

ZAMBIA

HIV/AIDS Commodity Security (HACS)



Assessment Technical Report

September, 2007

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ACRONYMS

ART	Antiretroviral Therapy
ARV	Antiretroviral
CA	Crown Agents
CBOH	Central Board of Health
CCM	Country Coordinating Mechanism
CHAI	Clinton HIV/AIDS Initiative
CHAZ	Churches Health Association of Zambia
CIDRZ	Centre for Infectious Disease Research in Zambia
CP	Cooperating Partner
DCCDS	Directorate of Clinical Care and Diagnostic Services
DfID	(British) Department for International Development
DSBL	Drug Supply Budget Line (office)
FDA	Food and Drug Administration
FP	Family Planning
NAC	National AIDS Commission
GFATM	Global Fund to Fight AIDS, Tuberculosis, and Malaria
GRZ	Government of Zambia
HACS	HIV/AIDS Commodity Security
HAC	HIV/AIDS Commodities
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
HMIS	Health Management Information Systems
IEC	information, education, and communication
JSI/DELIVER	John Snow Incorporated/DELIVER
LSAT	Logistics System Assessment Tool
LMIS	Logistics Management Information Systems
MOH	Ministry of Health
MSL	Medical Stores Limited
NAC	National HIV/AIDS/STI/TB Council
NASF	National HIV/AIDS Strategic Framework
NDC	Non-drug Consumable
NGO	Non-Governmental Organizations
NSF	National Strategic Framework

OI	Opportunistic Infections
PEP	Post Exposure Prophylaxis
PEPFAR	President's Emergency Plan for AIDS Relief
PLHA	People Living with HIV/AIDS
PMTCT	Prevention of mother to child transmission
PRA	Pharmaceutical Regulatory Authority
PSM	Procurement and Supply Management
PTWG	Procurement Technical Working Group
RH	reproductive health
RHCS	Reproductive Health Commodity Security
SCMS	Supply Chain Management Systems
SDP	service delivery point
SPARHCS	Strategic Pathway to Reproductive Health Commodity Security
STI	sexually transmitted infection
TOR	Terms of Reference
TRIPS	Trade Related Aspects of Intellectual Property Rights
TWG	Technical Working Group
USAID	United States Agency for International Development
VCT	Voluntary Counseling and Testing
WHO	World Health Organization
ZNAN	Zambia National AIDS Network
ZNTB	Zambia National Tenders Board

ACKNOWLEDGEMENT

The authors of this report are Raja Rao, Senior Technical Advisor, JSI, and Jan Dik, Consultant for the Supply Chain Management Systems (SCMS) Project. We would like to thank the Zambia Ministry of Health (MOH) for the opportunity to conduct a national assessment to identify the key HIV/AIDS commodity security (HACS) challenges in the country. The assessment revealed the progress Zambia has made in providing essential commodities to customers when and where they are needed and in the right quantity and of good quality – the definition of commodity security.

With each challenge to the system identified in the assessment, opportunities also presented themselves. It is hoped that issues identified in this report will inform and motivate HIV/AIDS stakeholders in Zambia to identify these opportunities in the subsequent strategic planning process. The authors would like to thank the individuals consulted for the technical report (see Annex 1) for their candor and time spent with us in discussing at length both what is, “going right,” as well as how the systems and policies can be improved to strengthen HACS.

We would also like to express our gratitude to the SCMS and USAID | DELIVER Project offices in Zambia for their support in organizing the assessment visit and for providing expert technical input on all aspects of a key HACS input – the supply chain!

The United States Presidents Emergency Plan for AIDS Relief (PEPFAR), through the United States Agency for International Development (USAID), provided financial support through the SCMS project to undertake this assessment. We are grateful for their support and continued commitment to HACS and to addressing the myriad of system necessary to achieve it.

EXECUTIVE SUMMARY

Introduction and Background

HIV/AIDS related morbidity and mortality in Zambia is a substantial and growing proportion of the overall disease burden. While many of the causes and responses to this challenge are beyond the scope of securing commodities, strengthening HACS is nonetheless a central requirement for treatment, care, and prevention. For example, recent sentinel surveys indicate a 16 percent prevalence rate, with the disease disproportionately affecting women, urban residents, and the 15 – 49 age group population. Current estimates put the number of annual new infections between 85,000 – 110,000 (NAC, 2006). As early as 2000, nearly 800,000 deaths were attributed to HIV/AIDS. The number of annual AIDS related deaths could reach 2.8 million by 2015 unless concerted, strategic action is taken to strengthen HACS for a range of commodities – including ARVs, test kits, lab supplies and reagents and medicines for Opportunistic Infections (OIs).

The Government of Zambia (GRZ) and partners are aware of and in agreement on the key bottlenecks and challenges to HIV/AIDS CS in the country. The MOH, cooperating partners (CPs), Zambian health experts, and technical assistance agencies have, for example, identified several areas in need of attention, including drug quantification, procurement, further developing a logistics management information systems (LMIS), coordinating and diversifying financing, and scaling up treatment programs. The pervasive and chronic human resource shortage in the health sector has also been well documented. This assessment found that it is a major constraint limiting the functioning of programs and systems necessary for HACS and other Zambian public health objectives. Several collaborative bodies and partners such as the Global Fund Country Coordinating Mechanism (CCM), the National HIV/AIDS/STI/TB Council (NAC) USAID, the U.S. Center for Disease Control (CDC), the Churches Health Association of Zambia (CHAZ), the Zambia National AIDS Network (ZNAN), World Bank, World Health Organization (WHO), UNICEF and others are aware of the broad challenges to commodity security for HIV/AIDS products and have produced several national and program specific strategies that address, in some measure, the findings raised in this report.

To strengthen these efforts, the GRZ realized the potential impact a strategic, commodity-based approach could have on ensuring that *patients and service providers can obtain and use HIV/AIDS commodities when and where they need them* – the definition of commodity security. Subsequently, USAID/Zambia signaled the MOH and partners that it was prepared to support the development of such a strategic plan. Consequently, in May – June, 2007, under the direction of MOH agencies, a national HACS assessment was conducted to:

1. *Raise awareness of HIV/AIDS Commodity Security*
2. *Conduct an initial key informant assessment to delineate Commodity Security issues in Zambia*
3. *Initiate the process to establish a HACS Coordinating Committee*
4. *Gain support for the development of a national HACS strategic plan*

The MOH has signaled that it is supporting the HACS process as part of its broader objectives for commodity security for all essential medicines and health consumables needed to reach its public health goals. Commodities for HIV/AIDS are an important focus of this holistic approach, given the severity of the epidemic and the costs for prevention, treatment, and care. However, the MOH does not view the

multiple commodity security programs (e.g., for Reproductive Health) as a zero-sum proposition, where increased support for one, means less support for the other.

Main Findings¹

Strengths of the System

- ✓ Significant increase in the number of Anti-retroviral Therapy (ART) patients from 2004 – 2007;
 - ART scale up meets and, potentially will exceed earlier GRZ targets;
- ✓ MOH Procurement Unit is establishing “framework contracts” increasing flexibility and improving efficiency and quality assurance;
- ✓ Creation of the Drug Supply Budget Line office (DSBL) as main coordination and management body for supply programs and supply management activities. It is foreseen that the DSBL will be the body to re-establish and strengthen the MOH leadership in drug supply management.
- ✓ Substantial improvement in inventory management at MSL (capital improvements, personnel) as part of the on-going process in which MSL will become the core unit in the supply chain through which all goods will flow for all partners in health service delivery. A next step in that structure will be the integration of the supplies, moving from a fragmented and sometimes un-accessible stock to a national supply source. In that phase it will manage well defined, properly monitored proportions of that stock for each service provider in the system.
- ✓ Improvements in data capture and reporting for the ART program and HIV test kits;
- ✓ An acknowledgement of the importance of laboratory systems in support of clinical care, diagnosis, detection and surveillance.

Key Constraints

- ✓ Meeting demand for ART and PMTCT services will become increasingly difficult if health system constraints, such as staff recruiting and attrition are not addressed.
- ✓ Zambia has over 1 million people infected by the HIV virus. Of these, estimates are that 20%, 200,000 people, are in need of ART services (MOH, 2006).
- ✓ *Heavy donor dependency* – ARV procurement financing is dependent on two primary sources – The Global Fund to Fight AIDS, TB, and Malaria (GFATM) (currently in Round 4 Phase II) and the U.S. funded President’s Emergency Plan for AIDS Relief (PEPFAR) program.
- ✓ Insufficient provider training on appropriate STGs for pediatric ART, which often lead to irrational prescribing
- ✓ MSL does not have consumption or inventory data for laboratory facilities to determine the basis

¹ This is a partial list taken from more detailed analysis in the body of the report.

for equipment/supplies request.

- ✓ Consumption for all products, except ARVs, at Service Delivery Points (SDPs) is not recorded on Reporting and Requisition (R&R) forms because of staff shortages, inadequate training, and irregular supervision.
- ✓ Limited integration of storage and inventory management functions for HIV/AIDS commodities within MSL.
- ✓ Monitoring and follow up of patient adherence and condition in ART and PMTCT programs is inadequate due to lack of motivated and available staff, patient access to facilities, and inadequate counseling.
- ✓ Limited diversification of funding sources for procurement support
- ✓ Limited GRZ budget contributions for HIV/AIDS commodities
- ✓ Substantial human resource attrition rate in the health sector
- ✓ Inadequate employment incentives in the public health sector
- ✓ *Human Resource Strategy* for the health sector is not fully implemented.
- ✓ Continued vertical programming leading to inefficient use of resources. The demands from vertical programs on the MOH are creating administrative and planning inefficiencies.
- ✓ Lack of confidence in MOH capacities and leadership ability
- ✓ Lack of M&E program skills at each level in the system – particularly the sub-national level where data collection is important.
- ✓ The increase in morbidity and mortality rates due to HIV and AIDS is limiting overall productivity as well as altering the Zambian population structure.
- ✓ Limited follow through on disseminating policy and legal documents and guidelines

Methodology

The assessment used the HACS framework as the analytical basis for the inquiry (See Section 1.0). The framework includes both what has been historically associated with commodities (e.g., logistics and financing), as well as the other elements of the health system necessary to ensure product availability.

