



Strengthening of the Zambian Health Management Information System

Project SSG/9 ACP ZA 9/5

Plan of Action

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Abbreviations

ACP	African, Caribbean, Pacific Group of States
ADB	African Development Bank
AFP	Acute Flaccid Paralysis
AIDS	Acquired Immuno Deficiency Syndrome
ARI	Acute Respiratory Infection
ART	Anti-Retroviral Treatment
ARVs	Anti-Retroviral Drugs
AU	African Union
AWP	Annual Work Plan
CARITAS	Catholic Health Initiatives
CBHMIS	Community Based Health Management Information System
CBHG	Community Based Health Groups
CBoH	Central Board of Health
CBHIS	Community Based Health Information System
CHAZ	Christian Health Association of Zambia
CHW	Community Health Worker
CMAZ	Churches Medical Association of Zambia
CP	Cooperating Partners
CRS	Catholic Relief Service
CSO	Central Statistical Office
CSP	Country Support Paper
DANIDA	Danish International Development Agency
DART	Decentralised, Action-oriented, Responsive and Transparent
DFID	Department for International Development
DHB	District Health Board
DHIO	District Health Information Officer
DHMT	District Health Management Team
DHO	District Health Office
DHS	Demographic and Health Survey
DPT	Diphtheria, Pertussis, Tetanus
EC	European Commission
ECHO	European Commission Humanitarian Aid Office
EDF	European Development Fund
EPI	Expanded Program on Immunisation
EU	European Union
FAMS	Financial & Administrative Management Systems
GIS	Geographic Information System
GRZ	Government of the Republic of Zambia
HAST	Integrated HIV, AIDS, STI and TB Program
HBC	Home Based Care
HC	Health Centre
HIS	Health Information System
HIU	Health Information Unit
HIV	Human Immunodeficiency Virus
HMB	Hospital Management Board
HMIS	Health Management Information System
HRD	Human Resources Development
HSR	Health Systems Research
HSSP	Health Sector Support Program
IDA	International Development Agency
IFMIS	Integrated Financial Management Information System
IP	In-Patient
ICT	Information and Communication Technology
KISS	Keep it Simple and Sustainable

LAN	Local Area Network
LDC	Least Developed Countries
LIMS	Logistic Information Management System
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MoFED	Ministry of Finance and Economic Development
MoH	Ministry of Health
MoU	Memorandum of Understanding
MTR	Mid Term Review
NDP	National Development Plan
NGO	Non-Governmental Organisation
OPD	Out-Patient Department
ORT	Oral Rehydration Therapy
PEMFAR	Public Expenditure Management And Financial Accountability Review
PEPFAR	Presidents Emergency Plan for AIDS Relief
PLWHA	People Living With HiV/AIDS
PPAZ	Planned Parenthood Association of Zambia
PRSP	Poverty Reduction Strategy Paper
STI	Sexually Transmitted Infection
SWAP	Sector Wide Approach to Planning
TA	Technical Assistance
TB	Tuberculosis
TBA	Traditional Birth Attendant
UCI	Universal Childhood Immunisation
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
WHO	World Health Organization
ZMK	Zambian Kwacha
ZNBTS	Zambia National Blood Transfusion Service

Executive summary

Under the Poverty Reduction Budget Support (PRBS), the European Union provides substantial funds to Zambia for poverty reduction. The PRSP emphasises health and has a number of indicators to monitor the health sector in line with the National Health Strategic Plan 2006-2011. Strengthening of the National Health Management Information System (HMIS) should lead to improved poverty reduction monitoring.

This document contains a detailed, quantified and budgeted plan of action to strengthen the HMIS. It presents a Logical Framework specifying the goal, purpose, output, activities, indicators, timeframe and budget necessary to produce the desired outputs and a risk assessment. It also contains terms of reference for specific activities needed for the first six months. The Plan of Action is based on the results of an assessment of the Health Management Information System (HMIS) conducted by the Euro Health Group (EHG) for the European Union in July 2005.¹

The HMIS assessment and the preparation of this Plan of Action were carried out in close collaboration with the Ministry of Health (MoH) and the Central Board of Health (CBoH). To assess the HMIS, a questionnaire was developed, with particular emphasis on the Millennium Development Goals and National Health Strategic Plan 2006-2011. Preliminary findings were presented at two meetings each of the Monitoring and Evaluation Subcommittee and the Implementation Review Subcommittee.

The assessment found that the Zambian HMIS is basically functional at all levels of the health system and compares favourably with most African HMISs. There is a defined indicator set and regularly collected data elements; data collection and reporting tools are in use and the flow of information are clearly set out using the “one channel” principle. There is regular quarterly analysis of routine data with reasonably good coverage for some MDG indicators, though many MDGs are not monitored. There is poor integration of vertical programs and administrative information into the routine HMIS, quality of data is not checked and the system of vital registration is weak. Most staff is inadequately trained in HMIS procedures and there is not much faith in the results coming out of the HMIS.

Five **key strategic issues** were identified and these form the basis of the plan to strengthen the HMIS:

1. Capacity development, including intensive skills development through in-service and pre-service training programs, upgrading of manuals and study of best practice sites.
2. Return to the 1996 HMIS principles of Decentralization, Action oriented, Responsive and Transparent health information system, and introduction of the information pyramid.
3. Information and communication technology (ICT) strengthening, through making the database more flexible and strengthening of decentralised information centres that are linked by internet to a central data warehouse.
4. Effective use of information through integration of vertical systems, with improved central coordination between stakeholders and sectors so that the information from HMIS is used to assess output-oriented management performance. Improved action research capacity is needed to improve feedback and dissemination and reduce overlap and duplication.

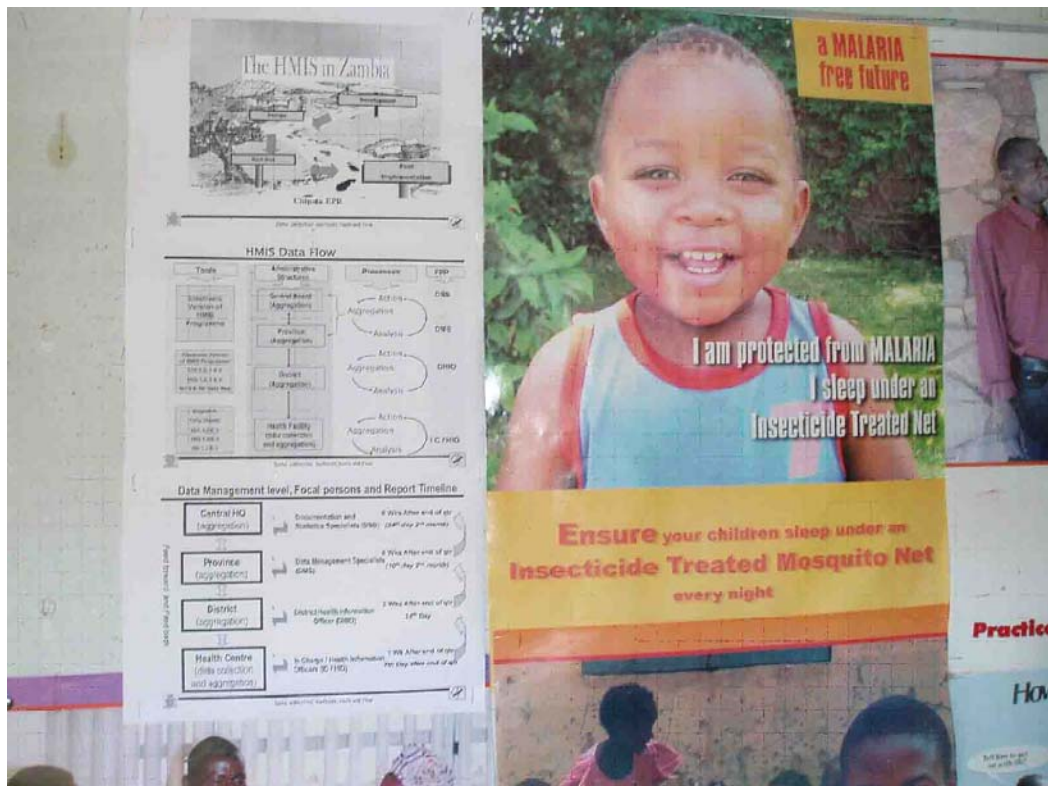
¹ *Assessment of the Zambian Health Management Information System by Arthur Heywood, Erik Nielsen and Stanislaw Orzeszyna, September 2005*

- 5. HMIS staff retention, particularly District Information Officers, is needed by improving skills and status and ensuring sustainability of systems, procedures and staff.

Major ideas for the Way Forward outlined in this action plan include:

- A participative **review** of the present system, with adoption of a few “key performance indicators” that ensure that MDG and NHSP indicators are regularly analysed by all levels and encourage local self-assessment to satisfy the needs of health providers, vertical programs and service managers.
- An intensive **capacity development** program targeted at all users as well as planners and policy makers and focusing on practical skills development for core HMIS functions such as epidemiology, statistics and ICT use and maintenance.
- Strengthening of the **ICT**, focusing on a revised database and data warehouse, with improved equipment and capacity at provincial and district level information centres.
- Improved **use of information** for local action that responds to local needs as well as the needs of MDG/NHSP program monitoring and management improvement. Promote local action- research skills to increase local analysis of existing records and Sentinel site data to get quality routine data and up-to-date analysis, improved dissemination and feedback of information.
- A MoH **project** that will provide Zambian leadership to the HMIS through use of international standards and regular monitoring and evaluation

This document presents a logical framework for an HMIS strengthening project, its time frame, milestones, budget and terms of reference for selected activities.



Background

Poverty reduction strategy

In July 2002, the Zambian Government officially launched its first Poverty Reduction Strategy Paper (PRSP) for the period 2002-2004. The main goal is poverty reduction through sustained economic growth and employment creation. In the health sector, in line with existing National Health Strategic Plan, the PRSP has the following programmatic priorities²:

- **Provision of the basic health care package**, to reduce morbidity and mortality and contribute to poverty reduction. An important component is cost sharing through fee paying; user fees should not, however, constitute a barrier to the poor accessing public health services;
- New approaches to **allocation of financial and human resources** to districts to give more weight to poverty issues; community participation and accountability of resources will be promoted; the Sector Wide Approach will be retained;
- Restructuring of the **procurement system**, to ensure that purchasing of drugs is done more efficiently and on a need basis;
- Improving **access to health care** in hard-to-reach and underserved areas as well as for vulnerable groups;
- The **public health priorities** areas cover: Malaria, HIV/AIDS, TB, and STI, Integrated Reproductive Health, Adolescent health, Child health, Epidemics, Hygiene, sanitation, and safe water
- The areas of focus of **support services** are following:
 - Development of physical infrastructure and provision of medical equipment
 - Human resource development
 - Strengthening of existing management systems

Evaluation of the Poverty Reduction Strategy

Poverty monitoring involves **tracking key indicators** over time and space with a view to seeing what changes have taken place to the indicators following the implementation of the PRSP. The central objective of the PRSP is to reduce poverty and evaluations will enable the assessment of the impact on poverty of PRSP interventions.

There are three main aspects of the PRSP evaluation strategy:

- evaluation of the **implementation** process: to attempt to establish whether programme implementation is done according to design and whether things are working or not;
- evaluation of **outcomes** to establish what the results are in relation to the original or revised **programme goals** and
- whether particular outcomes **are the result** of the interventions under the PRSP or a component of it.

² Zambia Poverty Reduction Strategy Paper 2002-2004, Ministry of Finance and National Planning, Lusaka, March 2002, <http://www.cboh.gov.zm/documents/PRSP%20Final%20Document.pdf>

PRSP monitoring indicators for the health sector	
Objectives	Objectively verifiable indicators
Overall: To improve the health status of all people in Zambia, especially the poor	Life expectancy
To increase the life expectancy of the population	Infant mortality rate
	Maternal mortality rate
	Under-5 mortality rate
	Infants aged 12-23 months fully immunised by 12 months
To encourage lifestyles that support health	Sexually active adults practising safe sex
To create environments that support health	Children under-5 with low weight for age
	Children who are stunted
To achieve equity in access to health opportunities	Rural households within 5 km of a health facility
	Health workers per 1,000 population
	Cots and beds allocated per 1,000 population
To provide assured quality health services	Health facilities with 80% of established posts filled
	Health facilities with essential drugs always available
	Health facilities rehabilitated
	New health posts constructed (according to health sector plan)
To provide quality policy and technical guidance to service providers	Policies developed
	Policies reviewed

National Health Strategic Plan 2006-2011

A 5-year National Health Strategic Plan (NHSP), for the period 2001-2006 is coming to an end. The preparation of NHSP 2006-2011 takes into account the PRSP/NDP process, the MDGs and new challenges to the basic health care package such as treatment for People Living with HIV/AIDS (PLWHs).

The NHSP directly addresses the Health Management Information System. It states that current weaknesses of HMIS are, among others: Lack of evidence based decisions; Undue influence of sectional interests; Weak demand for data; Difficulty of monitoring progress; Duplication of effort; Under use of data with absence of key data elements; Lack of reliable data on inequalities; Weak capacity to analyze existing data.

The NHSP identifies the following strategies and objectives for HMIS: To create a harmonized framework for the national health management information system; To define key health indicator standards, along with stratifiers (gender, rural/urban, socioeconomic, etc.); To develop platforms for providing essential health information; To determine data and

analytic capacities; To develop frameworks or guidelines for information use; To strengthen country health information systems; To establish collaboration with academic and research Institutions for analytic rigor to make information supplied reliable and acceptable; To improve access to and use of health information

Health Sector Reform

Health reforms have been implemented in Zambia since 1992 under the framework of the Sector Wide Approach (SWAP). Resources from government and other stake-holders are pooled so they can be used efficiently.

