educational Officials and Experts								School Personnel	
	REB		ZED		WEO		Total			
	F	%	F	%	F	%	F	%	F	%
To allocate budget	1	7.2	2	9	1	2.7	4	5.5	19	23.8
To assign workers and teachers	-	-	1	4.6	9	24.3	10	13.7	23	28.7
To maintain and construct school	-	-	-	-	1	2.7	1	1.4	4	5
All of the above	10	71.4	12	54.6	17	46	39	53.4	21	26.3
To allocate budget and assign workers and teachers	-	-	3	13.6	2	5.4	5	6.8	7	8.7
No use	3	21.4	4	18.2	7	18.9	14	19.2	6	7.5
Total	14	100	22	100	37	100	73	100	80	100

All these problems may one to be suspicious about the data that are being collected through the format. In addition, the problems identified by the training (team) of ZED and WEO's planners and statisticians indicated that:

1. usually principals did not fill the format carefully
2. the format is filled before the registration of students is completed
3. the format did not include the list of teachers
4. aggregation (summary) format was not prepared by REB
5. WEO statistics technicians were expected to do additional work. As a result less attention is given to the data collection through statistical format.

From the problem listed above, it is obvious that those who came from ZED and WEO expect everything from the REB. Attempt may not be made to adapt it to the local need. Furthermore the AREB (1992) educational abstract manual (1992) confirms that the data collected on age was unreliable due to the fact that most children do not know their ages, even if they know, they probably do not like to tell their true ages. Moreover parents may not tell their children's true ages.

On top of this, the training manual prepared to statisticians (REB, 1989) identified problems observed while collecting, organizing and analysing data as follows:

- A. school fill the unnecessary data
- B. the format was not sent back on time
- C. the data collected through the statistical format were not interpreted at each educational administrative levels
- D. lack of awareness about educational information.

All of these, in general, might lead to the conclusion that stakeholders, particularly school principals lack the awareness about educational information. It also seems that they have not been trained. Accordingly, accuracy and reliability of the information they provide are likely to be very low.

With the view of evaluating the reliability of the information collected, unit leaders and department heads were presented with a set of questions related to the support provided by teachers.

Table 16: Teachers Support

1. Do teachers cooperate in providing the data they are requested to collect on time?	Unit leaders and Department heads									
	K.G		Primary School		Secondary School		Institution*		Total	
	F	%	F	%	F	%	F	%	F	%
Yes	3	37.5	3	33.3	2	40	6	85.7	14	48.3
No	5	62.5	6	66.7	3	60	1	14.3	15	51.7
Total	8	100	9	100	5	100	7	100	29	100
2. The attention given to educational information by teachers is										
High	1	12.5	1	11.1	1	20	2	28.6	5	17.3
Medium	3	37.5	3	33.3	1	20	4	57.1	11	37.9
Low	4	50	5	55.6	3	60	1	14.3	13	44.8
Total	8	100	9	100	5	100	7	100	29	100
3. Are incentives provided to those teachers who perform better in collecting and utilizing data?										
Yes	3	37.5	2	22.2	2	40	3	42.9	10	34.5
No	5	62.5	7	77.8	3	60	4	57.1	19	65.5
Total	8	100	9	100	5	100	7	100	29	100

As presented in Table 16, about 52% of unit leaders and department heads said that teachers are not cooperative in providing data. This indicates that it is less than 50% of teachers that are readily willing to provide the required information on time.

As also observed in the table, respondents from institutes (85.7%) replied that teachers highly cooperate in providing the data they are requested. This may be because they are least loaded compared to the other group of respondents. Whereas most of K.G, primary and secondary schools respondents (50%, 55.6% and 60%, respectively) indicate that teachers give low attention to educational information. This might mainly be due to the fact that there is no any incentive mechanism to reward those who have shown better performance in information collection and storage, as indicated by all groups of respondents (65.5%).

Respondents were further requested to list down reasons why teachers were not cooperative in providing the data they are requested in their respective schools. Accordingly the main reasons identified include:

1. due to the work load, teachers do not collect and provide on time
2. the existence of data redundancy: the same educational office requests the same data repeatedly .
3. teachers do not consider data collection as their responsibility
4. they do not get the information compiled, analyzed form the data they have collected
5. some of them dislike it considering it as part of monitoring. Hence they are afraid if giving information.

In addition, to enrich the idea why teachers do not give attention to educational information, an open-ended question was also included in the questionnaire. Many reasons were listed down by the respondents among which the main points are:

1. school principles distort the data collected, by teachers in the ways that would enable them stay in their positions.
2. teachers have low awareness about educational information and its importance.
3. most teachers consider data collection as it is out of their responsibilities.
4. the objectives of data collection are not made clear to teachers.
5. they do not observe any improvement in the education system as result of activities.

But as the literature has it in most countries teachers are required to update regularly the achievement record of each student and share the information periodically with both teachers and head teachers. Even school principals often receive individual and class report from the teacher (Ross, 1990). It is to say that, flow of information involves the all stakeholders of the organization (Barch, 1989)

Generally, teachers are found to be not cooperative in data collection. This may be, on the one hand, due to the fact that teachers are not made aware of their responsibilities in data collection. On the other hand, the bosses in higher hierarchy seem not to make effort in involving the relevant departments/sections while designing educational statistical formats. Moreover ,those principals that might have not been trained would seem not to serve as models in transferring the real data and coordinating the efforts of teachers.

3.2.5 Efficiency and Effectiveness

This section deals with the fifth objective of the study. It attempts to analyze the views and attitudes of respondents to investigate the efficiency and effectiveness of educational management information system in the REB.

As discussed in the review of literature, the efficiency of the EMIS can be increased through integrating the subunits, training the information system workers and the users, increasing the relevance of the data collected and so on.

On the other hand, in order that the information system to be effective, it must first serve the objective of the organization, i.e., the information produced should be user-oriented. Secondly one should develop and operate a set of interconnected and interrelated information activities (Voich, 1975).

Hence, in view of investigating the institutional capabilities of the sample schools and educational offices, both educational officials (REB, ZED and WEO) and school principles and unit leaders were asked to indicate their agreement and disagreement on a 5 point scale regarding whether their respective schools and educational offices are effective and efficient in producing quality information or managing educational information

As it can be seen from Table 17, about 53% of the total respondents disagree and strongly disagree on the effectiveness and efficiency of EMIS. On the other hand nearly 30% of the respondents agree and strongly agree that the information system is effective as well as efficient. But when we look at it one by one the listed issues the majority of respondents confirmed that no subsequent training is given to information workers, the formation needs of all sections are not met, decision makers are not made to participate in the design of the educational statistical format and educational data are not timely available (51.63%, 58.82%, 58.82%, 58.17%, respectively).