The assessment required the consultants to examine multiple programs, policies, and systems. A survey questionnaire was developed prior to the assessment to guide the interview and data collection process. The questions were developed from existing survey tools such as the Logistics System Assessment Tool (LSAT); the Strategic Pathway to Reproductive Health Commodity Security (SPARHCS) Diagnostic Tool; and several existing questionnaires related to procurement, financing, and service delivery.

As a result, this initial effort could be described as *more breadth than depth*. A comprehensive analysis of each of the 19 programs, systems, and cross-cutting issues was neither possible nor expected. Much of the data exists in the form of program specific reports and assessments recently carried out by other organizations. The assessment team obtained a number of recently published report, draft analyses, and quantitative data, and was able to conduct secondary analysis on much of this information for this technical report. Additional data sources included: (1) findings from a pre-assessment key-informant survey distributed prior to arrival in-country; (2) an initial stakeholder's workshop, (3) personal interviews with experts; and (4) a debriefing session of findings to shape the analysis.

A pre-departure debriefing on initial findings was held on the final in-country work day in the main conference room at the MOH. The objectives of the debriefing were to review the initial findings with the HACS stakeholders, obtain feedback, and gain support for the national strategic planning process, and the formation of a HACS coordinating committee.

While there is a dearth of committees in the health sector, and key stakeholders were not keen to create another structure, it was agreed that a group of technical and managerial stakeholders were needed to fulfill HACS planning functions. The HACS/Coordinating Committee (CC) will formally be assembled with the support of the Zambia SCMS office and from the DSBL office and the Directorate of Clinical Care and Diagnostic Services (DCCDS). The decision by the senior leadership in the MOH to establish and provide political support to this committee was an important accomplishment of the assessment mission, and one which is crucial to implementing activities to address the wide-range of challenges described in this report.

Next Steps

1. Identify HACS issues and constraints not addressed in this report.
2. Establish a functioning HACS Coordinating Committee to guide the strategic planning process
3. Organize a national strategic planning workshop to prioritize the challenges and develop actions to address them.
4. Coordinate with NAC and other related bodies to ensure harmonization and avoid duplication of activities and M&E functions.
5. Link HACS to the MOH's DSBL and Procurement Technical Working Group (PTWG) structure as done for other commodity security areas
6. Develop a resource mobilization plan to obtain funding for the strategy.

1.0 INTRODUCTION

The necessary steps that must be taken to halt and then reverse the prevalence of the HIV virus are both numerous and complex, and thus require a strategic approach. This is based upon the growing knowledge of the disease and "its consequences," and further it is a consequence of the awareness that governments are dealing with a pandemic unparalleled in recent times. In response, an increasing number of programs to address treatment, care and prevention were created, yet with little coordination between these programs or a broad strategic framework that addresses importance of commodity availability in the overall fight against the disease.

Recently the necessity to "secure commodities" for all these programs was highlighted by governments and international organizations realizing that effective programs cannot exist without a routine supply of health commodities. As a consequence, the Zambia MOH has taken a policy decision to develop a HACS strategy to support its broader objectives contained in the National Strategic Framework (NSF) II. The first step towards development of that strategy, a national HACS assessment, was conducted in May, 2007 to identify the key obstacles and serve as the basis to develop the strategy.

The MOH has a position on assuring commodity security for all essential medical supplies across the health programs. As commodity security encompasses planning, organization, forecasting, human resources, financing, and procurement, the MOH is particularly supportive to arrangements that are holistic in nature and recognize the structures already in place at MOH. Programs are expected to have their own 'commodity security' platforms with the purpose of addressing the programmatic issues. As commodity security necessarily involves procurement planning, and procurement function, these commodity security groups must recognize the central role initiatives that MOH has put in place. These initiatives are:

- (a) The Procurement Technical Working Group (PTWG) which oversees all the procurement planning, arrangements and ensures that there is no duplication of efforts, etc..
- (b) The Drug Supply Budget Line (DSBL) which coordinates and liaises procurement and related activities within the MOH and with partners.

Commodity security groups are expected to be operationally linked to these two platforms.

The Government of Zambia further realizes the importance of establishing sustainable systems and financing to ensure that commodities are available to users – both the service provider and the patient. Nonetheless, a national program that sustains the activities, with particular reference to substantial scale up, is needed. Parallel to this, USAID/Zambia conveyed to the GRZ and MOH that it was prepared to support development of such a national program. A similar process, the "Commodity Security Program for Reproductive Health" in Zambia, is seeking to address supply availability for the Family Planning and Reproductive Health (RH) programs.

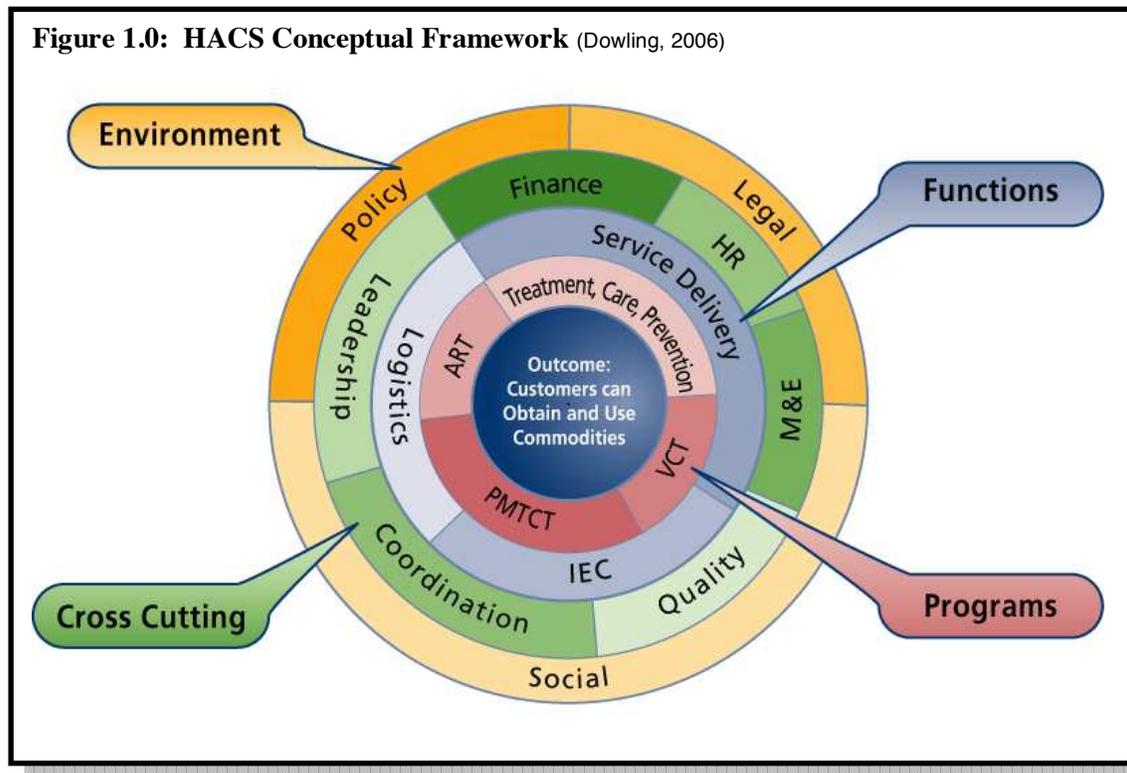
The current mission to assess the HACS situation, then support the development of a national strategy was inspired by awareness of the Zambia MOH and Cooperating Partners (CP) that essential health commodities – for HIV/AIDS, RH, and other essential care – should be a strategic objective in health sector. And further, that many of the systems and policies for one category of commodities (e.g., anti-retrovirals (ARVs) impact all essential drugs.

The objective of the assessment mission was the following:

5. **Raise awareness of HIV/AIDS Commodity Security**
6. **Conduct an initial key informant assessment to delineate Commodity Security issues in Zambia**
7. **Initiate the process to establish a HACS Coordinating Committee**
8. **Gain support for the development of a national HACS strategic plan**

This technical report will demonstrate how each of the objectives was met. The core activity of the mission was an analysis of the HACS components (see figure 1.0) to identify the main issues and opportunities to support the subsequent strategic planning process. These findings will inform the development of the first outline strategic plan. Further data will be collected during the strategic planning workshop in the fall of 2007 for components that assessment team were unable to address during the May/June mission.

1.1 Rationale & Analytical Basis



One of the major constraints in Zambia's national HIV/AIDS programs – and indeed in those of many other countries – is the inability to routinely ensure product availability for a wide range of programs. *Ensuring that patients and service providers can obtain and use these commodities when and where they need them*—also known as commodity security for HIV/AIDS programs—requires an effective supply chain. But an effective supply chain on its own will not guarantee HACS. It also requires effective

delivery of health services and other programmatic interventions, including Information, Education, and Communications (IEC) program, and the existence of a supportive policy, legal, and social environment (see Figure 1.0).

An effective response to HIV/AIDS requires both multi-sectoral and multi-programmatic action, with a variety of programs that address prevention, treatment, and care. These programs—including antiretroviral therapy (ART), prevention of mother-to-child transmission (PMTCT), voluntary counseling and testing (VCT), post-exposure prophylaxis (PEP), blood safety, sentinel surveillance, and palliative care—require a vast number and range of commodities. Those commodities include antiretroviral (ARV) drugs; drugs to treat opportunistic infections (OIs); HIV test kits; laboratory reagents; medical consumables such as syringes and gloves; and IEC materials.

