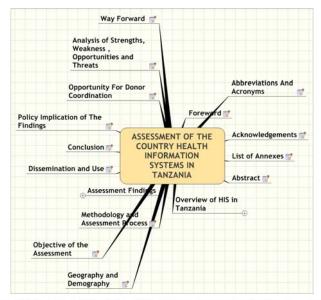
ASSESSMENT OF THE COUNTRY HEALTH INFORMATION SYSTEM IN TANZANIA





Cover photos:

Left: Participants in one of the orientation workshops (during a session) convened in Bagamoyo from 29th -31st August, 2007

Center: Group Photo during the Bagamoyo workshop

Right: Participants in one of the orientation workshops (during a session) convened at Regency Hotel on June 05th 2007

Photos by: Monica Sengoda

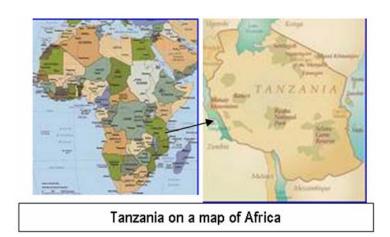


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1 Abbreviations And Acronyms

HMN - Health Metrics Network

PMO-RALG -Prime Minister's Office-Regional Administration and Local Government

MPEE -Ministry of Planning and Economic Empowerment

NBS - National Bureau of Statistics

IHRDC -Ifakara Health Research & Development Centre

NIMR - National Institute for Medical Research

RMO -Regional Medical Officer

CHMT - Council Health Management Team

MOHSW - Ministry of Health and Social Welfare

WHO TZ - World Health Organization Tanzania

DPP - Director of Policy and Planning

HIR - Health Information and Research Section

NGO - Non Governmental Organization

HIS - Health Information System

HMIS - Health Management Information Systems

DSS - Demographic Surveillance Systems

HSR (Health Systems Research)

DHS - Demographic and Health Surveys
PSH - Population Census and Housing

HS - Household Surveys
VR - Vital Registration

NSSS - National Sentinel Surveillance System

BoD - Burden of Disease

VRS - Vital Registration System

RITA - Registration, Insolvency and Trusteeship Agency
 TWGCS - Technical Working Group of Census and Surveys
 USAID - United States Agency for International Development

EAs - Enumeration Areas

TDHS - Tanzania Demographic and Health Survey

THIS - Tanzania HIV/AIDS Indicator Survey

TCAIDS - Tanzania Commission for AIDS

HIV/AIDS - Human immuno-deficiency virus/Acquired Immuno-deficiency Syndrome

TDS - Tanzania Disability Survey

EPI - Expanded Programme for ImmunizationNACP - National AIDS Control Programme

TB - Tuberculosis

IDSR - Integrated Disease Surveillance and Response

SAM - Service Availability Mapping Survey

TSPA - Tanzania Service Provision Assessment

PDA - Personal Digital Assistant FBO - Faith-based Organization

MDGs - Millennium Development Goals

M&E TC - Monitoring & Evaluation Technical Committee

M& E - Monitoring & Evaluation
SWAP - Sector Wide Approaches
GA - Government Agencies
NHI - National Health Insurance

ICT -Information & Communication Technology

NSGPR - National Health Strategy for growth and poverty Reduction

MKUKUTA - Mkakati wa Kukuza Uchumi na Kupunguza Umaskini Tanzania (Kiswahili for NSGPR)

GBS - General Budget Support

GF- ATM - Global Fund for AIDS, TB & MALARIA
ICD - International Classification of Diseases

TB&L - Tuberculosis & Leprosy

PMTCT - Prevention of Mother to Child Transmission

GPS - Global Positioning Satellite

DALYs - Disability Adjusted Life Years

DOTS - Direct Observed Treatments

GGHE - General government expenditure on health

SPA - Service Provision Assessment

HSSP - Health Sector Support Programme

PER - Performance Expenditure Review

D by D - Decentralization by Devolution

2 Foreword

The Ministry of Health and Social Welfare (MoHSW) takes a pleasure to present a report of the recent assessment of the country's Health Information System (HIS). As there are increasing demands for evidence on performance and evidence based decision making and planning in the face of national and international development agenda such as the Millennium Development Goals, National Strategy for Growth and Reduction of Poverty (NSGRP or MKUKUTA), Vision 2025, Health Sector Reforms, Health sector budgetary support and such others, the MoHSW put much emphasis on HIS such that there is always timely availability and use of reliable health information.

Within this context, The MoHSW welcomed the HMN initiative to contribute into the process to renovate country's HIS using a different set of tools and approaches. The purpose of the assessment was to determine good practices as well as gaps that should guide development of a strategic plan and therefore future investment in this area. This report shades light on existing gaps and priority areas for intervention. In this view, it is my expectation that the information contained in the report would provide valuable inputs for the future of HIS in our country. I also take this opportunity to acknowledge the role of various individuals, groups and institutions that has made this process possible. These are the Health Matrix Network (HMN) secretariat, Geneva, the HMN secretariat Tanzania chapter, various departments in the MoHSW, research institutions, government departments from different ministries, and in the individuals who made their contribution in one way or another. The MoHSW would like to register a vote of thank for their valuable contribution

Mr. Wilson C. Mukama
PERMANENT SECRETARY
MINISTRY OF HEALTH AND SOCIAL WELFARA

3 Acknowledgements

The successful assessment of HIS in Tanzania under the auspice of the Health Metrics Network (HMN) would have not been possible without active and dedicated efforts of individuals as well as institutions. We recognize the Prime Minister's Office - Regional Administration and Local Government (PMO-RALG), Ministry of Planning and Economic Empowerment (MPEE) through National Bureau of Statistics (NBS), Ministry of Constitution and Legal Affairs through Vital Registration, Ifakara Health Research & Development Centre (IHRDC), National Institute for Medical Research (NIMR), The Coast Region Secretariat, the Council Health Management Teams of Temeke, Kinondoni, Kilombero, Ulanga and Bagamoyo who contributed on the adaptation of tools and data collection process.

