THE REVOLUTIONARY GOVERNMENT OF ZANZIBAR (RGoZ)

HIS STRATEGIC PLAN 2012-2020

(FINAL VERSION subject to costs rationalization)

HIS COLLABORATING INSTITUTIONS:

MINISTRY OF HEALTH
OFFICE OF CHIEF GOVERNMENT STATISTICIAN
AND
REGISTRAR GENERALS OFFICE

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ZANZIBAR HIS STRATEGIC PLAN 2012-2020

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AIDS	Acquired Immune Deficiency Syndrome
CRS	Civil Registration System
CRVS	Civil Registration and Vital Statistics
DHIS II	District Health Information System II software
DSOs	District Surveillance Officers
EHCP	Essential Health Care Package
HBS	Household Budget Survey
HIS	Health Information System
HMIS	Health Management Information System
HMN	Health Metrics Network
ICD	International Classification of Diseases
ICT	Information Communication Technology
IDSR	Integrated Disease Surveillance and Response
ILFS	Integrated Labor Force Survey
MDGs	Millennium Development Goals
MKUZA	Zanzibar Growth and Poverty Reduction Strategy (Swahili abbreviation)
NSS	National Statistical System
OCGS	Office of the Chief Government Statistician
PHC	Population and Housing Census
RGO	Registrar General Office
SSWGs	Sector Statistics Working Groups
TB	Tuberculosis
TDHS	Tanzania Demographic and Health Survey
THMIS	Tanzania HIV-Malaria Indicator Survey
ZANSTAT	Zanzibar Statistical (project)
ZHSRSP	Zanzibar Health Sector Reform Strategic Plan

Executive summary

This HIS Strategic Plan is an effort of Zanzibar to translate HIS policies outlined in 2011 into strategies that can be operational zed, aiming at ensuring availability of a functional HIS system providing reliable, timely, quality health information and related data used for decision making on health matters. A methodologically sound approach to monitoring and assessing a comprehensive set of health indicators from known HIS data sources (HMIS, Population census, surveillance, vital statistics, surveys and studies) shall be in place with clear evidence on the functional state of the health system besides tracking health status and determinants of health.

The 2009 HIS assessment found overall low performance in the Civil Registration and Vital Statistics sub-system, and resource records element. Relatively low performances in data quality and data management across the sub-systems have been among the contributing factors to low level of dissemination and use of information. This strategy proposes measures to improve human and financial resources capacity as well as investment in harmonized and linked infrastructure for ease of access to data and information. A metadata dictionary, unique data identifier codes and standard operating procedures for review of indicators and data management shall be developed and applied to standardize practices across the sub-systems and facilitate users of the system. Due attention is paid to data verification and validation procedures, adaptation of ICD 10 to gain improvement in cause of death registration, attention to data collection and audit of maternal deaths in addition to laying emphasis on coordination and harmonization in order to optimize resource use.

The six components (Resources, Indicators, Data sources, Data quality, Data management, and Dissemination & use) covered in the strategy are briefly introduced and specific problems encountered in each are presented concisely. Solutions to key causes of the problems are crafted as strategic interventions. Performance indicators are defined against each outlined strategy: Each strategy is presented with detailed activities, and summary costs aggregated. The strategy covering years 2012 to 2020 will cost Tas 15,028,364,000 (subject to rationalization of costs).
        Leadership from the Steering Committee and concerted efforts and commitment of the Technical Team from all HIS sub-systems and the Planning and Policy Directorate of the MOH made it possible to realize this strategy in a participatory and transparent working process.

1. The Current HIS Situation

1.1   Performance of the present health information system

An Health Information System (HIS) aims at providing complete, timely and reliable health information that helps users in effective planning and decision making on health matters. To strengthen the HIS in Zanzibar, a baseline assessment was conducted in 2009 and a report was produced[1]. The assessment focused on six components outlined in the HMN framework namely; resources, indicators, data sources, data management, HIS data quality and dissemination & use.

Findings revealed that none of the assessed components scored highly adequate performance. In general findings indicated fragmentation and coordination insufficiency of various sub-systems such as population census, vital statistics, population-based surveys, HMIS, IDSR, human resource, and financing and expenditure of health services. Analysis by components suggested inadequacies in the component of data management and strength in indicators component: Summary of the findings to each component is given below based on application of scoring criteria.

Component performance scoring criteria:

> *Note: Scoring was based on the following categories:-*
>
> *Highly inadequate means present but*
> *not adequate at all score*   *less than 25%*
> *Present but not adequate means score*   *25 – 49%*
> *Adequate means score*   *50 – 74%*
> *Highly adequate score*   *75% and above*

1.2.1. Resources

The sub-components assessed under resources are Policy and planning, HIS institutions, Human resources and financing, and HIS infrastructure. The overall average score for the HIS resource elements was 48 percent, signifying the presence but not adequate availability of resources for HIS activity. Summary results for different sub-components are as shown in table 1 in annex 2.

Availability of information for policy and planning scored low (present but not adequate) largely due to limited data analysis, limited sharing, and low use of information amongst planners and policy developers.

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[1] RGOZ. MOHSW. HIS Assessment in Zanzibar 2009

In terms of infrastructure, a web based vital registration system was been developed and a legal framework was up for review. DHIS I is applied in all districts and hospitals connected to internet. The DHIS II (web based system) is being tested in all districts. An Epidemiologist is in place and a revised IDSR guideline using the new internationally recommended standard format has been accomplished.

Human resources for information: OCGS has limited number of statisticians, demographers and IT personnel and has not built enough strength, especially in the areas of attempting in-depth statistical analysis. All other HIS Sub-systems face human resource constraints. However the presence of HIS institutions and availability of financial resources (from DPs – an opportunity) have confounded the assessment with an improved score.

Institutional linkages: While RGO is currently developing its database for the capture of vital information and derivation of vital statistics, it intends to link with all HIS sub-systems. OCGS is making ample use of the developed Health Management Information System (HMIS) for its routine data reporting. However there is no direct link of HMIS database with OCGS.

Prioritization of health information financing and financial resource sharing is still problematic leaving some HIS sub-systems underfunded and some being highly donor dependent.

1.2.2 Indicators

Major sources of HIS indicators in Zanzibar include those used to track MDGs progress, MKUZA, Vision 2020 and MOH Strategic Plan. The national strategy for Growth and reduction of poverty (MKUZA) has stipulated minimum core health indicators of infant and child health, maternal and reproductive health, and communicable diseases and non communicable diseases. Despite the lack of locally defined terms and concepts of HIS indicators, the standard definitions are used by all subsystems.