The provision of HIV/AIDS services depends on several programs and functions as well as on cross-cutting issues, such as leadership, human resources, financing, and the quality of products and services at all levels. Leadership, for example, is necessary to develop and implement supportive policies at the national level, but also vital at service delivery points and along the supply chain.

Overall commodity security for the people who use HIV/AIDS products and services rests on the interplay among all of these elements. Without an effective coordinated strategy to address all of these components, HACS cannot exist. Equally, effective implementation of those policies must exist across all aspects of HIV/AIDS programming, including the supply chain, to ensure that HIV/AIDS commodities are available and accessible when and where they are needed. A commodity security approach, which looks beyond the immediate supply chain functions such as forecasting, procurement, and distribution, is needed to ensure commodity availability. The HACS framework provides a model that brings together all of the programs, functions, and cross-cutting issues that must be addressed in both assessing and developing a strategic response to ensure continuous availability of HIV/AIDS commodities.

1.2 BACKGROUND

HIV/AIDS related morbidity and mortality is a substantial and growing proportion of the overall disease burden in Zambia. Recent sentinel surveys indicate a 16 percent average prevalence rate, with the disease disproportionately affecting women, urban residents, and the 15 – 49 age group population. Current estimates put the number of new infections between 85,000 – 110,000 annually. As early as 2000, nearly 800,000 deaths were attributed to HIV/AIDS. The number of annual AIDS related deaths could reach 2.8 million by 2015 unless resources are made available to procure HIV/AIDS commodities – e.g. ARVs, test kits, lab supplies and reagents and medicines for Opportunistic Infections (OIs) – and supply chain and human resource capacities are strengthened to scale up and sustain the provision of HIV/AIDS commodities in Zambia.

As a result, the Zambia MOH and partners have taken a policy decision to develop and implement a national HACS strategy to ensure a *situation where patients and service providers can obtain and use commodities when and where they need them*. The first step in this process was the completion of a broad-based situational analysis to identify the major challenges within the functions, systems, and policies in the HACS framework. Secondly, develop a national strategic plan; and third, ensure that the plan is funded and implemented. The process is designed to identify (assessment), address (strategic plan), and resolve (implementation) the major HACS challenges facing Zambia.

This decision took into account that a multi-sectoral and coordinated programmatic response is necessary to help ensure a regular supply of HIV/AIDS commodities for clients. The range of services, for example, require a large *variety* and *quantity* of commodities for ART, PMTCT, and VCT programs – in addition to other treatment, detection and monitoring functions including blood safety monitoring, sentinel surveillance, palliative care, and laboratory testing. Critical to the success of these programs will be ensuring that the vast range of commodities will be regularly available to clients and service providers.

The proportion of the population affected by HIV/AIDS in Zambia has strained the social and economic fabric of the country. There was therefore a sense of urgency on the part of MOH and Cooperating Partners (CP) to address the issues with a national strategy that would eventually be integrated with, not separate from existing structures and programs.

1.2.1 Multi-Sectoral Response

HIV/AIDS programming is already a part of countless strategic and operational plans including, The Zambia National HIV/AIDS Strategic Plan and Framework, the on-going work plans of all MOH agencies, and among numerous health programs funded by Zambia's CPs. Therefore, commodity security efforts should be focused on adding value to these existing strategies, not duplicating or simply re-packaging their contents. A real focus then of a future commodity security initiative should be to seek integration and coordination with existing strategic planning and implementation.

In the context of HIV/AIDS commodities, the DSBL, Directorate of Clinical Care and Diagnostic Services, and NAC are the public sector agencies that manage the policy and implementation of the response to HIV/AIDS in Zambia. It is expected that these organizations will coordinate the implementation of the HACS strategy and help ensure the activities are integrated within existing systems and aligned with the strategic direction established in the National Strategic Framework (2006– 2010). The Zambian Government, CPs, and program implementers agree that HIV/AIDS is more than a health problem and requires a broad-based multi-sectoral approach to address the many facets of the epidemic. There is general consensus that HIV/AIDS is associated with poverty, social and economic inequities between men and women and long-standing cultural behaviors and beliefs. The National HIV/AIDS Strategic Framework 2006-2010 (NASF) II has been built on the process of joint annual reviews of the progress with the current 2002-2005 Strategic Intervention Plan and a broad consultative process with the Partners. The management intent of the NASF 2006-2010 is not to replace the need for Partners to have their own plans, but rather to support, facilitate, and coordinate their responses. It is within this approach that the HACS process and strategic plan will fit – it will have a defined set of activities and objectives, but be coordinated with the GRZ's broader response.

The national response also includes the commercial and NGO sectors. The majority of HIV/AIDS services are currently delivered by government facilities. Several NGOs, however, for example, the Churches Health Association of Zambia (CHAZ), are involved in promoting commodity availability and information and education on prevention. The Centre for Infectious Disease Research in Zambia (CIDRZ) also supports numerous MOH ART clinics in Lusaka and some in the other provinces. The MOH operational response is guided by *NSF* and the *HIV/AIDS Strategic Plan for the Health Sector*. NAC is responsible for coordinating the health sector response to HIV/AIDS. These areas include: counseling, care and support, drugs and logistics management, monitoring and evaluation, HIV and STI treatment and surveillance. NAC is also responsible for coordinating and oversight of the national VCT, PMTCT and sentinel surveillance programs.

As the HACS process moves forward, coordinating these existing strategies with HACS will become increasingly important as the national program scales-up, becomes more complex to manage, and requires substantially more commodities.

2.0 METHODOLOGY

The Zambia HACS assessment was only the second such analysis conducted in any country.² As such, a number of lessons are still being learned, including how to address the analytical challenge of examining a wide range of components (systems, policies, functions), while identifying program specific technical obstacles. Despite the infancy of this approach, the MOH and CPs and agreed that the assessment *is* a crucial first step toward developing actionable strategies to improve HACS. Broadly, the HACS process steps were agreed as follows:

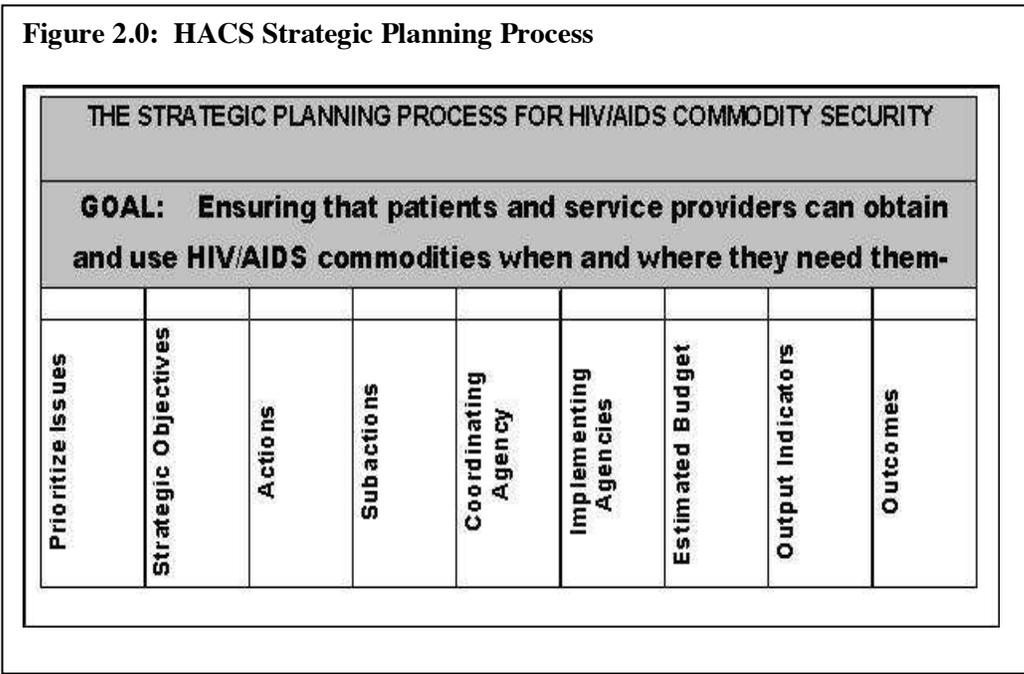
Step 1: HACS assessment - identify key obstacles within each component in the HACS framework (discussed in the previous section)

Step 2: HACS national strategic plan – develop a strategic response to the obstacles addressed in the assessment. One of the objectives of the assessment was to identify the main issues to inform a national strategic planning process. The process, illustrated in Figure 2.0, is dependent upon the identification and

consensus by stakeholders on the main issues within each component, noting that some issues, such as distribution, procurement, financing, and human resources will receive more attention than others because there is more available data and some components are simply more relevant HACS issues in Zambia than others.

After consensus is achieved on the issues – which will be reflected in the final draft of this technical report – the

Figure 2.0: HACS Strategic Planning Process



strategic planning process will begin with a technical workshop in Zambia to prioritize the issues, develop strategic objectives, activities, and other elements. Key challenges, among many, will be to develop a feasible budget (that does not overlap or result in reducing funding of other successful programs) and developing a monitoring plan to measure impact.

Step 3: Funded implementation of strategic plan – work with the GRZ, CPs, the private and NGO sectors, and patient groups to obtain an adequate level of financial commitment to carry out the activities in the

² The first HACS assessment was conducted by the USAID funded DELIVER Project in the fall of 2005 in Ghana. A subsequent national strategic plan was developed and is currently being implemented by the National AIDS Control Programme (NACP) and partners.

strategic plan. Turning the strategy into a funded implementation plan will be the key challenge to Step 3. Adequate financing for HACS commodities and systems will of course be fundamental, but not the only challenge following completion of the strategy. The HACS Committee will have to work diligently to ensure the following:

- *Political will* - mandating and motivating stakeholders to fully participate and commit to the implementation.
- *Accountability and Performance Measurement* - linking identified performance indicators with strategic initiatives that are carefully, designed, costed, and carried out.
- *Program integration* - ensures that the HACS plan is integrated within broader/existing plans. An example of “program integration” is how the NASF has been “mainstreamed” into the Zambia National Development Plan (2006 – 2010).