Our sincere gratitude goes to the Tanzania HMN secretariat and these are Mr. Josibert J. Rubona (MOHSW), Dr. Elihuruma Nangawe (WHO TZ), Mr. Oscar Mukasa (IHRDC), Mr. Maximilian Mapunda (WHO TZ), Dr. Leonard Mboera (NIMR) and Mr. Claud J. Kumalija (MOHSW), Mr. Kalungendo (NBS). We also acknowledge the contribution of Dr. Cyprian Mpemba (PMO-LARG), Mr Irenius Liyoba (NBS) and Dr. Elias Kwesi (MOHSW) who contributed significantly during report writing.

Lastly but not least we would also like to thank all respondents from government, parastatals, private firms, NGOs, development partners, the donor group and all stakeholders of HIS in the country, who participated in the assessment for their valuable time and most valued information

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5 Abstract

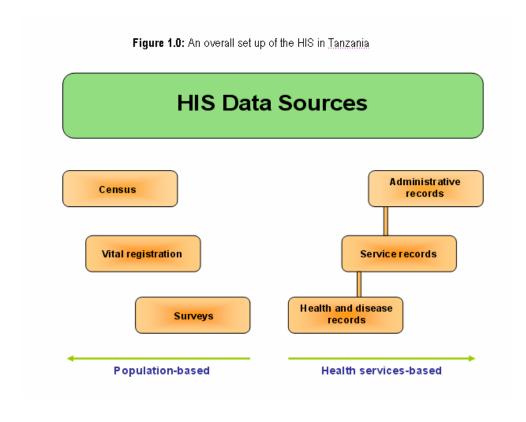
Assessment of HIS aimed at helping the MoH&SW and partners to identify key impediments and opportunities for future development of the information sector for health. The process analyzed key areas of HIS including the resource environment, data sources, information products along with quality of those products, and capacity to disseminate and use information for policy and advocacy, priority setting, resource allocation and implementation and action. The process applied a set of standardized criteria against which performance of HIS in terms of processes; context and resources were objectively gauged.

This report presents findings of the baseline assessment which was conducted from July- December 2007. In addition to the formal analysis, a number of other observations and past experiences are discussed. In general, the system has in place a reasonable environment that is required for its functioning and some capacity in terms of processes at various levels of the information flow. However lack of capacity to disseminate and use information (for priority setting, resource allocation and implementation and action) were generally noted to be an area of major concern despite the impressive performance with regard to information use for policy and advocacy. In conclusion, the balancing of capacity in terms of inputs and the environment with capacity to generate and utilize information products is of paramount importance. These findings are expected to generate additional demands for improvements of HIS in the country.

6 Overview of HIS in Tanzania

6.1 Background Information

The Government of Tanzania considers Health Information System as one of the keystones for an efficient health system. In this regard provision of support to sector performance monitoring system has been identified as a priority for health development(1). An array of information sub systems exists to generate a set of input, output, outcome, and process indicators for gauging key sectoral performance and contribution to development. Included in this are the health Management Information Systems (HMIS), Demographic Surveillance Systems (DSS) and Health Systems Research under the MoHSW, the Demographic and Health Surveys (DHS), Population Census and Housing and the Household Surveys are coordinated by the National Bureau of Statistics (NBS) in collaboration with the MoHSW. Vital Registration (VR) is another source of indicators that is administered through Ministry of Justice and Constitution Affairs. For VR the role of the MoHSW is not clearly stipulated despite the fact that health facilities are involved in recording events like births and deaths. The overall set up of the HIS in Tanzania as such is categorized into two major areas which are the Population and Health Services based sub systems as shown in figure 1.0



6.2 Population Census

For many years the population and housing census has been a major source of health information in Tanzania. This is mainly because of the weakness of vital registration system in the country. In that regard, the national censuses provide population size as well as denominator for health interventions such as immunizations and family planning. The census also provides national figures on fertility and mortality levels at different points in time. The National Bureau of Statistics is responsible for the census in Tanzania Mainland. Tanzania censuses follow de-facto procedure. There are two types of questionnaires; the short and long questionnaire covering personal particulars, relationship to head of household, sex, age, disability, citizenship, marital status, and total number of household members. There are also extra questions on parental survival, place of birth, education, socio economic status, fertility, and mortality and housing conditions. The post independence censuses were conducted in 1967, 1978, 1988 and 2002. In theory the population and housing census is done after every ten years although there was a prolonged interval of 14 years between the 1998 and 2002 censuses.

6.3 Demographic Surveillance System

The National Sentinel Surveillance System (NSSS) is a unit within the MoH& SW under Health Information and Research Section. The role of this unit is to provide co- ordination of DSS sites so as to harness the collective potential of the country's community-based longitudinal demographic surveillance initiatives. Collectively; site data provide a

better, empirical understanding of health and social issues to guide national policy, including complementing data on vital events.

Demographic Surveillance System is a household based programme which contributes essential information for the improvement of health services. It consists of the continuous and complete enumeration of all demographic events (births, deaths, and migrations) in a geographically defined population cluster. The DSS provides household -based information on population health, the burden of disease (BoD), and health service use at community level. These data complement data from other systems and programs, such as the facility-based Health Management Information System (HMIS), vital registration and population censuses. There are two main components to the DSS system:

- A census of the population in the sentinel areas that provides demographic information.
- A continuous, active reporting system of birth and deaths and ascertain deaths in the NSS area and to their probable cause

There are nine DSS sites in different parts of the country namely Hai, Igunga, Morogoro, Kigoma, Kilombero/Ulanga, Dar es Salaam, Tanga, Magu and Rufiji. Five out of the nine sites are currently active and running whereas the remaining four are semi-active due to financial constraints.

6.4 Vital Registration System (VRS)

Registration of vital events in Tanzania mainland is governed by the Registration Act of 2002 and is the main mandate of the Registration, Insolvency and Trusteeship Agency (RITA). RITA is an executive agency, answerable to the Ministry of Justice and Constitutional affairs. The agency was created from the former administrator's general department in response to demand for a better regulation unit for registration of vital events in the country. RITA was officially launched in 2006. Inherited from the former structure, there are district registrations of births and deaths as well as agents for marriage registration. The district registrations are required to register births and deaths occurring in their respective areas and submit returns to the Registrar General who is the custodian of the registration data. Despite the fact that registration is compulsory and it is supposed to cover most part of the country the data from this system is still incomplete(1;2). There are efforts on ground to ensure that birth, deaths and marriage/divorce registration system is established in places where it does not exist and to strengthen it where it exists.