Table 17: Effectiveness and efficiency of EMIS

Indicate the degree of your agreement or disagreement	Strongly agree 5		Agree 4		No opinion 3		Disagree 2		Strongly disagree 1		Mean score		t Statistics
	F	%	F	%	F	%	F	%	F	%	Educational Officials & Experts	School personnel	
A mechanism that help information workers get subsequent training to upgrade their knowledge is set	14	9.15	19	12.42	29	18.95	79	51.63	12	7.84	2.67	2.6	0.39
Integration of educational information is made practical	9	5.88	45	29.41	25	16.34	64	41.83	10	6.54	2.81	2.73	0.47
The information provided satisfies the information needs of all sections	6	3.92	29	18.95	19	12.42	90	58.82	9	5.88	2.42	2.69	1.69
Decision makers are made to participate in the preparation of educational statistics format	6	3.92	29	18.95	19	12.42	90	58.82	9	5.88	2.42	2.69	1.69
Data that do not change periodically are collected annually	8	5.23	45	29.41	24	15.69	69	45.01	7	4.58	2.81	2.9	0.53
MIS is flexible to meet needs of users	8	5.23	37	24.18	25	16.34	70	45.75	13	8.5	2.67	2.76	0.53
The educational information is available wherever needed	11	7.19	43	28.10	19	12.42	68	44.44	12	7.84	2.67	2.96	1.71
Complete and appropriate educational information's is provided to stakeholders at any level of the Regions education system	9	5.88	38	24.84	33	21.56	65	42.48	8	5.23	2.88	2.8	0.06
Information is clearly and vividly presented to users	11	7.19	46	30.06	29	18.95	56	36.60	11	7.19	3.03	2.85	1.06
data are available timely	9	5.88	31	20.26	17	11.11	89	58.17	7	4.58	2.49	2.79	1.76
Total respondents perceived	93	6.1	372	24.3	250	16.3	708	46.3	107	7	2.7	2.8	0.22

Note: Two-tailed t- test

Difference significant at * 0.05 and ** 0.01

A high score indicates a stronger agreement

For the details see appendix 3&4

These issues may manifest the fact that the information system is more or less inefficient. This might mainly be because decision makers sayings are neglected. This, of course, is to deny the managers right to choose what information they need. It is asserted that as they have the responsibility delegated to them managers should have the right to decide what information they need (Tricker, 1982). Additionally, a good proportion of respondents (45.01%) revealed that data that do not change periodically were asked repeatedly. This may lead school principals (the main sources of educational information) to be tiresome besides increasing the volume and cost of the format. Consequently, all these inefficiencies may cause ineffectiveness of the system as well. Hence the move towards greater effectiveness must also be moved towards efficiency (Ross, 1990).

To sum up, as observed in the mean scores, both groups of respondents invariably rated the general, effectiveness and efficiency of EMIS to be slightly above average.

This might suggest that the EMIS is not as effective and efficient as expected. The educational officials and school workers also seem to agree with this conclusion because they show no significance difference in their mean scores. Generally speaking, information system efficiency involves the identification of indicators for the performance of the system, the data need of decision makers at different level of the system and the training need of the educational information system, personnel and system users (Windham in Kemmerer, 1994).

With the view of identifying the constraints hindering the data collection process, the educational officials and school personnel were also requested to rate a set of perceived problems.

Thus as Table 18 shows, the majority (53.09%) of the total respondents seem to accept the list of perceived problems most of which is written in reverse order. From this it is possible to say that; the majority of the respondents confirm the existence of constraints during data collection. However, it has to be noted also that the proportion of those respondent who either deny the existence of any problem or refrain from giving their opinions, is not small.

It can thus be concluded that the awareness of managers above the importance of information may have frustrated the management of information.

The mean scores reveal that the two group of respondents identified and ascertained the problems handling the data collection activity by rating relatively higher than average to each of the listed problems. It is also observed that the mean scores of school personnel are higher than those of educational officials in almost all cases indicating that the problems are more felt by the former, rather than the later group of respondents.

Accordingly, the educational officials identified the major problems in data collections to both insufficient attention given by themselves to the collected data, the lack of awareness about educational information on the part of data collectors, and the failure to involved teachers in the data collection process (with mean score of 3.96, 3.34 and 3.03, respectively).

On the other hand school workers believe that the inaccessibility of the collocated data to the major stakeholders in education, inability to integrate the data collected from various education offices and the less attention given by managers to the collected data are the major obstacles (with mean score of 3.81, 3.73 and 3.61, respectively) that are observed during the data collection process.

Finally, comparing the two groups of respondents one can see that the school workers group has slightly higher mean scores than educational officials, indicating their higher concern towards the issue. Table 18, also shows the perceptual differences observed between educational officials and school personnel on a number of issues. Hence, the two groups of respondents are seen to be significantly different on: the rating of the low service of raw data collection, failure to analyse the collected data for users, the collection of data not relevant to decision making, failure to integrate the data collected from different educational offices, and the inaccessibility of data to stakeholders.

Table 18: Magnitude of problem during Data collection

Perceived problems	Strongly agree 5		Agree 4		No opinion 3		Disagree 2		Strongly disagree 1		Mean score		t statistics
	F	%	F	%	F	%	F	%	F	%	Educational Officials & Experts	School Personnel	
Collection of raw data of low service nature ®	18	11.76	61	39.87	23	15.03	35	22.88	16	10.46	2.84	3.53	3.67
The collected data are full of error ®	14	9.15	51	33.33	36	23.53	40	26.14	12	7.85	2.93	3.25	1.79
The collected data are not analyzed for users®	23	15.03	57	37.25	32	20.92	33	21.57	8	5.23	3.10	3.58	2.7**
Data that are not relevant to decision making are collected ®	14	9.15	52	33.99	26	16.99	47	30.72	14	9.15	2.66	3.37	4.06**
Integration of data in different education offices is not made ®	28	18.30	45	29.41	35	32.88	37	24.18	8	5.23	2.86	3.73	4.89**
Stakeholders of education (teachers, parents etc) are not access to data ®	37	24.18	69	45.10	17	11.11	17	11.11	13	8.5	2.79	3.81	5.86**
Collectors do not have sufficient knowledge on educational information ®	31	20.26	58	37.91	21	13.73	39	25.49	4	2.61	3.34	3.6	1.44
Stakeholders of education (teachers, parents etc.) are not let to participate in the data collection process ®	27	17.65	45	29.41	22	14.38	50	32.68	9	5.88	3.03	3.32	1.43
The attention paid by officials (managers) to the collected data is minimum ®	32	20.92	69	45.10	13	8.5	29	18.95	10	6.53	3.96	3.61	0.53
Total perceived problem	224	16.27	507	36.82	225	16.34	327	23.75	94	6.82	3.06	3.53	0.89

Note: Two-tailed t- test

Difference significant at * 0.05 and ** 0.01

®: Shows an item that has been reverse scored

For the details see appendix 5&6

However, they seem to agree on the issues that the data collected is full of errors, collectors do not have sufficient knowledge on educational information, attention paid by officials are minimal and teachers are not let to participate in the data collection process.

Table 19 presents the responses of educational officials and school workers on a question relating to areas of data collection. Accordingly, about 60% and 43% of the total respondents confirmed that the emphasis given to the data collected on inputs and outputs are rated to be high and medium respectively. On the other hand, approximately 54% of the respondents answered that attention is not given to the data on outcomes. Hence, it may be true to conclude that attention is not given to all of the building blocks of the set of indicators, rather emphasis is given to the inputs such as material and human resources. This implies that the effects the inputs are likely to produce are not much considered. This may be due to lack of awareness.

Similarly, in the irrespective mean scores, the two groups of respondents (educational officials and school workers) confirmed the above observations. It can thus be concluded that offices tend to give more attention to inputs and outputs than to others. That is, the data on process and outcome have been given less or no attention. However, the two groups seem to show wide perceptual differences in their ratings. Regarding data collection on inputs, process and outcomes. This may be due to the knowledge they have about data collection areas.

Table 19: Data collection areas

What is the level of attention paid to the data collected on	High 4		Medium 3		Low 2		No attention Disagree 1		Mean score		t Statistics
	F	%	F	%	F	%	F	%	Educational officials & Experts	School workers	
Inputs	84	54.90	33	21.57	29	18.95	7	4.58	2.96	3.38	2.86**
Process	26	16.99	50	32.68	66	43.14	11	7.19	2.77	2.44	2.46*
Out put	26	16.99	66	43.14	47	30.72	14	9.15	2.77	2.53	1.76
Outcome	18	11.76	23	15.03	29	18.95	83	54.25	1.99	1.66	6.45**
Total perception	154	24.8	172	28.1	171	27.94	115	18.80	2.6	2.5	0.24

Note: Two-tailed t_test

Difference significant * 0.05 and ** 0.01

A high score indicates a stronger agreement

For the details see appendix 7&8

Table 20 summarizes the views of the respondents regarding the contribution of EMIS to the educational task. Hence the table shows that majority of the respondents (69.1%) observed that the over all contribution of the educational information unit of the Region to the educational task is either medium or low.