2.1 Use of the HACS Framework

The assessment used the HACS framework to guide the inquiry. As described in Section 1.0, the framework includes both what has been historically associated with commodities (e.g., logistics and financing), as well as the other elements of the health system necessary to ensure product availability, such as a supportive policy environment, functioning and defined treatment, care, and prevention programs, and a service delivery infrastructure made up of qualified and an adequate number of health care workers.

The assessment itself required the consultants to examine multiple programs, policies, and systems. As a result, this initial effort could be described as *more breadth than depth*. This was the expectation of the assessment team when the process first began, and one in which was supported by key stakeholders who cautioned not to, “reinvent the wheel.” This analysis subsequently made use of existing data to help identify the issues. Nonetheless, between June and September, the consultants will work the MOH and the HACS committee to examine areas not covered (due to time, resources) including how IEC strategies; social/cultural practices; the private sector; and service delivery can affect (and are potentially affected by) HACS efforts.

2.2 Data Collection

The conversion of the framework to an analytical tool was challenging because the time and resources necessary to examine fully the programs, policies and cross-cutting issues requires enormous time and cost. To conduct an assessment of the ART program alone, for example, could well have occupied the assessment team for several weeks. A similar observation could be made for detailing the laboratory systems, or reviewing all policies and regulations regarding treatment, care, and prevention programs. A comprehensive analysis of each of the 19 programs, systems, and cross-cutting issues was neither possible nor expected because much of the data already exists in the form of program specific reports and assessments recently carried out by other organizations. The assessment team obtained a number of recently published report, draft analyses, and quantitative data and was able to conduct secondary analysis of this information for the technical report.

The analysis of existing data revealed that there was a good deal of “unevenness” in data availability between the component areas. For example, a substantial amount of information was available for ARV, HIV tests, and laboratory logistics, but very little on how IEC strategies and current M&E plans are promoting commodity availability. For other programs and functions, such as PMTCT, human resources, and financing, data availability was generally adequate. The assessment team, however, struggled to address data gaps for M&E, and how socio-economic variables impact (and are impacted by) HACS.

Table 2.0 provides a brief overview by framework component area on the team’s ability to obtain relevant data and, of course, serves as a guide indicating where additional data will need to be collected before a final list of priorities is established by the HACS committee.

Table 2.0: Data Availability and Gaps

HACS Component	Data Collection/Availability		
	Superior	Good	Inadequate
Commodities	✓		
Programs			
Treatment	✓		
Detection & Diagnosis	✓		
Prevention		✓	
Functions			
Supply Chain	✓		
IEC			✓
Service Delivery		✓	
Cross – Cutting Components			
Financing		✓	
Coordination	✓		
Human Resources	✓		
Leadership	✓		
Quality			✓
M&E			✓
Context			
Policies & Legislation		✓	
Socio-Economic Factors			✓

The “Inadequate” column does not necessarily mean that the data was unavailable. In most instances, it likely did exist. However, given the time allotted for the team in-country and the considerable number of component areas, there was insufficient resources to collect the data and/or interview key sources.

2.2.1 Use of Key Informants

In addition to written reports and quantitative data, the assessment team relied heavily on: (1) findings from a pre-assessment key-informant survey; (2) an initial stakeholder’s workshop, (3) personal interviews with experts; and (4) a debriefing session of findings to shape the analysis.

The initial workshop was held the third day into the in-country assessment period. The purpose of the workshop was to introduce participants to HACS by providing them with a conceptual background and examples of HACS in other countries. The assessment team also received feedback on the applicability of the HACS framework in Zambia, and the proposed methodology for the two-week assessment. At the workshop, HACS surveys (participants completed prior to the assessment) were also reviewed. In the surveys, participants were asked to identify strengths and weaknesses in HACS programming and suggest possible remedies. Almost 50 percent of the participants completed the surveys, which were instrumental in getting a sense of what Zambia stakeholders believed to be the priority HACS challenges. Figure 2.0 summarizes the results from the pre-assessment surveys. These issues are discussed in more detail in the subsequent sections of the report. Findings from the assessment and the surveys were generally synonymous.

Table 2.1: Summary of HACS Survey Results

	HACS Programs & Services	Total (n=10)	Result	Very weak	Weak	Average	Strong	Very Strong
				(1 - 10)	(11 - 20)	(21 - 30)	(31 - 40)	(41 - 50)
1	ART	50	36				•	
2	Blood Safety	40	30			•		
3	Lab Services	45	32			•		
4	Palliative Care	45	25		•	•		
5	Pediatric Services	50	20		•			
6	PMTCT	50	32				•	
7	Prevention	50	38				•	
8	VCT	50	37				•	
9	STI	45	30			•		
10	Selection Quality	45	33				•	
11	Quantification	50	36			•		
12	Procurement/Quantification	50	32				•	
13	Recording Diagnosis	45	26		•	•		
14	Recording Consumption (10)	45	27		•	•		
15	Adherence	50	31				•	
16	Training	50	28			•		

	HACS Categories	Total (n=10)	Result	Very weak	Weak	Average	Strong	Very Strong
				(1 - 10)	(11 - 20)	(21 - 30)	(31 - 40)	(41 - 50)
1	Financing (GRZ)	50	20		•			
2	Financing (donors)	50	40				•	
3	Service Delivery	50	29			•		
4	Service Quality	50	29			•		
5	Policies (GRZ)	50	28			•		
6	Policies (donors)	50	28			•		
7	HR adequate/sufficient	50	18		•			
8	HR training availability	50	19		•			
9	HR training appropriate	50	17		•			
10	HR training sufficient	50	17		•			
11	Coordination (health structure)	50	24			•		
12	Coordination (w/ ex. Partners)	50	30			•		
13	Quality of products	50	34				•	
14	Quality of services	50	32				•	
15	Leadership (10)	100	66				•	
16	Logistics (10)	100	62				•	
17	M&E	50	27			•		
18	IEC (internal)	45	28			•		
19	IEC (w/ population)	50	26			•		

As can be seen from Figure 2.0, human resources, data collection and pediatric programs were seen as “weak.” These findings were confirmed in the interviews and through review of available documentation. A key challenge in obtaining informant interviews was the multiple and competing commitments of the

experts in-country. The CP representatives, MOH technical and managerial staff, and staff at the NGOs are usually scheduled for several meetings often occurring simultaneously. In one sense, this is in fact a positive finding because it shows that movement is being made on many of the same systems and functions identified in the assessment. Nonetheless, this created a situation resulting in inadequate data collection for some of the HACS components. For further data collection, the team will be sure to schedule more time for the interviews in view of these demands.

Key informants with technical expertise in each of the component areas were interviewed following the initial workshop. A total of 21 informants were interviewed over the two-week period in sessions ranging from 30 minutes to two hours. A list of key informants is included as Annex 2. These interviews were important in helping the team interpret the data that was collected and filling in a number of gaps. They were also useful in sensitizing key actors to the benefits of HACS and getting a sense of common issues and priorities.

Field data collection was not substantial, and therefore can be seen as a limitation of this analysis. A visit to the Chongwe District ART Center, District stores (Lusaka Province) was conducted to verify findings with regards to the ART and PMTCT programs. The team also visited Medical Stores Limited (MSL). Information obtained during this visit is included in the discussion of programs.

2.2.2 Survey Tool

A survey questionnaire was developed prior to the assessment to guide the interview and data collection process. The questions were developed from existing survey tools such as the Logistics System Assessment Tool (LSAT); the Strategic Pathway to Reproductive Health Commodity Security (SPARHCS) Diagnostic Tool; and several existing questionnaires related to procurement, financing, and service delivery. When these questions were aggregated, and further questions added, the questionnaire totaled nearly 50 pages long – without the inclusion of any responses! The length of the tool provides an indication of how broad the subject matter is and the implicit challenge of assessing the status of all the HACS components. Therefore, the team divided up the sections in the questionnaire depending on who was to be interviewed that day in order to make the data collection more manageable. Of course, all the questions in the guide were not asked and additional questions were included in the interviews. Nonetheless, the survey tool was useful to the team in ensuring critical questions were asked and related data collected.³

2.3 Presentation of Initial Findings and HACS Coordinating Committee

A pre-departure debriefing on initial findings was held on the final in-country work day in the main conference room at the MOH. The objectives of the debriefing were to review the initial findings with the HACS stakeholders, obtain feedback, and gain support for the national strategic planning process and the formation of a HACS coordinating committee. At the debriefing, it was agreed that a HACS committee should be assembled to carry out the following functions:

1. Guide and serve as a technical resource for the HACS assessment;
2. Direct technical, policy, and advocacy efforts aimed at developing a national strategic plan
3. Coordinate HACS implementation activities

³ A copy of the survey tool can be obtained from the authors of this report. It should be considered a “draft” version as the situation and priorities will vary from one country to the next, necessitating the need to make revisions for use in other countries.

The terms of reference (TOR) for the committee are included as Annex 3. An important objective of the in-country visit was to obtain agreement on and begin to form a HAC Coordinating Committee (HACS/CC). While there is a dearth of committees in the health sector, and key stakeholders were not keen to create another structure, it was agreed that a group of technical and managerial stakeholders were needed to fulfill HACS planning functions. The HACS/CC will formally be assembled with the support of the JSI Zambia office with support coming from the Drug Supply Budget office (DSBL), the PTWG and the Directorate of Clinical Care and Diagnostic Services.

The preliminary findings from the assessment are detailed in the following sections and organized by the components in the HACS framework. Each of the sections includes a brief overview of the topic followed by the major constraints within each component. The sections purposefully omit detailed recommendations stemming from the findings. Once this report is finalized, recommendations and strategic guidance will be included as part of the second phase – strategic planning, and will rely on Zambian experts to develop strategies and activities to address the issues raised in this report.