Birth and death registration is decentralized in keeping with the local government structure. The structure starts from the smallest level called hamlet which consist of about 50 to 100 households. About five hamlets make up one village and four to six villages constitute a ward. Several wards (3 - 5) make a division, while 3 - 7 divisions make a district. This is the structure that facilitates establishment of a vital registration system.

Village registration system: In each village there is a registration system which requires every individual in the village to register. It contains information about everybody in the village and is updated as events of births or deaths occur. There are interventions to follow up and ensure that registers are adequately filled and updated. The hamlet chairperson is responsible for updating the registers with support from the village executive officer. In actual practice however, according to RITA, village registers are not well updated paralleled by extremely low returns to higher levels of the system.

6.5 Household Surveys

Household surveys are undertaken under the Master Plan of Monitoring and Evaluation of the Poverty Reduction Strategy. The master plan is supervised by the Technical Working Group of Census and Surveys (TWGCS) chaired by the National Bureau of Statistics (NBS). Members of the TWGCS are drawn from different ministries, departments, institutions, and development partners. The role of the TWGCS is to develop a calendar of surveys, plan, provide and solicit for technical and financial support. So far the group has designed a survey programme covering work until 2012.

Most of household surveys are executed by NBS in collaboration with different stakeholders including MoHSW. Technical assistance normally is provided through the MEASURE DHS programme, a project sponsored by the United States Agency for International Development (USAID). Assistance is on collection, analysis and dissemination of population and health data. Financial support is provided by the government of Tanzania and Development Partners.

Sampling procedure follows EAs established during population census preparations. Households are selected from the sampling frame which is obtained during household listing exercise. Sample is constructed to allow separate estimates for some indicators for all 21 regions in the country as well as for urban and rural areas separately. In most cases a two-stage sample design is applied. The first stage involves selecting sample points (clusters), consisting of enumeration areas and the second stage of selection entails systematic sampling of households from these lists.

Different types of questionnaires are used depending on type of the survey. However, most of the surveys use household and individual questionnaires. Contents of these questionnaires are based on model questionnaires developed by the MEASURE Demographic and Health Surveys (DHS) programme which are adapted for the Tanzania situation including translation into a national language, Kiswahili

6.6 Other household surveys

The following household surveys contribute into the information base for health

6.6.1 Household budget survey

This survey is executed by the National Bureau of Statistics. Tanzania conducted its first household budgetary survey (HBS in 1991/92 and it covered over 22,000 households. This survey provided baseline information for future comparison. The household budget survey provides information on: -

- Household member's education, economic activities and their health status;
- Household expenditures including health, consumption and income;
- Housing structure and building materials;

Household access to different services and facilities

6.6.2 Tanzania Demographic and Health Survey

Tanzania Demographic and Health Survey (TDHS) involve all areas of the country through a sampling procedure. The survey is part of worldwide effort aiming at assessing demographic and health dynamics. This effort has been, for

quite some time, coordinated and continues to be coordinated by the Demographic and Health Surveys programme of Macro International Inc of Columbia, Maryland, USA. In Tanzania this survey is done by NBS in collaboration with the Ministry of Health and Social Welfare. The 2004/05 is the latest in a series of periodic surveys to measure levels, patterns, and trends in demographic and health indicators, since 1991/92.

6.6.3 Tanzania HIV/AIDS Indicator Survey

Tanzania HIV/AIDs Indicator Survey (THIS) was conducted last in 2003/04. The survey was initiated by the Tanzania Commission for AIDS (TACAIDS) with the purpose of getting national baseline data. The THIS was the first household survey of its kind to be conducted in the country. The objective of the survey was: -

- To measure HIV prevalence among women and men of age 15 49 years;
- To assess levels and trends in knowledge about HIV/AIDS, attitudes towards those infected with the disease, and sexual behavior practices;
- To collect information on the proportion of adults who are chronically sick, the extent of orphan hood, and care and support levels;
- To gauge the extent to which these indicators vary by characteristic as well as between sub groups such
 as age, sex, region, education, marital status and poverty status

6.6.4 Tanzania Disability Survey

In 2002 population census information on disability was collected. The question on disability covered all type of disabilities. Basing on census results the department of Social Welfare in the MoHSW requested NBS to design a separate survey for disability. The National Bureau of Statistics (NBS) is in the final stages to conduct another survey planned for 2007. The survey was to have three types of questionnaires: -

- Detailed adult (≥15 years) questionnaire for people with disabilities
- Detailed questionnaire for children (0 14 years) with difficulties in functioning
- Household questionnaire with key sections as follows: -Identification; Household particulars; Economic
 activity; Difficulties because of health problems; and Housing and household facilities

Other information to be included in questionnaires would be: -Background information; Core questions on functioning; Services needed and received; Problems with services; Family and Social integration and attitudes; Accessibility of the environment; School attendance and employment; Underlying health condition; and duration, onset and cause of health condition.

6.7 Health Status Records System

Under the MoHSW a number of disease surveillance systems are operated through special programmes. These includes: -

- Acute disease surveillance systems rapidly detect events, manage outbreaks, support a response and document outcomes. This is maintained under EPI programme.
- Chronic disease surveillance systems such as HIV/AIDS under NACP and TB under TB & Leprosy
 programme provides accurate information on the disease prevalence trends either through special
 surveillance methods or special rounds or special efforts to collect high quality service data
- Integrated Disease Surveillance and Response (IDSR) strategy. The IDSR strategy links community, health
 facility, district, regional, and national levels with the overall objective of providing epidemiological evidence
 for use in making decisions and implementing public health interventions for the control and prevention of
 communicable diseases

6.8 Service records system

Facility-based health records [Health Management Information System (HMIS)] produce data that are used for the management of local health service delivery and district health management. For a selected number of indicators, it produces data for national statistics on morbidity, causes of death, health service coverage and health infrastructure. This includes a national database of health facilities, human resources and key service availability. Such data are collected in a standardized and systematic manner that allows comparisons between clinics, regions and over time.