The main success of the health reform processes in Zambia is decentralisation down to the district level. In 1996, the Central Board of Health (CBoH) was established as the implementing body. However, failure to implement the de-linkage of public health workers from the civil service led to the end of the dualism of the Ministry of Health and Central Board of Health. A new structure of the Ministry of Health is in its final stages of preparation. It will include a monitoring and evaluation unit addressing in a comprehensive way the Health Management Information System.

There was a change in attitude generated by the new health reforms whereby a number of initiatives (mainly in the private and NGO sector) were seen as being effective. This showed the possibility of implementing a new national HMIS system which was flexible and more responsive to the needs of all levels of the health system, and this resulted in the 1996 HMIS plan.

Health Management Information System

Before 1994 the Health Management Information System (HMIS) in Zambia was overly centralized and fragmented, and resulted in the collection of large amounts of data which was not useful for decision making and action. In 1996, a number of problems with the previous system were identified that included fragmentation, duplication, centralization, delay, unreliability. The system was not producing results and was donor driven, rather than being used for local decision making. Improvement of the HMIS was therefore an important part of overall health reforms and the HMIS plan was drawn up in 1996. An assessment of the implementation of the HMIS from 1996 to 2005 is presented in an earlier document.³

³ *Assessment of the Zambian Health Management Information System by Arthur Heywood, Erik Nielsen and Stanislaw Orzeszyna, September 2005*

Key strategic issues

The following strategic issues identified in the HMIS assessment of 2005 revolve mainly around improving quality of data and information dissemination by improving and integrating systems and strengthening capacity of staff to implement the HMIS and monitor the MDGs and NHSP

1. Capacity development

Capacity for implementation of the HMIS is critically limited at all levels of the system,

- amongst HMIS staff who are supposed to produce analysed information,
- amongst managers who should use the information
- at the level of facility staff who produce the raw data.

Training was started in 1998 and one manual was produced, but there has been little implementation of the training program envisaged, though some ad-hoc induction training has taken place. This is due to poor management, inadequate funding and lack of commitment to the HMIS by government and donors alike.

The result is that, while the basic data capture and reporting skills are present, there is little attention to data quality and staff is not skilled in self-assessment or the “epidemiological thinking” needed for the analysis, interpretation and use of information for action.

There is thus an urgent need for a comprehensive training program for people already in post and those studying to become health workers (undergraduate and post-graduate).

Links need to be set up with other African countries that offer appropriate HMIS-related short courses at universities, technical colleges and training institutions. Courses should be run in-country where possible, but key trainers and decision makers should be sent for short courses appropriate where possible.

Manuals

A set of appropriate and action oriented HMIS manuals is needed to be developed as the basis for training at all levels.

In-service training programs

Programs need to be developed with clear curricula, training methodologies and exercises for:

- **Facility level** staff for data collection, quality control and self-assessment,
- **HMIS staff** at all levels to ensure quality data collation, effective data processing, appropriate analysis and interpretation and intelligent feedback, dissemination and use of information,
- **Program managers** at national, provincial and district level to use information in the monitoring of program activities and epidemiological thinking.

Pre-service training

Pre-service training in HMIS was proposed in 1996 but never implemented. HMIS curricula need to be developed and courses integrated into pre-service training for

- **Monitoring and evaluation officers** (Data management specialists and DIOs) at provincial and district level **before** they take up their posts. Incentives for participating in the Institute of Management and Information Systems (IMIS) course need to be investigated
- **District Health Managers** at the District Health Management Course at Kabwe and the Health Management course at Chainama hills
- **Undergraduate** Curricula on HMIS principles and basic epidemiology should be introduced into the courses for nurses, clinical officers, doctors and other health professionals.

This will need a considerable and ongoing commitment from MoH and donors, as well as proactive advocacy and management of the training program.

Sustainability of systems, procedures and staff

In order for systems to be sustainable, procedures should not be static, as has been the case with the current HMIS, which procedures have not adapted to changing environments and requirements.

Procedures should be based on directives and information needs of managers, policy setters, etc. Managers should work with procedures and suggest changes according to internal and external requirements.

A set of flexible and regularly updated guidelines and procedures manuals should be developed that also take technical changes into account. Although all changes have to be disseminated immediately the manuals should be technically flexible in the sense that only outdated parts should be replaced by new procedures, and not the whole manual.

All users should have access to all – and at all times updated – manuals through the web and should be allowed to download and to produce and print their own updated versions.

Users should be trained properly in how to search information, how to keep manuals updated, and how to introduce local procedures without corrupting the general uniform procedures.

This needs proper training of staff - both HMIS and technical staff.

2. Implementation of DART principles

The 1996 HMIS plan⁴ has a number of excellent basic principles which have not been properly followed. These DART principles need to be revisited if the HMIS is to be effective. A few others such as the “information pyramid” and the concept of the “district information centre” should be introduced.

Decentralisation

A key to good district management is the presence of a functional and robust DHIS that enables local monitoring and analysis of coverage and quality. Data analysis and self-assessment should be carried out at the level where data is collected and information should be used for decision making and action at that level. Data should be collected for local management and not merely for upward reporting for “higher” levels and to ensure that

⁴ *Health Management Information System: Design and Implementation Plan for a DART-HMIS by HMIS Unit 1996*

donors pay out money. This will need revision and simplification of reporting and analysis tools to suit the needs of workers

Local managers and program coordinators have the right to demand high quality data from the routine HMIS and that adequate resources are allocated for this purpose.

Action oriented

Data should be collected for local action, self assessment and decision-making, not for filing. The HMIS should collect information for action according to the **information pyramid** and there should be a clear differentiation between the scope of decisions taken by each level.

1. Health Management Boards require operational information for day-to-day management and supervision;
2. Different health information needs also exist for the community, health post, health centre, hospitals as well as the Regional Boards of Health.
3. Specialised programs have some information needs which fall outside the boundaries of the routine HMIS. These should be collected (and paid for) through integrated use of sentinel surveillance, surveys and other techniques, rather than burdening the routine system.
4. Central Board of Health requires information for longer term strategic management and support, and for setting national policy.

Well performing units should be rewarded and poorly performing units given technical and managerial support to improve skills and infrastructure

Responsive

Data collection should react to **changing needs**, with data reported in an appropriate **timeframe** according to its use, and be flexible in terms of adaptation to changing local needs.

This responsiveness should be ensured by a high level internal “steering committee”, e.g. the Monitoring & Evaluation Subcommittee, and **regular reviews** of the HMIS involving all role players that ensure that each level collects standardised data in a flexible, locally empowering way.

The current HMIS system is technically inflexible and has not been regularly reviewed; as a result it has become stagnant and rigid, unable to incorporate new challenges such as HIV/AIDS, the Millennium Development Goals the NHSP 2006-2011 etc. Failure to respond to needs of program managers is a major reason why “vertical” programs have been forced to adopt parallel systems to collect timely and useful information not provided by the HMIS.

Transparent

A see-through system was envisaged where obtaining information would be easy and dissemination facilitated by the newly created Provincial and National Resource Centers.

All stakeholders should be able to easily access anonymous analysed information on key basic programs and the public should be honestly informed of progress and achievements of the health sector through regular press releases and annual publication of comprehensive reports that critically analyse information and give a realistic picture of successes and constraints.

In addition, correlation of data collected by the various subsystems will be greatly facilitated by an integrated, centralized and web-based data warehouse to which health workers, managers and the public should have selective access.

3. Information and communication Technology strengthening

Though computers exist at most provincial and district offices, there is an urgent need to improve the use of modern Information and Communication Technology (ICT) at all levels through provision of equipment and developing capacity of staff.

Key ICT issues include

- Revision of the **HMIS database** to make it into a modern, flexible, and user-friendly system that can be locally adapted to accommodate current information needs (data elements and indicators) and be easily locally adapted to suit future needs. There is no need to start from scratch and there should be an adaptation of existing internationally functioning programs to the needs of Zambia.
- Strengthened **information centres** with adequate Email and internet communication at districts, hospitals and provinces. Appropriate options should be investigated, including landline telephone, satellite dishes (mobile or fixed) and the radio-based “bush mail” service provider
- Development of an integrated web-enabled **data warehouse** to enable system integration and access at all levels, however without compromising anonymity and security of sensible data.
- Improved interactive **Web-site** for the ministry at all levels, to facilitate uploading reports, documents and other feedback and to ensure controlled access to information.
- Develop an ICT policy for the Ministry of Health, including security policies and electronic medical record standards.

4. Effective use of information

While the “information pipeline” is well established and plentiful data exists there is minimal interaction with the data by health staff and little of this is turned into useful information for decision making, performance assessment or resource allocation. Front-line health workers are overburdened with collecting excessive data that is not used and managers receive inappropriate, and therefore useless, information. Most workers and managers do not have adequate information skills to perform tasks required of their jobs.

There is an urgent need to

1. Revise the national **indicator set** to align it with the NHSP 2006-11, international MDGs, priority programs and key performance indicators of outputs for each level.
2. Reduce the number of **data elements** reported in line with these indicators. This will in turn reduce the data collection workload of front-line health workers and the amount of data reported.
3. Review the **periodicity** of reporting so that information that needs monthly action is reported monthly, and information needing less frequent action is reported less frequently.
4. Complete the interfaces between HMIS and the **subsystems** originally proposed in the 1996 plan but not implemented – namely Finances, Procurement, Human

Resources and Assets. These interfaces should be developed and as a result the subsystems integrated with the new HMIS database.

Integration of vertical systems

There are currently a number of vertical systems collecting and reporting data in systems that are parallel to the National HMIS and have no links to it. These include systems for vertical programs (Malaria, ARVs, and Disease Surveillance etc) as well as management systems (FAMS, LIMS etc). This results in duplication of efforts by front-line staff, overlap of information as well as gaps in the collection of essential information.

The reasons for this are numerous, but mainly relate to the inability of the HMIS to provide adequate and timely information that suit the needs of the various stakeholders.

The situation needs to be urgently addressed through

- detailed discussions with the various stakeholders running these parallel systems, to identify their information needs and indicators in use and to see how these can be harmonised with the Routine HMIS using the “information pyramid” principle
- development of interfaces between these parallel systems and the HMIS to incorporate key indicators in the routine HMIS and the data warehouse.

Research capacity

There is room for improvement of capacity for research, including basic epidemiological investigation. All levels need improved skills in simple participatory action research methods to enable health workers and managers to monitor progress towards the MDGs, to use data from sentinel surveillance sites better, to participate actively in surveys conducted at the periphery, to investigate disease outbreaks, to study epidemiological phenomena and to improve the critical content of routine reports.

There is need for improved skills in report writing and development of standard formats, or where standards formats exist, a review of these. Some formats may improve by including narrative summaries, in stead of or to supplement tables.

Examples of Practical local research would include

- Annual district-level reports on progress towards MDGs
- Analysis of data from sentinel sites, disease surveillance reports etc.
- Record reviews to cross-check routine data quality and to get more disaggregated data on gender, age etc.
- Improved projections of Population data linked to headcounts
- Improved analytical content of the annual reports
- Assessment of output and performance by priority health programs.

Improved coordination

Improved information use requires that coordination be strengthened

- vertically (between levels of the health services) and
- horizontally (with other stakeholders, CSO, health- related ministries and NGOs)

Information from HMIS should flow seamlessly between users with overlap and duplication eliminated and the gaps reduced. This will be greatly facilitated by application of the information pyramid principle.

This will require a strengthened M&E unit of MoH to provide necessary leadership and technical skills and a top level M&E steering committee with involvement of all stakeholders including district and provincial staff.

Coordination of surveys such as the DHS, facility survey, Service availability mapping and other future surveys should be improved in future by ensuring that all surveys pass through the national M&E steering committee.

Feedback and dissemination

Because of high staff turnover, poor pre-service training in HMIS and a generally low level of information skills, regular Performance Assessment is essential for staff to get orientation and feedback.

Feedback from **performance assessments**, though it is done often and at all levels, is generally of poor quality and is often not in an appropriate format that provides appropriate information. Feedback on results of **national surveys** is weak and peripheral staff is often used as data capturers but not given the results of the surveys, micro-data or even overall reports.

For example,

- The **quarterly summary** of selected HMIS indicators, on which donors base their funding, is merely a list of tables showing quarterly indicators, and appears not to be adequately analysed or checked, though large amounts of money are paid out on the basis of these results,
- The SAMS and JICA surveys were conducted over six months before the HMIS assessment of July 2005, and no province had received even preliminary reports.

The M&E unit should ensure that feedback of information is improved through

- improved documentation and coordination of surveys and research results,
- routine HMIS reports and an improved website that makes uploading of data easy,
- ensuring that survey reports and publications are distributed to district level, both paper-based and electronically, press releases published, and electronic versions uploaded to the website.

5. HMIS staff retention

Staff retention is a problem throughout the MoH, affecting all cadres at all levels.

District Health Information Officers are seen as the cornerstone of the HMIS, as without them the entire system will collapse. While most districts and all provinces have information officers / data specialists in place, there is an unacceptably high turnover of district health information officers, and the officers in place are demotivated, under-skilled and are all “looking for greener pastures”.

Extensive discussions with the DIOs revealed a great deal of dissatisfaction based around lack of recognition and authority within the DHMT, poor skills for analysis and interpretation of information and lack of established posts.

Lessons need to be learned from previous effective retention schemes (e.g. for doctors) that have improved job security, working conditions, career pathways and recognition.

What is needed appears to be a pilot of the health staff retention plan to include DIOs based on

- Creation of **established DIO posts** with clear job descriptions and career prospects.
- Adequate **training** for the required tasks, including computer and network skills, epidemiology demography and statistics skills.
- Appropriate **tools** such as improved internet access.