3.0 CLIENTS and Commodities

3.1 Overview

This section briefly describes the use of HIV/AIDS commodities by clients who are the ultimate beneficiaries of the system. A description of clients using the full-range of HACS commodities is not provided. To do so would require a more substantial effort to examine client and commodity data for prevention, care, diagnosis, and detection programs, including a multitude of laboratory consumables, drugs for OIs, non-drug consumables, and commodities for co-infections such as TB. This part of the analysis may be expanded as part of the HACS strategic plan, after stakeholders achieve consensus on the priority issues and the programs and functions that will need to be strengthened to address them.

3.1.1 Managing Increasing Patient Numbers

HIV/AIDS Commodity Security is a key objective for the GRZ to meet the projected growth in patient demand for prevention, treatment and care. Table 3.0 lists patient projections established by the MOH with support from technical partners for 1st and 2nd line adult ART, Pediatric ART, PMTCT, and the number of patients projected to be tested for HIV. Additional HIV test will also be required for blood safety and surveillance programs.

As illustrated in the table, ART patients are expected to grow from the current 2007 estimate of 73,210 to over 200,000 in 2010. This forecast is based on consensus targets adopted by the MOH, CHAZ, ZPCT, AIDS Relief, and JSI.

(HIV Test Kits: The forecast, conducted in 2007 by the MOH and the USAID | DELIVER Project, is based on logistics and service statistics data for kits used for blood safety, CT, PMTCT, sentinel surveillance, and VCT programs.)



Table 3.0: Projected Number of Patients Using HIV/AIDS Commodities in Zambia 2007 – 2010

	2007	2008	2009	2010
ART (1st & 2nd Line)	73,210	135,000	176,000	200,100
Pediatric ART	5,473	15,000	24,000	29,900
PMTCT	30,000	35,000	35,000	30,000

HIV Tests ⁴		550,000	750,000	1,000,000
VCT		277,200	390,750	551,000
PMTCT		220,000	292,500	360,000

3.1.2 Scaling Up Treatment

To meet treatment targets established by the MOH for prevention and treatment – and reflected in the National ART Scale Up Plan (MOH, 2006) the number of treatment facilities must be substantially expanded. Currently ART is offered in 296 sites – including a mix of MOH, mission, and other NGO hospitals and facilities. Fifty percent of ART patients receive treatment in Lusaka Province, with many others concentrated in the Copperbelt and Livingstone areas. PMTCT services are offered in over 400 facilities also distributed heavily in these three areas. These sites represent a substantial scale up in the commitment to treatment and prevention over the past 7 years. The MOH is planning a further expansion to additional regional and district sites as well as strengthening the partnership with the Zambian armed forces to improve quality of care and the number of treatment facilities for military personnel.

The size and reach of the planned scale-up will require substantial financial resources and active management and coordination of the process on the part of NAC, MOH agencies, CPs, and those NGOs currently supporting treatment programs including CHAZ and CIDRZ. In order to meet the targets set out through 2010, the challenge will be in sensitizing communities and service providers; training of ART prescribers in ART and management of OIs; LMIS training; integration of TB services; Procurement of a wide range of commodities (e.g., ARVs, CD4 machines, laboratory reagents); and major capital improvements; and strengthening waste management systems.

3.2 Major Constraints

The major challenges identified involved client access, particularly for rural clients, to treatment. Client education, notably initiating and adhering to PMTCT treatment, was also identified by the assessment team as constraints.

- Meeting demand for ART and PMTCT services will become increasingly difficult challenges if the MOH is to meet ambitious scale up targets. Many patients claim they must travel from long distances to treatment facilities which require them to spend both money and time that they do not have.
- Facilities need more resources to establish effective outreach programs to ensure mothers come back for PMTCT treatment following delivery. Patient counseling, the team was told, at many maternity clinics and VCT centers does not appear adequate.
- Rationalizing brands for clients: get used to a certain generic brand of ARVs, then are switched to another brand

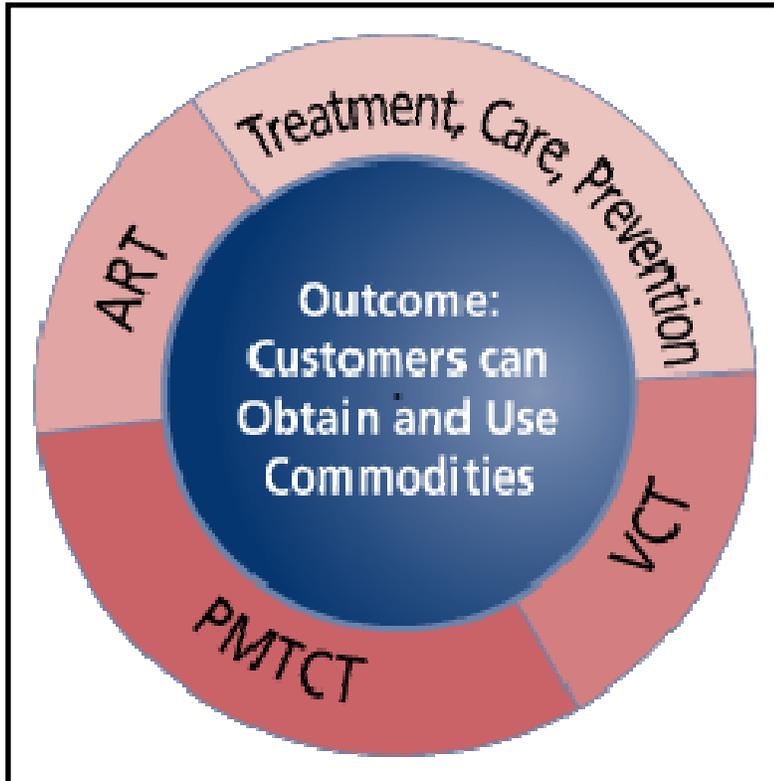
User Fees

In 2003, the Government launched its national policy of providing free and universal access ART, which was expanded in 2005 to include all ART related services. Further, users fees for health services in the public sector have been abolished in rural areas (This also implies no charges for essential drugs, including ART and related services). There are still charges in urban areas for essential drugs and primary care. The abolishment of the fee system is a direct reaction of the inability of rural clients to pay for health services combined with the strategy to encourage patients to seek treatment.

⁴ The majority of HIV tests are projected to be used by the VCT and PMTCT programs.

4.0 PROGRAMS

As noted, an effective national HIV/AIDS effort requires three different categories of programs: prevention, treatment, and care, which are shown in the innermost circle of the framework. Within each category, several types of programs will exist, and the environment must support commodity security for this diverse range of programs. Under prevention, programs could include PMTCT, VCT, OI treatment,



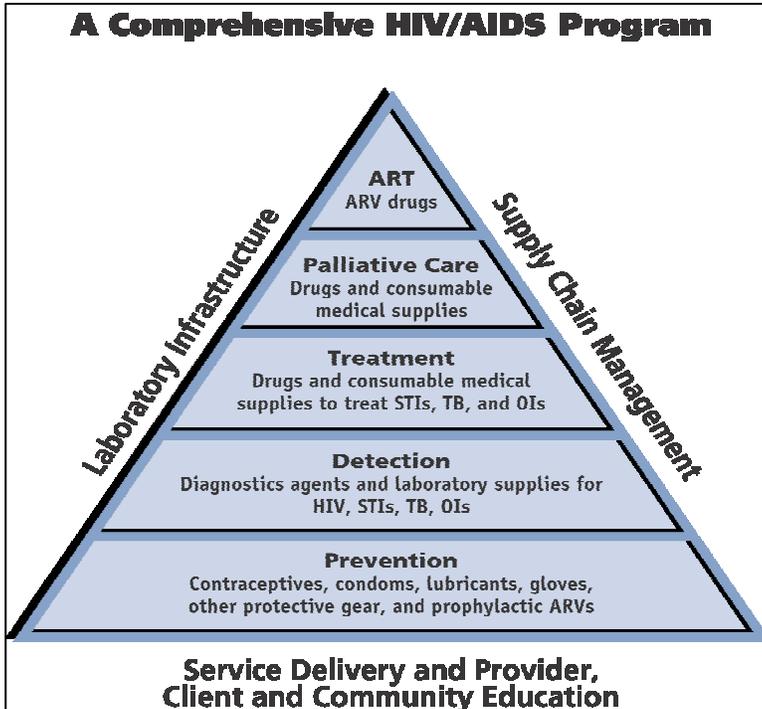
blood safety, sentinel surveillance, and condom distribution. Treatment programs could include ART and PEP, while care will include palliative care and tuberculosis (TB) treatment. Note that many of these programs will overlap the general categories; OI treatment, for example, can be considered as both prevention and care. These programs are the interface by which clients obtain and use HIV/AIDS commodities and services. The types of programs available will vary with the particular epidemic in a given country and the resources available. Each program may involve various sectors—public, commercial, and not-for-profit.

The broad challenge in Zambia, as in most other countries where the HIV infection rate continues to be a generalized epidemic, is building and

sustaining programs to diagnose, detect, prevent, and treat both HIV and related diseases such as TB, OI, and build up the clinical infrastructure to support the patient-based programs (e.g., laboratory services). For these programs to succeed over the long-term, requires a substantial volume and range of commodities – potentially upwards of 200 different products. These include ARVs, test kits, drugs for TB and other OIs, prophylaxis, lab reagents and equipment and other non-drug consumables and information and educational materials for the general population, clients and service providers.

