DEZIC

HMIS AS A SOURCE OF DEMOGRAPHIC DATA

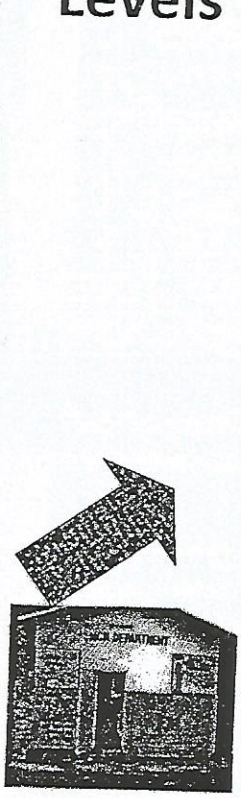
UNZA POP DEPT

May 2014

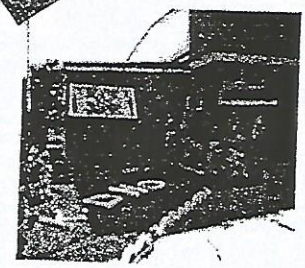
Examples of data collection tools at Health Facility

- Tally sheet
- Activity sheet
- ANC card
- Under 5 card
- Registers, e.g. Safe Motherhood Register, ART Register
- Aggregation Forms, e.g. Health Information Aggregation Form 2, (HIA2)

Levels of data utilisation



Health Facility



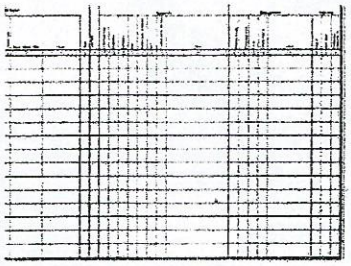
District

Province

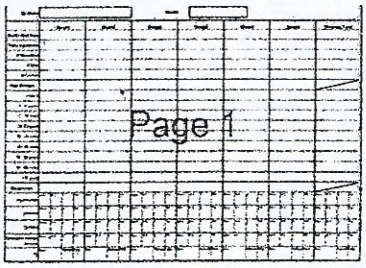
National

Data collection point

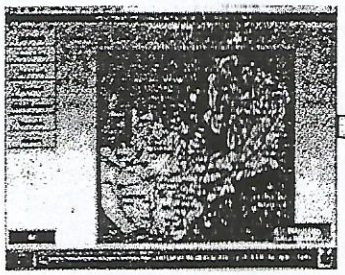
The Data Flow Process



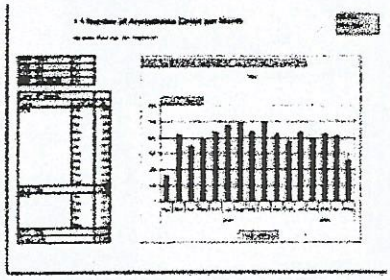
1. Record of patients seen(Tally sheets, activity sheets and registers)



2. Summary of key information(HIA 1, 2 and 3)



3. Data entry into database



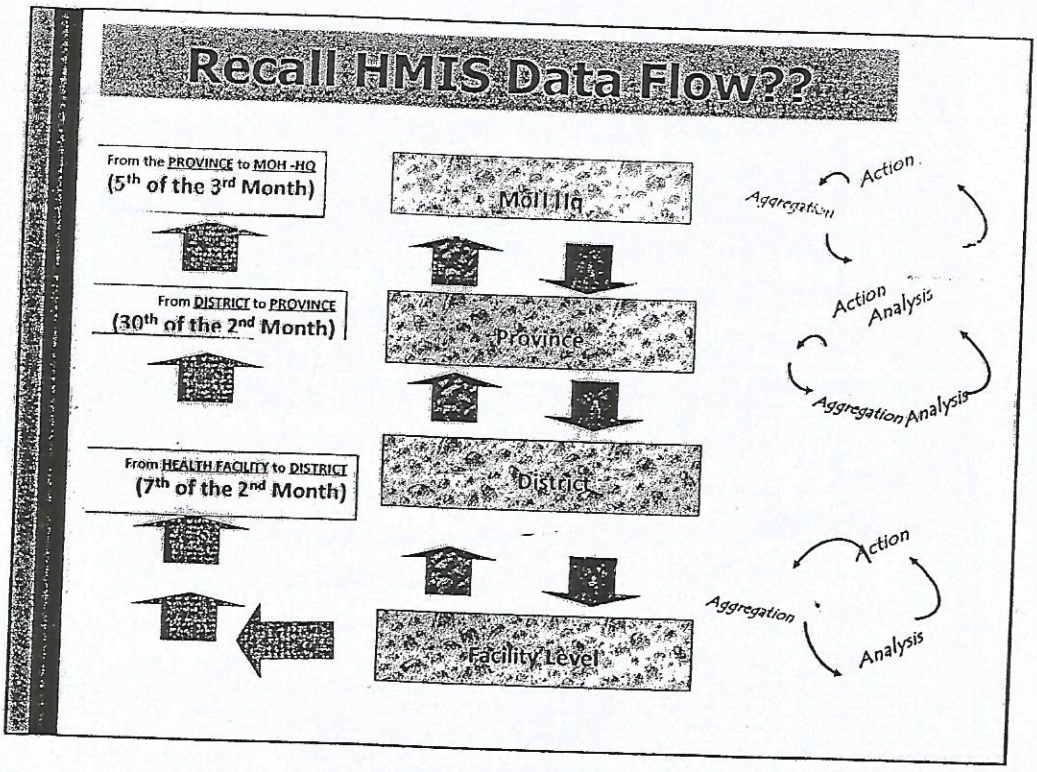
4. Data analysis and use

Any other information to be obtained from these primary data collection tools?

- HIA 2
- Tally sheet ..\Desktop\Tally Sheet final.rtf
- Activity sheet
- ANC card
- Registers, e.g. HIV Testing and Counselling (HTC) Register
- Under 5 card..\Desktop\HTC_Register_Sep2011.xls
- Aggregation Forms, e.g. Health Information Aggregation Form 2, (HIA2) ..\Desktop\Health Centre Service Delivery Form (HIA2) September 2012 B.xlsx

Challenges

- Limited to data generated only at HEALTH FACILITY
- Thus, not comprehensive
- Poor storage of data/information – difficult to follow-up on certain issues that may arise later
- Thus, can hardly benefit from time series data analysis
- Thus, costly as always have to generate new data
- Late or even non-reporting from some facilities Central Province\ce Central Province - HIA2 2013 - October 2013.pdf



- Mainly **Vital statistics,** e.g. births, deaths, age, sex
- Other demographic data e.g. **socio-economic** characteristics of the patients
- Enables generation of data elements – subsequent use in indicator calculation
- Thus, able to calculate several indicators and service delivery improvement guides e.g. calculate '***Top ten causes of morbidity***', '***Top ten causes of mortality***'...
- Enables calculation of disease burden

Way forward cont...'

- Fully roll out and begin to benefit from Hospital MIS
- Improve data use - use of various media, audiences and fora, e.g. **EDU, QIDU** trainings, presentations at seminars, workshops, radio, TV, journals, etc.
- Invest in technology- solar panels, 'dongles'....

- **Any other suggestions????**

Challenges cont...'