Close analysis of the responses of individual respondents reveals the EMIS contribution was medium in identifying the strong and weak sides, facilitating educational planning, inspecting and making follow-up, upgrading educational efficiency and in making better decision. On the other hand, the respondents indicated that educational information unit had made low contribution in maintaining educational policy, sharing experience and forecasting risks (41.3%, 39.87%, and 37.91%, respectively). These can also be seen by the analysis of the mean score

Analyzing the mean scores individually it is possible to make the following remarks. Both groups of respondents invariably rated (slightly above average) that the EMIS contributes in satisfying manpower need, and facilitating planning, in making better decision.

In general, it is possible to conclude that EMIS is found to have medium contribution to the teaching learning process. Also, both respondent seem to invariably agree in their attitude towards to all issues raised without shown no significant differences in their mean scores

Table 20: Contribution of EMS to the Educational task

Perceived purposes	High 4		Medium 3		Low 2		No attention Disagree 1		Mean score		t Statistics
	F	%	F	%	F	%	F	%	Education officials & Experts	School personnel	
Identifies the strong and the weak sides of the educational task	23	15.03	69	45.10	48	31.37	13	8.5	2.71	2.63	0.62
Facilities educational planning	39	25.49	69	45.1	34	22.22	11	7.19	2.96	2.83	0.93
To inspect and made follow up	35	22.88	63	41.18	44	28.76	11	7.18	2.67	2.91	1.71
To upgrade the educational efficiency	30	19.61	58	37.91	54	35.29	11	7.19	2.63	2.76	0.93
To maintain the quality of education	28	18.30	39	25.49	64	41.83	22	14.38	2.45	2.53	0.57
To make better decision	39	25.49	52	33.99	51	33.33	11	7.19	2.86	2.81	0.33
To formulate educational policy	29	18.96	45	29.41	59	38.56	20	13.06	2.41	2.66	1.67
To share experience	17	11.11	58	37.91	61	39.87	17	11.11	2.49	2.49	0
TO forecast risks	34	22.22	42	27.45	58	37.91	19	12.42	2.66	2.54	0.75
To satisfy manpower need	50	32.68	40	26.14	47	30.72	16	10.46	2.90	2.73	1.06
Total	324	21.2	535	35	520	34	151	9.9	2.67	2.68	.02

Note: Two-tiled t₋ test

*Difference significant * 0.05 and ** 0.01*

A high score indicates a stronger agreement

For the details see appendix 9&10

Finally, the respondents were asked to rank the factors that are likely to affect the EMIS of the Region.

As Table 21 shows, each of the problems, the assistance given by educational officials and school personnel and lack of office and furniture are ranked by both groups of respondents similarly. On the other hand, not making people responsible for wrong information they release was perceived as a serious problem by educational officials (REB, ZED and WEO), whereas school principals and unit leaders perceive it differently. In addition, school principals and unit leaders look lack of incentives for those who perform well in managing information as the main hindrance for the effectiveness of educational management information unit. But educational officials perceived as it have less influence compared to other factors. This implies that source of information (school principals and unit leaders) were not penalized for the information they release. Also educational officials were responsible for not taking measure according to the regulation they set. Similarly, education officials that may be WEO official did not motivate those who perform well in collecting information. That is, they could not discriminate the good workers from the bad worker that contributed to the ineffectiveness of EMIS. As it is observed from Table 21, factors that are affecting EMIS of the Region were ranked by the total respondents according to the degree of influence.

Table 21: Factors that are affecting EMS of the Region as ranked by the respondents

Perceived Problems	Rank								Educational officials & Experts		School personnel		The whole group	
	1	2	3	4	5	6	7	8	Mean	Rank	Mean	Rank	Mean	Rank
Non existence of trained man power	54	36	57	52	70	108	77	48	3.26	1	3.3	2	3.30	1
Non existence of information processing equipment	25	46	57	48	80	78	189	144	4.08	5	4.61	6	4.36	6
Less assistance is given by the educational administration	18	82	75	52	85	96	119	48	3.66	4	3.85	4	3.76	3
Low knowledge on the part of the user on information	27	64	102	88	60	60	56	64	3.55	3	3.29	1	3.41	2
Lack of office and furniture to under take the tasks	7	12	48	56	80	54	217	432	6.34	8	5.64	8	5.92	8
Lack of incentives for those who participate in management information task	9	46	93	136	65	90	70	144	4.82	7	3.76	3	4.27	5
Those who are taken to be sources of information are not held responsible for the wrong information they release	26	36	51	136	175	60	77	16	3.40	2	4.11	5	3.77	4
Information disseminating schemes such as computer radio telephone fax and the like are either not sufficiently available or not early accessible	20	24	24	52	180	210	77	144	4.27	6	5.24	7	4.78	7

Note: The lower the mean is the upper the rank and the upper the rank is the most seriousness is the problem

Hence the first four top constraints to managing information (according to the majority of respondents) were: non-existence of trained manpower, low knowledge on the part of the user of information, less assistance given by educational administrators, and information sources are not held responsible for the wrong information they release. However this does not mean that the remaining four factors are not problems affecting the EMIS of the Region.

Thus, factors that were expected to have great influence on the effectiveness or efficiency of educational information management were given rank according to their degree of influence. In other words factors that took the upper four ranks were the most serious problems affecting the regions education information unit in giving appropriate service to users.

These, four ranked problems may reveal that human resource (well trained or well informed) was more serious problem than the material resource in affecting the educational information unit in the region. Such condition may thus indicate that a lot has to be done in increasing the professional potential of workers

CHAPTER FOUR

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Based on the analysis and interpretation of the data gathered from questionnaires, documents and interview, the following summary, conclusion and recommendations are made.

4.1 Summary

The study was conducted to investigate factors that are affecting the educational management information system with particular reference to the ARNS. As it is stated in chapter one, the study objective was to give answers for the basic questions that were divided into five groups. They are training, equipment, integration and organization, reliability and efficiency and effectiveness. The descriptive survey approach was employed as the method of the study, REB office, six zone education departments, 24 Woredas Education offices and 68 schools (17 K.G 17 secondary, 34 primary schools and two institutes) were taken as a source of information. The instruments used to collect information were two types of questionnaires, interview, documents and observations were used to have better information for the study.

The data collected were analyzed and interpreted using the statistical tools percentage, mean score, standard deviation, mean rank and t- test. Thus, the major findings of the study are the following:

4.1.1 Educational Status and Training of Educational information Personnel

- A. The staff of EMIS of ZED and WEO were under the required qualification for the post. Those who have completed 12th grade are managing educational data of both ZED's, WEO's and schools.

- B. No one has got further education in in-service programme on EMIS. Only 33.3% of the total population has participated in short trainings even though the trainings were not satisfactory. No effort is made to fill all these gaps by making printed materials (educational information) available
- C. Most of the employees, especially those who took the top chairs in the Region's education administrative levels, have not taken the course in their pre-service training. Also the curriculum prepared for teacher training institutions is not sensitive to educational information. This by itself may lead one to the conclusion that universities, colleges and other training institutes, which are producing teachers and school administrators, have not looked into the importance of information management.
- D. Issues relating to educational information are part of the agenda of the various meetings, discussions and resolutions were frequently passed on the collection, storage and utilization of educational information. However, the decisions being taken are more nominal than practical. No one would be penalized for not implementing the issues on which decisions have been passed.