The HIV/AIDS pyramid (left) shows what commodities programs need to manage include:

- condoms for STI/HIV prevention
- contraceptives
- HIV tests for blood safety, VCT, PMTCT, clinical diagnosis, and sentinel surveillance
- laboratory reagents, drugs, and medical supplies for detection and treatment of STIs and OIs
- specialized drugs and laboratory supplies for TB, malaria, and anti-retroviral therapy
- A host of consumable laboratory and medical supplies, including syringes, gloves, aprons, disinfectants, etc...



4.1 Antiretroviral Therapy (ART)

4.1.1 Overview

The availability of treatment means more people are likely to seek to know their HIV status and to practice safer behavior, thus reducing HIV incidence, and an economic imperative, in that treatment could prolong the productive lives of those infected.

The scale up of ART services in Zambia is guided by and is a major component of the NSF II. The operational plan is detailed in the *Scale Up Plan for HIV Care and Antiretroviral Therapy Services 2006 – 2008*. Scale up activities during the

previous two years was guided by a previous operational plan that had, as of 2005, secured ART treatment for over 50,000 patients. Zambia's success to date in rolling out ART services is based on a combined resources from the GRZ, Global Fund, the World Bank MAP program, USAID funded NGOs, and private sector facilities. As a result, ART services are offered in most of the 72 districts.

Figure 4.0 shows the distribution of ART and PMTCT sites in Zambia. The map illustrates a key challenge for the ART program which is providing access to services for clients in rural areas. Most of the facilities are located within the major metropolitan areas in Livingstone, the Copperbelt, and Lusaka. To a large extent this makes sense as over 50 percent of patients in need of treatment are located in Lusaka Province. The current 2006 – 2008 scale up plan acknowledges this and over the next two-year period plans are in place to extend coverage to areas outside the three major population centers.

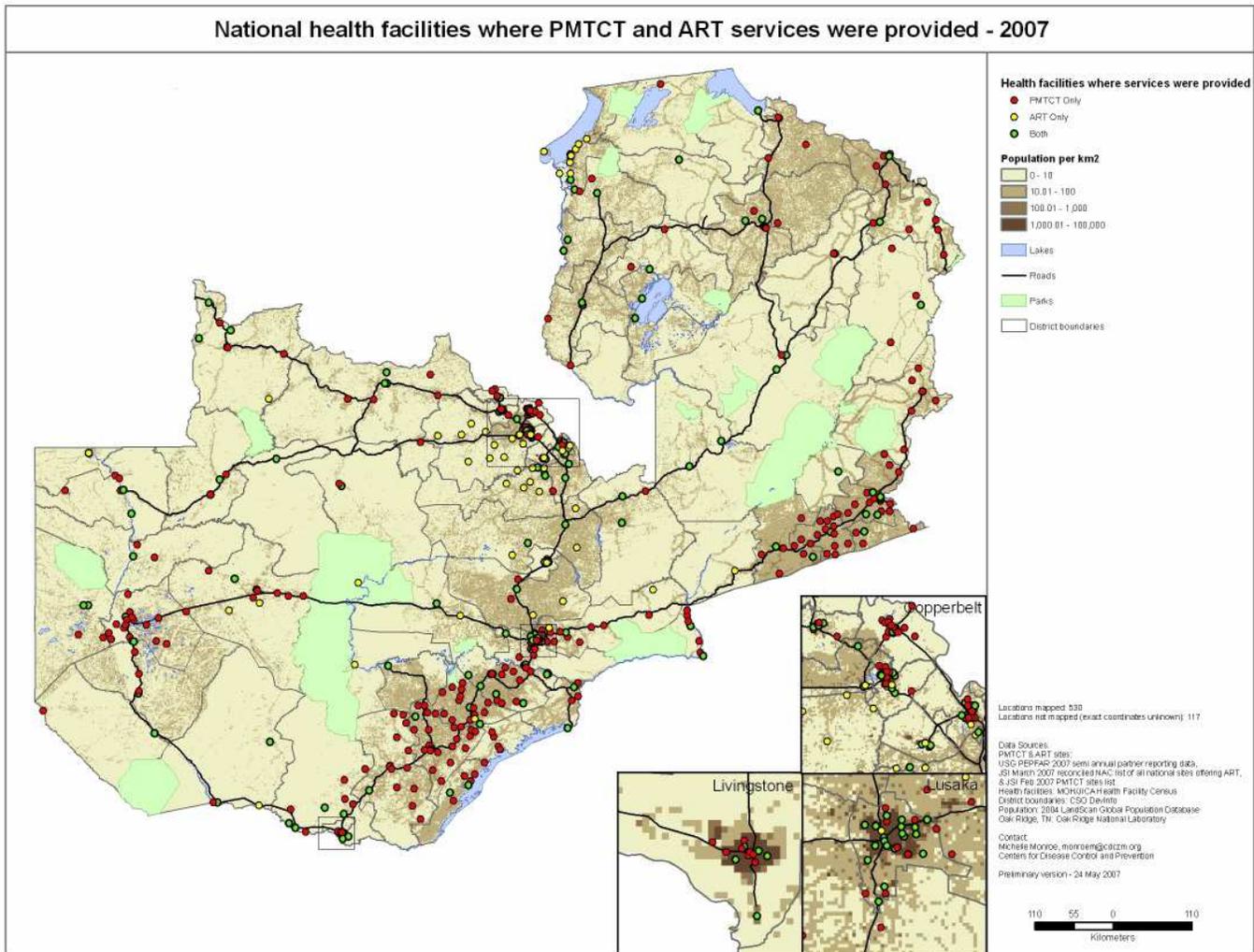
4.1.2 Major Constraints

- Zambia still has over 1 million people infected by the HIV virus. Of these, estimates are that 20% or 200,000 people are in need of ART services (MOH, 2006). However, only a little more than 70,000 people are on ART⁵. While this is a major accomplishment – and is close to meeting Zambia's WHO 3 x 5 target – ART services must be rapidly scaled up to treat the remaining majority of those who are HIV positive.

⁵ Based on consensus estimates provided in May, 2007 by organizations providing ART services (excluding the private-for profit commercial sector).

- *Human resource deficiencies* among pharmacists at all levels threaten the ability to meet treatment targets established through 2010. Trained logisticians at the district level and other dispensing staff at the service delivery point (SDP) level must also be identified, hired, and retained.
- *Heavy donor dependency* – ARV procurement is dependent on two primary sources – The Global Fund to Fight AIDS, TB, and Malaria (GFATM) (currently in Round 4 Phase II) and the U.S. funded President’s Emergency Plan for AIDS Relief (PEPFAR) program. While the World Bank’s MAP program and private sector sources contribute to supporting ARV procurement, the national system is at risk unless it can diversify the commodity funding base.
- Need to *build and sustain capacity* to perform routine forecasting and quantification - The MOH has become very dependent on outside technical assistance to organize and lead the quantification exercises of ARVs. Increased human resources within the ART program at the central level is needed to ensure capacity to manage the ARV supply chain is transferred to the national program.
- *Asses and enforce 1st and 2nd Line Standard Treatment Guidelines (STGs)*. STGs for ART is currently in the process of changing, and patients are expected to be phased over to new 1st and 2nd line regimens in beginning in the second half of 2007. A key challenge will be to ensure that the new

Figure 4.0: ART (and PMTCT) Sites in Zambia



regimens are prescribed routinely by service providers to ensure both treatment efficacy and a higher level of consumption forecast accuracy.

- **Other Constraints**
 - Slow development of an accreditation system for ART facilities
 - Insufficiently developed ART ancillary services such as routine laboratory testing and patient monitoring
 - Inadequate physical infrastructure for patient consultations, performance of laboratory services, and commodity storage

4.1.1 Pediatric ART

The MOH and technical partners recently completed an ART quantification exercise to determine procurement volumes for a range of 1st and 2nd line, PMTCT, and pediatric formulations. The quantifications were based on past trends and future targets. It is forecast that pediatric ART patients will rise from the current actual of 5,473 patients in 2007 to almost 30,000 in 2010 (DELIVER, 2007). While the issue of inadequate treatment for children has received significant attention, the majority of children infected with HIV – and who are in immediate need of treatment – do not have access to ART.

Major Constraints

- Limited number of newborns and children who are screened for HIV
- Inadequate IEC messages that reach parents on the need to diagnose and treat
- Insufficient provider training on appropriate STGs for pediatric ART, which often lead to irrational prescribing
- Limited pediatric ARV formulations available for procurement

4.2 Opportunistic Infections

A forecast of drugs necessary to combat OI infections associated with HIV was conducted in June, 2006 as part of the MOH Procurement and Supply Management (PSM) plan for the Global Fund. This work was based on MOH OI essential drug procurement for Zambia developed in March, 2005. When the national forecast was fully costed, the figures revealed that the national needs for medicines such as Co-trimoxazol and Benzyl penicillin will increase from over \$1 million in 2007 to \$2.5 million in 2009. Financing proposals for these medicines were included in the MOH's and CHAZ's Round 4 PSM plans and the MOH has historically supported OI drug procurement through its own sources. However, the issue has received little attention and it is far from certain when or if adequate financing will be available to meet demand. Further, key informants highlighted to the assessment team that there is currently insufficient stock of these commodities in the pipeline.

4.3 Detection and Diagnosis

4.3.1 Laboratory Services

Overview

The Republic of Zambia is in the middle of a rapid expansion of HIV/AIDS programs that require a functioning laboratory component. Without adequate coordination and planning, laboratories can provide a bottleneck to the rapid ART scale-up occurring in Zambia.

To develop a truly effective HIV/AIDS program, it is recognized that a full array of HIV/AIDS tests, including clinical chemistry, hematology, and CD4, must be available to diagnose, treat and monitor patients.