- Untrained staff, over-burdened staff – data considered secondary duty
- General lack or limited understanding of data, its use and importance, population over
- Poor or in-existent internet connectivity

Way forward

- Need to make adjustments, (standardizations) or take caution when intending to generalize to entire population
- Invest in trainings, both in and pre-service
- Ad-hoc trainings, refreshers... other, specially designed trainings e.g. **EDU, QIDU**
- Consider employing full time data staff
- Incorporate data generated from community through community HMIS

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EMIS

THE EDUCATION MANAGEMENT INFORMATION SYSTEM (EMIS)

1. BACKGROUND/INTRODUCTION

The Education Management Information Systems (EMIS) unit within Zambia's Ministry of Education (MOE) was working well in the early 1990's when Zambia participated in a pilot study on school records management. Together with other Sub-Saharan countries, coordinated by the Working Group on Education Statistics (WGES) and the National Education Statistical Information Systems (NESIS), Zambia took school records management as its priority needs. This was the beginning towards strengthening the management of school records in an effort to achieve data quality that comes from schools. However, this effort did not take root as expected. This problem, coupled with professionals who left the ministry, weakened the EMIS, which eventually became non-functional.

The system for data capturing then (1990 to 2000) was the Integrated Microcomputers Processing System (IMPS). This program was used as a data-capturing tool. However, the IMPS became outdated because of lack of maintenance, lack of educational information for the ministry, lack of ownership, non-regular update of the program and inadequate skills to handle the program. The EMIS began to deteriorate for various reasons and finally became idle.In 2000, it was revived as a result of an agreement between the Ministry of Education (MOE) of Zambia and the United States Agency for International Development (USAID). USAID contracted the American Institutes for Research. Financial assistance was provided to the MOE to collect, organize, and use (AIR) to execute the pilot project. AIR further sub contracted the Academy for Education Development (AED) to implement the project which was referred to as the "EMIS Project".

The African Union's Plan of Action for the Second Decade of Education for Africa (2006-2015), the Southern African Development Community (SADC) Strategic Plan, and UNESCO's Work Plan for the African continent all recognise and acknowledge that EMIS is a key priority area in improving education delivery in Africa. Other priority areas areGender and Culture; Teacher Development; Higher Education; Technical and Vocational Education andTraining, Curriculum Development and RelatedIssues of Teaching and Learning Materials; and Quality Management.An Education Management Information System (EMIS) is a comprehensive system that brings together people, processes and technology to provide timely, cost effective, and user appropriate information to support educational management at all levels.Education Management Information system (EMIS) is an essential tool for processing information for the management of education resources and services.Thus, the EMIS is the core custodian of mainstream education data for MOE. It collects and stores data on selected key indicators for educational management, strategies

and operations. Some products of the EMIS include:Statistical Bulletins, statistical highlights and fliers, CDsetc.

2. EMIS VISION

To establish a demand-responsive and self-sustainable Education Management Information System (EMIS) that is:

- Based on integration of decentralized and distributed sub-systems;
- Guided by partnership of stakeholders at both national and sub-regional levels; and
- Supported by technically competent individuals and institutional structures

3. RATIONALE

In Zambia and many other countries the quality of data and information in education has been a focus ofconcern due to a number of reported errors, inaccuracies, inconsistencies and misinterpretations.The inability of management to provide an adequate support system has equally contributed tothe seriousness of the problem.In addition schools and institutions of learning that are essentially thesources of data and information are highly dispersed and isolated by many geographical barriers such as rivers, forests, distance and other natural and manmade barriers.The emerging demands for reliable, up-to-date and timely data andinformation by local and international stakeholders have alerted data producers and providers to improvetheir management efforts to meet these demands.

What is a system: A set of elements or components that work together in relation for the overall good and objective/vision of the whole.

Working together- entails a collective effort that is additional to individual and professional efforts to achieve the desired outcome.

In relationship- working together as team members as well as with users.

Vision of the whole- this is the vision of the MOE in relation to the policies.The system therefore is made up of components each of which contributes to the proper functioning.

The components are: data collection, data processing, data analysis and data use. All these components lead to good planning for decision making purposes.

4. OBJECTIVES OF EMIS

The main purpose of an EMIS is to integrate information related to the management of educationalactivities, and to make it available in comprehensive yet concise ways to a variety of users and stakeholders. To achieve this, quality assurance should be one of the cornerstones of good statistical data. To this effect, the MoE has integrated quality processes and procedures in all aspects of its Statistics value chain. The MoE's Education Management Information Systems (EMIS) is a key tool in the statistical value chain and all efforts aimed at improving the system are taken on board as it has taken a holistic approach to quality integration in terms of both the pre-requisites and key dimensions of quality.

5. EMIS GUIDING PRINCIPLES

Before the EMIS (strategy) is developed, it is important to take the following principles into consideration:

5.1. Identify the development characteristics of your country and education system;
5.2. Determine which EMIS strategy is most appropriate, taking into accountpossible risks;
5.3. Develop a strategy that is capable of being implemented taking cognizance of the risks;
5.4. Ensure that outcomesof the EMIS can have impact as quickly as possible;
5.5. Pilot your strategy to ensure problems are identified prior to going nationally;
5.6. Develop a data production cycle, identifying who does what and when; and
5.7. Ensure commitment to this strategy is obtained from educational professionals and other stakeholders.

Any strategy for EMIS will have to take into account the specificdevelopment characteristics of an individual country, including: demographic issues,levels of socio-economic development and political characteristics. Prior to embarking on a full scale EMIS reform, it is important for mangers to identifywhat strategy will drive the management and operation of their EMIS. Thecomposition of this strategy will ultimately determine how data will be collected,what type of investments will be made in ICT infrastructure, what type of institutionaland capacity development will occur and how the outputs will be disseminated.

Equally significant to the success of any EMIS strategy is the commitment andsupport from professionals working at different levels of the education system, as wellas from stakeholders outside of the education system. Unless they are committed toEMIS it is

unlikely that timely and valid data will be produced. There are no shortcutsfor obtaining this commitment, but professionals are more likely to be committedif they have support from senior management.

In addition to what has been highlighted above, it is critical to look at the following international areas/issues when devising an EMIS strategy:

MANDATE FOR DATA COLLECTION FOR THE EDUCATION SECTOR: The Ministry of Education must have a clear legal mandate to collect information from all education and training institutions and bodies, both public and private, for educational statistical purposes.

QUALITY COMMITMENT: The Ministry of Education commits itself to work and cooperate according to the norms fixed in the quality declaration of its national statistical systems and in other international statistical frameworks.

STATISTICAL CONFIDENTIALITY: The Ministry of Education guarantees the privacy of data providers' individuality, the confidentiality of the information they provide and its use for statistical purposes only.

REPORTING ACCOUNTABILITY: The Ministry of Education adheres to a policy of timely and accurate reporting to the statistical information requirements of national, regional, continental and international education frameworks.

IMPARTIALITY AND OBJECTIVITY: The Ministry of Education must produce and disseminate education statistics respecting scientific independence and in an objective, professional and transparent manner in which all users are treated equitably.

REGISTRATION OF INSTITUTIONS: All education and training institutions must be compelled to register with appropriate education Ministries if they are to operate as an education and training institution.

COST EFFECTIVENESS: Resources must be prudently and effectively used.