4.1.2 Information Processing Equipment and Facilities

- A. As one goes down the administrative hierarchy, the availability of separate data processing rooms decreases. That is, a significant number of schools (48.7%) lack a separate room for processing and sorting information.
- B. The first two top educational administration levels in the Region's education hierarchies are relatively in a better position in terms of information processing equipment as compared to the grass root levels of educational administration, (WEOs and schools). The problem are serious at schools level because of shortage of money,

while lack of awareness of managers may have contributed to the aggravation of the problem of having sufficient equipment at ZED and REB levels.

- C. The qualities of information processing equipment in the three educational administrative categories (ZED, WEO and school) are of less quality. In addition efforts are not made to repair equipment as expected. The main reasons for the failure to maintain the equipment on time are identified to be shortage of money, unavailability of technicians and being items of less priority.
- D. These days' computers are becoming common in every segment of the education administrative levels except. Woreda education offices. All school computers are used for training purposes and significant number of respondents confirms that computers are used for word processing whereas in REB it is used for all purposes except Internet. But in some areas computers are shelved in schools because of shortage of manpower absences of room and equipment like stabilizers. But the management of computers is not developed as such. Computers are not used for complex functions rather people are using them for word processing, putting type writers aside - computers are not being used for data based management.

4.1.3 Integration and Organization of Information

- A. There are information bases but they are not organized. As a result information are not obtained on demand. At the same time individual departure caused for the loss of documents in same areas.
- B. The information system is included in the structure in most of the educational administrative levels except primary schools. Also 69.5 percent of the respondents insured the existence of the required manpower

- C. The effort made to improve or to fulfill material and human requirement is very low. WEO and schools have made less attempt in planning of human and material need of their information system
- D. REB has introduced computer technology. At time started integrating information system between departments with in its offices. Also exchange information through floppy discate facsimile with that of ZED's has been made. In addition information transferred over phone lines to urban Woredas and schools. But most schools and some Woredas have no telephone line-even road

4.1.4 Reliability of information

- A. Even though, the statistical format in general is rated to be satisfactory, significant number of respondents do not have any exposure to educational format to give their opinion. In addition about 32% of the total respondents have no positive attitude towards the educational statistical format.
- B. The educational statistical format has good support from educational officials. But it has lower support from school personnel which likely to be the cause for the less reliability of educational data.
- C. To secure more teachers, additional budget and to get appreciation from their boss those who fill the format especially school principals may exaggerate the data they give which is unreliable.
- D. Stake holders, particularly school principals lack awareness about educational information. It also seems that they have not been professionally trained. These has contributed for the less reliability of educational information.

E. Teachers from institutes are highly cooperative in providing the data they are requested. This may be because they are least loaded compared to others. But teachers (primary & secondary schools) are found to be not cooperative in data collection. This may be on the one hand, due to the fact that teachers are not made aware of their responsibilities in data collection on the other hand, the bases in higher hierarchy seen not to make effort in involving the relevant departments while designing educational statistical format.

4.1.5 Efficiency and Effectiveness of EMIS

- A. The majority of respondents confirmed that no subsequent training is given to information workers, the information needs of all sections are not met, decision makers are not made to participate in the design of educational statistical format and educational data are not timely available. Data that do not change periodically were asked repeatedly which make principals or others tiresome. At the same time increases the volume of the format as well as the cost.
- B. Offices tend to give more attention to inputs and outputs than to others. that is, the data on process and out come have been given less or no attention.
- C. School personnel and educational officials invariably rated slightly above average that EMIS contributes in satisfying manpower need, facilitating planning and in making better decision.

4.2 Conclusions

From the forgoing discussion and findings the following conclusions are drawn

- A. Determinants of educational management information system in Amhara Regional Education Bureau are: the professional capacity and awareness of managers at all level, the less reliability and poor organization and integration of information may have frustrated the contribution of educational management information system in providing informed decisions.
- B. The unit /EMIS/ does not link the questions that are foremost in the minds of decision makers operating at various decision making levels of the education system. Even though, the over all purpose of decentralization is to make educational organizations of all levels more efficient in making decisions locally based on the data collected and analyzed with in that location. In general it is possible to conclude that every information unit in the regions education hierarchy is serving in collecting data that meets the needs of the education bureau office but not their offices' need.
- C. Facilities, equipment and maintenance need are collected through the statistical format every year, how long a particular data remains tolerably accurate is not known, the beneficiaries of the education information system are not prepared to utilize its services and the information system is not as such flexible. All these deficits lead one to generalize that the information system of the region's education bureau is not very efficient (internally) as well as effective.
- D. It seems that the data collected through the educational information unit is highly used for facilitating educational planning than other managerial activities.

4.3 Recommendations

- A. Educational information workers of ZEDS' WEOs' and schools' should be given the opportunity to receive short trainings according to their needs in order to acquire the necessary knowledge and skill to run the information system.
- B. At schools, awareness about educational information has to be created not only with teachers and principals but also with parents and students. To create awareness information clubs can be established to identify such as literate, illiterates, school age population and the like that helps the school management to plan as well as to give informed decision. Moreover schools can serve as a source of information in the community, so that every body in the school community and then the region as well as the country at large would identify the value of information.
- C. Information is not only power or knowledge but it is often referred as the life blood of the organization or the agent for sustaining the organization Hence top managers of zone Education Departments, Woreda Education offices and the Region's Education Bureau office have to spend a good deal of time in the educational information design. In addition, most information systems operate in changing environment. Therefore, the educational information system must be regularly evaluated at each level of the ducational hierarchy to ensure that it is relevant and performing according to the expectation.
- D. The weak point of regional education information management is partly a result of relatively poor funding priority, both for short trainings and fulfilling equipment at woreda education offices and less attention is given in the management of information

activities. In light of this the REB should give attention to their information units and their personnel according to the economic growth of the region.

- E. The REB had to start the establishment of automated information power house with internet access, which is connected with Central Statistics office (CSO) and other relevant line ministries and NGOs and that could be accessed by officers, experts and teachers who come from the zone woredas and schools. In addition the establishment of information network between woreda education offices has to be studied for the future development of EMIS.

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አቅጣጫዎች, ባህርዳር (ያልታተመ)

APPENDICES

Appendix 1

Detail Calculation of Mean Scores OF Educational Officials for Table 14

No		Strongly Agree 5	Agree 4	No opinion 3	Disagree 2	Strongly disagree 1	Total	Mean Score	S
1	The Format prepared to collect data contains all the necessary information	6 X 5 =30	42X4=168	13X3=39	10X2=20	2X1=2	259	3.55	0.93
2	Subsequent evaluation is made on the format by the users	5 X 5 =25	28X4=112	11X3=33	27X2=56	2X1=2	226	3.1	1.07
3	It is only the had teacher who fills the format	5 X 5 =25	19X4=76	20X3=60	26X2=52	3X1=3	216	2.96	1.03
4	It is simple to read and fill the format	2 X 5 =10	52X4=208	5X3=15	12X2=24	2X1=2	259	3.55	0.90
5	The format is filled by schools every years	25X5 =125	35X4=140	9X3=27	2X2=4	2X1=2	298	4.08	1.14
6	October is a convenient month to fill and collect the format	8 X 5 =40	22X4=88	12X3=36	26X2=52	5X1=5	221	3.03	1.14
7	Those who filled the format, inappropriately will be held responsible	3 X 5 =15	12X4=48	23X3=69	32X2=64	3X1=3	219	3	0.93
8	The format is mostly carefully filled	7 X 5 =35	31X4=124	9X3=27	23X2=46	3X1=3	235	3.22	1.12
9	After the data are aggregated and analyzed they will be sent to each zone, woreda and school by REB	11 X 5 =55	22X4=88	9X3=27	29X2=58	2X1=2	230	3.15	1.19
10	Works of educational offices make use of the complied data as necessary	9X5=45	29X4=116	9X3=27	24X2=48	2X1=2	238	3.27	1.13
11	The information complied buy REB is analyzed in such a way was to make proper decision	10X5=50	30X4=120	20X3=60	11X2=22	2X1=2	254	3.48	1
12	Information workers at REB are so effective that they can interpret and analyses the crude information so collected	3X5=15	26X4=104	32X3=96	10X2=20	2X1=2	237	3.25	0.72