The HMIS is the largest routine health information system in the country. It collects information from more than 5,400 health facilities countrywide. In addition, through outreach programme, the HMIS do collect community based data which cover more than 10,000 villages in the country. HMIS in its current form was conceptualized in the early 1990s. This system was established as a key tool for monitoring and evaluation of health sector reform and performance in the country. HMIS as such is the system which provides management solutions to management questions through developed indicators at all levels of the health delivery system. HMIS indicators are in the form of rates, ratios and absolute numbers, and each has a threshold and target value on which assessment of performance is based upon

6.9 Administrative Record System

6.9.1 National Health Accounts

Health accounts (national and regional/district) provide information on the amount of financial resources for health and traces all the resources that flow through the health system. It provides breakdown by sources of finances that include public and private sectors (for example, government tax revenue, insurance schemes, development partners contributions, Private for profit sector, and household, etc.), by health functions (or health programme areas / major diseases) and by health providers. Currently a survey for National Health Accounts is going on and intends to answer the following questions:-

- Where do the resources come from?
- Where does the resource go to?
- What kind of services and goods do they purchase?
- Whom do they benefit?

6.9.2 Facility based surveys

In Tanzania there are two types of facility based surveys, known as: (i) Service Availability Mapping Survey (SAM); and (ii) Tanzania Service Provision Assessment. (TSPA).

Service Availability Mapping (SAM)

SAM is a rapid assessment tool that generates information on the availability of specific health services, health infrastructure and human resources for health in each district. Two brief questionnaires, one for District Medical Officers and their Council Health Management Team (CHMTs) and a second for health care facilities, are programmed in a personal digital assistant (PDA) and consist of several sections. These explore the availability and quantity of human resources, infrastructure and services in the district as a whole and at the facility level. A list of health care facilities is derived from the pre-existing WHO Health Mapper database and they updated as part of the district level questionnaire.

The aim of SAM is to collect key information on the availability of health resources and interventions and to use the results for operations and strategic planning and management. The benefits of SAM, however, are its systematic collection procedure and 'user-friendly' data presentation. Maps and summary measures generated through SAM provide a complete picture of the level and distribution of district resources, as well as highlight gaps in the provision of health services and interventions.

Tanzania Service Provision Assessment (TSPA)

The TSPA is implemented by the National Bureau of Statistics in collaboration with MoHSW. The survey is facility-based designed to extract information about general performance of facilities that offer maternal, child, and reproductive health services as well as services for specific infectious diseases including Sexually transmitted diseases, HIV/AIDS, and tuberculosis. It provides comprehensive picture of strengths and weaknesses of service delivery environment for each assessed service. The information is collected from representative sample of facilities managed by the Public sector, Private sector, Parastatal and Faith-based Organizations.

7 Geography and Demography

The United Republic of Tanzania lies between 29° and 41° longitude East and latitude 1° to 120 south. It covers a total area of 947,300 square kilometers, of which, 61,500 square kilometers or approximately 6.4 percent is inland water. Tanzania shares borders with eight countries: Kenya and Uganda to the north; Rwanda, Burundi, Democratic Republic of Congo, and Zambia to the west; and Malawi and Mozambique to the south. Zanzibar, comprising Unguja and Pemba Islands, with an area of 2,500 square kilometers, is situated in the Indian Ocean, East of the Mainland.

Most of Tanzania is on 200 metres above sea level with the Kibo Peak on Mount Kilimanjaro being the highest point at 5,895 meters. The main climatic feature for the larger part of the country is the long dry spell from June to October, followed by the short rainfall period in November/December. The main rainy season along the coast and around Mount Kilimanjaro starts from March to May, with short rains between October and December. In the western part of the

country, and around Lake Victoria, rainfall is uniformly distributed throughout the year, with peak period between March and May.

Administratively, Tanzania is divided into twenty six regions whereby Tanzania Mainland constitutes twenty one regions and Tanzania Zanzibar has five.

The country has so far undertaken four population censuses since independence in 1961. The first census in 1961 reported a population of 12.3 million. According to 2002 Population and Housing Census the population has increased to 34.4 million. While the population has nearly tripled in the last four decades, the country is still sparsely populated, though population density is high in some part of the country and has been increasing over time. In 1967, the average population density was 14 per square kilometer; by 2002, it had increased to 39 persons per square kilometer

8 Objective of the Assessment

The assessment of HIS in Tanzania was part of the on going process to improve the evidence base that underpins performance in the health sector. The assessment allowed for systematic review of strengths and weaknesses/challenges of health information sub-systems and thus offers potential to guide development and investment in the area of health information. Contributing as well into the global vision to increase availability, value and use of timely and accurate health information particularly in developing countries, the assessment specifically aimed at:

- Providing data on current status of the HIS as a key input for a development process
- Building consensus among stakeholders, based on objective 1, on priority areas for strengthening of HIS
- Initiating process to develop HIS policy framework and guidelines based on objective 1 and 2 above

9 Methodology and Assessment Process

The assessment engaged key stakeholders from providers, and users to financiers of health information. As a stepping stone a steering committee was formed for coordination of the Tanzania HMN Chapter. Stakeholders were oriented with the HMN framework and assessment tools before they were engaged in the evaluation process. Steering committee members were earlier on introduced to the framework and tools by facilitators from HMN Headquarters in Geneva

Orientation on HMN framework and the assessment tools aimed at facilitating further exchange and feedback on current affairs within HIS. Orientation and adaptation of the tools was done through workshops (whereby participants were as well trained to orient others on the framework and tools) and outreach visits to stakeholders who could not participate in the workshops.

The following are the key outcomes from the adaptation process (i) the framework and assessment tools were accepted as being relevant for the country situation (ii) two main areas of assessment questions were noted and these are the "fact" and "opinion" based questions. The two categories of assessment questions are important in terms of selecting appropriate stakeholders participate in different assessment areas and (iii) groups were formed to participate in specific evaluation areas taking into account nature of the assessment questions (Table 1.0).