RELEVANCE: Education statistics must meet the needs of users.

ACCURACY AND RELIABILITY: Education statistics must accurately and reliably portray reality. The accuracy of the statistical information is the degree to which the output correctly describes the phenomenon it was designed to measure.

IMELINESS AND PUNCTUALITY: Education statistics must be disseminated in a timely nd punctual manner.

HERENCE, CONSISTENCY, COMPARABILITY AND INTEGRATION: Education statistics hould be coherent and consistent, over time and comparable between regions and untries; it should be possible to combine and make joint use of related data from ferent sources.

CESSIBILITY AND CLARITY: Education statistics should be presented in a clear and derstandable form, disseminated in a suitable and convenient manner, available and cessible on an impartial basis with supporting metadata and guidance.

MPREHENSIVENESS: Education statistics and information are reported on for all ctors of education and training.

THE EMIS C[illegible]E

e EMIS cycle basically comprises seven areas though others compress the processes.

6.1. DATA COLLECTION: Most often data is collected by means of questionnaires prepared in a centralised system mostly annually To collect this data properly, knowledge of the needs of the planners, decision makers, researchers and other users and stakeholders is required

PROCESSES OF DATA COLLECTION

Instrument design: MOE collects core regular data using questionnaires. The design of such an instrument, however, needs to be done carefully to consider: the questions, layout, language and also the recipient/user of the questionnaire. Done between April and June each year;

Taking stock of the Schools: They remain the core source of most of the required data though not always recorded in the desired manner;

Questionnaire Pre-testing: Once the instrument has been designed, it must be pre-tested. This is done by selecting a limited number of schools to fill in the questionnaire. This is meant to: find out how the receiver (school) understands the questionnaire for necessary adjustments, better estimate the time it would take to complete the questionnaire; learn more how records are kept at school level; establish how it is to complete the questionnaire. It is important to note that the pre-testing of the instrument should include a wider variety of project users. Usually July to August:

Questionnaire re-design: When the pre-test is complete, any change needs to be carefully incorporated. This is often done through discussions to approve the changes required, a process of learning from each other as it affords each one an opportunity to understand why the changes are necessary. Done in September;

Printing and Publication: once the pre-testing is done and changes incorporated, the instrument will have to beprinted and published bearing in mind the estimated number of copies per region and the production cost. Done between October and December;

Distribution and Follow up: distribution of instruments is usually done in stages; the HQ distributes the instruments to the provinces, districts and schools. This requires a well scheduled follow up. Done between December and January of the following year;

6.2. **DATA PROCESSING:** For data processing to take place, data must have been collected. Otherwise, there will be nothing to process. It is therefore important that once the data is collected, there is need to plan how to organise its many different types so that it is usable for planning purposes. The following are some of the most important aspects of data processing:

- Monitoring instruments;
- Missing data;
- Data entry;
- Data cleaning and verification;
- Data compilation

It is not the working of the one part of the system that will lead to the desired result. It requires good output from the whole system to get an efficient accomplishment of the vision, from the people, processes and technology.

6.3. **DATA ANALYSIS:** Until you have processed your data, you will have little or nothing to analyse. In all this process it is possible to have a good data collection survey with poor data processing or good data processing system **BUT** poor analysis.Analysis of data involves looking very closely at the data, and in various ways in order to extract information useful for planning and decision making; ascertain trends, compare provinces, districts, urban and rural schools, boys and girls etc. The analysis is done to provide information to planners, decision makers, researchers, policy makers and other users so that they can establish whether their actions are appropriate or need to be modified.

The results of the analysis, therefore, can point decision makers in the right direction. Data analysis must be done with users in mind and these several users include a wider group.

6.4. **REPORTING:** The type of report may differ depending on the type of the user/stakeholder to serve. It is, therefore, important that we know each of our users and what they are likely to use. The production of the following reports will help serve the interest the various groups of our user category:

Annual Statistical Abstract: this is a summary of statistical tables and some indicators and is intended for the general public. By producing a statistical abstract we have taken many steps forward in our aim to provide information to the general public;

Quick Reference: this is a short summary of the annual statistical abstract. It is meant for quick reference and is targeted at upper decision makers and those users who do not require detailed statistics;

Indicator report (Statistical Bulletins): this contains the analysis of the school system's performance. It is usually prepared by a team of experts within the MOE. The objective is to identify the progress made, the problems encountered and the future direction in the implementation process.

Statistical fliers: this is basically a very brief/short flier with only a few indicators mainly meant to highlight performance in a few selected indicators. Usually acts to let the public or decision makers be aware about performance in certain critical indicators.

6.5. **PUBLICATIONS:** If you have not published it, you haven't achieved anything. The core objective of EMIS is to provide information to users through various techniques and methods. One way of providing this information is to publish our products and distribute them to the users. This encourages the use of our information.

6.6. **DISSEMINATION:** In practice, dissemination takes a number of forms:

- Regular distribution of school abstracts, quick references, indicators' reports to users;
- Distribution of pamphlets and posters to users; and
- Reports and briefing provided to planners and decision-makers at different levels of administration-provinces,districts, and schools.

6.7. FEEDBACK: Feedback is a learning process through which we can learn about our achievements and failures. It gives us the opportunity to correct our mistakes. The feedback process allows us to realise that others appreciate what we are doing, that there may be other ways of doing things and that there may be other innovative ideas to support our efforts. We therefore apply some mechanisms of collecting feedback:

- Develop the habit of reading through policy and research papers;
- Using opportunities to attend meetings and also individual discussions;
- Having a record book to monitor information from those visiting us in order to know what information they require and for what purpose.

7. USES OF EMIS DATA

The main reason for the existence of any EMIS is to produce outputs that can be used by managerswithin the education system and to respond to the information needs of those outsidethe education system. It therefore goes without saying that EMIS must respond to these different needs by producing timely and accurate data.Normally, EMIS is an information centre in a Ministry of Education and responsible for the use of information for policy planning, planning and implementation, Decision making, monitoring and evaluation of the education of theeducation system. Thus, EMIS outputs would assist identify priority areas for targeting resources and helping monitoring progress of strategies towards defined objectives.

8. CONCLUSION

The Ministry of Education' EMIS is a one stop depository of education data for all learning institutions in the country. The EMIS strategy has factored in mechanisms to address the highlights from the External evaluations and the Data Quality Assessment Framework (DQAF) report. Additionally, by setting up and EMIS unit with its own resources, the Government (Ministry) has factored in issues related to sustainability as well as the SADC EMIS Norms and Standards. In many countries, issues related to EMIS are donor driven hence the need to embrace sustainability for the continuation of EMIS, running efficiently into the future, as intended initially, even after the external assistance is no longer available. This implies keeping the existing system functioning and reinforcing the established system with new vision and new ideas as well as building capacity of local staff in all respects related to EMIS. In this regard, the managerial, professional and technical skills need to be strong enough to meet the challenges.

The Ministry of Education has set up and equipped a training centre for the ministry and this is an indicator of political will and commitment which cardinal for sustenance of EMIS. The EMIS unit through the restructuring of the MoE has well established structures with professionals occupying the positions. This is another indicator of commitment. However, to keep the system going and strong, a continuous encouragement and assistance is needed from decision-makers. Allocating adequate budgetary resources for training, upgrading equipment, procurement of necessary hardware, software, and other consumables should be fulfilled as much as possible in order for the system to remain strong.