Appendix 2

Detail Calculation of Mean Scores of School Personnel for Table 14

No		Strongly Agree 5	Agree 4	No opinion 3	Disagree 2	Strongly disagree 1	Total	Mean Score	S
1	The Format prepared to collect data contains all the necessary information	13X5=65	31X4=124	18X3=54	14X2= 28	4X1=4	275	3.43	1.11
2	Subsequent evaluation is made on the format by the users	15X5=75	20X4=80	8X3=24	31X3=62	6X1=6	247	3.09	1.30
3	It is only the had teacher who fills the format	7X5=35	18X4=72	12X3=36	32X2=64	11X1=11	218	2.73	1.21
4	It is simple to read and fill the format	19X5=95	36X4=144	5X3=15	14X2=28	6X1=6	288	3.6	1.24
5	The format is filled by schools every years	32X5=160	20X4=80	9X3=27	13X2=26	6X1=6	299	3.74	1.34
6	October is a convenient month to fill and collect the format	20X5=100	23X4=92	10X3=30	22X2=44	5X1=5	271	3.39	1.30
7	Those who filled the format inappropriately will be held responsible	10X5=50	20X4=80	6X3=18	38X2=76	6X1=6	230	2.88	1.24
8	The format is mostly carefully filled	31X5=155	29X4=116	2X3=6	15X2=30	3X1=3	310	3.88	1.23
9	After the data are aggregated and analyzed they will be sent to each zone, woreda and school by REB	17X5=85	20X4=80	16X3=48	22X2=44	5X1=5	262	3.28	1.25
10	Works of educational offices make use of the complied data as necessary	12X5=60	20X4=80	22X3=66	22X2=44	4X1=4	254	3.18	1.15
11	The information complied buy REB is analyzed in such a way was to make proper decision	9X5=45	15X4=60	29X3=87	24X2=48	3X1=3	243	3.06	1.05
12	Information workers at REB are so effective that they can interpret and analyses the crude information so collected	7X5=35	12X4=48	42X3=126	17X2=34	2X1=2	245	3.06	0.91

Appendix 3

Detail Calculation of Mean Scores of Educational Official for Table 17

No		Strongly Agree 5	Agree 4	No opinion 3	Disagree 2	Strongly disagree 1	Total	Mean Score	S
1	A mechanism that helps information workers get subsequent training to upgrade their knowledge is set	2X5=10	10X4=40	25X3=75	34X2=68	2X1=2	195	2.67	0.85
2	Integration of information is make practical	5X5=25	27X4=108	10X3=30	26X2=52	5X1=5	220	3.01	1.27
3	The information produced satisfies the information needs of all sections	2X5=10	10X4=40	9X3=27	48X2=96	4X1=4	177	2.42	0.89
4	Decision makers are made to participate in the preparation of educational statistics format	2X5=10	20X4=80	16X3=48	31X2=62	4X1=4	204	2.79	0.99
5	Data that do not change periodically are collected annually	2X5=10	23X4=92	9X3=27	37X2=74	2X1=2	205	2.81	1
6	MIS is flexible to meet needs of users	2X5=10	15X4=60	15X3=45	39X2=78	2X1=2	195	2.67	0.92
7	The educational information is available when ever needed	2X5=10	17X4=68	13X3=39	37X2=74	4X1=4	195	2.67	0.98
8	Complete and appropriate educational information is provided to stakeholders at any level of the Region's education system	2X5=10	21X4=84	18X3=54	30X2=60	2X1=2	210	2.88	0.96
9	Information is clearly and vividly presented to users	4X5=20	26X4=104	14X3=42	26X2=52	3X1=3	221	3.03	0.96
10	Information is available on time	2X5=10	13X4=52	7X3=21	48X2=96	3X1=3	182	2.49	1.05

Appendix 4

Detail Calculation of Mean Scores of School Personnel for Table 17

No		Strongly Agree 5	Agree 4	No opinion 3	Disagree 2	Strongly disagree 1	Total	Mean Score	S
1	A mechanism that helps information workers get subsequent training to upgrade their knowledge is set	12X5=60	9X4=36	4X3=12	45X2=90	10X1=10	208	2.6	1.30
2	Integration of information is make practical	4X5=20	18X4=72	15X3=45	38X2=76	5X1=5	218	2.73	1.04
3	The information produced satisfies the information needs of all sections	4X5=20	19X4=76	10X3=30	42X2=84	5X1=5	215	2.69	1.06
4	Decision makers are made to participate in the preparation of educational statistics format	6X5=30	19X4=76	14X3=42	27X2=54	14X1=14	216	2.7	1.23
5	Data that do not change periodically are collected annually	6X5=30	22X4=88	15X3=45	32X2=64	5X1=5	232	2.9	1.11
6	MIS is flexible to meet needs of users	6X5=30	22X4=88	10X3=30	31X2=62	11X1=11	221	2.76	1.22
7	The educational information is available when ever needed	9X5=45	26X4=104	6X3=18	31X2=62	8X1=8	237	2.96	1.16
8	Complete and appropriate educational information is provided to stakeholders at any level of the Region's education system	7X5=35	17X4=68	15X3=45	35X2=70	6X1=6	224	2.8	1.13
9	Information is clearly and vividly presented to users	7X5=35	20X4=80	15X3=45	30X2=60	8X1=8	228	2.85	1.17
10	Information is available on time	7X5=35	18X4=72	10X3=30	41X2=82	4X1=4	223	2.79	1.12

Appendix 5

Detail Calculation of Mean Scores of Educational Officials for Table 19

No		Strongly Agree 5	Agree 4	No opinion 3	Disagree 2	Strongly disagree 1	Total	Mean Score	S
1	Collection of Raw data of low service nature	2X5=10	27X4=108	12X3=36	21X2=42	11X1=11	207	2.84	1.17
2	The collected data are full of error	2X5=10	26X4=104	16X3=48	23X2=46	6X1=6	214	2.93	1.06
3	The collected data are not analysed for users	2X5=10	27X4=108	24X3=72	16X2=32	4X1=4	226	3.10	0.96
4	Data that are not relevant to decision making are collected	2X5=10	17X4=68	18X3=54	26X2=52	10X1=10	194	2.66	1.07
5	Integration of data to different education offices is not made	2X5=10	21X4=84	21X3=63	23X2=46	6X1=6	209	2.86	1.04
6	Stake holders of education are inaccessible to data	10X5=50	39X4=156	7X3=21	10X2=20	7X1=7	204	2.79	1.18
7	Collectors do not have sufficient knowledge on educational information	7X5=35	33X4=132	13X3=39	18X2=36	2X1=2	244	3.34	1.04
8	Teachers are not let to participate in the data collection process	5X5=25	24X4=96	17X3=51	22X2=44	5X1=5	221	3.03	1.19
9	The attention paid by officials to the collected data is minimal	13X5=65	32X4=128	8X3=24	17X2=34	3X1=3	254	3.48	1.16