The Way Forward

The MoH has to see improved information as a top priority and set up and support a strong, decentralised program to strengthen data quality and increase use of information in management decisions and monitoring of performance at all levels.

This project is concerned mainly with strengthening the Routine HMIS reporting of health service data and its conversion into indicators that can be used for local management of services and improvement of quality of care to patients. There are, however, many subsystems that need to be addressed in order for the overall monitoring of health system performance to be improved as outlined in the HMIS assessment report of 2005⁵

The new HMIS project should be founded on the 1996 HMIS plan with the principles of Decentralisation, action Orientation, Responsiveness and Transparency at its centre, and incorporation of the information pyramid and integration of vertical program needs

This will require the following outputs, further elaborated in the action plan.

1. Revised HMIS

While acknowledging that the “data pipeline” is in place and that the HMIS is basically functional, there is need for a substantial revision to return to the 1996 DART principles and to adapt to the new challenges of the past 10 years

- **Decentralised action by managers and output-oriented self-assessment**
- **Action orientation, based on local decision making to monitor the NHSP and achieve MDGs; simplified tools for data collection and analysis.**
- **Responsive to needs of all health workers and priority programs for the NHSP and able to change as the needs arise.**
- **Transparent data collection and dissemination and controlled access via a web-based data warehouse; Review of policies and legislation**

This revision should be done gradually and with minimal disruption to the existing positive aspects of the HMIS, but with a clear focus on improving monitoring of MDGs and local priorities. In order to maintain a balance between local flexibility and international standardisation, it is necessary to collect data in a way that ensures a minimum set of information for each level, with data from the “lower” levels (community and facility) including all data that is mutually agreed as being necessary for “higher” levels (national and international) as in the diagram on page 19.

This will require development of a revised integrated national set of **indicators** so that NHSP targets and international MDGs are regularly analysed by all levels. Relevant national and provincial level indicators will be added that adhere to international standards, while encouraging local flexibility, resulting in a hierarchy of standards.

In this way, through ongoing discussion around the minimum indicator set, each level maintains the flexibility to collect data it considers important, and every level will have essential information required for decision making and action reported to it.

⁵ *Assessment of the Zambian Health Management Information System by Arthur Heywood, Erik Nielsen and Stanislaw Orzeszyna, September 2005*

Using this same pyramidal approach, action for important but neglected subsystems such as Hospitals, community information, administration and human resources need to be investigated and action plans developed.

2. Capacity development

Human Resource capacity must be strengthened with a comprehensive training program to promote a “culture of information” for HMIS staff, program managers and facility health workers at all levels. This should include both technical skills and the DART information principles

- all **levels** and all categories of health workers, including district, program and facility managers
- a focus on in-service **skills** development for health and information
- formal **in-service** and pre-service courses,
- undergraduate and post-graduate training involving universities, training colleges and technical colleges.
- “Best practice” **study tours** and courses both within Zambia and in other African countries

3. Improved ICT

Appropriate ICT for the 21st century is desperately needed for Zambia MoH, to enable improved communication between levels and dissemination of information outside of the health sector. The focus should be on a modern and flexible ICT platform

- revision of the HMIS **database** to make it user-friendly, flexible and able to integrate needs of new challenges and the vertical programs
- strengthening of district and provincial **information centres** with computers, internet and Email access
- Setting up an integrated **data warehouse** that will allow access to relevant health-related data.

4. Increased use of information

Use of information for action is essential at all levels in order to improve quality of data and to stimulate critical self-assessment. The MDGs and NHSP should be the core focus of all assessment, with regular analysis and self assessment around them.

Some ways of increasing use will include

- promoting local **research** skills to increase local in-depth analysis of existing records
- encouraging annual district-based **progress reports** for NHSP 2006-11, MDGs and other priorities, based on record review and local surveys,
- improved use of data from **Sentinel sites** to get quality routine data and up-to- date analysis at local level
- improved **dissemination** and feedback of national level surveys

Logical Framework

Introduction

Based on the assessment report of July 2005⁶, a 3 year project has been developed to be based in the Ministry of Health and funded by the European Union. The project purpose is to strengthen the capacity of the MoH to monitor health sector performance. It is assumed that this will in turn contribute to the overall goal of strengthening the monitoring of poverty reduction programme in the country.

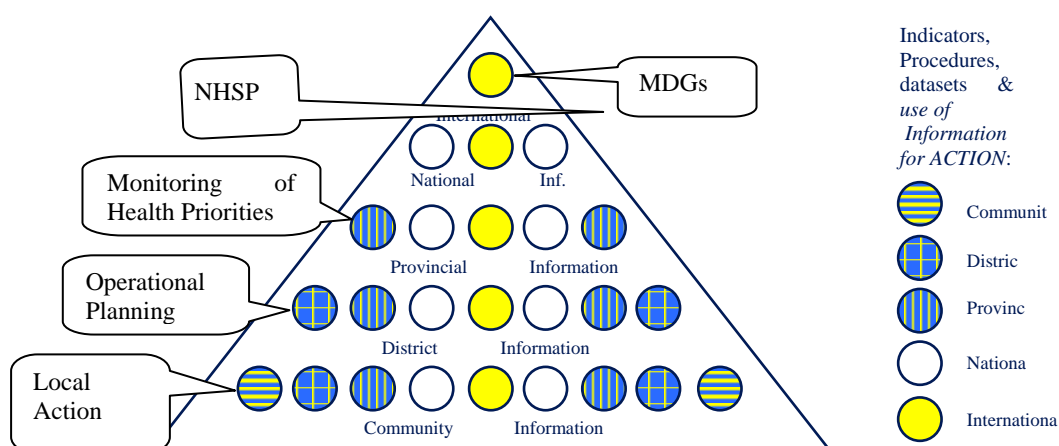
This project will have five major outputs

- 1 Revised HMIS that is integrated, flexible and responsive to the needs of all users,
- 2 Capacity of staff developed to ensure sustainable functioning of the HMIS
- 3 Strengthened ICT infrastructure of the HMIS
- 4 Increased use of available information
- 5 A project implementation unit based in the Ministry of Health will ensure Implementation, monitoring and evaluation of the project

Project Principles

Sustainability

- Keep the HMIS **Simple and Sustainable** and stick wherever possible to the **original principles** of the 1996 plan⁷ – Decentralisation, Action-oriented, Responsiveness and Transparency (DART), single information pipeline, etc. - in order to achieve minimum disruption to the current system.
- Application of the “information pyramid” principle that will ensure local flexibility and initiative, with central application of international standards as illustrated below



⁶ Assessment of the Zambian Health Management Information System by Arthur Heywood, Erik Nielsen and Stanislaw Orzeszyna, September 2005

There should be a focus on ALL levels of this pyramid, from practical individual patient care information to more abstract policy-type information at national and international levels

- Focus on the basics, monitoring the **NHSP 2006-11** and **Millennium Development Goals (MDGs)**, with a minimum set of indicators and a related data set collected, with a reducing number of data elements reported up the information pyramid.
- Emphasis on **key performance indicators** that can be used to monitor performance of the health sector, with a focus on self-assessment at all levels.
- Ensure sustainability through adequate **political commitment** to the HMIS revision, with an active steering committee at national level and a HMIS revision team in each province.
- Ensure funding by GRZ of the key elements of the HMIS such as staff establishment, recurrent costs and ongoing training.
- Implementation and piloting in a **phased** manner, starting with small pilots to test prototype systems, expanding to all provinces, initially selecting the best two districts in each and then expanding to a further two districts after six months and total roll-out after a year.

Integration and participation

The project will be fully integrated into the MoH and will use existing structures where possible. Project staff will be seconded from MoH and implementation teams will be selected from different directorates as needed.

Collaboration with CSO will be crucial in order to improve the relevance of the census to health and to improve implementation of the system of vital registration

All role players need to pull in the same direction if the HMIS is to succeed. This can only be achieved by a participatory, phased approach that identifies and builds on existing successes, develops local ownership and ensures local use of information for self-assessment of service delivery and management performance.

- **Consultation** at all levels and **consensus building** to get a critical mass of reform-minded managers and health workers will be essential, particularly in the early phases so that everyone is aware of the need for changes in the system.
- **Collaboration** is needed with vertical programs and the SWAP process to ensure that disaggregated and anonymous data for operational activities is incorporated into the HMIS and that funds are used to strengthen the overall M&E process rather than individual data empires. Service managers and pro-program managers need to collaborate to ensure joint monitoring of service delivery of priority programs.
- **Integration** of existing data sources into one data warehouse that uses modern technology to enable easy access to information from a variety of platforms at a single point will ensure maximum use of available information. Simple and appropriate reports should be created in an integrated way and made readily available to managers at all levels and regular feedback made to all data providers.
- The database should be **flexible and open-sourced** so that whatever relevant report requirement by end-users and/or stakeholders may be fulfilled.
- Create at each level an appropriately staffed and equipped **information centre** which integrates data from all sources – routine information, special programs, epidemiological surveillance, administration and population. In the longer term, this information centre can be used by other ministries to monitor MDGs.

⁷ *Health Management Information System: Design and Implementation Plan for a DART-HMIS by HMIS Unit 1996*

- Information should be **used and shared** by all actors working in health – including hospitals, administrators, communities and the media so that everyone can participate in planning and monitoring programs.

Local Capacity development

- **Capacity development** should focus on appropriate practical skills development in epidemiological thinking, statistics and ICT for all levels of staff, including managers, particularly at the periphery. This will need to be linked to the new MoH structure
- Encourage use of **Zambian consultants** wherever possible to provide technical assistance to the MoH. These consultants, to be drawn from academic institutions, NGOs and the private sector, should be seen as key resources for sustainability and receive appropriate support and skills development.
- The cornerstone of the HMIS is the **DIOs**, and their development should be given particular emphasis so they have adequate skills to collect data, ensure quality and analyse data.
- Studies of “best practices” in Zambia and other African countries will be encouraged.
- Back-stopping and support features should be introduced and appropriate procedures for sustainable technical and managerial support by provincial and national data specialists to the districts developed.

Organisational project set-up

To secure ownership and sustainability it is imperative that the project should be anchored within the MoH. The implementation of the project should also be seen as an excellent capacity building opportunity for the ministry staff.

It is thus envisaged that the core functions of the project management should be filled by staff from the ministry. While it is envisaged that there will be ongoing backstopping and support to project management, external technical assistance will come in for short term consultancies only.

As the assessment of the current HMIS clearly demonstrated there are serious capacity problems at all levels. As these problems have not been eased, solved or even addressed during the 10 years of implementation of the 1996 plan, we believe that getting technical assistance from outside the ministry is a must if the expected outputs of the project can be achieved.

It is suggested that the project management should comprise

- 1 Project Manager who will be overall responsible for management, including finances, and implementation of the project activities,
- 1 Programme Coordinator who will be responsible for coordination of the activities laid down in the work plan and carried out by implementation teams,
- 1 Administrator who will also be responsible for financial management of the project,
- Auxiliary staff.

The implementation teams will consist of ministry staff and external consultants.

The project shall be anchored to the Directorate of Planning and Development through the Programme Coordinator. In order to stress the importance of a well-functioning HMIS it is

further seen as important that there is a strong link between the Project Manager and the Permanent Secretary.

The charts of organization below (see next page) show the organisational structure of the project and its linkages to MoH.

EU Project Account Administrative requirements

Although the project will be anchored in, fully integrated with, and owned by the MoH, there is one single assumption that may seriously affect the implementation of the project, namely that the project managers will be capable of complying with the account administrative requirements of the European Development Fund (EDF). If not, the funds for implementation of the planned activities will dry out and the expected outputs will not be achieved.

Although the project will be owned by the MoH, the financial management must follow the requirements of the EDF which means that the Ministry of Planning and Finance National Accounting Office (NAO) is overall responsible for the financial management.

However, in accordance with the EDF accounting procedures the some of the powers of the NAO are delegated to an **imprest administrator** and an **imprest accounting officer**, in this project through a service contract with the MoH. The contract must clearly designate the two persons who will take on the duties of authorisation (imprest administrator) and payment (imprest accounting officer). These persons must then be duly authorised by the MoH to sign and act on its behalf in implementing the corresponding project estimates.

The duties of authorising officer and imprest accounting officer are separate and mutually incompatible, and the two officers must be able to exercise their duties independently.

In the organizational set-up Project Coordinator will be delegated to take on the duties of the imprest administrator and the Administrator will be imprest accounting officer.