The other portion of commitment is to come from inside EMIS. EMIS by its very nature is an environment of learning due to the dynamic nature of ICTs. It takes individual interest and commitment to engage in self-learning. The EMIS staff should also know what the user wants and put users at the centre of the focus. The planners and decision-makers at all levels including province and districts of the ministry are primary users of educational information who should be considered at every stage of the statistical value chain. The ultimate aim is to have good quality products and services. Good quality information is more likely to be used than a poor quality information thus increasing demand for educational information. Hence, the focus is made to put the user up in front and render good quality services by producing credible education information.

Another success factor for EMIS products and services is the awareness and ability to market the products. Many users may not be aware of the power of information, hence the EMIS unit has the responsibility and ability to market the product. This can be done through production of analytical reports, indicators, training materials, flyers etc. It can also be done by presenting the outcome of the year, or changes over time to workshop participants, briefing to higher bodies, publishing, group discussions etc.

Sample Vital Registration with Verbal Autopsy (SAVVY):

An Overview

This overview booklet describes the rationale, methods, outputs, and uses of a sample vital registration system (SRS) that includes active follow-up of deaths in the community to determine their likely causes.

This system is called **S**ample **V**ital **R**egistration with **V**erbal Autops**Y**, or **SAVVY**.

Taking Action to Improve Vital Statistics

Accurate statistics on births, deaths, and the causes of death generated by a well functioning vital statistics system are the foundation of rational health and public policy. Yet these are lacking for the vast majority of the world's poorest countries. In sub-Saharan Africa, for example, fewer than 10 countries have routine vital statistics systems that produce usable data. In particular, data on both the number and causes of death in developing countries are virtually non-existent. Reliable data on levels of adult death - let alone causes of death - simply do not exist for the majority of developing countries, where a large majority of deaths occur at home. Mortality estimates, particularly for adults, that are patched together and modeled from limited sources of information have not provided an adequate foundation for setting health sector priorities or for assessing program progress and impact.

The objective is to move from a situation in which knowledge of most events that take place in communities and households is lost (represented in Figure 1), to one in which information about those vital events is brought into the health information system (Figure 2).

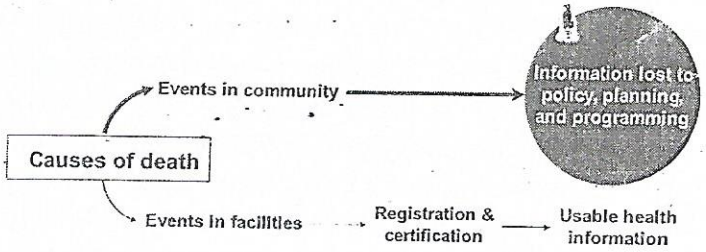

Figure1. Current state of vital events information in most low income countries.

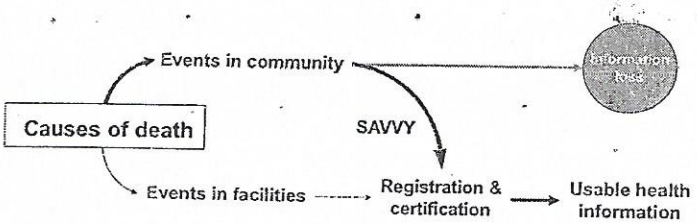

Figure 2. Role of SAVVY resources in recovering information for use in national planning and development.

While the preferred, long-range goal for vital events data is to achieve civil registration of births and deaths and medical certification of causes of death with high and representative coverage, it is widely accepted that attaining this objective for most countries is far in the future. Given the present inadequacies of current knowledge, what are the best ways to measure and monitor vital events and related socio-demographic information in the short- to medium-term?

Health Metrics is a set of figures/stats that measure results of the savvy. They better vite events monitoring and are entirely harmonized the WHO international classification of diseases.

There are a variety of recommendations endorsed by the international community, including through the Health Metrics Network. While they cannot substitute for universal civil registration, complementary methods for vital events measurement such as those contained in the SAVVY library can fill this crucial void in the public health evidence base. The implementation of these methods should contribute to the goal of moving from a situation in which no reliable routinely collected vital statistics exist to a long-term goal of having vital statistics derived from civil registration with high coverage and reliable cause of death attribution.

This resource library provides all the necessary reference materials to establish a complete system capable of generating nationally representative vital events information, including information on causes of death, or strengthening existing sources of data. All materials included are the product of extensive field application and expert review, and are consistent with agreed international standards and best-practice.

What is a SAVVY Sample Registration System?

SAVVY stands for SAmple Vital Registration with Verbal AutopsY. The SAVVY resource library is a series of best practice manuals and methods for improving the quality of vital statistics where high coverage of civil registration and good cause of death data are not available. SAVVY methods are integrated into the Health Metrics Network's vision of "stepping stones" to better vital events monitoring, and are entirely harmonized to the WHO International Classification of Diseases (ICD).

SAVVY can be implemented in many ways. It can be put into operation as a complete system or, in many cases, specific SAVVY methods might be effectively implemented in various combinations or on their own. When implemented as a complete system, SAVVY can provide nationally representative vital statistics, including information about levels and causes of death which are not available from other sources. Other options include, for example, adapting the cause-specific mortality methods for use in stand-alone a data collection exercise, such as a household survey or post-census follow-up of reported deaths. Another potential use of SAVVY methodologies is to augment existing facility-based or administrative data sources. SAVVY includes resources to implement the following:

- **Demographic surveillance system (DSS)** — DSS is a complete and continuous enumeration of births, deaths, and migration in a geographically defined population.
- **Mortality surveillance system (MSS)** — MSS consists of the active reporting of deaths in a geographically defined population. Verbal autopsy (VA) interviews are used to determine the probable causes of death.
- **Death Certification and ICD Coding** — This involves application of the tenth revision of the International Classification of Diseases (ICD-10) and WHO-approved procedures to certify deaths from verbal autopsy interviews and assign a probable cause of death.
- **Nested surveys** — Nested surveys consist of focused sets of questions and are included in the census update rounds. Examples include surveys on poverty monitoring, reproductive health, health service coverage, and environmental and behavioral risk factors.

In establishing a full SAVVY system (shown in Figure 3), the first step is to select and define representative sample areas. Then a complete baseline census is conducted of all households and residents in those areas. The census information on the residents of each sample area is updated annually. Following the baseline census and continuously thereafter, a key informant notifies a verbal autopsy interviewer of all deaths occurring in the sample area. The VA interviewer then conducts an interview at the household where that death has occurred.