The component of HIS indicators was assessed in areas of vital statistics, demographic and socioeconomic, health systems and health status.

This component revealed adequate performance of 64 percent and was the best of all six assessed components. The adequacy of indicators was attributed by elements covered in the assessment; these were identification of minimum core indicators at national and sub-national level, presence of strategies for measurement, collaboration of stakeholders, criteria for selection of core indicators, and frequency of reporting of indicators. Summary results for the different elements are given in table 2 annex 2.

All aspects assessed for indicators were found adequate except for regularity of reporting. The irregular reporting was due to laxity of enforcement amongst implementers and responsible managers. The high performance score of the indicators component however presents an opportunity for enhancing harmonization and coordination within HIS sub-systems.

1.2.3 Data Sources

Health information comes from MoH (through HMIS and IDSR), OCGS, and RGO into different forms of data-sets: population and housing census, population-based surveys, vital statistics, disease and surveillance records, health service records, and health administrative records; these formed the sub-components for assessment. Summary performance for data sources is given in table 3 annex 2.

The HIS data sources assessed scored overall 47 percent – depicting availability but not adequate status. The status of different sub-components is detailed below:

- Census: Aspects of mortality, availability of descriptive statistics (by age, sex and smallest administrative levels), timeliness in publication and whether population projections are used for the estimation of health services coverage and planning of health services were assessed. Results from assessment of different elements revealed that the content of census was adequate with a score of 68 percent.
- Vital Statistics: The overall average score for vital statistics as a data source was only seven percent (7%) which is categorized as not adequate at all. All elements assessed (capacity and practices, dissemination, integration and use, and content of vital statistics attributed by civil registration) were found to be not adequate due to poor law enforcement, non-use of ICD10 to identify causes of death, and lack of production of vital statistics from existing Civil Registration System (CRS) as a result of lack of computerization and low Human Resource competency.
- Population-based surveys: Questions raised in assessing content of population-based surveys were the presence of recent surveys concerning maternal and child health services, availability of estimates of infants and under-five mortality and prevalence of some priority non communicable diseases/health problems. Other elements are integration and use dynamics, capacity and practices, and dissemination. The score in all elements assessed stood with average of 68 percent indicating that it was adequate**.**
- Health and disease records: The four core dimensions analyzed under this component were the contents, capacity and practices, dissemination and integration, and uses. The analysis of health and disease records revealed adequate overall performance with 55 percent score.
- Health service records: Like in health and disease records, the health service records were also analyzed under the same four core dimensions. The overall score for health services records revealed presence but not adequate performance.
- Resource records: Elements included in assessment are information on the infrastructure and health services, human resources, financing and expenditure for health services, and equipment, supplies and commodities. The results indicated that resource records were present but not adequate due to lack of systematic collection of resource data.

1.2.4 Data Management

Data management consists of practices on data collection, processing, analysis and storage. These practices include placing controls in data collection and processing, as well as following standards in carrying out these procedures.

The findings of the assessment reveal that there are few written sets of data management procedures with weak implementation and incomplete metadata dictionary. In addition, there is neither a national data warehouse nor unique identifier codes which can be used in different databases. These deficiencies ranked the component of data management as least in all assessed components. The overall average scores ranked the component as present but not adequate (27 percent).

Current status of data management is depicted by the existence of unlinked databases from different sources and assessment findings have yet to be addressed.

1.2.5 HIS Data quality

Method of data collection, timeliness, periodicity, consistency, representativeness, disaggregation and estimation method are elements assessed in data quality. Using these quality elements allows for comparison with other data sets over time or between countries. These quality components were assessed using mortality and morbidity dimensions, as well as measles vaccination in health system indicators.

The findings suggested that an overall average score on data quality was 58 percent, suggesting adequacy (relevance) of the information derived from the indicators. Summary performance to information products is given in table 4 annex 2.

Cause of death reporting gaps affect mortality aspect scores. Collection of Maternal Mortality data is incomplete, not representative and poses a challenge in method of data collection.

1.2.6 Dissemination and Use

The collected and analyzed information has to be disseminated and used. Data collected but not disseminated in time for use is resource wastage. The information may be used for further analytical work, policy and advocacy, planning and priority setting, resource allocation and for implementation actions.

The findings under this area revealed that health information including population health status, health systems and risk factors is adequate and used for planning and priority setting in the sector. However, health information is used mainly for diagnostic purposes to describe health problems and challenges, but not synchronized in different planning frameworks; nor is the health information used to influence resource allocation.

An overall assessment classified the component as adequate (51 percent), although the level of adequacy still suggests that the value ascribed to information among decision makers and change agents (implementers) is still low. Summary results for the component are given in table 5 annex 2.

- The lack of linkage and mainstreaming health information for actual resource allocation persists as a problem influenced by behavioral elements when scarce resources in an environment of competing priorities is paraded by advocacy limitations.

- Inadequate second level analysis of existing data limits the ability to maximize utilization of data to generate information for use at policy forums, strategy formulation and intervention design.

1.2   Strengths and opportunities

MOH has undertaken the following strengthening measures
- HMIS web based data base has been initiated with introduction of DHIS 2 and now fully functional since the past 2 years.
- MOH website has been enhanced for increased information sharing and dissemination since the past one year.
- Human Resources for Health information system got established and functional since 2010. Computerization of personnel records into a central data base has been done and accessible to entitled entities on the web.
- IDSR data collection tools have been integrated in HMIS data base and structurally District Surveillance Officers (DSOs) undertake HMIS and IDSR requirements.
- MOH Epidemiology Unit has been established and started to operate under a qualified epidemiologist and an expert in health informatics.

ICT infrastructure has been enhanced as follows
- Laying of fiber optic cable in Unguja and Pemba for higher speed web connectivity has been done; this shall benefit sharing and access to information
- Government Central Data Center has been developed for data storage, sharing and access.

Civil Registration and Vital Statistics has undertaken
- System of computerization of births data; this has been changed and is now functional at Registrar of Births & Deaths Office.

Office of the Chief Government Statistician (OCGS) has been busy with
- Capacity building for the OCGS Office under the Zanzibar Statistical (ZANSTAT) project – staff training, office equipment provision.