Appendix 6

Detail Calculation of Mean Scores of School personnel for Table 19

No		Strongly Agree 5	Agree 4	No opinion 3	Disagree 2	Strongly disagree 1	Total	Mean Score	S
1	Collection of Raw data of low service nature	16X5=80	34X4=136	11X3=33	14X2=28	5X1=5	282	3.53	1.18
2	The collected data are full of error	12X5=60	25X4=100	20X3=60	17X2=34	6X1=6	260	3.25	1.17
3	The collected data are not analysed for users	21X5=105	30X4=120	8X3=24	17X2=34	4X1=4	287	3.58	1.23
4	Data that are not relevant to decision making are collected	12X5=60	35X4=140	8X3=24	21X2=42	4X1=4	270	3.37	1.11
5	Integration of data to different education offices is not made	26X5=130	24X4=96	14X3=42	14X2=28	2X1=2	298	3.73	1.17
6	Stake holders of education are inaccessible to data	27X5=135	30X4=120	10X3=30	7X2=14	6X1=6	305	3.81	0.99
7	Collectors do not have sufficient knowledge on educational information	24X5=120	25X4=100	8X3=24	21X2=42	2X1=2	288	3.6	1.24
8	Teachers are not let to participate in the data collection process	22X5=110	21X4=84	5X3=15	28X2=56	4X1=4	267	3.36	1.34
9	The attention paid by officials to the collected data is minimal	19X5=95	37X4=148	5X3=15	12X2=24	7X1=7	289	3.61	1.81

Appendix 7

Detail Calculation of Mean Scores of Educational Officials for Table 20

	What is the level of attention paid to the data collected on	High 4	Medium 3	Low 2	No- attention 1	Total	Mean score	S
	in put	$37 \times 4 = 148$	$14 \times 3 = 42$	$18 \times 2 = 36$	$4 \times 1 = 4$	230	3.15	0.99
	process	$14 \times 4 = 56$	$35 \times 3 = 105$	$17 \times 2 = 34$	$7 \times 1 = 7$	202	2.77	0.87
	out put	$18 \times 4 = 72$	$32 \times 3 = 96$	$18 \times 2 = 36$	$5 \times 1 = 5$	209	2.86	0.86
	out come	$12 \times 4 = 48$	$10 \times 3 = 30$	$20 \times 2 = 40$	$31 \times 1 = 31$	149	2.04	1.1

Appendix 8

Detail calculation of means scores of school personnel for Table 20

	in put	$47 \times 4 = 188$	$19 \times 3 = 57$	$11 \times 2 = 22$	$3 \times 1 = 3$	270	3.38	0.86
	process	$12 \times 4 = 48$	$15 \times 3 = 45$	$49 \times 2 = 98$	$4 \times 1 = 4$	195	2.44	0.81
	out put	$8 \times 4 = 32$	$35 \times 3 = 105$	$28 \times 2 = 56$	$9 \times 1 = 9$	202	2.53	0.83
	out come	$6 \times 4 = 24$	$13 \times 3 = 39$	$9 \times 2 = 18$	$52 \times 1 = 52$	133	1.66	1.01

Appendix 9

Detail Calculation of Mean Scores of Educational Officials for Table 21

No		High 4	Medium 3	Low 2	Useless 1	Total	Means score	S
1	Identifies the strong and the weak sides of the educational task	11X4=44	34X3=102	24X2=48	4X1=4	198	2.71	0.79
2	Facilitates educational planning	20X4=80	33X3=99	17X2=34	3X1=3	216	2.96	0.82
3	To inspect and make follow up	13X4=52	30X3=90	23X2=46	7X1=7	195	2.67	0.88
4	To upgrade the educational efficiency	10X4=40	34X3=102	21X2=42	8X1=8	192	2.63	0.86
5	To maintain the quality of education	11X4=44	20X3=60	33X2=66	9X1=9	179	2.45	0.90
6	To make better decisions	15X4=60	28X3=84	26X2=52	4X1=4	200	2.86	0.85
7	To formulate educational policy	8X4=32	22X3=66	35X2=70	8X1=8	176	2.41	0.83
8	To share experiences	9X4=36	23X3=69	36X2=72	5X1=5	182	2.49	0.80
9	To forecast risks	14X4=56	26X3=78	27X2=54	6X1=6	194	2.66	0.89
10	To satisfy manpower need	24X4=96	23X3=69	21X2=42	5X1=5	212	2.90	0.95

Appendix 10

Detail Calculation of Mean Scores of School Personnel for Table 21

No		High 4	Medium 3	Low 2	Useless 1	Total	Means score	S
1	Identifies the strong and the weak sides of the educational task	12X4=48	35X3=105	24X2=48	9X1=9	210	2.63	0.88
2	Facilitates educational planning	19X4=76	36X3=108	17X2=34	8X1=8	226	2.83	0.91
3	To inspect and make follow	22X4=88	33X3=99	21X2=42	4X1=4	233	2.91	0.86
4	To upgrade the educational efficiency	20X4=80	24X3=72	33X2=66	3X1=3	221	2.76	0.87
5	To maintain the quality of education	18X4=72	19X3=57	30X2=60	13X1=13	202	2.53	0.82
6	To make better decisions	24X4=96	24X3=72	25X2=50	7X1=7	225	2.81	0.97
7	To formulate educational policy	21X4=84	23X3=69	24X2=48	12X1=12	213	2.66	1.03
8	To share experiences	8X4=32	35X3=105	25X2=50	12X1=12	199	2.49	0.87
9	To forecast risks	20X4=80	16X3=48	31X2=62	13X1=13	205	2.54	1.04
10	To satisfy manpower need	26X4=104	17X3=51	26X2=52	11X1=11	218	2.73	1.07

Appendix 11 : List of data collection formats

የቅጽ መለያ	አገልግሎት	ተዘጋጅቶ የሚላክበት ጊዜ
ትም/01-1	የአፀደ ሕፃናት ትምህርት ሁኔታ ማቅረቢያ	በየወሩ መጨረሻ
ትም/01-2	የልዩ ትምህርት " "	" "
ትም/01-3	የመጀመሪያ ደረጃ ትምህርት " "	" "
ትም/01-4	የ2ኛ ደረጃ ትምህርት " "	" "
ትም/01-5	የት/ቤቶችና ሴክሽኖች ብዛት " "	በዓመቱ መጀመሪያ
ትም/01-6	በአፍ መፍቻ ቋንቋ ብቻ በመማር ላይ የሚገኙ ህፃናት ማቅረቢያ	በየወሩ መጨረሻ
ትም/01-7	የመምህራን ብዛት ማቅረቢያ ቅጽ (ለብሄረሰብ ዞኖች) "	" "
ትም/01-8	የቴክኒክና ሙያ ትም/ሁኔታ ማቅረቢያ	" "
ትም/01-9	የማታ ትምህርት መረጃ ማቅረቢያ	" "
ትም/01-10	የርቀት ትምህርት " "	በሩብ ዓመት መጨረሻ
ትም/01-11	በየክፍል ደረጃው የተመዘገቡ ያቋረጡ ሪፖርትና ክፍል የደገሙ ተማሪዎች	በዓመቱ መጨረሻ
ትም/01-12	የ8ኛ ክፍል ብሔራዊፈተና ውጤት ማቅረቢያ	በዓመቱ መጀመሪያ(ያለፉ)
ትም/01-13	የ2ኛ ደረጃ መልቀቂያ ፈተና " "	" "
ትም/01-14	መደበኛ ያልሆነ ጉትምህርት መረጃ" "	በየሩብ ዓመት መጨረሻ
ትም/01-15	የማክሰማ " " "	" "
ትም/01-16	የአስተዳደር ሠራተኞች መረጃ መቅረቢያ (በቅጥር ሁኔታ)	መስከረም፣ ታህሣሥና ሰኔ
ትም/01-17	የአስተዳደር ሠራተኞች " " (በሥራ መደብ)	" " "
ትም/01-18	የአስተዳደር ሠራተኞች " " (በትም/ደረጃ)	" " "
ትም/01-19	የአስተዳደር ሠራተኞች " " (በደመወዝ)	" " "
ትም/01-20	የመምህራን ብዛት " " (በትም/ደረጃ)	" " "
ትም/01-21	የመምህራን ብዛት " " (በማዕረግ)	በዓመቱ መጀመሪያና በየሩብ ዓመቱ
ትም/01-22	በተለያዩ ምክንያት ሥራ የለቀቁ መምህራን መረጃ ማቅረቢያ	" " "
ትም/01-23	በተለያዩ ምክንያት ሥራ የለቀቁ ሠራተኞች መረጃ ማቅረቢያ	በየሩብ ዓመት የሚሞላ
ትም/01-24	የመደበኛ በጀት አጠቃቀም መረጃ ማቅረቢያ	" " "
ትም/01-25	የካፒታል በጀት አጠቃቀም መረጃ ማቅረቢያ	በየሩብ ዓመት የሚሞላ
ትም/01-26	በጉንደር ኮሌጅ የሚገኙ መምህራንና አስ/ሠራተኞች መረጃ ማቅረቢያ	" " "
ትም/01-27	በጉንደር ኮሌጅ የተማሪዎች መረጃ መሰብሰቢያ(የቀን፣የማታና የክረምት)	በዓመቱ መጀመሪያ (መስከረም)
ትም/01-28	በጉንደር ኮሌጅ በትም/ዓይነት የሚሰለጥኑ ተማሪዎችና በመደበኛና በማታው የሚከታተሉ መረጃ ማቅረቢያ	" " "
ትም/01-29	በመምህራን ማሠልጠኛ የተማሪዎችና የመምህራን መረጃ ማቅረቢያ	በዓመቱ መጨረሻ
ትም/01-30	በመምህራን ማሠልጠኛ ትምህርት ያጠናቀቁና ያቋረጡ፣ እንዲሁም በክረምት የሰለጠኑ መምህራን መረጃ ማሰባሰቢያ	በዓመቱ መጨረሻ
ትም/1-29	- የህብረተሰብ ተሳትፎ መመዝገቢያ	በዓመቱ መጨረሻ
ቅጽ ትም/1.3	- መንግሥታዊ ያልሆኑ ድርጅቶች	በዓመቱ መጨረሻ