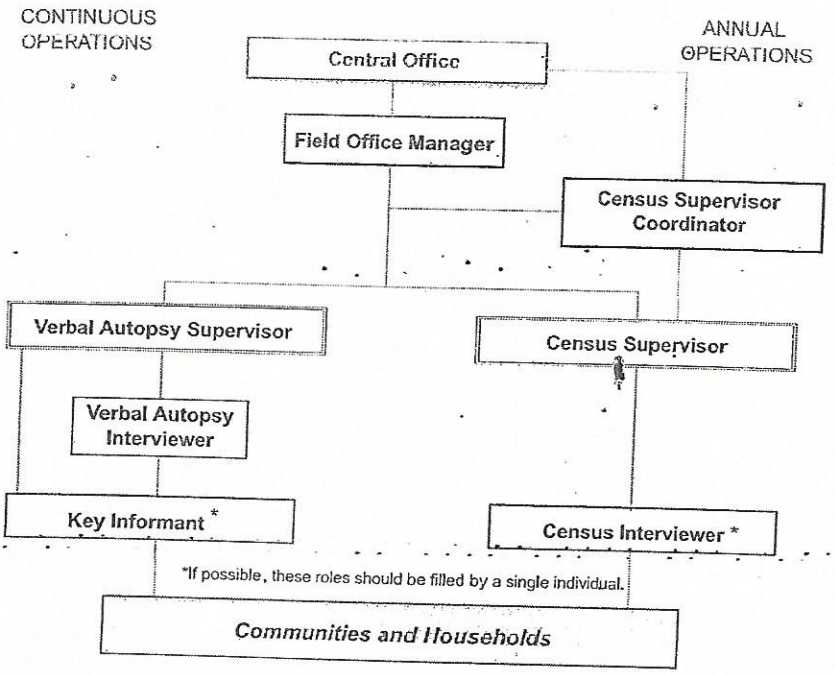

Figure 3. Chart of SAVVY system.

Most of the people who work to implement SAVVY are selected with community input and participation. The success and sustainability of SAVVY depends upon fostering community participation and ownership.

As part of a national vital statistics strategy, a SAVVY-type system requires a long-term commitment on the part of national and local government and the active participation of a country's national statistics office, ministry of health, civil registration authority, and other relevant partners. It is anticipated that several social sectors will join together to invest in the establishment and support the scale-up and sustained functioning of a SAVVY-type sample vital registration system. Over time, a SAVVY system should augment the civil registration system and can promote behavioral changes that make the registration of births and deaths more locally acceptable.

Manuals and Other Resources

As noted above, there are three phases of data collection that take place in SAVVY representative sample areas. Detailed manuals describing the different roles and responsibilities for all actors involved in these SAVVY system activities are available for translation and adaptation. Training materials, sample forms, job aids, electronic documents, spreadsheets, and software are also available or will be forthcoming.

Central office manuals:

Data Processing Manager's Manual
SAVVY Budget Manual
Verbal Autopsy Certifier and Coder's Manual

Field office manuals:

Census Interviewer's Manual
Census Supervisor Coordinator's Manual
Census Supervisor's Manual
Census Update Interviewer's Manual
Field Office Manager's Manual
Key Informant's Manual
Verbal Autopsy Interviewer's Manual
Verbal Autopsy Supervisor's Manual

Training guides and materials:

Census Interviewer Training Guide
Census Interviewer's Workbook
Census Supervisor Training Guide
Census Update Interviewer Training Guide
Census Update Interviewer's Workbook
Key Informant's Training Guide
Verbal Autopsy Interviewer Training Guide
Verbal Autopsy Supervisor Training Guide

SAVVY Information Outputs and Use

The census and mortality data in SAVVY can be used to produce "indicator packages" for reporting on, monitoring, and evaluating major programs at the national and international level. A fully implemented SAVVY system should also be capable of producing sub-national data. Indicator packages and disease burden profiles can be pre-defined for the needs of each country implementing the system. They include, but are not limited to, indicators for HIV/AIDS, malaria, and tuberculosis programs; child health and survival programs; poverty reduction; and social sector and local government reform. User-friendly reporting software also permits indicators to be produced separately for age, sex, or poverty groupings, and by geographic area.

The production of routine system outputs can be tailored to local planning and budgeting cycles. For example, an annually-updated profile can be produced consisting of:

- the proportion of the mortality burden that can be addressed by specific, locally available, and cost effective interventions;
- information on coverage of health services and use of health services in the period before death;
- data on use of maternal or family planning services, and household interventions such as oral rehydration therapy or insecticide treated bed nets;
- fertility and reproductive health data; and
- socio-demographic information including education, occupation, housing conditions, food security and poverty levels.

SAVVY methods for verbal autopsy (including forms, certification, and cause of death assigment and coding) have been developed in collaboration with the WHO. The WHO publication *Verbal Autopsy Standards: Ascertaining and Attributing Cause of Death* is an essential resource for the application of SAVVY methods. This series of SAVVY mortality surveillance system manuals and guides, together with the WHO verbal autopsy standards publication and other documents, is available at no cost as a CD-ROM resource kit or as documents that can be downloaded from MEASURE Evaluation at:

http://www.cpc.unc.edu/measure/leadership/savvy.html

For more information, please contact:

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This manual series was made possible by support from the U.S. Agency for International Development (USAID) under the terms of Cooperative Agreement GPO-A-00-03-00003-00. The opinions expressed are those of the authors and do not necessarily reflect the views of USAID or the United States government.

MS-07-26-OB

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THE UNIVERSITY OF ZAMBIA

SCHOOL OF HUMANITIES AND SOCIAL SCIENCE

2012/2013 ACADEMIC YEAR

FIRST SEMESTER FINAL EXAMINATION

DE 211: MAIN SOURCES OF DEMOGRAPHIC DATA

IME: THREE (3) HOURS

NSTRUCTIONS: ANSWER ALL QUESTIONS FROM SECTIONS A & B, AND TWO UESTIONS FROM SECTION C.

ECTION A: ANSWER ALL QUESTIONS. THIS SECTION CARRIES 50%

1. (a) Outline **briefly** any three (3) conditions to be considered when selecting the use of either **De-jure** or **De-facto** method of enumeration?
   (b) In both Census and Survey undertaking, **briefly** state why it is important to **pre-test.**
   (c) State **briefly** three (3) important factors in **pre-test**?

2. (a) In Subject matter organization, **briefly** explain the concept of the "Core Items".
   (b) Give at least two (2) conditions to consider in subject matter combination.
   (c) Why is it important to determine concise definitions of concepts in subject matter organization? (Credit will be given for practical examples)

3. (a) State the difference between **Primary** and **Secondary** data.
   (b) By the beginning of the twentieth century, some form of population registration was in operation in (state 5 countries).....
   (c) With examples, distinguish between **Stock** data and **Flow** data.

4. In reference to Dennis Trewine's article, briefly state:
   (a) The opportunities, potential benefits of administrative records
   (b) Challenges of administrative data.
   (c) The eight (8) uses of administrative data.

5. According to David Lucas' article briefly state:
   (a) The six (6) advantages of using qualitative methods.
   (b) The disadvantages of using qualitative methods, particularly when compared with survey methods?

SECTION B: ANSWER ALL QUESTIONS. THIS SECTION CARRIES 20%

1. Provide standard definitions for the following concepts:
   (a) Vital statistics
   (b) Vital statistics System
   (c) Civil Registration method
   (d) Census
   (e) Live birth
   (f) foetal death
   (g) Death
   (h) Marriage
   (i) Annulment
   (j) Divorce
2. State whether true or false:
   (a) Static data come from population census
   (b) Flow data come from population registration system
   (c) The earliest population registers in Europe were the parish registers of Sweden and England, which originated during the sixteenth century
   (d) At the end of 1967, population registers were known to be in operation in at least the sixty – six countries
3. List five (5) problems that have been identified as affecting the availability and quality of vital statistics in many countries.