SWOT ANALYSIS

No	STRENGTHS	No	WEAKNESSES
1	Presence of committed HR	1	No ICT Policy for HIS
2	Competent leading team	2	No data Identifier codes
3	Existence of Steering committee for HIS	3	Availability of data from district not timely
4	Presence of HIS Policy Guideline	4	Insufficient data use for decision making
5	Presence of HIS sub-systems with respective legal backing	5	Inadequate skills for HIS
6	Willingness to cooperate among HIS sub systems	6	Limited awareness of HIS among subsystem stakeholders
7	Presence of Data bases	7	Unlinked HIS data bases and sub- systems
		8	Limited data capture (data collection coverage limitations), and limited use
		9	Poor and unreliable of collection of data from the community
		10	Poor staff retention among the sub systems
		11	Unreliable funding
No	OPPORTUNITIES		THREATS
1	Existence of e-Governance (Fibre optic communication and data centre)	1	Donor dependency
2	Existence of DHS-2 software that can serve as an HIS data warehouse	2	Staff turnover including (brain drain)
3	Existence of supportive Government policy for HIS movement	3	If a sub-system assumes arrogance over others
4	Establishment of training for development of human resource including up-coming e-learning	4	In the event of failure to implement the HIS policy.
5	Curricula update to include HIS issues and concepts	5	Political instability
6	Presence of partners support		
7c	Availability of international conferences		

Health Sector Reforms registered progress in establishing a District Health Basket Fund, formula based financial resource allocation for district health plans, and Central Medical Stores beginning to shift from push to pull system of drugs and medical supplies management through introducing Zanzibar Integrated Logistics and Supplies system.

1.3 Priority HIS Components and problems

1.3.1 HIS Components specific issues

The strategy drafting team found it prudent to remain consistent with the HMN framework in deriving and elaborating the components and problems considering that none of the components attained a high performance score during assessment.

- Resources

Considered here are the policy planning, institutional and legal framework to ensure health data availability, exchange, and quality of data and sharing. Also considered is the human resource complement in terms of availability, skills mix relevant to information, deployment and management as well as the financial resources in support. HIS harmonization in Zanzibar is affected by ineffective interoperability of sub-systems in resources mobilization, data collection procedures, validation of indicators, and standardization of tools. Completeness and effective

coverage of health information is affected by poor law enforcement, lateness in adapting ICD 10 and unsystematic collection of resources data. Exchange and sharing of data is constrained by shortfalls in infrastructure programming and linkages for ease of access. Specific resource constraints feature

➢ Limited human resource capacity (numbers, positions)
➢ Succession planning of human resources not established
➢ Low HIS skills and career development
➢ Limited data analysis on resources due to gaps in resources data
➢ Low use of information amongst policy developers and planners
➢ Limited sharing of information due to insufficient HIS sub-system linkages
➢ Donor dependency in HIS sub-systems

- ## Indicators

These capture changes over time in domains of determinants of health, health system and health status. Consideration here includes validity, reliability, sensitivity, specificity and feasibility of an indicator. Health indicators are needed to monitor local and national priorities; however indicator definitions must also meet international technical standards. The ZHSR Strategic Plan II has listed a good number of input, process, output and outcome indicators[2]

Country consensus on application of standard definitions of health indicators and meta-data, periodicity of collection, review and updating, has yet to emerge. Specific issues in this respect include disaggregation by level and gender differentials, finishing work started on risk factors indicators (review or definition), regularity of reporting and defining HIS performance indicators.

- ## Data sources

National HIS data are usually generated either directly from populations or from the operations of health and other institutions. *Population-based* sources generate data on all individuals within defined populations and can include total population counts (such as the census and civil registration) and data on representative populations or subpopulations using determined samples. *Institution-based* sources generate data as a result of administrative and operational activities within or outside the health sector. Within the health sector, the wide variety of health service data includes morbidity and mortality data among people using services; services delivered; drugs and commodities provided; information on the availability and quality of services; case reporting; and resource, human, financial and logistics information. Specific problems in relation to sources of data include:

➢ Inadequate functioning of civil registration and vital statistics
➢ Unsystematic collection of resources data
➢ Paper based records present challenges of tracking patient records and capture of patient data – retrieval difficulties at hospitals are commonly experienced.
➢ Incomplete or un-retrievable patient records at lower level health facilities.
➢ Incompleteness of Shehia population records and Registrar of Births and Deaths records causes dependency on population projection data.

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[2] RGoZ. 2005. ZHSR Strategic Plan II 2006/7-2010/11 pp 58-59

- ## Data management

Data management is a set of procedures for the collection, storage, processing and compilation of data. A centralized (preferably electronic) data depository that brings together all information for the national HIS facilitates making it available to all sub-systems stakeholders. The depository facilitates the cross-referencing of data among programs, promotes adherence to standard definitions and methods, and helps to reduce redundant and overlapping data collection. It also provides a forum to examine and understand data inconsistencies and to facilitate the reconciliation of data reported through different systems. Critical considerations to be addressed include written data management procedures, running a national integrated data warehouse, a meta data dictionary with comprehensive definitions and unique identifier codes for merging of multiple data sets from different sources. Commonly agreed standardized procedures for data capture, validation and processing, with infrastructure linkage through unique identifier codes for easy access, are not in place. Specific problems include

➢ Incomplete formulation of data management procedures and weak implementation
➢ Incomplete metadata dictionary
➢ Lack of a national data warehouse
➢ Lack of unique identifier codes to enable interaction of different data bases
➢ Incomplete collection of vital registration data

- ## **Data quality**

Accuracy and reliability of data using the "minimum data set" principle that addresses a core of agreed indicators is cardinal. Meeting high standards of reliability, timeliness and completeness is a key feature of a strong health information system. Criteria used to assess quality of data usually include data collection method, timeliness, periodicity, consistency, representativeness, disaggregation, data security, confidentiality and accessibility.