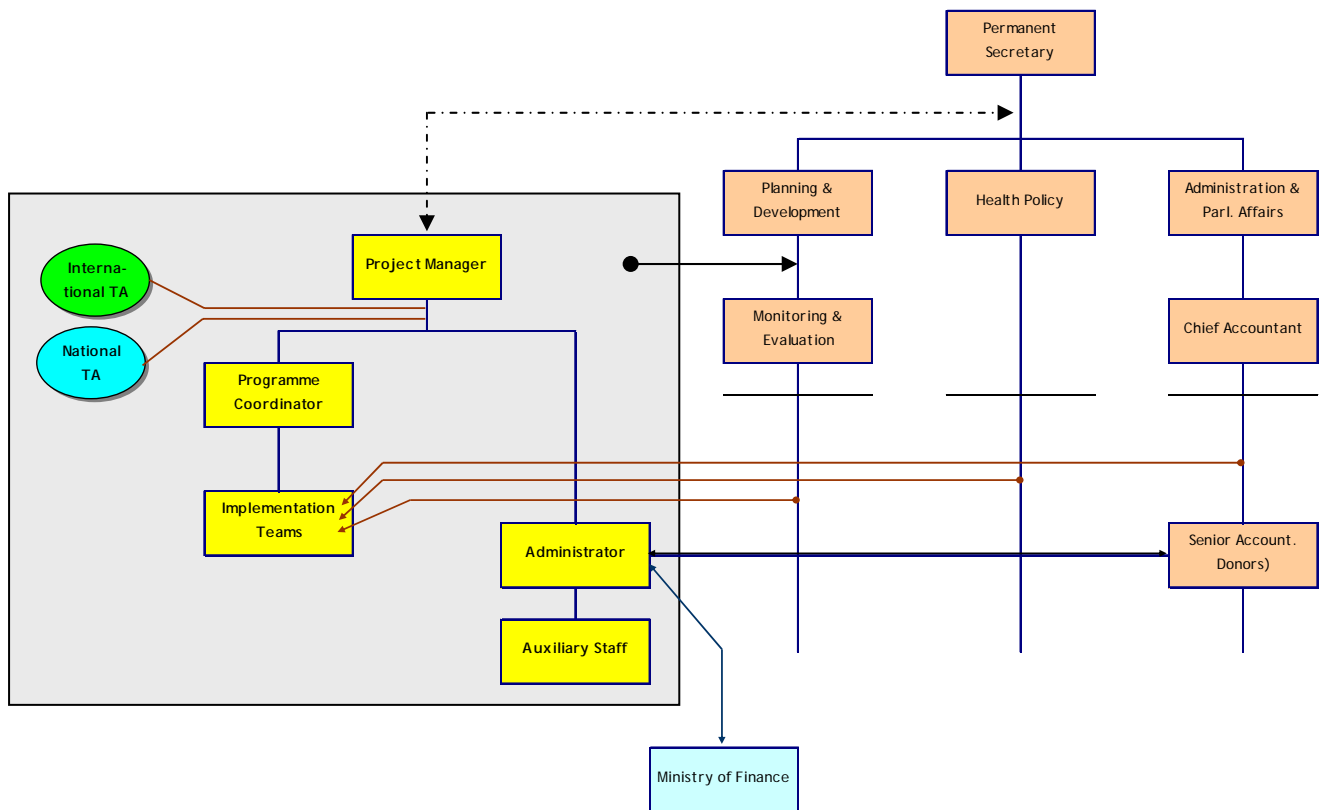
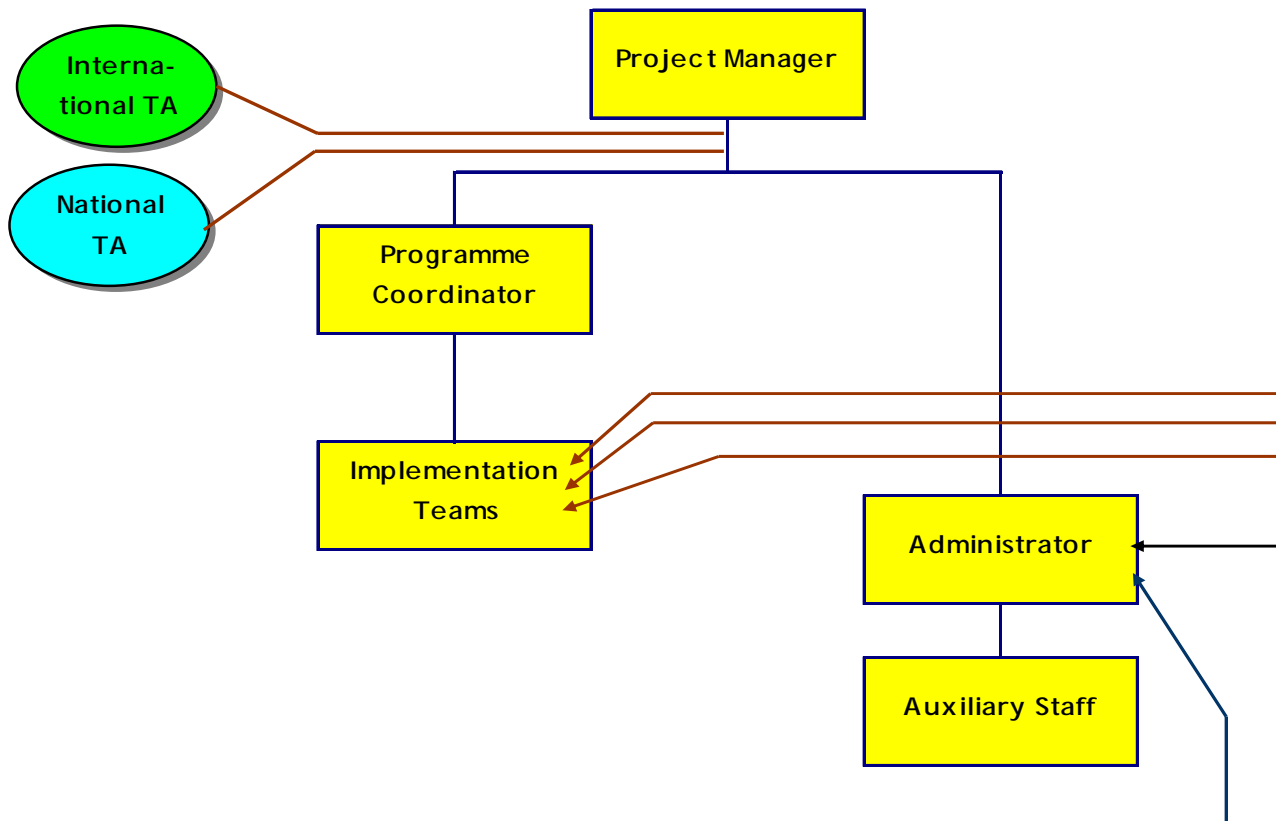
The position as Administrator is probably the most critical for a successful implementation of the project. If s(he) is not capable of controlling the flow of funds and compiling the financial reports on spending timely and accurately the funds will stop flowing.

Flow of funds

In short, the EDF financial procedures are based on the principle of imprest and replenishment. The imprest will be paid out in accordance with a plan of activities and when financial reports are approved, project funds will be replenished by the amount spent and approved.

It is in principle a fairly simple system, but it requires a strong and independent imprest accounting officer who understands the importance of presenting correct accounts with proper documentation and without delays.

In order for the project to reach its target the Administrator must be full time and duly authorised by the MoH to sign and act on its behalf in implementing the corresponding project estimates.



Risk Assessment

Purpose and Key Strategic Areas

The **purpose** of the project is to strengthen the HMIS capacity to monitor health sector performance in Zambia using internationally standardised assessment tools.

The **key strategic areas** of the project have been identified as

- **Capacity development** which includes among others
 - human resources, e.g. facility staff, HMIS staff, and managers,
 - system manuals, e.g. procedures, dictionaries, documentation,
 - pre-service training curricula and materials,
 - in-service training curricula and materials
- **Implementation of DART**, i.e. decentralised, action-oriented, responsive, and transparent HMIS,
- **Information and communication technology strengthening**, which includes among others
 - revision of the **HMIS database**,
 - strengthened **information centres**,
 - integrated web-enabled **data warehouse**,
 - interactive **Web-site**.
- **Effective use of information**, which includes among others
 - revise the national **indicator set**,
 - reduce the number of **data elements** reported,
 - review the **periodicity** of reporting,
 - complete the **subsystems** originally proposed in the 1996 plan.
 - integrate vertical systems,
 - improve research capacity,
 - improve coordination,
 - improve feedback and dissemination.
- **HMIS staff retention**, which includes among others
 - Creation of **established DIO posts** with clear job descriptions and career prospects,
 - Adequate **training** for the required tasks, including computer and network skills, epidemiology demography and statistics skills,
 - Appropriate **tools** such as improved internet access.

Primary strengths of the HMIS

The **current HMIS is basically functional** and compares favourably with many African HMISs. It produces and reports on data according to a defined indicator set and uses it to make annual plans right down to facility level.

The **1996 plan is excellent** and deserves to be fully implemented. The principles of the plan – namely DART, uniform pipeline, links to NHSP - are good and should be followed in any future HMIS. One of the important strengths is that the pipeline has been built and the data is flowing from the facilities to the districts, provinces and ministry and there is a data refinery in place, although not yet refining the data to the best quality information

The **national indicator set is well defined** and there is a related dataset linked to it that is well known and used on a regular basis for action plans, performance appraisal and supervision.

There is a uniform **feedback** system in place with links to financing based on quarterly indicators.

The **procedures manuals from 1996 are in place** at all levels and are used by new HMIS users as reference files. The manuals are, however, not updated for all new features introduced since the commencement of the 1996-HMIS.

There is a general **basic understanding** of the importance of a well functioning HMIS and the staff at all levels are accustomed to working with information systems.

Funding is secured for the investment in the project for strengthening the HMIS for poverty reduction monitoring.

Obstacles that may affect the purpose

The general obstacles that may affect the implementation of this project for strengthening of HMIS are similar to the ones that caused the slippage of the 1996 plan, i.e. poor support, limited funding, weak capacity development, a low demand for quality information, and poor ICT use.

The risk remains that **HMIS may be neglected** at higher levels and may lack top level leadership and management. The proposed steering committee has to take a lead role in policy and strategy setting, monitoring and evaluation of the implementation, budget monitoring, annual reviews and subsequent revision of action plans. If this does not happen, it is unlikely that the situation will improve.

HMIS and the development of an information culture have had minimal effective political or financial support over the past 10 years. A **change of philosophy and approach** to ensure the use of quality information to make HMIS performance-oriented will require strong national leadership and political direction from the highest level within the ministry. If this does not happen, it is unlikely that the situation will improve.

Vertical programs have to realise that they **should work within the HMIS** environment and not set up parallel reporting systems. By setting up parallel reporting systems those programs are bypassing service manager. By reporting directly to program “coordinators” they increase the workload for all HMIS staff which most likely will cause poorer data quality. If this does not happen the risk is a less reliable HMIS.

Cooperating partner, e.g. donors, should work within the HMIS environment and not set up parallel reporting systems. All stakeholders must be made aware of the advantages of strengthening the HMIS as opposed to creating parallel systems. Again, if donors and other cooperating partners do not work within the HMIS reliability of data will not improve.

As the “information pipeline” is in place, the information produced by the HMIS must be used for evidence based decision making. At present it is not broadly used due to a belief of data being of poor quality. Again, if the perceived solution to this problem is to create parallel systems, which may or may not produce better quality data, the HMIS will not be strengthened.

Coordinators of vertical programmes **must change their attitude of not sharing** information and not coordinating with other management structures. If information is not shared the HMIS will be less effective.

The proposed capacity development program **may suffer from lack of human, financial, technical and other resources** which availability is imperative for a successful implementation of the planned activities.

The presently de-motivated and under-skilled District Health Information Officers (**DHIOs**), who actually should be the cornerstone of the HMIS, **must be offered legally established posts** and have attractive career structure. If these posts are not established, it is most likely that the DHIOs will look for greener pastures outside the HMIS-structure, resulting in a continuation of the prevailing unfortunate staff turn-over situation.

The proposed **retention scheme for DHIOs** is seen as a prerequisite for a decreased staff turn-over. Until a scheme is in place, this crucial cornerstone of the HMIS will be continually eroded and the HMIS can not hope to function.

There is **no formal training program** in place for new DHIO staff. If this is not introduced the project may be affected due to under-skilled staff.

The introduction to and basic training in the **function of a HMIS is not part of the pre-service training** for health workers. If not introduced it may affect the purpose of strengthening HMIS for poverty reduction monitoring.

The need for improved data is generally acknowledged which lead to the need for **improved quality control**. However, there is a step from acknowledging poor quality to actually be capable of improving data quality. There is therefore a need for the development of quality control procedures, introduction of data quality standards, and frequent data quality audits. If not introduced it may have a negative influence on the strengthening of HMIS.

There is **not much faith in the census figures** from the 2000 census report due to poor counting by enumerators. Many provinces and districts use therefore local **headcounts** for the populations, in order to get updated and more correct figures. The projections for population figures are not disaggregated by gender and age and are based on projection ratios from the 2000 census report. No considerations are taken into accounts on recent demographic development in the catchment areas. The projection techniques must be substantially improved in order to get more correct denominators for the indicator estimates. If this does not happen there is only limited scope for improved reliability of HMIS data.

Vital registration systems seem not to be working, with registration of births and deaths (even maternal deaths) negligible. Appropriate procedures for vital registration must be introduced in order to attain improved reliability of HMIS data.

There has been a tendency among **program and service managers that they do not need training in HMIS**. If the managers maintain this attitude, they will not be able to effectively use the information and the health sector will suffer.

Policy makers, GRZ and donors, who for some time have received quarterly data of dubious quality on which to approve funding, **must demand better quality data**. If not, the risk is that the data quality remains poor.

The **donors, GRZ and other stakeholders must demand properly analysed data reports** on which to disburse funds and not just rubber stamp reports without critical interpretation of data with regard to performance of services. If not, the risk is that the data quality remains poor.

Many vertical programs are driven by powerful outside donors who have specific information needs and inflexible reporting requirements. While it is often impossible to totally change these requirements, **pressure needs to be brought on these programs to coordinate information needs** and minimize information overload on peripheral health workers. Every effort must be made to ensure that indicators are harmonized and both gaps and overlap minimized. Unless this happens, there will continue to be a donor-dominated information agenda with multiple reporting channels, with overlaps and gaps and overload on the front-line data collectors.

The issue of the presently underutilised ICT outside the central ministry must be addressed. The weak ICT is a result of not focusing on the technical, managerial and training aspects of working with ICT. **A formal ICT structure**, organisational as well as managerial, **must be established** to support districts, health facilities, and all other users and beneficiaries of the proposed web-based data-warehouse, information centres and integrated computerised systems. Unless this happens, the risk of underutilisation, or even abandoning, of the data features will be high.

Additional resources to achieve the objective

The most crucial additional resource would be the introduction and funds for the establishment of a retention scheme for HMIS staff at all levels. This is not part of the project, but would, if introduced, have a serious impact on sustainability.