Irish Aid was one of the first CPs to provide assistance for the national laboratory network in Zambia. A national lab assessment and policies and standard operating procedures (SOPs) were developed as part of this support in the 1990s. The lab policies and SOPs were officially adopted in 1997. This work coincided with problems in lab equipment standardization and the compatibility and quality of donations of reagents. Much of the equipment, for example, consisted of “closed systems” – where only specific reagents could be used for CD4 and PCR equipment. Further, the donated equipment did not include service contracts. As a result, equipment quickly became useless because due to lack of repair facilities. Implementation of the National Lab policies included training of technicians. Irish Aid also built a biomedical sciences training facility at the University of Zambia. The result was an improved lab capacity in the country.

As the HIV infection rate began to increase, new strategies were needed to improve the laboratory infrastructure in Zambia to support ART, blood safety, testing, and surveillance programs. Minimum standards, defined SOPs, and a reliable supply chain were among, and still are, a few of the many challenges facing the build out of the national laboratory infrastructure. The planned scale up of ART, for example, demands that lab services are in place to routinely diagnose and monitor patients. The cost and complexity of the system is substantial. Each ART facility cannot easily be equipped to conduct testing, nor do a major of lab stakeholders think it is practical. Therefore, laboratory strategies are being developed that ensure access but also consider efficient ways to transfer samples and obtain timely results.

A Laboratory Technical Working Group (TWG) was formed in December 2005 to develop a coordinated approach to improving laboratory services in Zambia. In May, 2006 the TWG developed a formal, *Operational Plan for the National Laboratory System: 2006 – 2008*. The operational plan provides a roadmap for addressing the requirements of laboratories for the Zambia HIV/AIDS programme. The operational plan as developed provides a picture of activities requiring strengthening through December 2008, including areas requiring support. These recommended activities are approved and recommended by the MOH (MOH, 2006 [1]). Areas it addresses include:

- Program Management
- Procurement and Logistics
- Instrumentation and Infrastructure
- Quality and Data Management
- Human Resources and Training

As the HACS strategic planning process moves forward, the HACS Committee should consult the Laboratory TWG to determine how value can be added to the existing effort described in the operational plan. A member(s) of the TWG should also serve on the HACS strategic planning committee to identify areas that are not currently being addressed.

Major Constraints

- A new ARV, *Truvada*, requires a creatinine test before use because of toxicity. This creates increased

demand on lab services.

- Equipment maintenance – Lab. equipment is donated without any needs assessment or coordination with other lab supply programs.
- Limited technical support and provision of service contracts for lab equipment many of the systems

Blood Safety

National blood supply program operates as a high centralized vertical system. The National Blood Transfusion Center is located in Lusaka at UTH. They use antigen and antibody testing for HIV. All blood used in the system must first undergo testing at UTH. It can only then be distributed to provinces and districts after tests confirm it is negative for the HIV virus.

are closed, meaning that particular reagents must be used for specific equipment. Equipment should be standardized backed by strong MOH oversight on lab donations and procurement. Standardization is in fact in the national lab policy but it is not implemented.

- Many suppliers of lab equipment: JICA, CDC, (USAID, ZPCT, CHAZ), CHAI, and Global Fund without adequate coordination of plans.
- Lab equipment that is purchased by the MOH is stored at MSL. However, there is no data at MSL on consumption of reagents and equipment. The only data that is available is supplier, manufacturer and shipping origin.
- Current delays or lack of notification by MSL to SDPs that lab equipment and reagents are in stock.
- MSL does not have consumption or inventory data at lab sites to determine basis for equipment/supplies request.
- Consumption at SDPs not recorded on Reporting and Requisition (R&R) forms due to human resource constraints and lack of supervision.
- Many qualified laboratory technicians trained by JICA in Japan left UTH and the public sector for overseas jobs.
- DNA/PCR tests: - CD4 tests only record the HIV antibodies which are present in all infants of infected mothers, even if they don't have HIV. The PCR test examines DNA for the virus and can determine HIV infection in newborns. If positive, infants can start ART much earlier. Only UTH and Arthur Davison Hospital in Ndola have a PCR machine.

4.4 Prevention

4.4.1 Overview

The majority of HIV transmission in Zambia is through heterosexual contact. Prevention strategies are made more difficult and must also take into account several aggravating factors such as high prevalence of commercial sex workers in urban areas, gender inequity, poverty, and stigma associated with HIV. To improve prevention outcomes, and take into account these factors, the national Prevention approach is focused principally on strengthening PMTCT and VCT programs (NAC, 2007).

The Abstinence, Be Faithful, and Condom (ABC) IEC component of the VCT program has been credited with helping to decrease the average age of sexual debut from 16.5 years in 2003 to 18.5 years in 2005. 15 – 24 year old respondents also report a decrease in sexual encounters with multiple partners (NAC, 2006). However, knowledge about the correct use of condoms and the use of condoms by young people remains below 50 percent.

PMTCT

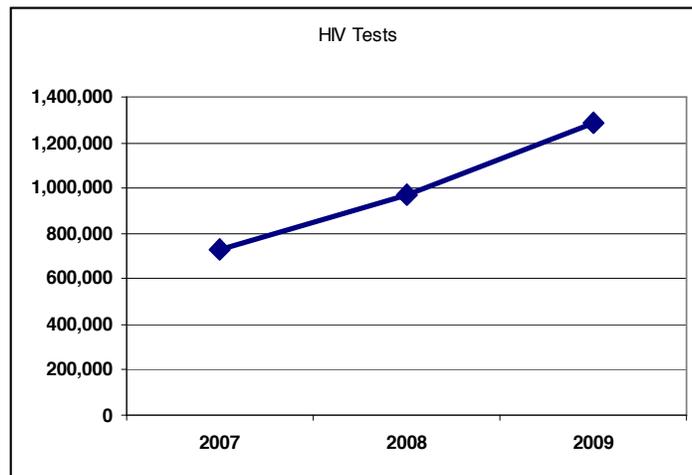
Access to VCT and PMTCT has increased over the past several years as the number of sites for both programs have increased. Access in rural areas and access for the poor urban areas, however, remains a central challenge to prevention efforts. Only 25 percent of HIV-positive pregnant women are receiving a complete PMTCT related course of ARVs (NAC, 2006) despite the improvements in physical access. PMTCT services are available in all but two districts. The Lusaka Province provides over 60 percent of PMTCT services, followed Eastern and the Copperbelt Provinces (NAC, 2006).

VCT

Voluntary Counseling and Testing (VCT) services are a critical entry point for prevention, care, and treatment services. The MOH VCT program was expanded nation-wide in 1999, with the goal of providing same day counseling and testing services to clients. Twenty-one pilot sites were established in each of the nine provinces through support of the Norwegian government. The GRZ provided VCT staff at the pilot sites and established the Zambia VCT Service, based in the Virology Laboratory at the University Teaching Hospital (UTH) in Lusaka. VCT sites have been rapidly expanded since 1999. The

VCT program has been greatly expanded since 1999. In 2006, 485 VCT sites have been established in all 72 districts (NAC, 2006).

Figure 4.4: Projected Number of HIV Tests



HIV Tests

There has been a significant growth in the number of HIV tests given and the number of testing sites established over the past several years. There are over 600 testing sites using a uniform standard testing algorithm in each facility⁶.

In June, 2006 the MOH, with the participation of NGOs, private institutions and the Zambian military, organized a logistics system design workshop. The purpose of the workshop was to agree on the design and the operations of a

standardized logistics system for managing the national supply of HIV tests in Zambia. This included consensus on the design of the in-country supply pipeline as well as the inventory control procedures and the data collection and reporting systems to be used by all partners that will receive HIV test kits through the national HIV test logistics system. As a result, the government and all the cooperating partners agreed to share information and to adhere to the standard operating procedures for management of the HIV test logistics system which have now been harmonized across the different funding sources and implementing agencies that are supporting or providing HIV testing services in Zambia.

In May, 2007, a subsequent test kit quantification was conducted with the participation of CHAZ, CIDRZ, CRS, MOH, and other partners, including JSI (SCMS and USAID | DELIVER). HIV Test kit consumption (Figure 4.4) is expected to increase dramatically from approximately 500,000 test in 2007 to over 1,000,000 million in 2009 (USAID | DELIVER, 2007). The majority of the test will be for screening (*Determine*), followed by the new confirmatory test (*Uni-gold*), and a very small number of the tie-break test, *SD-Bioline*. The MOH made a policy decision in 2006 to switch from the confirmatory test *Genie II*

⁶ See, *Zambia National Guidelines for HIV Counseling and Testing* for more details on the national testing algorithm.

to *Uni-gold* because the latter, while costlier on a unit basis, does not require expensive cold-chain handling.

Condom use in 2006, where the latest figures are available, does not show any significant increases from the previous year. Further, there is some discrepancy on the number of condoms distributed nationwide. This is due largely because consumption is not recorded at SDPs, when it is, the data often is not aggregated or used for ordering. The issues data (distribution) indicates that between 12.9 million and 19.7 male condoms were distributed in 2006. Increased male and female condom use and improved consumption reporting are two areas stakeholders mentioned to the assessment team as priorities during the development of the strategic plan.