A recent data validation exercise supported by WHO revealed good performance on data completeness in HMIS but weaknesses were noted on internal consistency of reported data due either to counting errors or differences between register records and what is entered in HMIS data base. In Zanzibar reliability, validity, transparency, timeliness and completeness of health data is affected by causes of death reporting gaps, lack of consensus on maternal mortality data collection method, recording and counting errors, confidentiality and data security concerns. Specifically

➢ Cause of death reporting is poor due to late updating and adapting to ICD 10
➢ There is no consensus yet on community Maternal Mortality data collection method.
➢ Civil registration and vital statistics does not have adequate data verification procedure; the same holds true for HMIS and IDSR

- ## **Infrastructure**

Infrastructural needs of the national HIS can be as simple as pencils and paper or as complex as fully integrated, web-connected, ICT. At national and sub-national levels, health managers should have access to an information infrastructure that includes computers, e-mail and Internet access. Communications infrastructure is also needed to fully realize the potential benefits of information that may already be available. The health sector has not developed an ICT policy to guide HIS stakeholders in line with the country's ICT policy framework. Specifically the following issues need attention:-
➢ Data warehouse linkage
➢ Adherence to Country infrastructure standard
➢ Preventive maintenance
➢ Reporting system on status of information infrastructure

- **Dissemination and use**

Information has often been produced and failed at the level of use. Information is of far greater value, especially when it is integrated with other information and evaluated in terms of the issues confronting the health system. At this stage, information becomes evidence that can be used by decision-makers. This synthesis of evidence becomes even more powerful when it is *formatted for presentation, communication or dissemination to decision-makers in a form that changes their understanding* of health issues and needs. Currently there is insufficient synchronization of health information in different planning frameworks, low second level analysis, and limited dissemination leading to low usage of information in decision making.

Analyzed data becomes information when it is interpreted and reflected against other sources of evidence. Better information presented to decision makers/ planners leads to better decisions and hence evidence based medical and health services. Specifically the status depicts

- Inadequate use of information during planning due to insufficient enforcement at Policy and Planning directorates
- Health information is insufficiently used to influence resource allocation
- Inadequate second level analysis of existing data limiting the amount of information to be disseminated and used.

1.3.2 Related health system priorities

Health information
- Functional status of Medical records system at hospitals – some records kept by patients and those retained at hospital have no easy retrieval system. Electronic medical records would be a practical solution to the problem.
- Review and enforcement of legislation and regulations relevant to HIS – (Development of Statistics Regulations based on Statistics Act No. 9 of 2007, and Act governing CRVS)
- Information system security standard definition, access rights specifications and threat mitigation measures in harmony with e-governance.
- Epidemiological investigations and analyses call for more systematic support in terms of capacity development.
- Capture of community health data in a comprehensive way by specifically orienting and capacitating Shehias to enable them capture the data on agreed tool and report timely.

Human resources
- Human resource capacity for analyzing and managing information
- HRH performance indicators need to be developed and formalized

Health financing
- Documentation on financial investments in health information through National Health Accounts, Public Expenditure Reviews and other related studies.
- Equity of access to health services; functionality of exemption mechanisms
- Efficiency and equity of resource allocation

Logistics and supplies
- Inability to track stock levels at health facility level despite presence of a central drugs logistics and supplies data base.

Governance
- Reporting and sharing information – accountability to communities

Service delivery
- Quality of care in service delivery is poor due to insufficient generation of analyzed information to influence quality improvement
- Maternal mortality and neonatal mortality reduction
- Sustaining gains in key programs (Malaria, AIDS, TB) and scaling up to universal coverage (EHCP)

1.3.3 Recent and ongoing work

Across the HIS sub-systems there has been significant volume of work as evidenced below:

- HMIS data validation (under WHO support) – maternal mortality, IMR, Immunization trends over 3 years horizon. Also HMIS has developed data validation rules within their data base.
- Performance assessment of the health sector indicators – focus HMIS subsystem
- Risk factors assessment on NCDs has been done and reported, supported by DANIDA and WHO.
- E-governance has been initiated eventually shall include all sectors.
- Legal framework for registration of births and deaths has been reviewed and a draft is in process of Ministerial level consultations.
- Preparatory activities for the National Census due in August 2012: Training of Trainers is in progress geared to facilitate training of 2012 Census enumerators.
- Accomplished the 2009/10 Household Budget Surveys (HBS), the 2009/10 Demographic and Health Survey (TDHS), the 2010 Health and Malaria Indicator Surveys (THMIS), the 2008 Integrated Labor Force Survey (ILFS), the 2007 Survey on Accessibility to Water and Sanitation in Zanzibar Urban Areas and the 2010 Census on Water Users
- Conducted the 2008 Agricultural Sample Census, the 2008 Disability Survey, the Immunization Coverage Survey, and 2010 – 2011 Panel survey

Health Sector Reforms

- Establishment of District Basket Funds for health – information on its influence on effective delivery of health interventions is critical.
- Formula based financial resource allocation is in use to respond to district health plans – information on district performance and equity effects of the formula is needed.
- Central Medical Stores is piloting a shift from push to pull system of drugs and medical supplies management through introducing Zanzibar Integrated Logistics and Supplies system – information on stock outs reduction shall be an important system tracer.

2. Vision and objectives

2.1 Vision

Availability of fully functional system that provides reliable, timely, quality health information and related data is used by all in decision making on health matters.

Key tenets of the vision target to get valid health information used timely at the level of health policy, strategy and implementation without barriers limiting access.

2.2 Mission

HIS Stakeholders shall strive to ensure analysis, sharing and use of health information and related data is attained within the country through better coordination, harmonization and accessibility to quality data.

To achieve the vision and mission HIS Stakeholders shall endeavor to attain harmonized HIS sub-systems contributing to efficiency gains and evidence based decisions.

Specifically the HIS strategy therefore aims at:

> ➢ Enhancing availability of comprehensive quality health and health related data and health information;

> ➢ Serving as an instrument for harmonization and linkage of health information sub-systems and their coordination through enhanced partnership to optimize resources utilization within the guidance set by the HIS Policy guidelines;

> ➢ Making it obligatory to adhere to standardized mandatory reporting by all agents (public and private).

> ➢ Enhancing the perceived value, access and use of health data.