Another resource outside the scope of this project is the establishment of an ICT-department in the ministry which would be responsible for the technical maintenance of HMIS equipment.

Finally, the GRZ should guaranty sufficient funding to pay for recurrent costs of keeping the HMIS sustainable.

Critical interfaces

One of the critical issues to seriously affect the effective implementation of the project is the risk of **HMIS being neglected** at higher political and managerial levels.

A killer assumption is the capability of the imprest administrator (i.e. the Project Coordinator) and the Imprest Accounting Officer (i.e. the Project Administrator) to comply with the EDF procedures, in particular the account administrative requirements. If not, the funds for implementation of the planned activities will dry out and the expected outputs will not be achieved.

Time Frame and milestones

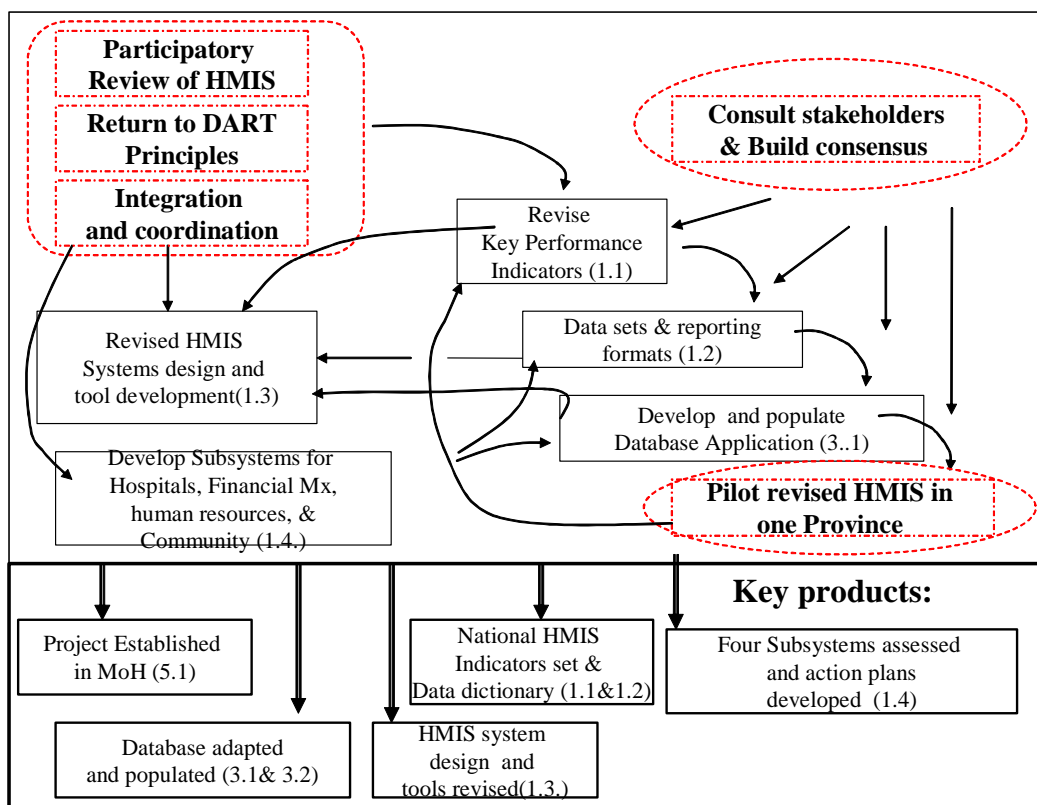
The First six months

The first six months will be mainly occupied with setting up project structures, review and revision of the existing system, strengthening the good points and changing the functions that are not working, while trying to disrupt ongoing activities as little as possible. It is envisaged that there will be extensive technical assistance during this initial project setting up phase to review systems and to plan relevant subsystems.

- Indicators and data sets developed by discussion and a consensus reached on minimum information needs
- Data flow and periodicity revised to ensure that all indicators are reported as often as they are used by the level above.
- Data collection and reporting tools revised in line with the indicators to minimise overlaps and gaps and to ensure regular and useful feedback
- Review of critical subsystems and development of action plans to ensure integration into and support of the overall functioning of the HMIS
- Database developed that is flexible and user-friendly, able to incorporate and analyse all routine and semi-permanent data as well as key anonymous information from the new subsystems.
- Development of a long-term HMIS strategy and information policy into which all future activities will fit.

This is diagrammatically shown in figure 1, where the principles outlined above are shown circled in red and activities shown with numbering from the log frame. Key products to be produced by the end of the six months are shown in the box below.

First Six Months



A complex project that is participatory and process-oriented is difficult to plan in detail for the entire three years, but the following Gantt chart gives an idea of the planned activities by month in the first quarter. In addition, detailed budget plans will be drawn up for each six month period, providing details of proposed expenditure in line with local priorities.

Activity/ Month	1	2	3	4	5	6
5.1 Establish project within the MoH						
5.2 Meeting of steering committee						
1.1 Identify key performance indicators						
1.2 Develop a minimum data set and dictionary						
1.3 Review HMIS system design						
1.5 Assess needs and plan for Hospital HMIS						
1.5 Assess administrative and management systems						
1.5 Assess community based information systems						
3.1 Modify DHIS to suit Zambian situation						

Milestones

The following products will be delivered by the end of the first six months

1. National HMIS indicators set & data dictionary (1.1 & 1.2),
2. An agreed NHMIS strategy and design, with appropriate tools (1.3 & 1.4),
3. A modern, flexible database that contains relevant indicator data for the past year (including population, facilities, semi-permanent data) and is capable of incorporating all key subsystems (3.1),
4. Project established in MoH with regular meetings of the steering committee (5.1 & 5.2),
5. Three administrative and management subsystems assessed and action plans developed (1.5),
6. Budget reviewed and plan made for next six months (5.2).

The second Six months

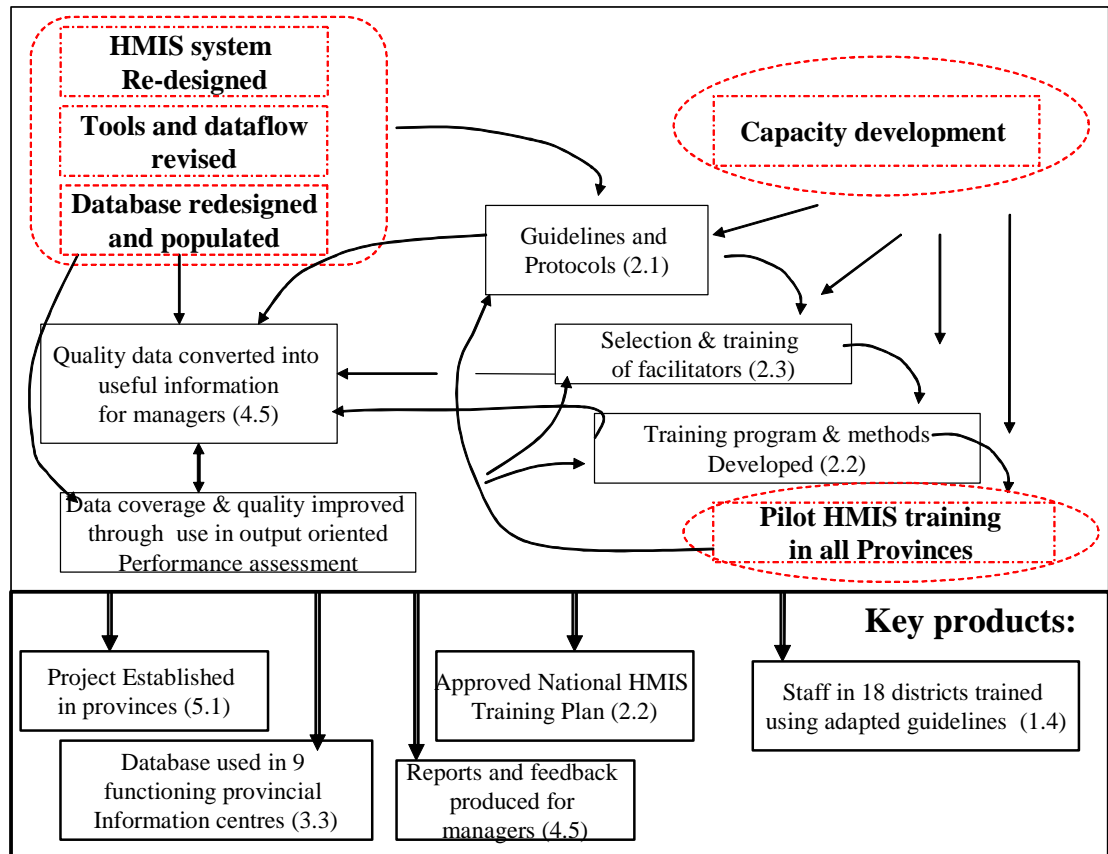
The second six months will build on the revisions of the first 6 months, and will focus on planning for capacity development and training trainers, as well as practical use of the analyzed information

- Conclusion of any outstanding reviews of critical subsystems and development of action plans,
- Revision of guidelines and training manuals,
- Development of training plans, in-service training and methodologies,

- Training of trainers and pilot testing materials and methods,
- Strengthening analysis of data and use of information by managers as evidenced by 9 provincial and 18 district MDG and NHSP progress reports.

This is shown in the following diagram, which shows the basic principles and products of the first six months (circled in red dotted lines) being used to develop a training program and to encourage the practical use of analysed data.

Second Six Months



Milestones

By the end of the first year, the following products will have been delivered. Numbers relate to the activities in the Log frame.

1. Project established in two districts in each of the 9 provinces (5.1)
2. Approved National HMIS Training Plan (2.2)
3. Facilitators in 9 provinces trained (2.3.)
4. Key staff in 18 districts trained using adapted guidelines (2.4)
5. 9 functioning provincial information centres with database and internet in use for HMIS (3.3)
6. Integrated reports and feedback produced for district, provincial and program managers using the new database (4.5)

7. Study tours and short courses in African countries identified (2.8)
8. Pilot testing of the key subsystems and the DIO retention scheme (2.7)
9. District level problem solving approach for strengthen data use at district level tested in one district (2.5)

The Second year

The second year will be a **consolidation of the training**, with roll out of the training program in all 72 districts. Additional capacity development will include the innovative DHMT training, study tours and short courses and initiation of pre-service curriculum development.

Information use will be the core of the years activities, with annual progress reports produced in all provinces and 18 districts; quarterly reports of priority programs and output-based management assessment based on the HMIS. The statistical legislation process will be started and DIO retention scheme will be functional, with the private sector fully involved in the urban areas.

ICT strengthening will include installation of functional **information centres** in all 72 districts, intranet at provinces, development of the data warehouse and strengthening of maintenance capacity.

The steering committee will meet regularly; first formal **review** of the indicator set will see appropriate modifications of the data set and the external mid-term review will see a review of the entire project.

Milestones

By the end of the second year, the following products will have been delivered:

1. At least one trained staff in all facilities in 36 districts (2.4)
2. Standards for quality checks developed and introduced (2.1)
3. Reporting rate over 80%, with data quality checked by districts (2.1)
4. MDG/NHSP progress reports produced by 72 districts (4.3)
5. Regular integrated and critically analysed reports from all priority programs produced by HMIS database using data from multiple subsystems (4.5)
6. District information centres equipped and functional in 36 districts (3.3)
7. HMIS curriculum developed and piloted for postgraduate public health trainees (2.6)
8. 10 MoH staff have gone on Study tours or short courses (2.8)
9. Key subsystems tested in all provinces and preliminary evaluation completed. (1.5)
10. One health systems research project funded and carried out by provincial staff in each province (4.2)
11. Mid-term evaluation completed (5.3)
12. Participatory review of indicators and data set carried out and documented (1.6)
13. Draft health-related statistics legislation produced (4.6)
14. District level problem solving approach for strengthen data use at district level implemented in one district in each province (2.5)

The Third year

This will be the year of **institutionalisation** of the gains of the project, with routine quality **reports being used** by managers at all levels to monitor progress and improve service delivery, **training** institutionalised at all levels so that everyone participates in the “information Culture” and the information centres will be producing valuable information that is used by all managers as well as health-related sectors

The annual indicator **review** will happen and the end of project review will find remarkable improvement in HMIS use for health sector performance monitoring

Milestones

By the end of the third year, the following products will have been delivered:

1. At least one trained staff in all facilities in all 72 districts (2.4)
2. Reporting rate over 90% with data quality checked by districts (2.1)
3. Second annual MDG / NHSP progress reports produced by 80% of districts and all provinces. (4.3)
4. Regular integrated and critically analysed reports from all priority programs produced by HMIS database using data from multiple subsystems (4.5)
5. District level problem solving approach for strengthen data use at district level implemented in two districts in each province (2.5)
6. District information centres equipped and functional in 72 districts (3.3)
7. HMIS curriculum developed and piloted for undergraduate public health nurses and clinical officers (2.6)
8. Further 10 district and provincial MoH staff have gone on Study tours or short courses (2.8)
9. Subsystems implemented in all provinces with GRZ SWAP funds.(1.5)
10. Second health systems research project funded and carried out by provincial staff in each province (4.2)
11. End of project evaluation completed (5.3)
12. Third annual review of indicators and data set documented (1.6)
13. Health-related statistics legislation submitted to national assembly (4.6)

Output, Activities, Indicators

Goal:	To contribute towards improved monitoring of poverty reduction in Zambia with emphasis on the Millennium Development Goals
Purpose:	Strengthen the HMIS capacity to monitor health sector performance in Zambia, particularly at district level.