ADDIS ABABA UNIVERSITY
SCHOOL OF GRADUATE STUDIES
FACULTY OF EDUCATION
DEPARTMENT OF EDUCATIONAL ADMINISTRATION

QUESTIONNAIRE DESIGNED ON EDUCATIONAL MANAGEMENT
INFORMATION SYSTEM

This questionnaire is to be filled by heads and experts in Woreda Education Offices, Zone Education Departments and Regional Education Bureau (I .01)

A. **Significance of the Study:** The study is conducted in partial fulfillment for the Masters of education (M.Ed) Degree in Educational Planning and Management. The study focuses on pin pointing the factors that hamper Educational Management Information System (EMIS).

B. **Objectives of the Study:** The study tries to:

1. investigate the contribution of the educational information system in the Region's administrative decisions;
2. assess the efficiency and effectiveness of the information system

INSTRUCTION

- A. Please, do not write name
- B. Please, put 'X' mark in the boxes of question with different multiple choices!
- C. Please put your short and precise answers for questions that are accompanied by blank spaces!

N.B. The success of the study depends on the responses you give to the questionnaire. So, I kindly request you to give due attention while responding to every question.

I in advance, extend my thanks for your cordial cooperation.

part one: Bio Data

1. Zone _____ Woreda _____
2. Sex (a) Male ☐ (b) Female ☐
3. Current post _____
4. Age
 - (a) 20 and below ☐
 - (b) 21-25 ☐
 - (c) 26 - 30 ☐
 - (d) 31 - 35 ☐
 - (e) 36 - 40 ☐
 - (f) 41 - 45 ☐
 - (g) 46 and above ☐
5. Educational Level
 - (a) below 12th grade ☐
 - (b) 12 complete ☐
 - (c) T.T.I graduate ☐
 - (d) College Diploma ☐
 - (e) B.A/B.Sc. ☐
 - (f) M.A/M.Sc. ☐
 - (g) other ☐
6. Field of study (if you are a college or university graduate)
 - (a) major _____
 - (b) minor _____
7. Total years of service:
 - (a) 0-5 ☐
 - (b) 6-10 ☐
 - (c) 11-15 ☐
 - (d) 16 -20 ☐
 - (e) 21 - 25 ☐
 - (f) 26 - 30 ☐
 - (g) 31 and above ☐

8. Service rendered in Education Offices
- (a) 0 -5 ☐ (c) 11 - 15 ☐
- (b) 6 -10 ☐ (d) 16 and above ☐

part Two: Training

1. Did you take any course on information management before?
- (a) Yes . ☐
- (b) No ☐
2. Did you participate in a long term training in EMIS?
- a. Yes ☐ (b) No ☐
3. If you answer to question No 2 is 'yes', for how long? _____
4. Did you participate in on-short term training on collection, storage and utilization of educational information
- (a) Yes ☐
- (b) No ☐
5. If your answer to question No. 4 is yes, for how long? _____
6. If your answer to question No. 4 is 'Yes' do you think that the training given is sufficient to undertake the task.
- (a) Yes ☐
- (b) No ☐
7. If you had participated in information management and usage training, how do you rate its effectiveness?
- (a) high ☐ (b) average ☐ (c) low ☐

8. If you hadn't participated in information management and usage training in relation to question No. 4, Please, give your reasons? _____
9. Are text books or other printed materials available on educational informaiton?
- (a) The organization doesn't have relevant books ☐
 - (b) Although books are available, the situation doesn't invite reading ☐
 - (c) Books are available and there is as well a conducive environment for reading ☐
10. Whom do you think are those who should be given training on informaiton management?
- (a) teachers ☐
 - (b) head teachers ☐
 - (c) record officers ☐
 - (d) statisticians at Woreda, Zone and Bureau levels ☐
 - (f) any worker ☐
11. Who are the workers and at which administrative category that are usually likely to take training on information management and usage?
- (a) workers in the education bureau ☐
 - (b) workers in the zone education departments ☐
 - (c) workers in the woreda education offices ☐
 - (d) school personnel and teachers ☐
12. Did you participate in discussions on educational informaiton in conferences of which you were a member?
- (a) Yes ☐
 - (b) No ☐

13. If your answer to question No. 12 is 'yes', were resolutions passed regarding on educational information?
- (a) Yes ☐
- (b) No ☐
14. If your answer to question No. 13 is 'yes', did you observe the practicality of the resolutions?
- (a) wholly practical ☐
- (b) partially practical ☐
- (c) minimally practical ☐

Part Three: Information Processing Equipment and Facilities

1. Is there information processing section in your organization
- (a) Yes (b) No
2. Are information processing manual equipment fully available in your organization?
- (a) wholly available ☐
- (b) partially available ☐
- (c) not available ☐
3. If your response to question No. 2 is not available what do you think the reasons are: It is possilbe to give more than one asnwer
- (a) shortage of money ☐
- (b) Less attention ☐
- (c) Others _____

4. The information processing manual equipment are:
- (a) highly quality ☐
 - (b) medium quality ☐
 - (c) less quality ☐
5. Are information processing equipment available on demand?
- (a) Yes ☐
 - (b) No ☐
6. Are the information processing equipment maintained on time?
- (a) Yes, ☐ (b) No, ☐
7. If your response to question No. 6 is 'b', what do you think is the reason ?
(It is possible to give more than one answer)
- (a) lack of technicians ☐ (d) less attention ☐
 - (b) shortage of money ☐ (e) others _____
 - (c) the equipment can not be maintained ☐
8. Is computer available in your organization?
- (a) Yes ☐
 - (b) No ☐
9. If your response to question No 8 is yes, for what purpose it is used?
- (a) used for training and others ☐
 - (b) used for word processing ☐
 - (c) used for data processing ☐
 - (d) used for internet ☐

(e) it gives no service ☐

(f) others _____

10. If your response to question No. 9 is it gives no service what do you think the reason is ?

Part Four: Information Collection, Storage and Utilization

1. Is there an organized information base which indicates all the yearly activities of each unit in your organization?

(a) Yes ☐ (b) No ☐ (c) I don't know ☐

2. Are informaiton well organized as to be available on demand in your organization?

(a) Yes, ☐ (b) No, ☐ (c) I don't know ☐

3. The necessary educational information are kept:

(a) in management informaiton system section ☐

(b) in the concerned departments ☐

(c) in hand of individual persons ☐

(d) in a library ☐

(e) in all the above four ☐

(f) others _____

4. If your response to question 3 is 'C' had a problem in loss of information been encountered as a result of the individual's departure of any kind?