SECTION C: ANSWER QUESTION ONE (1) PLUS ANY OTHER QUESTION. THIS SECTION CARRIES 30%

1. It is generally accepted that there are close links between a Population Census and Sample Survey.

   a. Outline clearly two (2) main links between a Population Census and Sample Survey?

   a. What are the **Pros** and **Cons** of Sample Surveys?
   (Credit will be given for elaborate and practical examples)

2. "The compulsion or legal obligation to register a vital event is the basic premise of the entire civil registration system".

   - Discuss this statement with reference to Zambia, and any other countries.

3. With examples, discuss how a civil registration system for collecting vital statistics must be organized.

END OF EXAMINATION

SCHOOL OF HUMANITIES AND SOCIAL SCIENCE

DEPARTMENT OF POPULATION STUDIES

DE 211- TEST ONE [2011]

KAGELE 1

Kalumba (Mason) Mr...

: One hour

uctions: *Attempt all questions*

What was affirmed in the following declarations;

i. November 1959 Declaration of the Rights of the Child
ii. International Covenant on Civil and Political Rights of 1996

Write brief notes on the following principles (criteria) for measuring effectiveness of national vital statistics programs.

i. Accuracy of statistics
ii. Tabulation of sufficient detail
iii. Universal coverage

Continuity
Confidentiality
Timeliness

Define the following;

i. Civil registration
ii. Civil registration system
iii. Vital statistics
iv. Vital statistics system

plain briefly the following essential features of the Census.

i. Defined periodicity
ii. Simultaneity
iii. Universality

Briefly define the following with relevant examples.

i. Retrospective survey
ii. Specialized survey
iii. Cross-sectional survey
iv. Multi-phase survey

List the five components of non-sampling errors.

What do processing errors in sample surveys comprise of?

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SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

POPULATION STUIDES DEPARTMENT

DEM 2110: SOURCES AND MEASURES OF DEMOGRAPHIC DATA TEST 2

TIME ALLOWED: ONE HOUR (1HR)

INSTRUCTIONS: ***ATTEMPT ALL QUESTIONS***

DEM 2110 QUESTIONS

1. Show your understanding of the vital registration system by attempting all aspects of the question below
   a) Define the civil registration system?
   b) What is the basic purpose of civil registration?
   c) Briefly state what distinguishes civil registration from the enumeration method
   d) Clearly delineate any four vital events in the population
   e) With the events identified in (d), what are the clerical uses of the system?
   f) Make plain the flaws of the system and offer possible solutions

2. The overall goal of Health Management Information system is to further improve health service delivery in order to significantly contribute to the attainment of Health MDGs and national health priorities. Clearly state challenges faced in meeting this goal in Zambia and give feasible solutions to these challenges.

END

2110 MARKING KEY

CIVIL REGISTRATION SYSTEM

Civil registration is defined is defined as a continuous, permanent and compulsory collection of the occurrence and characteristics of vital events such as births, deaths, marriage, annulment, separation, in accordance with the legal requirements of each country.

(3 marks)

BASIC PURPOSE OF CIVIL REGISTRATION

CRS are intended to make available up to date information of vital events which save as legal records documenting the facts surrounding each registered vital event and the statistical records of vital events collectively, convey important information about the persons described in the statistics in summary form **(3 marks).**

DIFFERENCE OF CIVIL REGISTRATION AND ENUMERATION METHOD

Despite both being data collection methods, the civil registration system collects data continuously whereas the Enumeration method collects data at a particular point in time **(2marks).**

FOUR VITAL EVENTS

Live Birth - Is defined as "the complete expulsion or extraction from its mother of a product of conception irrespective of the duration of pregnancy which after such separation breaths or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of involuntary muscles whether or not the umbilical cord has been cut or the placenta is attached to the product, such a birth is considered a live birth."**(3 marks)**

Divorce- This is the final legal dissolution of a marital union declared by legal or judicial decree through a competent authority. A competent authority can be taken on civil, religious and customary law. It confers on the individuals that were united the right to remarry under civil, customary and legal laws. **(3 marks)**

Marriage- it is a union between two or more people of the opposite sex. It should be legalised through civil, customary or traditional law. This concept differs in different societies. **(3 marks)**

Death – the permanent disappearance of all evidence of life at any time after birth has taken place (post-natal cessation of vital functions without capability of resuscitation). **(3 marks)**

Separation- This is case where individuals are still united but living separately that is the marriage is recognised by civil law but the individuals in marriage are not living together. A separation can either lead to reconciliation or divorce. A separation has to be decreed by a competent authority. **(3 marks)**

TOTAL= 12 Marks (Only four events)

USES FOR EACH EVENT

This should focus on the documentation and establishing of legal documents based on the vital events identified or statistical uses of vital events such as planning

Certificates such as marriage, divorce, death and birth certificates or statistical uses of vital events

(2 marks for each), total= 8 marks

FLAWS OF THE SYSTEM AND SOLUTIONS ONLY FOUR LIMITATIONS AND SOLUTIONS

- It is passive in nature and no one feels mandated to register any vital event
- Enforcement is so weak that getting the required data is not guaranteed
- The coverage is poor as a result of centralization
- Cultural hindrances because in some cultures it is a taboo to report vital events as they happen
- Since it is a system, its completeness is dependent on other sources and thus might not be reliable
- They are expensive due to their nature of continuity

- ❖ In remote areas, distance to registration centres is a problem, therefore citizens find it very hard to access the areas

(2 marks for each of the flaws and 1 mark for each solution), total = 12 marks

Total Question, 40 marks

QUESTION TWO SOLUTIONS

CHALLENGES (2 marks each, 5 points: total 10 marks)

1) Shortage of trained stuff in data management at various levels
2) Inadequate funds for the production of data collection tools
3) Existence of vertical reporting systems
4) Poor record capturing and late reporting
5) Lack of training for pre and in service
6) Hospitals and community HMIS are not fully developed-rural areas usually have communication problems in terms of reporting to major hospitals.
7) Parallel reporting system.
8) Private clinics do not have a well-defined HMIS.
9) Accessibility of information from HMIS is difficult.

SOLUTIONS (2 marks each, 5 points: 10 marks)

1) Increase funding for data collection and management of information.
2) The ministry of Community Development, mother and Child Health and Ministry of Health should see to it that HMIS are operational in all health Centres.
3) Develop well defined database or storage facilities that will make record keeping more efficient.
4) Training of medical personnel should be done to make them more acquitted to HMIS i.e data entry, recording and management.
5) Make HMIS outputs be available to all stakeholders.
6) The responsible ministries should make sure all private clinics report to the districts their HMIS data
7) Initiate monitoring and evaluation programs to ascertain the effectiveness of HMIS

Question 2, 20 marks

NOTE: There are other challenges and solutions which can be added

TOTAL 60 marks, x/60*100

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THE UNIVERSITY OF ZAMBIA

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

POPULATION STUIDES DEPARTMENT

DEM 2110: SOURCES AND MEASURES OF DEMOGRAPHIC DATA, END OF YEAR EXAMINATIONS

INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A AND ANY TWO IN SECTION B

TIME ALLOWED: THREE HOURS

SECTION A

1. What do processing errors in sample surveys comprise of?
2. List the five components of non-sampling errors.
3. With examples, explain briefly what the three types of surveys below are and what they intend to achieve?
   a) Retrospective Surveys
   b) Multi-phase surveys
   c) Specialized surveys
4. How are the sample surveys and census interrelated?
5. What is the United Nations definition of a live birth?
6. What do you understand by time reference for data?
7. Name and briefly explain any four preparatory works for the census
8. What is an Education Management Information System (EMIS)?
9. Name and explain the four HMIS principles
10. What is the use of living quarters and household listing in census preparatory works?
11. What is legitimation as a vital event?
12. Define a rate and give a demographic variable that uses a rate

SECTION B

1. The government of the United States of America in collaboration with the Zambian government have put up an initiative aimed at reducing maternal mortality in Zambia. As a planner under Minister of Health, you are required to gather information with the help of a SAVVY to collect all the necessary information. How would you go about this? What are the merits and demerits of this system?