2.3 Objectives by component

2.3.1 HIS resources:

To strengthen information on resources in HIS sub-systems

To enhance human resource capacity across the sub-systems
- o Capacity on population studies, statistics, disease classification, computer science and health informatics
- o Data analysis and information management
- o Long and short courses to build the pool of Health Information cadre (IDSR personnel)

To optimize utilization of resources across the health information sub-systems

To improve local laboratory capacity for surveillance and response

2.3.2   HIS indicators

To establish health risk factors indicators for Zanzibar

To establish consensus on HIS performance indicators

To reach consensus on national set of indicators in the health sector that allows data disaggregation categories by level and gender differentials

2.3.3   Data sources

To initiate electronic medical records for the whole Country

To strengthen disease surveillance and cause of death reporting through adaptation of ICD 10

To improve civil registration and vital statistics (births and deaths, marriage and divorce) procedures and coverage

To systematize collection of data on resources

2.3.4   Data management

To publish a metadata dictionary for the HIS

To establish a national warehouse for data management that facilitates access, input and sharing amongst HIS sub-system stakeholders

To reach consensus on data management procedures across HIS sub-systems

To develop and put to use unique identifier codes that enable interaction of different data bases

2.3.5   Data quality

To improve reliability, validity, transparency, timeliness and completeness of health data

To establish data verification and validation procedures

2.3.6   Infrastructure

To develop ICT policy guidance for health that adheres to Country ICT infrastructure standard

To create links of HIS subsystems data bases

To establish a functional ICT preventive maintenance routine

2.3.7   Dissemination and Use

To enhance the capacity in performing second level analysis

To enhance the use of information in planning and management decision making

To increase application of evidence in influencing resource allocation

To expand the range of information dissemination channels within HIS

2.4   Critical Assumptions and Risks

When the HIS assessment results were shared with senior managers of the involved sectors the pre-HIS policy (drafting way forward) Stakeholders meeting in February 2011 recommended that a costed HIS strategic plan to follow the HIS policy be in place. It was also emphasized that the Chair of Core team should provide oversight to the practical implementation of the way forward and recommendations from the assessment. Areas of collaboration amongst the HIS stakeholders were identified by respective sub-system members at the stage of HIS policy guidelines formulation. This strategic plan has been

formulated under the assumption that HIS sub-system custodians fully subscribe to the collaborative and harmonized approach put forward in the policy and now followed by corresponding strategies.

It is also assumed that all HIS stakeholders are fully in agreement with the identified focal point for overall management of HIS within the Health Sector and shall willingly facilitate the strategy to pool resources under an HIS basket arrangement.

Stability and harmonious coordination of HIS sub-systems shall minimize risks and wastage that are bound to emanate from disjointedness and poor functional links across the sub-systems.

3   Strategies for strengthening priority HIS Components

3.1.1   Facilitation of Steering Committee functionality for **resource** mobilization and deployment will be a core coordinative and harmonizing activity. Steering Committee decisions shall empower the Focal Point and Technical Working Group to take forward the HIS short, medium and long term agenda.
Performance indicator: a) Presence of a functional Steering Committee playing an oversight on HIS coordination and harmonization through regular meetings.
b) % of Government funds utilized for HIS activities
c) % of Development Partners' funds utilized for HIS activities

3.1.2   Review and updating laws and regulations governing health information. Examples include the design of regulations to ensure ICD 10 use, interacting with CR and other HIS subsystems, Zanzibar law Review Commission and AG Chamber to update civil registration legal framework periodically.
Performance indicator: Pieces of legislation relevant to health information reviewed or designed.

3.1.3   Institutional capacity development in core health information sciences to enhance **human resource** knowledge and skills. The intent to develop and implement a Training Plan under the OCGS is an area where mutual benefits shall be harnessed considering that HMIS, IDSR and CRVS also have scheduled training plans.
Performance indicator: a) Proportion of training plan activities implemented annually
b) Proportion of established Health Information positions filled against the approved establishment.
c) Proportion of staff trained in core HIS competencies functioning in respective relevant positions
d) Proportion of staff trained against annual target
e) Proportion of computers purchased that are functional
f) Number of HIS sub-systems with a functioning inventory system

3.1.4   Create and manage a mechanism for pooled funding of HIS generic and collaborative interventions and activities. Within the HIS policy each HIS sub-system had identified areas of collaboration with others. Such areas shall fall under management responsibility of the Focal Point so that they can be scheduled and resources identified to support their implementation.
Performance indicator: Proportion of collaboration interventions supported under pooled funding.

3.1.5   Formulate a health sector ICT policy with **infrastructure** specifications that shall enable data verification, sharing, access, analysis and dissemination of health information.
Performance indicator: Health sector ICT policy guideline in place and used.

3.1.6   A system designed for defining, reviewing and updating Health Sector **indicators**, periodicity, and procedures for collecting related data, and analysis, interpretation and reporting. With HMIS looking at up-scaling capture and use of documented risk factors Indicators, attention drawn by IDSR on M&E indicators for HIS merits cooperation by all sub-systems and joint action.
Performance indicator: a) System parameters and criteria for selection and review of health indicators written in a simple guide.
b) National minimum core indicators have been identified by consensus for national and Sub-national levels, covering all categories of health indicators (determinants of health; health risks; health system inputs, outputs and outcomes; and health status)
c) Proportion of sector indicators that meet National and international standard
c) Reporting on the minimum set of core indicators occurs on a regular basis
d) Proportion of indicators disaggregated by level and other parameters.

3.1.7   A metadata dictionary for the health indicators, that meets consensus amongst HIS stakeholders, is developed and maintained in the linked health information data bases. This strategy is aimed at enabling users to make effective and informed use of the linked data bases with the ultimate objective of increasing the scope of data and information dissemination to wider range of stakeholders. Another advantage of the metadata dictionary is inherent in the harmonization of standards in terms of facilitating commonly shared understanding. Notwithstanding the fact that this intervention is reflected in work plans of two sub-systems, the strategy shall be pursued by all sub-systems to spread a common understanding and ensure application of similar standard definitions.
Performance indicator: An elaborated metadata dictionary is available on the web and at all HIS Focal desks in respective sub-systems facilitating data access to users.

3.1.8   Improve **quality of data** using commonly agreed verification and validation procedures, sharing and using unique data identifier codes, and completeness and timeliness checks. Define quality control measures and cleaning procedures including establishment of validation rules and validation surveys. Particular attention to this is seen in CRVS subsystem plan to establish quality control mechanisms and improve data quality at National, district and shehia level. Attention to quality of data in terms of verification and validation is needed in all sub-systems as a cross cutting element.
Performance indicator: Proportion of health data sets meeting quality of data assessment criteria (collection method adequacy, timeliness, periodicity, consistency, representativeness, disaggregation) per subsystem and overall.

3.1.9   Invest in measures to improve availability of vital statistics through strengthening the Civil Registration system. This strategy has given special attention to the lowest scoring data source - Vital Statistics - to make the CRVS sub-system more robust. Benefits of this shall be derived as heavier dependency on surveys is alleviated, and overburdening routine health data in HMIS is lessened.
Performance indicator: Information from civil registration on: (1) mortality rates; and (2) causes of death is used for national and sub-national analysis

3.1.10 Standardize disease and deaths reporting through training and adapting ICD10, Collaboration between IDSR, HMIS and CRVS is foreseen in the standardization effort. Improvements are foreseen in better classification of diseases and registration of causes of deaths.