Table	1.0: Assessment Process		
Sn	Methodology	Process	Product
1	Defining mechanism for coordination of HMN activities at country level	A committee were proposed and approved by MoHSW to coordinate the HMN initiative including development of work plan and executing day to day activities	Committee was formed and the work plan developed
2	Introducing HMN initiative	Members of the Monitoring & Evaluation Technical committee (M&E TC) of the MoH &SW were taken through the HMN framework and assessment tools in one of their ordinary monthly meetings. The committee was made of representatives from most of the key partners of the HIS in the country	Stakeholders were informed of key aspects of HIS The proposed HMN process was accepted and seen as potential input into already existing country's M&E strengthening mechanism Discussion on mobilizing resources for the HIS were stimulated
		Members of the SWAP sub committee were taken through the HMN framework and the assessment tools in one of their ordinary meetings. The SWAP sub committee is a multi sectoral team of senior officers representing a variety of departments from different ministries	 The top most decision making rank on HIS <i>Informed</i> about aspects of the HIS Buy in of the proposed HMN process by the inter-ministerial top management
3	Initiate evaluation process	Heads of departments and programmes in the MoH & SW as well as other ministries, Government Agencies (GA) ,Academic and Research Institutions, and development partners were formerly contacted ,informed of the HMN initiative and invited to participate in the process	Awareness was created among stakeholders about the initiative and anticipated outcome Institutions (stakeholders) nominated representatives to participate in the orientation workshop and/process
4	Orientation of HMN framework and assessment tools	Key stakeholders (information producers, consumers and financing partners) were taken through the HMN framework and assessment tool.	 Key stakeholders informed about aspects of the HIS. Stakeholders prepared to participate in the assessment and exercise Participants of the workshop prepared to undertake similar orientation exercises to other stakeholders who could not attend the workshop so that they can also participate in the assessment task Consensus reached among stakeholders on; Who should participate in the assessment exercise for each of the assessment areas(using the group building tool and based on categorization of assessment questions "opinion versus fact based") What should be the approach and logistics for conducting the assessment What should be the way forward once assessment the findings are available

			workshop participants(each) were assigned to a group of stakeholders they would approach (those who missed the workshops) for orientation on the framework and tools and guide them to complete the assessment questionnaires
5	2 nd phase of orientation on HMN framework and assessment tools and scoring on assessment questions	Stakeholders who missed the workshops were visited, taken through HMN framework and assessment tools. Assessment questionnaires were then distributed to them for scoring	An additional group of stakeholders informed about aspects of the HIS about which some might have not been familiar. An additional group of stakeholders prepared to take part in the assessment exercise Independent judgment obtained from individual stakeholders for each of the assessment questions.
6	Compilation of assessment scores	Assessment scores by individual stakeholders were aggregated	A collective depiction of the scores obtained for each of the assessment areas and the overall HIS
7	Analysis and interpretation of findings	Assessment findings were presented to the secretariat (and a few other stakeholders), analyzed and discussed for policy implication	Assessment report produced
		Way forward	
8	Dissemination and review of the report	Stakeholders were invited in a workshop for dissemination of the report Report was presented and discussed in the M&E TC and the SWAP Sub Committee	 Findings fed back to stakeholders Inputs gathered from stakeholders Report approved
9	Accommodating inputs from stakeholders	Steering committee met to improve the report by accommodating inputs from stakeholders	Report improved to accommodate inputs from stakeholders

10 Assessment Findings

10.1 Resource

Resources	52%
Policy and planning	43%
Institutions, human resources & financing	49%
Infrastructure	70%

Resources for HIS are generally in place though not adequate (see above). Although there is a reasonable environment with regard to infrastructure and legislation (covering vital registration, notifiable diseases and confidentiality), the performance is not adequate in terms of policy and planning (43%), financing, human resources and institutions to contribute into HIS processes (49%). Enforcement of legislation is an issue of major concern. On vital statistics for instance there is inadequate enforcement especially in rural areas due to several reasons including lack of registration offices and community awareness. Lack of an overall HIS policy and HIS strategic plan is also an important area of limitation. There exist separate strategic plans for the specific sub systems which lack the required coordinative framework. Regarding human resource there are limitations in terms of capacity in the core health information sciences, inadequate skill mix at the central HIS administrative unit, lack of dedicated HIS staff at regional and district levels.

10.2 Indicators

Performance on heath indicators was found to be reasonable (74 per cent) implying capability of the health sector performances. National minimum core indicators have been identified for national and regional/district levels covering all categories of health indicators (determinants of health, health system inputs, outputs, outcomes; health status). A technical committee for Monitoring and Evaluation has the responsibility for indicator generation. This committee operates under the Sector Wide Approach structure as such offering good environment for compilation of data from different sources. The major sources of health indicators include the HMIS; the different surveys that are coordinated by the NBS which includes the DHS and HIV indicator Survey, National Sentinels Surveillance sites, HIV and Immunization Surveillances and operational researches.

The assessment has revealed a clear strategy for measuring each of the health-related Millennium Development Goals (MDG) indicators relevant to the country. In the health sector there are 33 indicators selected for tracking health sector performance in response to the needs for the MDG, the National Health Strategy for growth and Poverty Reduction (MKUKUTA) which are all to be generated on annual bases. On a parallel note the SWAP committee has selected four key composite indicators for General Budget Support (GBS) which would illustrate sector progress and these are i) DPT-HpB3 Coverage, ii) Number of people with advanced HIV infection receiving antiretroviral therapy, iii) Proportion of births attended by a skilled health workers and iv) TB treatment completion rate.

At the regional and district levels there are set of minimum core indicators used to support Council and Regional Health Management Teams (CHMT/RHMT) plan and evaluation. The national health indicators are implemented in line with international indicators e.g. GF- ATM, Reproductive and Child Health indicators.

10.3 Data Sources

10.3.1 Census

Data Source	Contents	Capacity & Practices	Dissemination	Integration and use	Total
Census	Present but not adequate	Adequate	Adequate	Adequate	Adequate

Population censuses in Tanzania are planned for every ten years. For many reasons, mainly financial limitations the 10 years cycle have not been strictly adhered to. Since independence Tanzania has seen four censuses (in 1967, 1978, 1988 and 2002).

Overall, census as a source of health data was found to be adequate (65 percent). However, the assessment has revealed poor performance (40 percent) in terms of contents. Questions relating to recent household deaths and indirect estimation for child and adult mortality were not adequate. Capacity of the country to carry out the census was found to be adequate (76 percent) and similarly the system performed well on dissemination of census information (77 percent) and use of information products (67 percent)

10.3.2 Vital statistics

Data	Source	Contents	Capacity & Practices	Dissemination	Integration and use	Total
Vital statistics		Present but not adeq 58% (5.3 / 9)	Adequate 65% (15.5 / 24)	Adequate 67% (2.073)	Highly adequate \$3% (2.5 / 3)	Adequate 68%

Vital registration in the country is the responsibility of RITA. Overall, the operation of this system was found to be adequate (68 percent). According to the assessment results, vital statistics were found to be adequate by capacity and practice (65 percent), dissemination (67 percent) and highly adequate for integration and use (83 percent), though on contents the assessment has revealed shortfall (58 percent). Among the five sources of data, vital registration was found to be the most adequate. These results however must be taken with caution because registration of vital events in the country has been recorded to be very low and almost non-existent in many rural areas(1). Low birth registration rate have also been documented by UNICEF in 2002 with a marked percent point difference between rural (3%) and urban areas (22%)(2; 3).