2. "**In Zambia**, like many other **developing countries**, there are, **among other problems**, generally severe **constraints** in the area of data availability and collection, completeness, quality of information, non-response, time-lags and underreporting. Even resources to enable the collection, and dissemination of requisite data are, quite often, never sufficient".
   With reference to any one of the major sources of **Demographic data**, amplify and validate the above statement. What do you recommend can be done to address the situation and how?
3. Using Table 1.0, calculate the following:

Table 1.0

Age group	Women in Age group (Mid year population)	Live births to women in Age group
10_14	9387020	9462
15-19	9493761	484895
20-24	8678024	965122
25-29	9341226	1083010
30-34	10179403	889365
35-39	11369766	424890
40-44	11049377	81027
45-49	9607011	3624

   a. The general Fertility rate
   b. Age specific fertility rate
   c. Total fertility rate
   d. At which age group is fertility highest, what is the probable reason?
   e. Comment on the fertility of this population

End of Examination

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SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

POPULATION STUIDES DEPARTMENT

DEM 2110: SOURCES AND MEASURES OF DEMOGRAPHIC DATA TEST 2

TIME ALLOWED: ONE HOUR (1HR)

INSTRUCTIONS: ***ATTEMPT ALL QUESTIONS***

DEM 2110 QUESTIONS

1. Show your understanding of the vital registration system by attempting all aspects of the question below
   a) Define the civil registration system?
   b) What is the basic purpose of civil registration?
   c) Briefly state what distinguishes civil registration from the enumeration method
   d) Clearly delineate any four vital events in the population
   e) With the events identified in (d), what are the clerical uses of the system?
   f) Make plain the flaws of the system and offer possible solutions

2. The overall goal of Health Management Information system is to further improve health service delivery in order to significantly contribute to the attainment of Health MDGs and national health priorities. Clearly state challenges faced in meeting this goal in Zambia and give feasible solutions to these challenges.

END

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THE UNIVERSITY OF ZAMBIA

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

POPULATION STUIDES DEPARTMENT

DEM 2110: SOURCES AND MEASURES OF DEMOGRAPHIC DATA TEST 1 (2013/14)

TIME ALLOWED: One Hour (1hr)

INSTRUCTIONS: *Attempt All Questions*

SECTION A

1. Static data come from population registration system True False (1 MARK)
2. Flow data come from population census True False (1 MARK)
3. The earliest population registers in Europe were the parish registers of Sweden and England, which originated during the sixteenth century True False (1 MARK)
4. When did **Household registration** in Japan begin? (1 MARK)
5. Where does the earliest record of a register of households and persons come from? (1 MARK)
6. At the end of 1967, population registers were known to be in operation in at least the sixty – six countries True False (1 MARK)

SECTION B

1. **Anders Kiaer (1838-1919)** started the process that ended in the development of modern survey sampling theory and methods. What are the **THREE** important principles in Kiaer's approach? (6 MARKS)

2. What are the **essential features** of the **census** according to the United Nations? (7 MARKS)

3. State and explain the three types of tests found in census (6 MARKS)

4. With examples explain briefly what the **THREE** types of surveys below are and what they intend to achieve?

a) Specialized surveys (2 MARKS)

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b) Multi-phase surveys (2 MARKS)

c) Multi-subject surveys (2 MARKS)

5. What is the difference between a CSA and SEA? (2 MARKS)

6. Briefly explain the following sources of sampling and non-sampling errors

a. Margin of error (1.5 MARKS)

b. Coverage/frame error (1.5 MARKS)

c. Specification error (1.5 MARKS)

d. None response error (1.5 MARKS)

e. Processing error (1.5 MARKS)

7. With examples, explain the difference between Stock data and Flow data. (3 MARKS)

8. Explain how the census can be used as a sampling frame for the sample survey (2 MARKS)

NOTE: Be as brief and to the point as possible

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THE UNIVERSITY OF ZAMBIA

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

2003 ACADEMIC YEAR FIRST SEMESTER
FINAL EXAMINATIONS

DE 211: MAIN SOURCES OF DEMOGRAPHIC DATA

TIME: THREE HOURS
INSTRUCTIONS: ANSWER QUESTIONS ONE AND ANY OTHER THREE.

1. Discuss the status of demographic data collection in Africa. In your discussion, identify at least five (5) factors that have negatively affected the collection and quality of demographic data in Africa. Credit will be given for use of appropriate examples.

2. Discuss any five (5) unconventional sources of demographic data. What are their prospects in Zambia?

3. Outline the origins of sample surveys. What are the lessons for the African universities?

4. Explain in detail any ten (10) steps you need to consider in census planning and evaluate the performance of Zambia in implementing your identified steps. Are there any lessons for the future?

5. (i) Demographic data can be collected through canvasser or self-enumeration methods. Discuss the advantages and disadvantages of each method.

(ii) Discuss any three (3) limitations of the vital statistics registration system.

6. (i) Give any five (5) criticisms of a sample survey.

(ii) Discuss any five (5) reasons why demographic data are collected in any socio-economic setting.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
DEPARTMENT OF SOCIAL DEVELOPMENT STUDIES

DE 211: MAIN SOURCES OF DEMOGRAPHIC DATA
2007/2008 ACADEMIC YEAR FIRST SEMESTER FINAL EXAMINATIONS

TIME: THREE HOURS

INSTRUCTIONS: ANSWER ALL QUESTIONS IN SECTION A AND ANY TWO IN SECTION B

SECTION A (50 MARKS)

1.
a. Give (with examples) the two main sources of demographic data.
b. State the difference between the Conventional and Non-conventional sources of demographic data.
c. Briefly explain the De-jure and De-facto methods of Enumeration.
d. Explain the terms Single Round Surveys and Multi-Round Surveys in the Demographic Sample Surveys.
e. State some advantages of the Multi-Round surveys over the Single-Round Surveys.

SECTION B (50 MARKS)

2
a. State and briefly explain the essential features of a Census.
b. Briefly state and explain the procedures followed in undertaking a Census enumeration.

3
a. Briefly explain the Vital Registration System (VRS) and give the two major methods of collecting the VRS data.
b. What are some of the factors that hinder the successful implementation of the VRS in a developing country like Zambia?

4
a. Explain why the Demographic Sample Survey is more suitable in most developing countries as a source of demographic data than the other sources of data.
b. Explain the uses of the Population Registers.