Performance indicator: a) The International Statistical Classification of Diseases and related health problems (ICD) is used for cause-of-death registration
b) Reports of local laboratory diagnostic capacity within disease surveillance meet disease detection and cause of death detection standards.
c) Percentage of cause of death reporting using ICD 10
d) Number of HIS sub systems scoring 100 percent reporting in HIS data ware house

3.1.11 Establish trained focal points for **data management** including maintaining accuracy, integrity, and security of data.

Performance indicator: a) Proportion of planned HIS activities implemented in each sub-system annually
b) Proportion of planned HIS activities implemented against total planned activities in the whole HIS
c) Presence of unique data identifier codes that met consensus of HIS subsystem
d) Proportion of planned products delivered on time.

3.1.12 Establish electronic medical records and patient data at health facilities thus replacing the current paper based system. Ease of retrieval is enhanced by e-medical records and this is in line with OCGS plan to improve routine data systems. A phased approach is envisaged starting with a pilot test in Chakechake Hospital, followed by introduction in other public facilities then scaled to cover private health facilities.

Performance indicator: Proportion of Health Facilities that have acquired electronic medical records annually among those targeted.

3.1.13 Strengthen maternal deaths audit and other death audits at health facilities. Causes of maternal deaths can be either client specific, service provider specific or systemic: All these need careful analysis to gain an understanding of same and determine precise interventions to lessen such occurrences in future.

Performance indicator: Functional reporting of community maternal deaths.

3.1.14 Organize working sessions for primary and secondary data analysis designed to feed into forums for information **dissemination**. This is a generic aspect cutting across sub-systems in terms of developing the requisite expertise and conducting the actual secondary analyses. The plan within HMIS shall extend this to other sub-systems.

Performance indicator: a) Proportion of planning documents that used disseminated information.
b) Number of policy guidelines with evidence of having used disseminated information products.
c) Number of secondary analyses performed by trained staff.

3.2   Related health systems issues

In addressing Health systems related issues the following has been considered:-

Introduction of Electronic Medical Records under HMIS shall be a great step in facilitating easy retrieval as well as data validation checks. The metadata dictionary shall include specifications around information system security

standard definition, access rights specifications and threat mitigation measures in harmony with e-governance. Comprehensive community health data capture shall be accomplished by specifically orienting and capacitating Shehias.

A cross cutting program for Human Resource capacity strengthening in managing data, analysis and reporting has been planned. Human resource competency has been planned for under the OCGS sub-system.

On the financing side National Health Accounts, Public Expenditure Reviews and other related studies shall be undertaken to understand patterns of investment in the sector, equity of resource allocation and spending, how exemptions are paid for, and level finances available for health information system.

An efficient tool to track supplies and medicines stock levels at health facilities shall be worked on in consultation with focal point responsible for supply chain management.

Regarding Human Resources information the existing data base shall be updated and linked to other sub-systems data bases for ease of access and sharing of information.

3.3 Log frame

Strategic Objectives	Expected Results	Indicator(s)	Means of Verification
To optimize utilization of resources across the health information sub-systems	Coordination of HIS resources (mobilization, deployment, investment) enhanced	Presence of a functional Steering Committee playing an oversight on HIS coordination and harmonization through regular meetings	Meeting minutes records
		Pooled funding budget line for HIS	Government budget book
To strengthen disease surveillance and cause of death reporting through adaptation of ICD 10 and vital registration	Legal enforcement of the adaptation of ICD 10 and registration of vital events attained	Pieces of legislation relevant to health information reviewed or designed	AG Chambers records
		Law defaulters detected among reporting focal points	Sub-system Focal points reports
	Laboratory diagnostic capacity contributing to disease surveillance and response is strengthened	Reports of local laboratory diagnostic capacity within disease surveillance meeting disease detection and cause of death detection standards	Laboratory standards supervision and quality assurance system
	Disease surveillance and cause of death reporting improved	Percentage of cause of death reporting using ICD 10	IDSR and CRVS reports
To increase human resource capacity across the Health Information sub-systems	Health information science is applied in all Health Information sub-systems	Proportion of established Health Information positions filled against the approved establishment.

Proportion of staff trained in core HIS competencies functioning in respective relevant positions | Sub-systems establishment audit |
| To develop ICT policy guidance for | Data access and | Health sector ICT policy guidelines | Sector guidelines |

health that adheres to Country ICT infrastructure standard	sharing across HIS sub-systems in compliance to country ICT standard is enhanced	document	menu
To reach consensus on national set of indicators in the health sector that allows data disaggregation categories by level and gender differentials.	National set of health sector indicators is established for use by all HIS Stakeholders	National minimum core indicators have been identified by consensus for national and Sub-national levels, covering all categories of health indicators (determinants of health; health risks; health system inputs, outputs and outcomes; and health status)	National Consensus workshop report showing the agreed set of indicators
To initiate electronic medical records for the whole Country	Access and retrieval of disease surveillance data enhanced	Proportion of Health Facilities that have acquired electronic medical records annually among those targeted.	MOH profile report or Annual Health Bulletin
To improve civil registration and vital statistics (births and deaths, marriage and divorce) procedures and coverage	Country over dependency on surveys and overburdened routine data system (HMIS) is reduced	Information from civil registration on: (1) mortality rates; and (2) causes of death is used for national and sub-national analysis	CRVS reports on births and deaths
To establish a national warehouse for data management that facilitates access, input and sharing amongst HIS sub-system stakeholders	Adherence to data and information management standards is increased among HIS Stakeholders	An elaborated metadata dictionary is available on the web and at all HIS Focal desks in respective sub-systems facilitating data access to users	Presence of the tool in linked data bases
		Unique identifier codes that enable interaction of different data bases shared among authorized focal points	SOPs for the national warehouse show the codes in guidance to linked data bases Focal Points
		Data management focal points appointed in each health information sub-system	Organogram showing filled positions
To establish data verification and validation procedures	Reliability, validity, transparency, timeliness and completeness of health data improved	Proportion of health data sets meeting quality of data assessment criteria (collection method adequacy, timeliness, validity) per subsystem and overall.	Data validation routine checks and data validation surveys
To increase the practice of maternal death audit and other deaths audit at health facilities	Evidence informed action to prevent occurrence of maternal deaths enhanced	Proportion of maternal deaths subjected to death audit	Health facility death audit reports Community maternal death audit reports
To enhance the use of information in planning and management decision making	Analyzed products that qualify as evidence for decision making in health produced in the HIS	Number of policy guidelines, planning documents and resource allocation documents with evidence of having used disseminated information products	Key sector documents

4. Summary of HIS Resource Requirements

The following categories of resources have been considered in the strategy

Human resources – Sourced from various disciplines including Statistics, Epidemiology, Demography, Health Informatics, ICT, M&E, Data Analysts, Medical Records, Disease Surveillance, Legal, Accounts

General supplies - Reporting forms, data collection tools, stationery, printers, copiers, scanners, telephones, computers, software, TV screens, projectors and cameras.