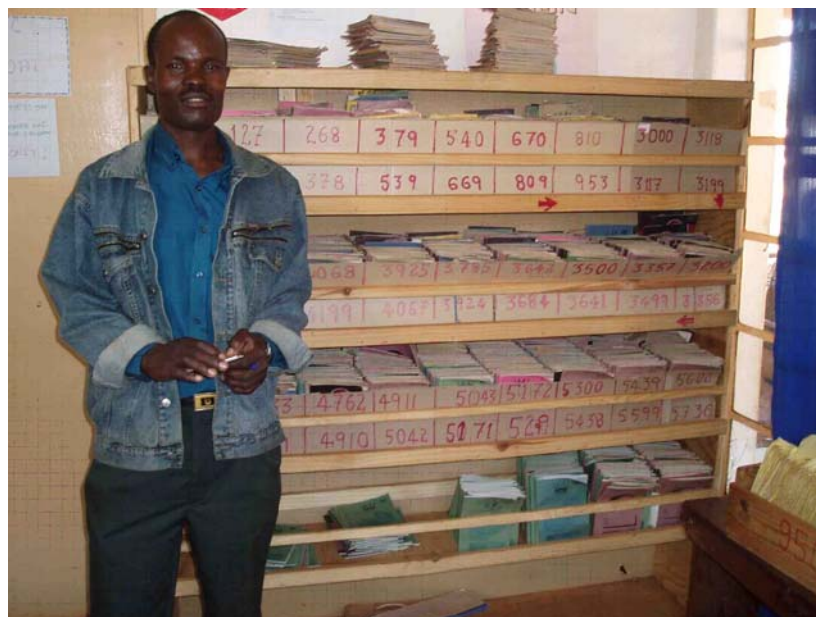
Output	Activities	Indicators
1. Revised HMIS that is integrated, flexible and responsive to the needs of all users	<p>1.1 Identify key performance indicators through discussion with all stakeholders:</p> <ul style="list-style-type: none"> - HMIS managers, district, provincial managers, - priority "vertical" programme managers, - policy makers, cooperating partners <p>1.2 Based on these indicators, develop</p> <ul style="list-style-type: none"> - a minimum data set with clear definitions and a dictionary - relevant targets based on strategic and action plans <p>Consensus National workshop on HMIS</p> <ul style="list-style-type: none"> - implementation strategy, key performance - indicators and minimum data set <p>1.3 Review HMIS system design, data flow and periodicity of reporting</p> <p>1.4 Revise data collection, collation and analysis tools</p> <p>Set up quality assurance procedures</p> <p>1.5 Assess needs and plan for Key subsystems</p> <ul style="list-style-type: none"> - Hospital HMIS - Finances, drugs, logistics, assets - Human resources - Community based information systems <p>1.6 Create organisational setup to ensure regular review of HMIS as part of the overall M&E framework, with Annual revision workshop of key performance indicators and minimum data set, 2007 & 2008.</p>	<ul style="list-style-type: none"> ○ An agreed national set of indicators with numerators and denominators ○ A data set and dictionary that is based on the indicator set ○ National targets for all indicators, with provincial adaptations ○ A revised HMIS system design and implementation strategy accepted by national consensus workshop ○ Assessment reports and plan of action for four key subsystems written and piloted – <ul style="list-style-type: none"> ● Hospitals ● Administrative systems – finances, assets and logistics ● Community based HMIS ● Human Resources ○ Quarterly minutes of meetings of National Health Information Systems Steering Committee ○ Annual consultative review of HMIS indicators and design

Output	Activities	Indicators
2. Capacity of staff developed to ensure sustainable functioning of the HMIS	<p>2.1 Revise guidelines for collection, quality assurance, collation, analysis and use of data at all levels</p> <p>2.2 Develop HMIS in-service training program for all levels focusing on appropriate information use for self assessment, planning and management and technical skills for HMIS staff</p> <p>2.3 Identify and train provincial and district HMIS facilitators</p> <p>2.4 Support and monitor in-service training programs for all levels</p> <p>2.5 Support innovative programs for DHMT data use – district level problem solving approach for strengthen data use at district level</p> <p>2.6 Support development of curricula for pre-service training program</p> <p>2.7 Develop and pilot retention scheme for DIOs and Provincial DMSs</p> <p>2.8 Support focused seminars and study tours to neighbouring countries</p>	<ul style="list-style-type: none"> ○ Written Guidelines for HMIS implementation for facility staff, program managers and HMIS staff ○ National training program developed for in-service and pre-service health workers ○ % provinces with HMIS training plan implemented on schedule ○ % of district with correct numbers of health staff trained in HMIS at different levels ○ % of planned districts that have completed DHMT training programs ○ % of planned curricula developed ○ % of DIOs who remain in post ○ % of planned health staff doing study tours and courses in African countries

Output	Activities	Indicators
3. Strengthened ICT infrastructure of the HMIS	<p>3.1 Set up a modern, integrated HMIS database that is flexible, platform independent, user-friendly and able to handle all necessary data sources.</p> <p>3.2 Incorporate all available data into this database (routine, semi-permanent and survey data)</p> <p>3.3 Strengthen provincial, District and hospital Information centres including staffing, computers and internet.</p> <p>3.4 Support maintenance of hard and software, including in-house capacity</p> <p>3.5 Develop an integrated, web-based data warehouse that can link multiple data sources and ensure controlled access by users.</p> <p>3.6 Set up intranet at provinces and selected test districts</p>	<ul style="list-style-type: none"> ○ Integrated Database established with facility data entered for all national indicators, facility list, data definitions, report facility ○ % districts with fully equipped and functional information centres ○ % districts with maintenance turnaround time under 5 days ○ Web-based data warehouse up to date with integrated data from all provinces and adequate access ○ % provinces and planned districts with functioning intranet

Output	Activities	Indicators
4. Increased use of available information	4.1 Improve coordination of data sources, health surveys and information dissemination 4.2 Strengthen research and survey capacity at all levels 4.3 Ensure district based annual NHSP and MDG progress report and other relevant record reviews and surveys 4.4 Link information to output-oriented management performance assessment and incentive scheme 4.5 Ensure vertical programs and service managers using HMIS format for feedback and reports to respond to and report on health events 4.6 Support revision of health related statistical legislation	<ul style="list-style-type: none"> ○ % districts with written annual NHSP and MDG progress reports ○ % district program managers using routine HMIS to analyse program performance ○ % provinces with staff conducting & documenting health systems research ○ % districts with access to micro-data from major health household surveys ○ % districts and programs with management performance assessed using HMIS information ○ Health statistical legislation reviewed

Output	Activities	Indicators
5. Set up HMIS project	5.1 Project management structure set up within MoH with Zambian leadership, decentralised management and facility based implementation 5.2 Ongoing monitoring of project activities by MoH 5.3 Annual external evaluation	<ul style="list-style-type: none"> ○ Project established within MoH with external support ○ Half-yearly monitoring of project activities ○ Annual external evaluation



Detailed Timeframe by Output, Activity and Quarter

Output 1 - Revised HMIS that is integrated, flexible and responsive to the needs of all users		06 Q1	06 Q2	06 Q3	06 Q4	07 Q1	07 Q2	07 Q3	07 Q4	08 Q1	08 Q2	08 Q3	08 Q4
1.1	Identify key performance indicators through discussion with all stakeholders: - HMIS managers, district, provincial managers, - priority "vertical" programme managers, - policy makers, cooperating partners												
1.2	Based on these indicators, develop - a minimum data set with clear definitions and a dictionary - relevant targets based on strategic and action plans												
1.3	Review HMIS system design o data flow and periodicity of reportingo Revise data collection, collation and analysis tools o Set up quality assurance procedures												
1.4	Revise data collection, collation and analysis tools and set up quality assurance procedures												
1.5	Assess needs for unfinished subsystems planned in 1996: Hospital HMIS												
	Assess needs for unfinished subsystems planned in 1996: Finances, drugs, logistics, assets												
	Assess needs for unfinished subsystems planned in 1996: Human resources development and management												
	Assess needs for unfinished subsystems planned in 1996: Community based information systems												
1.6	Create organisational setup to ensure regular review of HMIS as part of the overall M&E framework												
	Consensus National workshop on on identification of key performance indicators and minimum data set												
	Annual revision workshop of key performance indicators and minimum data set, 2007												
	Annual revision workshop of key performance indicators and minimum data set, 2008												

Output 2 - Capacity of staff developed to ensure sustainable functioning of the HMIS		06 Q1	06 Q2	06 Q3	06 Q4	07 Q1	07 Q2	07 Q3	07 Q4	08 Q1	08 Q2	08 Q3	08 Q4
2.1	Revise 1998 HMIS guidelines for collection, quality assurance, collation, analysis and use of data at all levels												
2.2	Develop HMIS in-service training program for all levels focusing on practical skill development for HMIS staff, facility level staff and managers												
2.3	Identify and train provincial and district HMIS facilitators												
2.4	Support and monitor in-service training programs for all levels												
2.5	Support innovative programs for data use at district level district health team problem solving approach												
2.6	Support development of curricula for pre-service and postgraduate training programs												
2.7	Develop and pilot retention scheme for District and Provincial M&E officers												
2.8	Support focused seminars and study tours to neighbouring countries												

Output 3 - Strengthened ICT infrastructure of the HMIS		06 Q1	06 Q2	06 Q3	06 Q4	07 Q1	07 Q2	07 Q3	07 Q4	08 Q1	08 Q2	08 Q3	08 Q4
3.1	Set up a modern, integrated HMIS database that is flexible, user-friendly and able to handle all necessary data sources. Incorporate all available data from routine, semi-permanent and survey sources. Produce prototype reports and discuss with stakeholders												
3.2	Strengthen the provincial, district and hospital information centres including staffing, computers, HMIS website and internet connectivity.												
3.3	Support maintenance of hard and software, including in-house capacity												
3.4	Develop an integrated, web-based data warehouse that can link multiple data sources and control access to different users.												
3.5	Set up intranet at provinces and selected test districts / hospitals												

Output 4 - Increased use of available information		06 Q1	06 Q2	06 Q3	06 Q4	07 Q1	07 Q2	07 Q3	07 Q4	08 Q1	08 Q2	08 Q3	08 Q4
4.1	Improve coordination of data sources, health surveys and information dissemination												
4.2	Ensure links to ongoing performance based management review proposal												
4.3	Strengthen research and survey capacity at all levels												
4.4	Ensure district based annual MDG progress report and other relevant record reviews and surveys												
4.5	Develop format for feedback and reports that enables program managers to use HMIS data report on and respond to health events												
4.6	Support revision of health related statistical legislation												

Output 5 - Project Management, Monitoring and Evaluation		06 Q1	06 Q2	06 Q3	06 Q4	07 Q1	07 Q2	07 Q3	07 Q4	08 Q1	08 Q2	08 Q3	08 Q4
5.1	Develop project management structure within MoH, taking into account: Zambian leadership - steering committee, Decentralized management and implementation, HMIS cutting across all directorates to get ownership, Encourage local consultants, International												
5.2	Carry out on-going monitoring and evaluation activities												
5.3	Annual external evaluation												

Proposed budget frame by Output, Activity and Input

Activities / Inputs	Man-weeks			Estimated cost (€)				
	GRZ	TA	Nat. Cons.	GRZ	TA	Nat. Cons.	Equipment & Materials	Total
Output 1 - Revised HMIS that is integrated, flexible and responsive to the needs of all users	102	46	56	25.500	184.000	28.000	30.000	267.500
Output 2 - Capacity of staff developed to ensure sustainable functioning of the HMIS	224	63	0	112.000	252.000	0	665.000	1.029.000
Output 3 - Strengthened ICT infrastructure of the HMIS	44	28	16	11.000	112.000	8.000	500.000	631.000
Output 4 - Increased use of available information	74	26	0	37.000	104.000	0	190.000	331.000
Output 5 - Project Management, Monitoring and Evaluation	120	66	0	30.000	264.000	0	250.000	544.000
Subtotal per input	564	229	72	215.500	916.000	36.000	1.635.000	2.802.500
Un-allocated funds - to be allocated during annual reviews							7,05%	197.500
GRAND TOTAL								3.000.000

Detailed budget by Output, Activity and Input

Activities / Inputs		Man-weeks			Estimated cost (€)			
		GRZ	TA	Nat. Cons.	GRZ	TA	Nat. Cons.	Equipment & Materials
Output 1 - Revised HMIS that is integrated, flexible and responsive to the needs of all users		102	46	56	25.500	184.000	28.000	30.000
1.1	Identify key performance indicators through discussion with all stakeholders: - HMIS managers, district, provincial managers, - priority "vertical" programme managers, - policy makers, cooperating partners	20	8		5.000	32.000		
1.2	Based on these indicators, develop - a minimum data set with clear definitions and a dictionary - relevant targets based on strategic and action plans	10	4	12	2.500	16.000	6.000	
1.3	Review HMIS system design - data flow and periodicity of reporting Revise data collection, collation and analysis tools - Set up quality assurance procedures	24	12	14	6.000	48.000	7.000	
1.4	Revise data collection, collation and analysis tools and set up quality assurance procedures	8	4	6	2.000	16.000	3.000	
1.5	Assess needs for unfinished subsystems planned in 1996: Hospital HMIS	8	4	6	2.000	16.000	3.000	
	Assess needs for unfinished subsystems planned in 1996: Finances, drugs, logistics, assets	8	4	6	2.000	16.000	3.000	
	Assess needs for unfinished subsystems planned in 1996: Human resources development and management	8	4	6	2.000	16.000	3.000	
	Assess needs for unfinished subsystems planned in 1996: Community based information systems	8	4	6	2.000	16.000	3.000	
1.6	Create organisational setup to ensure regular review of HMIS as part of the overall M&E framework	8	2		2.000	8.000		
	Consensus National workshop on identification of key performance indicators and minimum data set							10.000
	Annual revision workshop of key performance indicators and minimum data set, 2007							10.000
	Annual revision workshop of key performance indicators and minimum data set, 2008							10.000