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA
SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
2010/2011 ACADEMIC YEAR
FIRST SEMESTER EXAMINATIONS

DE 211: MAIN SOURCES OF DEMOGRAPHIC DATA

ME ALLOWED: THREE HOURS (3 HRS)
TRUCTIONS: ANSWER ANY FOUR QUESTIONS

1. Define what a census is; in the same way, outline and explain essential features of a census as established by the United Nations.

2. There are basically two types of enumeration in either a survey or census: householder and canvasser methods. Define them and establish which one works in Zambia and why. In the same way, mention the three types of questionnaires used in surveys or censuses and explain how they are used.

3. In the past 25 years or so, demographers have used a dichotomous methodology approach in most surveys namely direct estimation and indirect estimation techniques; in the direct estimation approach, consider the following:
   a. What are single round surveys? What alternate approaches do they use; and in the same way what disadvantages do these approaches have?
   b. What are multi-round surveys? Why were they created? Mention their advantage/s and disadvantages.
   c. What is the dual record system? Mention three categories by which events are classified in a dual record system. In the same way state three conditions under which a dual record system approach could result in an incorrect estimation of the total number of events.

4. Define what a Sentinel Health Surveillance System (SHSS) is; what attributes would ensure reliable results from such a system are achieved? What are the major optimal characteristics of a SHSS? List at least six uses of the data obtained through a SHSS.

5. Verbal Autopsy with Sample Registration (SAVVY) is one of the latest techniques of the many methods of data collection processes known in Demography. Describe in full the process of establishing SAVVY. What purpose does it serve? How different is it from the DSS or SHSS? What are the major benefits and what demerits can you detect from this system?

nd of Examination

(iv) Conventional and non-conventional sources of data

3(a) Discuss in detail, all the necessary steps you would undertake in order to have a successful survey.

(b) Discuss the origins of the population register. How practical is this system in Zambia?

4(a) Give four reasons why there is need for an adequate legal framework for census undertaking.

(b) Assuming you have just been requested by Cabinet Office (Zambia) to offer consultancy services to the Department of National Registration. Part of your terms of reference is to design registration forms to capture vital events information and to make recommendations on how to enhance data collection in this department:

(i) Identify the variables you would use to capture information on marriage and divorce

(ii) Make three main recommendations that you think, once implemented, could improve data collection in this department

END OF EXAMINATION

THE UNIVERSITY OF ZAMBIA

SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

2004 ACADEMIC YEAR FIRST SEMESTER FINAL EXAMINATIONS

DE 211: MAIN SOURCES OF DEMOGRAPHIC DATA

TIME: THREE HOURS

INSTRUCTIONS: ANSWER QUESTION ONE (COMPULSORY) AND ANY OTHER TWO QUESTIONS.

1(a) Discuss the status of vital registration in Zambia, stressing the main problems and some possible solutions.

(b) Compare and contrast the main sources of demographic data by completing the table below. In this table, you are supposed to indicate the level of strength of each source in providing data needed to estimate net migration according to each criterion. Use the following scale: **strong, moderate, weak.**

Criteria	Data collection method(s)		
	Sample survey	Vital statistics registration system	Census
Topical detail (richness and diversity of subject matter)			
Accuracy			
Precision (absence of sampling errors)			
Timeliness of data			
Geographical detail			
Obtaining information on population at risk			
Ease of organization in a developing country			

2(a) Zambia's data collection systems have the main weakness of not capturing migration data adequately. If you were the Director of Central Statistical office (Zambia), what measures can you put in place to improve the status of migration data collection?

(b) Explain the various aspects that the census budget should reflect.

(c) Compare and contract the following:

(i) Modern and classic censuses
(ii) Vital statistics registration system and sample survey
(iii) Journal and book

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(iv) Conventional and non-conventional sources of data

3(a) Discuss in detail, all the necessary steps you would undertake in order to have a successful survey

(b) Discuss the origins of the population register. How practical is this system in Zambia?

4(a) Give four reasons why there is need for an adequate legal framework for census undertaking.

(b) Assuming you have just been requested by Cabinet Office (Zambia) to offer consultancy services to the Department of National Registration. Part of your terms of reference is to design registration forms to capture vital events information and to make recommendations on how to enhance data collection in this department:

(i) Identify the variables you would use to capture information on marriage and divorce

(ii) Make three main recommendations that you think, once implemented, could improve data collection in this department

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END OF EXAMINATION

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THE UNIVERSITY OF ZAMBIA
SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
2006 ACADEMIC YEAR
FIRST SEMESTER FINAL EXAMINATIONS

DE 211: MAIN SOURCES OF DEMOGRAPHIC DATA

DATE: WEDNESDAY, 13TH SEPTEMBER, 2006. MORNING SESSION

TIME: **THREE (3) HOURS**

INSTRUCTIONS: ANSWER **ALL** QUESTIONS FROM SECTION [A] (COMPULSORY) AND ANSWER ANY **TWO (2)** QUESTIONS FROM SECTION [B]

SECTION A

1. a) What key legal elements in Census establishments are necessary to conduct a census?
   b) Define the terms De-jure and De-facto. Explain how one would go about selecting a suitable procedure for Zambia.

2. Account for issues of great concern in **The Processing** of census data. In the same line, list and explain the types of questionnaires used in census operations.

3. What does evaluation of censuses aim to accomplish? Give a general classification of errors as they occur in censuses.

4. Describe The Geographic Information System (GIS) and how it operates in tandem with Demography. What pros and cons come about in this system?

SECTION B

5. What are Single Round Surveys (SRS)? Explain alternate procedures employed by SRS and the challenges thereof. Why is it that most African countries have continued using SRS's even when they are defective?

6. a). What advantages can one draw from The Old Age, Survivors, Disability and Health Insurance (OASDHI)? Give examples of cases where The OASDHI has been used.
   b). Outline obstacles to the improvement of a Civil Registration System (CRS) in Zambia. In the same way, explain the use of a CRS and list its advantages.

7. Give a detailed account of the sort of Technical Issues influencing the **Design** of the Survey.

END OF EXAMINATION

(USES OF POPLN REGISTERS)

- → [illegible] the eligibility of individuals for [illegible] education, voting, military service, pension schemes [illegible]
- → [illegible]
- → As sampling framework for HH surveys
- → for checking the accuracy for validating the [illegible]
- → In some countries they are used to make census typed tables e.g. the Scandinavian [illegible] which acts as a replacement for conducting census
- → They also provide longitudinal data.

Coordination of the Population Register, Civil registration and Vital statistics

- → Some countries have different agencies for population register, civil registration and vital statistics
- → It's recomended that in that situation births, marriages divorces and other vital events are co[illegible] by the civil registration which will act as [illegible]
- → This allows the agencies to share and compa[illegible] information while each meeting it's own o[illegible]
- → It's the prefered situation where one agency [illegible] responsible of civil reg, maintainance of registers and the production of vital events
- → *Data collection level → one form such as a mu[illegible] form is used to record and copies are sent to [illegible] for entry into its sys[illegible]
- * Data processing level →
- * The experience of some countries [illegible] when a single agency is used [illegible] collect [illegible] civil registration [illegible] vital stats [illegible] [illegible]