Reference and guiding documents - Laws, policy documents, standards guides, ICD10.

Funding sources – Government, Development Partners

Summary of Cost Requirements

This work on costing is not quite complete since justification and rationalization of the projections has yet to be done: After the rationalization and consensus the overall costs should be broken down into the categories shown below:

Cost category	Estimated cost
Personnel costs	
Training (short and long courses, seminars, capacity building workshops) including ICD 10 adaptation	
ICT infrastructure	
Data collection, analysis (including surveys)	
Collaborative stakeholders meetings and workshops	
Dissemination and use	
Travel and logistics (includes supervision)	
Consultancies	
Routine activities	
TOTAL	

Total costs (TAS 000 rounded)

YEAR	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	TOTAL Tas	Total US $
GRAND TOTAL	3,477,184	2,606,675	2,500,926	1,949,781	1,623,068	1,937,284	933,449	15,028,364	9,695,737

Estimations of financial mobilization have not been done but will be very essential to clarify the financing gap that is quite likely given the high projected costs.

5. Expected Products, Milestones and Benefits

Effective functionality of the HIS Steering Committee is expected to benefit the hitherto under resourced CRVS sub-system.
Regular availability of vital statistics shall benefit various planning initiatives.

Standardized disease and deaths reporting that shall attained after the adoption of the WHO recommended classification.
Enhanced data management, validity, reliability, security and access shall be an asset for the researchers' community.
Strengthened maternal death audit shall feed into efforts to reduce maternal mortality.
Organized forums for information dissemination shall influence use of health information

The following deliverables are expected during the plan period
- ✓ Reviewed legislation and regulations governing health information areas
- ✓ 'X' duly trained and competent professionals deployed in the Health Information business
- ✓ A budget line item established to finance generic HIS operations shall be at the core of pooled funding for HIS.
- ✓ Health Sector ICT policy
- ✓ Health indicators formulation, review and updating system in place and working.
- ✓ Meta data dictionary for health indicators
- ✓ Data quality assurance procedures manual
- ✓ Electronic medical records in place and in use
- ✓ More complete vital statistics data produced regularly as needed
- ✓ Thematic analytical reports

6. Conclusion

This strategy has outlined an approach to link HIS sub-systems using linked ICT infrastructure, collaborative capacity building, joint formulation and consensus on indicators, data management procedures, data quality verification and validation procedures, data access and sharing facilitated by unique identifier codes and a metadata dictionary. A coordinated approach in addressing major systems tasks such as indicators reviews and updates, legislation reviews, key health information competency development shall contribute to enhanced analysis, dissemination and use of health information. A key result is expected in minimizing duplication and optimizing the use of resources, and hence strengthening the health system.

Annexes

References

1. HMN. 2009. Guidance for the Health Information Systems (HIS) Strategic Planning Process Version 6.
2. RGoZ. 2011. Health Information System (HIS) Policy Guidelines.
3. Zanzibar HIS Assessment Report, 2009
4. United Republic of Tanzania NBS, Demographic and Health Survey 2010
5. RGoZ. 2005. HSRS Strategic Plan II 2006/7-2010/11
6. RGoZ.2011. Zanzibar Health Sector Public Expenditure Review 2010

Gant charts – see separate file
Cost estimates by HIS sub-system – see separate file

Annex 1:
HSRS Strategic Plan Indicators (subject to updating when next strategy is produced)

Proposed national level indicator set No	Type	Indicator	Purpose (what measured)	Baseline FY2005/06	Target FY2010/11	Data source
1	Input	Health share of GOZ budget (excl complementary and foreign development)	Government commitment to the sector	8.0%	12.0%	GOZ budget docs; PER
2	Input	Per capita total (GOZ + external + complementary) allocation to Health (US$)	Total resource envelope	Bgt: $13.13	Bgt: $20	GOZ budget docs; PER
3	Input	Share of GOZ + external finance to district health services	Commitment to devolution	n/a	60%	PER
4	Input	% Total Resource Envelope on drugs and supplies	Allocation to key input	n/a	TBD	PER
5	Input	Population to trained health worker ratio	HR availability	243	TBD	Human Resource Info System
6	Input	% PHCU meeting minimum staffing norms	Effective access; HR distribution	n/a	60%	District plans/reports
7	Process	% of external funds on budget/plan/report	harmonisation	Bgt: 34% Report: n/a	Bgt: 60% Rpt: 60%	PER
8	Process	% of OC budget released	Budget implementation	59%	100%	PER; Appropriation Accounts:

No	Type	Indicator	Purpose (what it measures)	Baseline FY2005/06	Target FY2010/11	Data source
9	Process	% facilities with no stockout of 5 tracer drugs/supplies (to include ACT, contraceptives, ORS, Cotrimoxazole)	Service quality ; drug supply system functioning	n/a	95%	QIRI; routine supervision
10	Process	% HMIS returns complete and on time	Information system functioning	93.7%	100%	HMIS
11	Output	Per capita new OPD attendances per 1000 population (public + private if possible)	Utilisation (proxy for access)	0.4 (2006[15])	1.0	HMIS
No	**Type**	**Indicator**	**Purpose (what it measures)**	**Baseline FY2005/06**	**Target FY2010/11**	**Data source**
12	Output	% deliveries attended by skilled personnel (MDG)	Access to quality delivery services	50%[16]	60%	TDHS
13	Output	Full immunization coverage of children at 1 year	Coverage/access	85% (TDHS)	95%	EPI/HMIS
14	Output	Measles coverage at 1 year	Immunisation coverage (MDG)	87%	98%	EPI/HMIS
15	Output	% of first antenatal visits before 20 weeks	IEC effectiveness; coverage	57.5%[17]	75%	TDHS; HMIS
16	Output	% pregnant women and children using ITN <% households with at least one ITN>>	Coverage with malaria prevention interventions	PW: 34.5% U5: 36.9%	PW: 90% U5: 90%	Coverage survey; TDHS
17	Output	IPT2 coverage	Coverage/access	31%[18]	90%	HMIS
18	Outcome	HIV prevalence among pregnant women aged 15-24 years (MDG)	Prevalence	1%	0.5%	ZACP
19	Outcome	Number of infants dying in a year per 1000 live births	Health status; impact	61 (2005)	51	TDHS
20	Outcome	Under-five mortality rate	Health status; impact	101 (2005)	73	TDHS
21	Outcome	Maternal	Service	473	251	HMIS

		mortality rate (facility-based)	quality	(2006)		
22	Outcome	% under-fives underweight for age	Health status Acute malnutrition	8.6%	4%	HMIS; TDHS
23	Outcome	% under-fives underweight for height	Health status Chronic malnutrition	23%	10%	TDHS