Activities / Inputs		Man-weeks			Estimated cost (€)			
		GRZ	TA	Nat. Cons.	GRZ	TA	Nat. Cons.	Equipment & Materials
Output 2 - Capacity of staff developed to ensure sustainable functioning of the HMIS		224	63		112.000	252.000		665.000
2.1	Revise 1998 HMIS guidelines for collection, quality assurance, collation, analysis and use of data at all levels	20	8		5.000	32.000		80.000
2.2	Develop HMIS in-service training program for all levels focusing on practical skill development for HMIS staff, facility level staff and managers	40	10		10.000	40.000		100.000
2.3	Identify and train provincial and district HMIS facilitators	10	8		2.500	32.000		150.000
2.4	Support and monitor in-service training programs for all levels	54	12		13.500	48.000		180.000
2.5	Support innovative programs for data use at district level district health team problemsolving approach	20	12		5.000	48.000		50.000
2.6	Support development of curricula for pre-service and postgraduate training programs	40	8		10.000	32.000		20.000
2.7	Develop and pilot retention scheme for District and Provincial M&E officers	10	2		2.500	8.000		75.000
2.8	Support focused seminars and study tours to neighbouring countries	30	3		7.500	12.000		10.000

Activities / Inputs		Man-weeks			Estimated cost (€)			
		GRZ	TA	Nat. Cons.	GRZ	TA	Nat. Cons.	Equipment & Materials
Output 3 - Strengthened ICT infrastructure of the HMIS		44	28	16	11.000	112.000	8.000	500.000
3.1	Set up a modern, integrated HMIS database that is flexible, user-friendly and able to handle all necessary data sources. Incorporate all available data from routine, semi-permanent and survey sources. Produce prototype reports and discuss with stakeholders	20	16	16	5.000	64.000	8.000	100.000
3.2	Strengthen the provincial, district and hospital information centres including staffing, computers, HMIS website and internet connectivity.	8	2		2.000	8.000		200.000
3.3	Support maintenance of hard and software, including in-house capacity	4	1		1.000	4.000		50.000
3.4	Develop an integrated, web-based data warehouse that can link multiple data sources and control access to different users.	8	8		2.000	32.000		50.000
3.5	Set up intranet at provinces and selected test districts / hospitals	4	1		1.000	4.000		100.000

Activities / Inputs		Man-weeks			Estimated cost (€)			
		GRZ	TA	Nat. Cons.	GRZ	TA	Nat. Cons.	Equipment & Materials
Output 4 - Increased use of available information		74	26		37.000	104.000		190.000
4.1	Improve coordination of data sources, health surveys and information dissemination	10	4		2.500	16.000		20.000
4.2	Ensure links to ongoing performance based management review proposal							50.000
4.3	Strengthen research and survey capacity at all levels	20	4		5.000	16.000		20.000
4.4	Ensure district based annual MDG progress report and other relevant record reviews and surveys	20	10		5.000	40.000		30.000
4.5	Develop format for feedback and reports that enables program managers to use HMIS data report on and respond to health events	12	6		3.000	24.000		50.000
4.6	Support revision of health related statistical legislation	12	2		3.000	8.000		20.000

Activities / Inputs		Man-weeks			Estimated cost (€)			
		GRZ	TA	Nat. Cons.	GRZ	TA	Nat. Cons.	Equipment & Materials
Output 5 - Project Management, Monitoring and Evaluation		120	66	0	30.000	264.000	0	250.000
5.1	Develop project management structure within MoH, taking into account: Zambian leadership - steering committee, Decentralized management and implementation, HMIS cutting across all directorates to get ownership, Encourage local consultants, International	24	12		6.000	48.000		150.000
5.2	Carry out on-going monitoring and evaluation activities	72	36		18.000	144.000		50.000
5.3	Annual external evaluation	24	18		6.000	72.000		50.000

Terms of Reference for Specific Activities

Terms of Reference #1 - Indicator and dataset revision

Date August 2005
Reference Number Activity 1.2
Drafted by: HMIS Revision Team

Background

An indicator set has existed in Zambia since 1996, but this is now seen as being out of date and inadequate and needs to be reviewed in conjunction with all relevant stakeholders.

Objectives

Through discussion with all stakeholders and in line with the National health Strategic plan,

- Identify **key performance indicators** for the health sector in Zambia
- Develop a minimum **data set** based on indicators with clear definitions of all components

Scope of Work

- Review existing indicator set and data definitions
- Meet with all key stakeholders and their implementation teams at all levels, from within the MoH and outside it
 - Policy makers, cooperating partners
 - Priority “vertical” program managers,
 - HMIS managers, District, provincial managers
- Develop draft national indicator set with defined numerator and denominator and source, in accordance with international norms and the HMN framework
- Circulate indicators with numerator, denominator, data source, rationale, use, related indicators
- Organise and facilitate consensus meeting on indicators in each province
- Incorporate final definitions into HMIS database
- Develop web and print-enabled data dictionary
- Devise a mechanism to revise indicator set annually

Week	Activity	Participants
1-4	<ul style="list-style-type: none">• Meetings with national level policy makers, program managers and development partners• develop a draft indicator set and definitions	All
5-8	<ul style="list-style-type: none">• facilitate provincial workshops• direct dialogue with provincial and district service and program managers• Revision of draft	All
9-10	<ul style="list-style-type: none">• National Consensus workshop• finalise indicator set and data dictionary	All

Expected outputs

1. List of **national indicators**, with numerator, denominators and source in line with international standards and HMN framework
2. **Data set** with definitions, guidelines for data sources, rationale, use and related indicators
3. **Reports** of provincial and national consensus workshops

Personnel Required.

Two consultants, one international one Zambian national, who should be:

- knowledgeable on the development of indicators according to international standards
- Familiar with the HMIS program in Zambia
- Experienced in report writing and communicating with stakeholders

The consultants will work with one GRZ MoH staff member who will be assigned full time for this consultancy

Duration

This consultancy will be the first event in the first quarter of the EU HMIS reform program

One International Consultant	10 weeks
National Consultant	12 weeks
GRZ MoH staff	12 weeks

The additional weeks for the GRZ consultants and MoH staff will be one week before the consultancy preparing background documentation and one week afterwards ensuring feedback to stakeholders.

Terms of Reference #2 - HMIS review

Date August 2005
Reference Number Activity 1.3
Drafted by: HMIS Action Plan Team

Background

The HMIS in Zambia was designed in 1996 and has been successfully implemented throughout the country. However the 2005 review team felt that there had been insufficient revision of the system and that the HMIS did not respond to new developments, particularly the MDGs and emerging health problems such as HIV/AIDS. With the start of the EU funded HMIS reform project, the HMIS design, management and process needs to be reviewed and piloted before full rollout in all 9 provinces. A strategic plan needs to be made and agreed for long-term implementation of the HMIS

Objectives

1. Review current HMIS system design
 - a. Links with other subsystems and proposed subsystems
 - b. data flow and periodicity of reporting; issues of age, gender and disaggregation
 - c. System management
2. Revise HMIS design
 - a. data collection, collation and analysis tools
 - b. Management systems, job descriptions etc.
 - c. Links with other subsystems, including administration, hospitals, human resources
3. Set up quality assurance procedures
4. Clarify managerial and administrative requirements

Scope of Work

In conjunction with key stakeholders at national, provincial and district level and the Database development team

1. Review current system, assessing and identifying reasons for success or failure
2. Review information needs of different programs with regard to periodicity, data flow, indicators
3. Revise HMIS systems and linkages, in collaboration with the database development team
 - data collection, quality assurance, collation, reporting tools
 - Management systems and job descriptions
 - Special information needs of programs, including age and gender disaggregation
4. Pilot test in two districts in one province over a period of at least 2 months
5. Facilitate a national consensus building meeting to approve new strategy and system.
6. Draw up a plan of action and budget for phased implementation.

Expected Activities

Week	Activity	Participants
1-4	Plan and implementation strategy for revised HMIS system <ul style="list-style-type: none"> modified periodicity of reporting to meet NHSP needs draft tool revision for collection, self assessment, quality assurance, collation and data reporting Develop M&E instruments Get consensus from key stakeholders 	All
5-8	Set up pilot project in two districts in one province <ul style="list-style-type: none"> train district, facility staff in new procedures, forms etc Collect data retroactively for 6 months 	All TA Provincial teams
9-18	Follow up pilot project	National TA; GRZ
19-20	Implementation Review	All
21-22	National Consensus workshop Plan for rollout to all provinces	All
24 ongoing	Provincial rollout	All

Expected outputs

1. Revised HMIS design, management systems and implementation strategy agreed by national consensus workshop
2. Pilot test carried out in one province and written up
3. Implementation rollout plan, with options
4. Feedback report to stakeholders and MoH

Personnel Required

Two consultants, one international and one Zambian, who should be

- knowledgeable on HMIS system design
- Familiar with the HMIS program in Zambia
- Experienced in report writing and communicating with stakeholders

They will work closely with senior MoH staff, one of whom will be assigned full time to this activity

Duration

This consultancy will take place in the second quarter of the EU HMIS project and will occur concurrently with the revision and testing of the database.

One International Consultant	10 weeks
One National Consultant	14 weeks
One GRZ official	14 weeks

The additional weeks for the GRZ consultants and MoH officials will be for preparation of background documentation (1 week) follow up of pilot project (2 weeks) and feedback and dissemination of reports (1 week)

Terms of Reference #3 - HMIS Database development

Date August 2005
Reference Number Activity 3.1
Drafted by: HMIS Action Plan Team

Background

Set up a modern, integrated HMIS **database** that is flexible, user-friendly and able to handle all relevant data sources. While the database normally will reside on standalone PCs or within a LAN at the district level, it must also provide access to all data sets available at the national level via a web interface

Objectives

1. Review the technical capabilities and structure of current database and other related systems with data and identify strengths and weaknesses, including features that should be incorporated into the new integrated HMIS (e.g. standard reports)
2. Review existing data in current database and prepare such data for transfer to a new integrated HMIS
3. Develop specifications for the technical infrastructure necessary to maintain and use an integrated HMIS database (hardware, basic software, networks, communication infrastructure)
4. Adapt DHIS database to the new national indicator/data set
5. Design methods for re-formatting and importing available data from routine, semi-permanent and survey data sources into HMIS
6. Design data exchange mechanisms with patient- or staff-based information systems (e.g. disease surveillance, notification system, government HR/salary system, government accounting system), in particular to enable the routine extraction and import of aggregated values into the HMIS.
7. Design data exchange mechanisms with administrative and management subsystems
8. Pilot database in one province along with revised design of HMIS system
9. Produce prototype reports and discuss with stakeholders
10. Produce tentative “road-map” for HMIS use and expansion over the next three years

Scope of Work

Proposed activities

Weeks	Activity	Participants
1-4	<ol style="list-style-type: none">1. Review existing systems and data sets, assess what to re-use and what discard2. Set up an integrated DHIS data file for Zambia that includes the national HMIS indicators/data set, the Zambia health sector Organisational Structure (public sector plus all relevant Organisational Units from e.g. the private or NGO/faith-based sectors), and other	All TA

	<p>stakeholders that's relevant for HMIS analysis (e.g. funders, health programmes)</p> <ol style="list-style-type: none"> 3. Re-format and import structured data that is already available in digital format into the HMIS* 4. Design interface between HMIS and other relevant systems 5. Produce draft reports and feedback to key managers at national and district levels 	
5-8	<ol style="list-style-type: none"> 1. Pilot database in one province, training provincial and district M&E officers 2. incorporate 6 months of retroactively collected data 3. Produce program and feedback reports 	All TA Provincial teams
10-18	<ol style="list-style-type: none"> 1. Monthly data entry and reports 	Zambian TA Provincial teams
19-20	Implementation review	All TA Provincial teams
24	Provincial rollout	
Monthly 2 days	Review data from pilot districts, support to GRZ with quality control, training, reporting, feedback.	Provincial teams

* The HMIS Database Development team will assess, re-format and import structured data, but the team will only *advise* on the methodology to be used in case of poorly structured data (e.g. data contained in documents or spreadsheets that needs massive manual clean-up before import) or data that still only exist on paper.

Expected outputs

1. Report of consultations with stakeholders (10 pages)
2. Implementation plan, with options
3. Feedback to stakeholders and MoH
4. Complete and ready-to-use DHIS installation CD with all available Zambia data

Personnel Required.

One international consultant (or a two-person team with complementary skills that share the work), who should be

- Highly experienced in the design and implementation of HMIS systems
- Intimately familiar with the DHIS software and its design, and able to modify or adapt it as required
- Able to provide high quality and motivational training in HMIS in general and the DHIS in particular
- Experienced in report writing and communicating with stakeholders.

One Zambian consultant, who should be

- Familiar with the HMIS program in Zambia
- Experienced in report writing and communicating with stakeholders

Duration of consultancies

In accordance with the activities outlined above the consultants will be required as follows:

One International Consultant	16 weeks
One National Consultant	16 weeks

It is anticipated that the international consulting team will spend the initial 8 weeks in country, return for the implementation review (2 weeks) and then provide backstopping by internet for two days a month for the following 10 months (20 days = 4 weeks)

Terms of Reference #4 - Hospital HMIS review and action plan

Date: August 2005
Reference number: Logframe activity 1.4.
Drafted by: HMIS Revision Team

Background

Current data from hospitals in Zambia is extremely poor quality, not very useful for planning and suffers from multiple structural and organisational problems.

A Hospital HMIS was proposed for Zambia since 1996, but this was never given top priority and is now seen as being out of date and inadequate and needs to be reviewed in conjunction with all relevant stakeholders.