10.3.3 Population-based surveys

Data Source	Contents	Capacity & Practices	Dissemination	Integration and use	Total
Population-based surveys	Present but not adeq	Highly adequate	Adequate	Adequate	Adequate
	54% (4.8/9)	83% (10.0 / 12)	62% (3.776)	60% (3.676)	65%

Overall performance on population based surveys was adequate (65%). Contents in terms of nationally-representative survey to measure percentage of the relevant population receiving key maternal and child health services (family planning, antenatal care, professionally attended deliveries, immunization), nationally-representative survey to

provide estimates of infant and under-5 mortality and 1.3 In the pas measurement of prevalence of some priority no communicable diseases/health problems (e.g. disability, mental illness, hypertension, diabetes, accidents, violence) and leading risk factors (e.g. smoking, drug use, diet, physical inactivity) were found to be present but not adequate(54%). Other aspects of capacity and practice, dissemination and integration and use of data fro population based surveys were all adequate as shown above.

10.3.4 Health & diseases records

Data Source	Contents	Capacity & Practices	Dissemination	Integration and use	Total
Health and disease records	Adequate	Present but not adeq			
(incl. surveillance)	71% (6.479)	52% (10.9 / 21)	53% (1.673)	47% (2.876)	56%

Generally, health and disease records were found to be present but not adequate to meet the country's needs (56%). The areas of major weaknesses included lack of mapping of public health risks and populations at risk, low proportion of investigated outbreaks with laboratory results, lack of support on quality and continuity of care from individual patient records (patient charts or patient- retained "health passports"), non use of International Statistical Classification of Diseases and Related Health Problems (ICD) for reporting hospital discharge diagnoses and lack of capacity to integrate reporting for disease surveillance and other focused public health programmes (e.g. maternal care, family planning, growth monitoring). There was a positive note though on availability and use of case definitions for epidemic and non-epidemic diseases; capacity to diagnose and record cases of notifiable diseases; capacity to report and transmit timely and complete data on integrated disease surveillance and response (IDSR) priority diseases; and (iv) analysis and use of data for outbreak response and planning of public health interventions. Appropriate case definitions for all 13 diseases (Table 2) under the IDSR strategy were available. These include epidemic prone diseases, disease targeted for elimination/eradication and diseases of public health importance. The later group of diseases (malaria, tuberculosis, diarrhea, pneumonia), are the leading causes of morbidity and mortality in Tanzania. Similar findings were reported in 2005 from the baseline Monitoring and Evaluation of Integrated Disease Surveillance and Response in Tanzania(1;4).

Health and disease records are collected in all private and public health facilities (dispensaries, health centers and hospitals) using tally sheet and registers. IDSR priority diseases are compiled weekly (epidemic-prone diseases) and monthly (all diseases) and transmitted to the district, regional and eventually national level. In terms of capacities and practices, districts have some capacities to diagnose record, analyze and report a limited number of notifiable diseases. Some regions have capacity to diagnose most bacterial diseases. Capacity to diagnose some viral infections such as measles and polio is only available at the national level.

Table 2.0: List of IDSR priority diseases and frequency of reporting in Tanzania

Group of disease	To be reported weekly	To be reported monthly
Epidemic prone diseases	Cholera	Cholera
	Plague	Bacillary dysentery
	Measles	Plague
	Yellow fever	Measles
	Meningitis	Yellow fever
	Rabies	Meningitis
		Rabies
Diseases which are targeted for elimination/eradication	NIL	Acute flaccid paralysis
eiiiiiiiauoi//ei aulcauoii		Neonatal tetanus
Diseases of public health importance	NIL	Diarrhea in children <5 years
		Pneumonia in children <5 years
		Malaria
		Typhoid fever

Note: Diseases to be reported monthly include those reported weekly

10.3.5 Health service records

Data Source	Contents	Capacity & Practices	Dissemination	Integration and use	Total
Health service records	Adequate	·	Present but not adeq	·	
	67% (4.076)	50% (7.5 / 15)	42% (2.5/6)	52% (4.7/9)	53%

Health services records were judged to be present but not adequate (53 per cent). Despite the fact that there is a national wide HMIS that is active and running in all public health facilities and some of the non public facilities the system is facing a lot of challenges. There is lack of trained cadre of health information specialists at district level, lack of mechanism from district to national level to verify completeness and consistency of data from facilities, and non use of findings from surveys, civil registration or DSS to assess the validity of clinic-based data by managers and analysts at national and regional/district levels. There are an extensive number of parallel systems known as HMIS complementary data collection tools. These have been created for special programs like HIV/AIDS, Tuberculosis and Leprosy, Prevention of Mother to Child Transmission, mainly to track programme specific indicators. Changes in health provision like Health Insurance Programme, Neonatal care etc has also created demand for new data tools. A fundamental issue has been lack of coordination of supplementary tools at all levels. As a result service providers at lower levels are the ones carrying the ultimate burden. On a positive note though there are mechanisms in place at national and sub national levels for supervision and feedback on information practices. The data derived from health service records are used to estimate coverage with key services such as antenatal care, delivery with a skilled attendant and immunization.

10.3.6 Administrative records

Data Source	Contents	Capacity & Practices	Dissemination	Integration and use	Total
Administrative records	Present but not adeq				
	58% (13.9 / 24)	45% (14.9 / 33)	54% (3.3 / 6)	54% (6.5 / 12)	53%

The Health Management Information System entails as well administrative records in the form of finance management system, Human Resource management system, system to manage drugs, equipment, buildings, vehicles and other infrastructure. The assessment reported inadequate performance in this area (53 per cent). There were shortfalls in terms of contents, capacity and practices, dissemination as well as integration and use. There are no Global Positioning Satellite (GPS) coordinates for the majority of facilities which is also paralleled by lack of human resources and equipment for maintaining and updating the same. For the National Health Accounts periodicity and timeliness is a serious problem.