District level indicators:

No	Type	Indicator	Purpose (what it measures)	Data source
1	Input	Total per capita (GOZ + external)	District resource envelope	GOZ budget docs; PER
2	Input	Population per trained health worker	HR availability	Annual plan/report; HRIS
3	Input	% PHCU meeting minimum staffing norms (eg 3 trained staff)	Access to services (quality)	Annual plan/report; HRIS
4	Process	No of facilities performing deliveries	Access to services (range)	HMIS; District profiles
5	Process	No of facilities reporting no stockouts of 5 tracer drugs/supplies	Access to quality services; Quality of drug management process in the district	QIRI; routine supervision
6	Output	Full immunisation coverage at 1 year	Measles coverage at 1 year	Immunisation coverage (MDG)
7	Process	% facilities submitting complete and timely HMIS reports	HMIS quality	HMIS
8	Outcome	Malaria case fatality rate	Case mgt;	early treatment seeking

Proposed hospital level indicators:

No	Type	Indicator	Purpose (what it measures)	Data source
1	Input	Total allocation GOZ + external)	Public resource envelope	GOZ budget docs; PER
2	Input	Cost-sharing revenue as % total resource envelope [19]	Revenue generation	Hospital financial report
3	Input	No of key positions vacant [20]	HR availability	Annual hospital reports; HRIS
4	Process	Bed occupancy rate	Efficiency	HMIS; hospital report
5	Process	Average length of stay	Efficiency	HMIS; hospital report
7	Output	Caesarean rate (as % deliveries)	Comprehensive EmOC	HMIS
8	Output	No of patients on ARVs	Access to C+T	ZACP: HMIS
9	Output	Referral rate (% admissions	Functional referral	HMIS

No	Type	Indicator	Purpose (what it measures)	Data source
		referred elsewhere)		
10	Outcome	Facility-specific mortality rate	Quality of care	HMIS

HIS performance indicators

No	Type	Indicator	Purpose (what it measures)	Data source
1	Input	Presence of a functional Steering Committee.	Oversight on HIS coordination and harmonization	Regular meetings minutes
2	Output	Up-to-date pieces of legislation relevant to health information	Updating of health information related laws	AG Chambers docs
3	Output	Proportion of training plan activities implemented annually	Degree of achievement of the training plan	Training reports
4	Input	Proportion of established Health Information positions filled against the approved establishment.	Recruitment management	Personnel records
5	Input	Proportion of staff trained in core HIS competencies functioning in respective relevant positions	Human resource management	Personnel records
7	Output	Proportion of staff trained against annual target	Annual training target achievement	Training reports
8	Input	Proportion of computers purchased that are functional	IT infrastructure functionality	Inventory system
9	Process	Number of HIS sub-systems with a functioning inventory system	Inventory control	Inventory records
10	Outcome	% of Government funds utilized for HIS activities	Increase in local ownership	PER
11	Outcome	% of Development Partners' funds utilized for HIS	Dependency	PER
12	Outcome	Proportion of collaboration interventions supported under pooled funding	Degree of HIS harmonization	HIS Management reports
13	Output	Health sector ICT policy guideline in place and used	ICT policy guidance	Presence/ absence
14	Process	National minimum core indicators have been identified consultatively	Consensus on indicators	Indicators set
15	Process	Proportion of sector indicators that meet National and international standard	System and criteria in use for setting indicators	HIS assessment
16	Output	An elaborated metadata dictionary	Clarity and consistency of definitions	HIS data base content

Annex 2 List of tables summarizing HIS assessment results:

Table 1: Average assessment score for HIS – Resources

Categories	Score (Percent)	Performance remarks
Policy and Planning	32	Present but not adequate
HIS institutions, human resources and financing	52	Adequate
HIS Infrastructure	63	Adequate
Overall	48	Present but not adequate

Table 2: Average assessment score for HIS Indicators

Categories	Score (Percent)	Performance remarks
National minimum core indicators have been identified for national and sub-national levels, covering all categories of health indicators (determinants of health; health system inputs, outputs and outcomes; and health status)	66	Adequate
There is a clear and explicit official strategy for measuring each of the health-related MDG indicators relevant to the country	87	Highly adequate
Core indicators are defined in collaboration with all key stakeholders (e.g., ministry of health (MoH), national statistics office (NSO), other relevant ministries, professional organizations, sub national experts and major disease-focused programmes)	60	Adequate
Core indicators have been selected according to explicit criteria including usefulness, scientific soundness, reliability, representativeness, feasibility and accessibility	70	Adequate
Reporting on the minimum set of core indicators occurs on a regular basis	37	Present but not adequate
Overall	64	Adequate

Table 3 Average assessment score for HIS – Data Sources

Categories	Score (Percent)	Performance remarks

Census	68	Adequate
Vital Statistics	7	Not adequate at all
Population-based survey	68	Adequate
Health and disease records	55	Adequate
Health Service records	50	Adequate
Resource records	35	Present but not adequate
Overall	47	Present but not adequate

Table 4 Average assessment score for HIS – Data quality

Categories	Score (Percent)	Performance remarks
Mortality	42	Present but not adequate
Morbidity	65	Adequate
Health System Indicators	69	Adequate
Overall	58	Adequate

Table 5 Average assessment score for HIS: Dissemination and Use of Health Information

Categories	Score (Percent)	Performance remarks
Analysis and use of information	49	Present but not adequate
Information use for policy and advocacy	56	Adequate
Information use for planning and priority setting	62	Adequate
Information use for resource allocation	49	Present but not adequate
Information use for implementation and action	50	Adequate
Overall	51	Adequate