(a) Yes ☐

(b) No ☐

5. Is there a conducive condition for workers to make use of the information gathered?
- (a) Yes ☐
- (b) No ☐
6. Who would make the most use out of organized information in your organization?
- (a) high level officials ☐ (d) others ☐
- (b) middle level officials ☐ (e) Nobody ☐
- (c) lower level officials ☐
7. If your response to question No. 6 is nobody give reasons?
-
-

Part Five: Organization of Educational Information

1. Is Management Information System (MIS) included in organizational structure?
- (a) Yes ☐ (b) No ☐
2. If your response to question No. 1 is yes are the required manpower assigned to undertake the task?
- (a) Yes, ☐ (b) No, ☐
3. If yes, is the person so assigned capable of performing the task?
- (a) Yes, ☐ (b) No, ☐

4. What measures should be taken if information isn't being properly collected and reach users?

5. Does the Region's information collection and dissemination system have policy support?

(a) Yes ☐ (b) No ☐

6. If your response to question No. 5 is 'no'. what do you think are the concomitant effects?

7. Is the manpower and material requirement of the information administration section embodied in the organization's overall plan?

(a) Yes, ☐ (b) No, ☐

8. Is there any attempt to integrate computer information system so far in educational offices?

(a) Yes ☐ (b) No ☐

Part Six:

Information Collection Format or Educational Statistical Format

Indicate the degree of your agreement or disagreement?

		strongly agree 5	agree 4	No opinion 3	disagree 2	strongly disagree 1
1	The format prepared to collect data contains all the necessary information					
2	Subsequent evaluation is made on the format by the users					
3	It is only the head teacher who fills the format					
4	It is simple to read and fill the format					
5	The format is filled by schools every year					
6	October is a convenient month to fill and collect the format					
7	Those who filled the format in appropriately will be held responsible					
8	The format is mostly carefully filled					
9	After the data are aggregated and analysed, they will be sent to each zone, woreda and school by REB					
10	Workers of educational offices make use of the compiled data as is necessary					
11	The information compiled by REB is analysed in such a way as to make proper decision.					
12	Information workers at REB are so effective that they can interpret and analyse the crude information so collected					

Part Seven: Data Collection

Show the magnitude of problem during data collection

		strongly Agree 5	Agree 4	No Opinion 3	Disagree 2	Strongly Disagree 1
1	Collection of raw data of low service nature					
2	The collected data are full of error					
3	The collected data are not analysed for users					
4	Data that are not relevant to decision making are collected					
5	Integration of data to different education offices is not made					
6.	Stakeholders of education (teachers, parents etc) are inaccessible to data					
7	Collectors, do not have sufficient knowledge on educational information					
8	Teachers are not let to participate in the data collection process					
9	The attention paid by officials to the collected data is minimal					

		High 4	Medium 3	Low 2	No. Attention 1
10	What is the level of attention paid to the data collected on				
	(a) in put				
	(b) Process				
	(c) out put				
	(d) out come				

11. What is the use of information obtained from educational statistics ^{formal} ~~data~~? ^{data?}
- (a) to allocate budget ☐
 - (b) to assign workers and teachers ☐
 - (c) to maintain and construct schools ☐
 - (d) others _____

12. Would you please pinpoint the problems that are observed in the statistics data format?

13. What do you think are the solutions for the problems cited in question No. 12?

part Eight: The Efficiency and effectiveness of the Education Management Information System.

Indicate the degree of your agreement or disagreement

		strongly agree 5	agree 4	No opinion 3	disagree 2	strongly disagree 1
1	A mechanism that helps information workers get subsequent training to upgrade their knowledge is set					
2	Integration of informaiton is made practical					
3	The information produced satisfies the information needs of all sections					
4	Decision makers are made to participate in the preparation of educational statistics format					
5	Data that do not change periodically are collected annually					
6	Management information system is flexible to meet needs of users					
7	The educational information is available whenever needed					
8	Complete and appropriate educational information is provided to stakeholders at any level of the Region's education system					
9	Information is clearly and vividly presented to users					

Part Nine: Contribution of EMIS to the Educational Task

To what extent does EMIS serve the following purposes?

		High 4	Medium 3	Low 2	Useless 1
1	Identifies the strong and the weak sides of the educational task				
2	Facilitates educational planning				
3	To inspect and made follow up				
4	To upgrade the educational efficiency				
5	To maintain the quality of education				
6	To make better decisions				
7	To formulate educational policy				
8	To share experiences				
9	To forecast risks				
10	To satisfy manpower needs				

Part Ten: Factors affecting EMIS

Please give rank to each problem depending on its magnitude and nature. Only one rank is given to one problem.

		1 st	2 nd	3 rd	4 th	5 th	6 th	7 th	8 th
1	Non-existence of trained man power for the job								
2	Non-existence of information processing equipment								
3	Less assistance is given by the educational administration								
4	Low knowledge on the part of the user on information								
5	Lack of office and furniture to undertake the task								
6	Lack of incentives for those who participate in management information task								
7	Those who are taken to be sources of information are not held responsible for the wrong informaiton they release								
8	Information disseminating schemes such as computer, radio, telephone, fax and the like are either not sufficiently available or not easily accessible								

Part Eleven: Opinion

Please, jot down your opinion relating to the improvement of EMIS

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Appendix

t- test

The perceptual difference b/n two groups of respondents can be tested using a two tailed t-test at 0.01 and 0.05 significance. The formula for t-test is the ratio of the absolute difference b/n the sample means to the standard error of the mean.

$$|t| = \frac{|\bar{x}_1 - \bar{x}_2|}{S_{\bar{x}_1 - \bar{x}_2}}$$

Where the standard error is calculated using the formula

$$S_{\bar{x}_1 - \bar{x}_2} = S \sqrt{\left(\frac{1}{n_1} + \frac{1}{n_2} \right)}$$

The pooled standard deviation is determined by

$$S = \sqrt{\frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{(n_1 + n_2) - 2}}$$

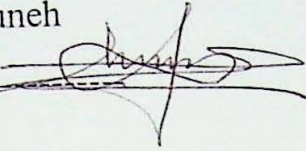
n_1 and n_2 are the sample sizes whereas s_1 and s_2 are the corresponding standard deviation by checking. the calculated t- value against the critical value at $(n_1 + n_2) - 2$ degrees of freedom and 0.01 and 0.05 level of significance, the null hypothesis can either be rejected or retained.

DECLARATION

I, The undersigned, declare that this thesis is my work and all sources of materials used for the thesis have been acknowledged.

Ayana Tiruneh

signature

A handwritten signature in dark ink, consisting of a series of loops and a long horizontal stroke extending to the right.

Addis Ababa university

may 2002