10.4 Data Management

Categories	Result
Data management	Adequate 65% (9.8 / 15)

The system was found to perform adequately on data management (65%). There is a written set of procedures for data management including data collection, storage, cleaning, quality control, analysis and presentation for target audiences, and these are implemented throughout the country. However, there is no integrated data warehouse containing data from all sources (both population-based and facility-based, including all key health programmes) and this is true at national and regional/district levels. Unique identifier codes exist for health facilities and administrative geographical units (e.g. province, district, municipality, etc.) which facilitate merging of multiple databases from different sources.

10.5 Information Products

	Data-collection method	Timeliness	Periodicity	Consistency	Representativeness	Disaggregation	Estimation method	Overall
Health status indicators	Adequate	Adequate	Present but not adeq	Adequate	Adequate	Adequate	Highly adequate	Adequate
	68%	69%	50%	65%	77%	74%	82%	69%
Mortality	Present but not adeq	Adequate	Present but not adeq	Adequate	Adequate	Adequate	Highly adequate	Adequate
	51% (4.6 / 9)	62% (5.6 / 9)	57% (5.179)	63% (5.679)	69% (6.279)	64% (5.8 / 9)	82% (7.479)	64%
Morbidity	Highly adequate	Adequate	Present but not adeq	Adequate	Highly adequate	Highly adequate	Not assessed	Adequate
	85% (5.176)	76% (4.5 / 6)	43% (2.6 / 6)	68% (4.176)	86% (5.276)	83% (5.076)		74%
Health system indicators	Adequate	Adequate	Adequate	Adequate	Adequate	Present but not adeq	Present but not adeq	Adequate
	64% (15.4 / 24)	64% (15.4 / 24)	70% (16.7 / 24)	66% (15.7 / 24)	67% (14.0 / 21)	56% (13.4 / 24)	50% (3.076)	62%
Risk factor indicators	Present but not adeq	Present but not adeq	Not adequate at all	Not adequate at all	Adequate	Present but not adeq	Not assessed	Present but not adeq
	58% (5.3/9)	42% (3.8/9)	31% (2.8 / 9)	33% (3.079)	72% (6.5/9)	50% (4.5/9)		48%
Overall health indicator	Adequate	Adequate	Present but not adeq	Present but not adeq	Adequate	Present but not adeq	Adequate	Adequate
quality	63% (30.3 / 48)	61% (29.3 / 48)	57% (27.2 / 48)	59% (28.5 / 48)	71% (31.8 / 45)	60% (28.7 / 48)	69% (10.4 / 15)	63%

The assessment revealed satisfactory performance of the system regarding the generation of products of information in terms of timeliness, periodicity, consistency, representative ness, disaggregation, and estimation methods (63%). There was adequate performance on these parameters for health status indicators (69%), mortality (64%), morbidity (74%) and health systems indicator (62%). However, the performance was inadequate on generation of products for risk factor indicators (48%)

10.5.1 Health status indicators

Health status indicators in Tanzania are mainly collected through surveys such as the TDHS, THIS and DSS. The NBS in collaboration with the MOHSW coordinates the collection of DHS data while MOHSW in collaboration with sentinel districts provide household based data. The assessed mortality indicators are the under five mortality (all causes), adult mortality (all causes) and maternal mortality. Others include morbidity indicators like HIV prevalence and Underweight in children (<59 months or <36 months). The Sentinel Demographic Surveillance Systems (DSS) on the other hand enables estimation of Disability Adjusted Life Years (DALYs). Ideally, the most reliable data collection source to provide empirical evidence on mortality indicators would have been the vital registration; however, it has very low coverage in the country. The findings imply that indicators for health status are adequately produced to provide evidence base for the health sector needs. The only weakness according to the evaluation is on periodicity of sources of data as this was found to be inadequate or too spaced.

10.5.2 Health system indicators

Indicators assessed in this category were Outpatient attendance, Measles coverage by 12 months of age, Deliveries attended by skilled health professionals, tuberculosis treatment success rate under direct observed treatment strategy (DOTS), proportion of children (<59 months or <36 months) sleeping under insecticide-treated bed nets and general government expenditure on health (GGHE) per capita (Ministries of Health and Social Welfare, Public Security, Regional and Local governments, extra budgetary entities), private expenditure on health per capita (households' out-of-pocket, private health insurance, NGOs, corporations) and density of health workforce (total and by professional category) by 1,000 population. Health systems indicators are mainly collected routinely by the MOHSW through the HMIS. These indicators provide information on performance of the health system including human resources, drug supplies, and disease burden which includes incidence and case fatality rates. Another set source of health systems data are the SPA and SAM. In general, all the health systems indicators had adequately met data quality assessment criteria. An overall, quality of the health system indicators was as well found to be adequate (62 percent).

10.5.3 Risk factor indicators

This area assessed the indicators on smoking prevalence (15 years and older), Condom use and proportion of households using improved water supply (pipe-borne or borehole or protected well). The overall performance was poor (48 percent). It was noted that the indicators are not very clear, either rarely done or are done on an ad hoc basis. Most indicators are not timely collected, and periodicity is also too long. Although information on other risk factors is clear, the risk factor assessments on smoking do not have clear system or not collected at all. It follows that the HIS may not have adequate information to provide to the Tanzanian populace regarding risk factors for health

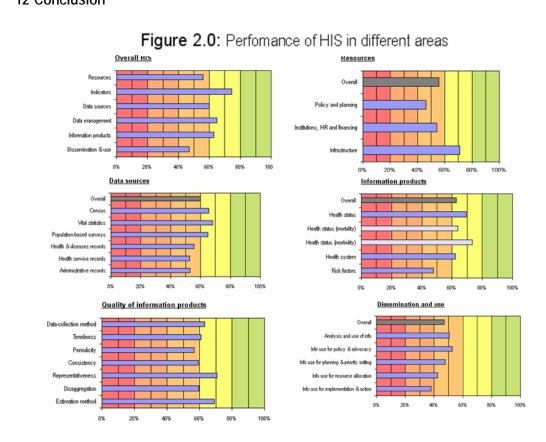
11 Dissemination and Use

Dissemination & use	47%
Analysis and use of information	51%
Policy & advocacy	53%
Planning & priority setting	48%
Resource allocation	43%
Implementation & action	38%

There is limited evidence on use of information for decision making. Overall performance on this aspect was 47 percent, the level which is generally inadequate. Care-providers other than those at central level do not use health information for service delivery planning and monitoring. Graphical presentation in a form of maps, charts and such others are generated but poorly understood. HIS summary reports especially from the HMIS, the census and surveys are sufficiently (relatively) analyzed and reports produced. The under five mortality rate, immunization rate and HIV prevalence was generally known among health focused policy/ decision makers. There is limited systematic use of information on health risk factors to advocate less-risk behavior in the general public as well as in targeted vulnerable groups.