Objectives

Through discussion with all stakeholders and in line with the National Health Strategic plan (NHSP 2006-2011), with particular emphasis on the first and second level referral hospitals

- Assess the current Hospital HMIS,
- Identify a minimum list of draft **key performance indicators** for the hospital sector in Zambia, with a linked **data set** comprising numerators and denominators and definitions;
- Develop and propose a data flow policy for hospital dataset that will support and complement the PHC data flow policy
- Get consensus on the hospital HMIS through a national workshop
- Produce a budgeted action plan for implementation of the Hospital HMIS over a period of 3 years

Scope of Work

- Review written documentation of existing hospital HMIS, indicator set, data definitions and data management procedures.
- Meet with selected key stakeholders and their implementation teams in public and NGO sectors to discuss ways of strengthening Hospital HMIS
 - Policy makers, cooperating partners, CHAZ etc
 - Hospital managers; District, provincial managers
- Develop draft national Hospital HMIS plan, including indicator set
- Circulate draft Hospital HMIS plan
- Organise and facilitate consensus meeting on draft plan
- Develop final plan based on feedback.

Week	Activity	Participants
1-2	<ul style="list-style-type: none">• Review of documentation• Meetings with hospital managers, policy makers and development partners	All
3-4	<ul style="list-style-type: none">• develop draft action plan• develop draft indicators and linked dataset• develop draft data flow policy for the hospital	All

	dataset <ul style="list-style-type: none"> • facilitate consensus workshop on the three draft documents • Revision of draft 	
5	<ul style="list-style-type: none"> • finalise action plan 	All

Expected outputs

1. Report detailing the findings of the assessment of existing hospital HMIS
2. Draft action plan to be presented to consensus workshop
3. Draft dataset to be presented to consensus workshop
4. Draft data flow policy to be presented to consensus workshop
5. **Reports** of national consensus workshop
6. Final budgeted action plan for three years implementation

Personnel Required.

Two consultants, one international one Zambian national, who should be:

- knowledgeable on the development of indicators
- Familiar with the HMIS program in Zambia
- Experienced in report writing and communicating with stakeholders

The consultants will work with one GRZ MoH staff member who will be assigned full time for this consultancy

Duration

This consultancy will be in the first quarter of the EU HMIS reform program (early 2006)

One International Consultant	5 weeks
National Consultant	6 weeks
GRZ MoH staff	6 weeks

It is envisaged that implementation of the action plan will be built into the overall workplan of the GRZ MOH over a period of approximately three years. Further terms of reference will be developed for this implementation.

Terms of Reference #5 - Community HMIS review and action plan

Date August 2005
Reference Number: Logframe Activity 1.7
Drafted by: HMIS Revision Team

Background

A Community HMIS was proposed for Zambia since 1996, but this was never given top priority and was never finalise or implemented as part of the HMIS program. However, the 2006 EU review noted that the community component of MDG monitoring is extremely weak and recommended that this be reviewed in conjunction with all relevant stakeholders.

Objectives

Through discussion with all stakeholders and in line with the National Health Strategic plan (NHSP 2006-2011), with particular emphasis on Millennium Development Goals:

- Assess the current Community HMIS in terms of the CORE M&E group community based health information system (CBHIS) guide
- Identify a minimum list of draft **key performance indicators** for the community sector in Zambia, with ideas on sources of each data element
- Get consensus on a draft action plan to be piloted in one district in one province
- Produce a budgeted action plan for a phased implementation of the Community HMIS over a period of 3 years

Scope of Work

- Review written documentation of existing community HMIS plans, and visit functioning CBHIS, identifying
 - how the system(s) were developed, how they were designed and how people were trained
 - how they currently work, - what areas (interventions and management) are included in the system; who the target population is; how data is collected, by whom and for whom; who analyses the data
 - Relationship of the data to community problems, and dissemination within the community
- Meet with selected key stakeholders and their implementation teams in public and NGO sectors to discuss ways of strengthening Community HMIS
 - Policy makers, NGOs, cooperating partners, CHAZ etc
 - Community leaders; health facility staff, District, provincial managers
- Identify a possible CBHIS strategy, indicator set, data definitions and data management procedures.
- Develop draft Community based HMIS pilot plan, including indicator set
- Circulate draft Community HMIS plan
- Organise and facilitate consensus meeting on draft plan
- Develop final pilot plan, with possible expansion strategy, based on feedback

Week	Activity	Participants
0	<ul style="list-style-type: none"> Preparation of documentation and persons to meet 	Zambians
1-2	<ul style="list-style-type: none"> Review of community HMIS documentation Visit functioning CBHIS sites to meet with community leaders, NGOs, facility staff, policy makers and development partners 	All
3-4	<ul style="list-style-type: none"> Assessment report and SWOT analysis develop draft action plan facilitate consensus workshop Revise draft pilot implementation plan 	All
5	<ul style="list-style-type: none"> finalise and present budgeted plan 	All
6	<ul style="list-style-type: none"> Advocacy and follow up 	Zambians

Expected outputs

1. Assessment report of existing community based HMISs, with SWOT analysis
2. Draft action plan to be presented to consensus workshop
3. **Report** of consensus workshop
4. Final budgeted **action plan** for pilot implementation and possible expansion

Personnel Required

Two consultants, one international and one Zambian national, who should be:

- knowledgeable on Community HMIS and the NGO sector in Africa
- Familiar with the HMIS program in Zambia
- Experienced in report writing and communicating with stakeholders

The consultants will work with one GRZ MoH staff member who will be assigned full time for this consultancy and do the necessary preparation and follow up of the consultancy

Duration

This consultancy will be in the second quarter of the EU HMIS reform program (April-June 2006)

One International Consultant	5 weeks
National Consultant	6 weeks
GRZ MoH staff	8 weeks

It is envisaged that implementation of the action plan will be built into the overall work plan of the GRZ MOH over a period of approximately three years. Further terms of reference will be developed for this implementation, based on this review.

Terms of Reference #6 - Assess needs and plan for finances, drugs, logistics and assets

Date August 2005
Reference Number Activity 1.5
Drafted by: HMIS Revision Team

Background

The *Financial and Administrative Management Systems (FAMS)* was initiated at district level as early as 1991. Computerised accounting procedures, through *Navision Financial* were introduced at CBoH in 1997. At present there are plans for introducing the computerised FAMS in all provinces and districts.

Although a plan for expanding the Navision to all provinces and districts in principle has been approved, the 2005 EU review team recommended the plan be reviewed due to a number of reservations e.g. that a uniform software solution at all levels may not be the most economical and sustainable solution and that a less complicated, more user-friendly, and less expensive package would make the FAMS more sustainable,.

For other administrative and management systems the 2005 EU review found erratic and variable degrees of plans for computerisation. However none of the administrative and management systems, including FAMS, was integrated or even linked to HMIS.

Objectives

Through discussions with stakeholders and analysis of existing documentation, plans and reports

- assess the current plan for computerisation of FAMS and other administrative and management systems,
- assess the current plan for linking the administrative and management systems to the routine HMIS.

Scope of Work

In close collaboration with key stakeholders and the team responsible for the review of HMIS (Terms of Reference #2)

- review the current plan for computerisation of FAMS,
 - assess the rationale for introduction of Navision at provincial and district level,
 - assess the need for accounting software packages at province, district and hospitals,
 - present analysed options for computerisation of accounts at the various health management levels,
 - calculate investment and recurrent cost estimates for different expansion scenarios, e.g.
 - (i) Navision for provinces only,
 - (ii) Navision for provinces and districts,
 - (iii) Navision for provinces, districts and hospitals,

- (iv) Other accounting software packages for the same segments of health entities,
- review the existing plan, if any, for computerisation of other administrative and management systems than FAMS, e.g. logistics management, procurement, assets,
 - review the existing plan, if any, for integration of the administrative and management systems, including FAMS, with HMIS,
 - in close collaboration with the team doing the HMIS review (ToR #2) elaborate a proposal for a realistic and manageable integration with HMIS
 - interface,
 - data flow and periodicity,
 - key indicator set,
 - system management,
 - procedures and manuals,
 - draw up a plan for implementation.

Week	Activity	Participants
1-2	<ul style="list-style-type: none"> • Review the current plan for computerisation of FAMS and assess the rationale for launching of Navision at sub-national levels, • Review the existing plan for computerization of other administrative and management systems, • Review the existing plans for integration with HMIS, • Prepare field visits. 	All
3	<ul style="list-style-type: none"> • Field visits to two provinces to assess <ul style="list-style-type: none"> ○ the need for accounting software at sub-national levels, ○ the need for other computerised administrative and management software, ○ the need and requirements for integration at sub-national level. • Compile assessment report, • Present assessment report to project management, and adopt strategy frame for way forward, 	All
4	<ul style="list-style-type: none"> • Calculate investment and recurrent cost estimates for different scenario options, • Specify draft requirements for integration of administrative and management systems <ul style="list-style-type: none"> ○ Interface(s), ○ Data flow and periodicity ○ Key indicator set for sub-systems ○ System management ○ Plan for elaboration of procedures manual • Draw up a draft action plan for implementation • Present final report to project management. 	All
5-6	<ul style="list-style-type: none"> • Follow-up by GRZ MoH staff 	GRZ staff

Expected outputs

1. Assessment report of existing plans for computerisation of administrative and management systems,
2. Budget estimates for investment and recurrent costs for different scenarios,
3. Specifications of needs and requirements for integration of administrative and management systems with HMIS,

Personnel Required

One international consultant who should be:

- knowledgeable of computerised accounts systems in general
- familiar with Navision software,
- familiar with administrative and management software, e.g. CRM, ERP,
- intimately familiar with the HMIS program in Zambia
- Experienced in report writing and communicating with stakeholders

The consultant will work with one GRZ MoH staff member who will be assigned full time for this consultancy and do the necessary preparation and follow up of the consultancy

Duration

This consultancy will be in the first quarter of the EU HMIS reform program (January - March 2006)

One International Consultant	4 weeks
GRZ MoH staff	6 weeks

It is envisaged that implementation of the action plan will be built into the overall work plan of the GRZ MOH over a period of approximately three years. Further terms of reference will be developed for this implementation, based on this review.

Terms of Reference #7 - Assess needs and plan for human resources

Date August 2005
Reference Number Activity 1.5
Drafted by: HMIS Revision Team

Background

During the 2006 EU review the team noted that although data on human resources (through the HR-registers) is available there is no integration with the routine HMIS and even where some data is available it is of poor quality and incomplete. Indicators on performance in terms of human resources are neither estimated nor reported as part of the routine HMIS.

Objectives

Through discussions with stakeholders assess the need for inclusion of data on human resources, e.g. allocation of staff, allocation of human resources to health centres, districts and province, assessment of performance, etc. in the routine HMIS.

Scope of Work

In close collaboration with key stakeholders and the team responsible for the review of HMIS (Terms of Reference #2)

- assess the need for information on human resources (HR), including all levels and categories of health workers, in-service skills and experiences available at sub-national level, GRZ, private and mixed institutions, plans for maintenance and development of HR,
- review existing plans, if any, for HR development at sub-national levels, including pre-service, in-service and continuous training,
- assess existing HR-registers and their suitability in terms of providing data on HR for inclusion in the routine HMIS,
- review the existing plan, if any, for integration of the human resource data with HMIS,
- in close collaboration with the team doing the HMIS review (ToR #2) elaborate a proposal for a realistic and manageable integration with HMIS
 - interface,
 - data flow and periodicity,
 - key indicator set,
 - system management,
 - procedures and manuals,
- draw up a plan for implementation.

Week	Activity	Participants
1-2	<ul style="list-style-type: none"> • Assess the need for information on human resources, • Review existing plans for HR development at sub-national level, • Assess existing HR-registers and their suitability in terms of integration with HMIS, • Assess the integration between HR-register and other administrative and management systems, in particular FAMS, • Assess existing human resource software programs and suggest actions for improvement, if appropriate, • Prepare field visits. 	All
2-3	<ul style="list-style-type: none"> • Field visits to two provinces to assess <ul style="list-style-type: none"> ○ the opportunities and problems of inclusion of data from private and semi-private sector in the routine HMIS, ○ the quality of available data on GRZ human resources, ○ key indicators on which allocation of human resource to health facilities, districts and provinces, are based, ○ the need computerisation of HR-registers at sub-national level. • Compile assessment report, • Present assessment report to project management, and adopt strategy frame for way forward, 	All
4	<ul style="list-style-type: none"> • Specify draft requirements for integration of human resource system with HMIS <ul style="list-style-type: none"> ○ Interface(s), ○ Data flow and periodicity ○ Key indicator set for HR-system, ○ System management ○ Plan for elaboration of procedures manual • Draw up a draft action plan for implementation • Present final report to project management. 	All
5-6	<ul style="list-style-type: none"> • Follow-up by GRZ MoH staff 	GRZ staff

Expected outputs

1. Assessment report of current human resource system, including plans for system development,
2. Specifications of needs and requirements for integration of administrative and management systems with HMIS,
3. Action plan for integration of HMIS with the routine HMIS

Personnel Required

One international consultant who should be:

- knowledgeable of human resource systems in general
- familiar with human resource management software, e.g. HR Metrics
- intimately familiar with the HMIS program in Zambia
- Experienced in report writing and communicating with stakeholders

The consultant will work with one GRZ MoH staff member who will be assigned full time for this consultancy and do the necessary preparation and follow up of the consultancy

Duration

This consultancy will be in the third quarter of the EU HMIS reform program (July - September 2006)

One International Consultant	4 weeks
GRZ MoH staff	6 weeks

It is envisaged that implementation of the action plan will be built into the overall work plan of the GRZ MOH over a period of approximately three years. Further terms of reference will be developed for this implementation, based on this review.