Use of information for policy and advocacy (53%) or for planning and priority setting (48%) were found to be in place although inadequate . However there was common use of information for diagnostic purposes to describe health problems/challenges at Local Government levels (City municipal, town and district council authorities). There was lack of synchronized use of information between different planning frameworks. With regard to use of information for resource allocation it was found that the practice was there but once again not adequate (48%). Although performance was poor on use of information for resource allocation there is a need based resource allocation formula for distributing resources from centre to districts. This approach advocates for geographical equity in allocation of the resources. During the past 5 years there have been some shifts in annual budgets and a general resource allocation, but linking HIS to these changes is not clear. On another note lack of such a formula within districts and catchment's population where by crude guidelines are used in allocation of resources to various health facilities poses a challenge. The implication is that equity and increased resources to disadvantaged groups and communities is not sufficiently addressed. Implementation and action was found to be an area of critical shortfall with regard to use of information (38 percent).

12 Conclusion



Generally, the performance of the HIS in Tanzania is inadequate (Figure 2.0). With unsatisfactory resource environment for HIS (policy and planning, financing as well as institutions and human resource) there is limited capacity to disseminate and use information for planning and priority setting, resource allocation as well as for implementation and action. Although there is reasonable performance in terms of capacity of the data platform, some of the data sources (including health and disease records, health services records and administrative records) require special attention. The assessment has revealed reasonable performance in terms of capacity to generate information products (with exception of generation of information products related to risk factors for health) along with quality of those products in terms of the data collection methods, timeliness of the products, consistency, representative ness, diasggeregation and estimation methods (with an exception of periodicity). This is also an area with potential for further improvement.

It follows therefore that an improved balance of capacity in terms of inputs and environments (resources, data sources and processes) with capacity to use the information for actions is a phenomenon of paramount importance.

13 Policy Implication of The Findings

Supportive efforts made previously (since 1990) within the MoHSW and a number of external pushes from other ministries and development partners had played a major role in attaining the level of HIS development recorded in this assessment. Existence of health sector management instruments such as the SWAP Committee and Basket Financing Committee has lead to creation of mechanisms with direct push on HIS including the on-going Health Sector Support Programme (HSSP), the Health Sector Review (HSR) process, establishment of M & E technical committee and several others. The arrangements have been complimentary to government efforts in the implementation of HIS in terms of setting performance indicators and strategies. Such management instruments at policy level are likely to yield additional benefits if they are aligned to mechanisms to stimulate effective use of information particularly at sub national level. It is of paramount importance that such policy level mechanisms have clear links to HIS in a way that puts to task the sub national levels with regard to use of information for implementation and action. Already existing arrangements such as the resource allocation formula that aim to direct resources to the main priorities in the health sector, existence of Comprehensive Council Health Plans and the growing necessity for proof of performance at all levels provide good environment for stimulating effective use of information. Moreover in order to enhance equity and increased attention to disadvantaged groups it is vital that catchment's populations within districts (in this case health facilities) are also brought into the playing arena with regard to employing mechanisms to ensure effective use of information. Such an emphasis on use of information that dissects the districts is likely to bring about meaningful changes with ultimate feed into policy review processes. The general inadequacy noted in HIS sub-systems should challenge HIS stakeholders to a deeper level of analysis of these results and devise effective improvement strategies. Better coordination of the stakeholders shall be a pre-requisite to coming up with an HIS policy and strategy for the medium to long term.

14 Opportunity For Donor Coordination

Information on performance of the health sector is a key input to all stakeholders on board. Performance monitoring is becoming critical to donors who have opted to coordinate, harmonize and align their support to the sector through the general budget support and Health Basket Funding. In this regard the agenda on strengthening HIS is becoming more and more a priority to all the players. The already existing M&E technical committee for HIS and the Health Sector Review (HSR) process within the MOH&SW along with other similar inter ministerial structures such as the analysis working group for the National Strategy for Growth and Poverty Reduction (MKUKUTA) and the SWAP committee provide good environment for coordination of technical and financial efforts

15 Analysis of Strengths, Weakness, Opportunities and Threats

HIS Strengths

- Has good organization framework that is implemented countrywide and at all levels
- Collects comprehensive data to suit most of the needs by stakeholders
- It is supported by government and a wide group of stakeholders and in particular the HSSP

HIS Weakness

- Has allowed mushrooming of parallel sub systems that continue to frustrate the mainstream
- Has failed to accommodate current changes in the health sector a reasonable pace as such helping to emerging of parallel systems

HIS Opportunity

- Development partners window to support harmonization of the system to compliment Decentralization by Devolution (D by D) policy
- Harmonization of HIS with the Poverty Monitoring System (PMS) provides a niche for utilizing government resources in refining the HIS.

Threats to future development

- Inadequate financial resources to support integration
- If parallel funding by partners favors some subsystems in uncoordinated fashion.

16 Way Forward

The MoH&SW considers HIS as an important element of the health system. As such the ministry had launched a process to formulate policy and guidelines for HIS as part of the strengthening mechanism of its Health Information System. The findings from this assessment are therefore timely and will complement the process to develop HIS guidelines and policy. The following tasks have been scheduled to build up on findings of the assessment (i) HIS guidelines shall be developed and disseminated to stakeholders for their inputs,(ii) HIS Strategic Plan shall be prepared and (iii) capacity building plan shall be developed and implemented particularly to frontline workers to ensure effectiveness at the level of operations. Most of the gaps identified in this assessment are within the reach of the Ministry of Health and Social Welfare and other ministries responsible for Health Information System. It is therefore important that efforts are made to strengthen the capacity to develop and maintain a user friendly and implementable Health Information System at all levels of health delivery system in the country

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