4.4.2 Major Constraints

VCT

- Inadequate development, coordination and distribution of IEC materials for VCT sites.
- High attrition rate for VCT counselors
- Insufficient meeting space for VCT visits

PMTCT

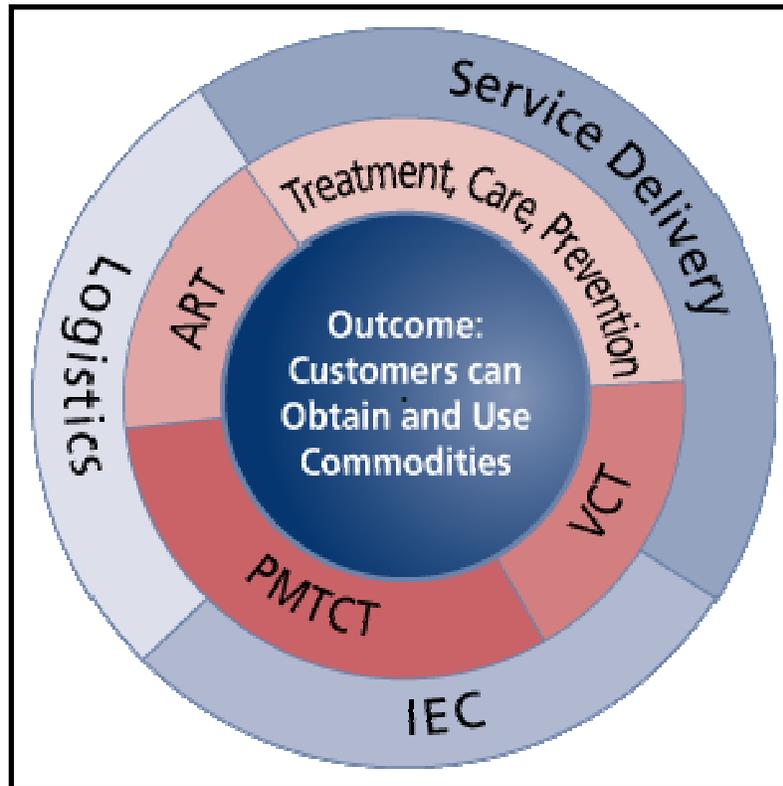
- High attrition rate of clinical staff at PMTC sites (much worse in rural areas)
- Inadequate resources for infrastructure, equipment and staffing to support continued scale up
- Insufficient programs to ensure mothers come back for PMTCT treatment following delivery
- Site distribution – heavily concentrated in urban areas, with limited (but growing) attention on rural areas

HIV Test Kits

- Consumption data for HIV test kits improving, but remains incomplete
- Multiple groups finance test kit procurement, but need to improve coordination to prevent stock imbalances
- Increase rate of test kit use creating more demands on service providers and distribution system
- Need to routinely update/revise procurement plan based on logistics data

5.0 FUNCTIONS (SYSTEMS)

This section describes findings in the systems and functions that must be addressed to achieve HACS. The components detailed include: logistics, service delivery, and IEC systems. Although the supply chain has the most direct effect on commodity availability, decisions made within other areas—or not made, as the case may be—have consequences for commodity security and must be considered in that context.

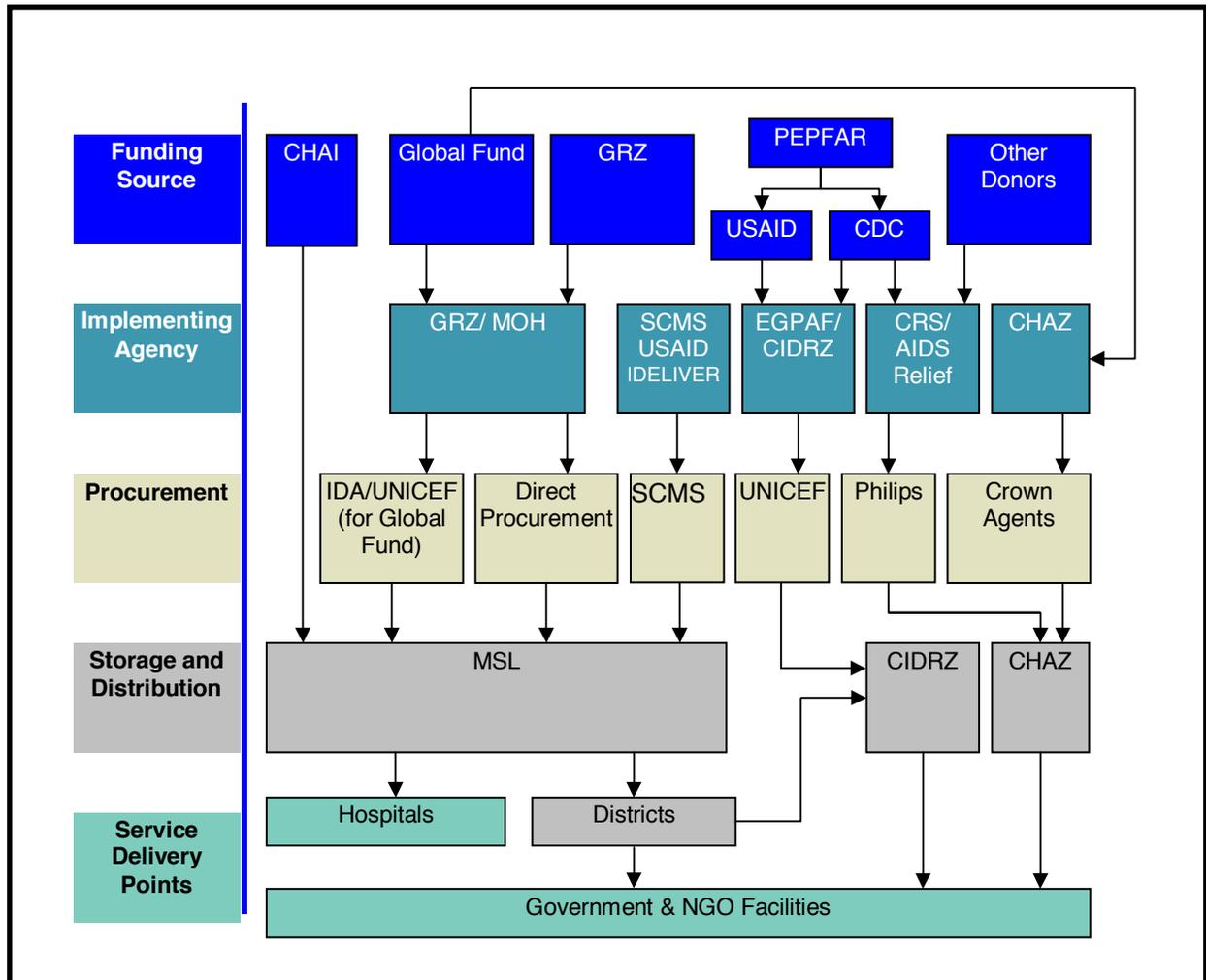


5.1 Supply Chain

5.1.1 Overview

A well-functioning supply chain capable of selecting, forecasting, quantifying, financing, procuring, and delivering the commodities needed is a prerequisite for any effective HIV/AIDS program. In itself, the supply chain is not sufficient to ensure commodity security, but without it the other investments made in service delivery, IEC, and policy are not going to achieve their intended program goals.

Figure 5.0: Zambia HIV/AIDS Supply Chain



There are numerous **funding sources** for HIV/AIDS commodities. The main sources for ARVs are GFATM and the PEPFAR program, sourced through USAID and the U.S. CDC. The GRZ, World Bank, and several bilateral donors also provide support for test kits, essential drugs, NDCs, and other products. Those funds support several “vertical” commodity programs **implemented** by several agencies. The largest program for ARV, test kit distribution, and medicines for essential care, is the MOH. However, CHAZ, for example, also receives substantial funding from GFATM’s Round 4 Phase II to support supply programs in the country. CIDRZ also distributes HIV/AIDS products and supports the MOH through its Lusaka-based laboratory program. Several agencies are involved in the **procurement** of a wide-range of commodities. The MOH procurement unit, the International Dispensary Association (IDA), and UNICEF procure with the support of GFATM grant funds. The USG, through the SCMS Project and USAID | DELIVER purchases ARVs, test kits, and laboratory supplies. Other third party agents are involved in supporting CIDRZ and CHAZ (see figure 5.0). Currently, three main central **warehouses** in Lusaka store HIV/AIDS commodities – they are operated by MSL (by contract with the MOH); CIDRZ, and CHAZ. Partners have agreed that within the next several years most HIV related commodities and essential medicines supplying vertical programs, will be stored at MSL’s central warehouse to improve distribution efficiency and the capture of logistics data. The three central warehouses serve a number of

tertiary hospitals, districts stores, and sub-district **SDPs**. SDPs are expected to record consumption of commodities and report this back “up the chain to the logistics management and program staff at the central level (DELIVER, 2006). These facilities also provide the final link by connecting HACS programs and systems to the ultimate beneficiary – the client.

5.1.2 Key Findings

Product Selection

The Directorate of Clinical Care and Diagnostic Services, in collaboration with CPs and other Ministry agencies, are responsible for product selection. Selection is based on national STGs, established by the GRZ. . For ARVs, national guidelines recently developed in a multi-partner ARV quantification exercise are used as the basis for product selection. The National Guidelines call for the use of generic products for first line treatment. The USG’s PEPFAR program also supports the procurement of some first line branded products as well as second line drugs, which are largely patented, innovator products. The majority of PEPFAR Funds are used to procure innovator brand products; though this is changing as more generic manufacturers are becoming approved by the U.S. Food and Drug Administration (FDA).

Forecasting

Forecasting, quantification and procurement planning for ARVs and test kits had historically been conducted by the various supply programs in isolation of one another. In 2006 a national forecasting exercise, involving all the relevant stakeholders, was conducted in the first quarter of 2006 to determine national needs for 2007 – 2009. In an exercise led by the MOH Pharmacy Unit, different implementing partners were assembled including procurement officers, the National ART coordinator, all major treatment partners (ZPCT, CIDRZ, CRS/AIDSRELIEF, CHAZ), and the supply chain technical assistance provider the USAID | DELIVER PROJECT .

Procurement

The Procurement and Supply Unit (PSU) reports directly to the Permanent Secretary (PS), Ministry of Health. It is currently responsible for procurement of pharmaceuticals, medical supplies and NDCs. The Unit is lead by the Head of Procurement and Supplies. The PSU has a Pharmaceutical Procurement Specialist, who is a registered Pharmacist. Procurement Activities are provided additional oversight by the DSBL. There are operational links between PSU and the Directorate of Clinical Care and Diagnostic Services (DCCDS), especially for pharmaceutical products where the Pharmacy Specialist at the Directorate works in support of procurement function, through providing quantification data, etc. The MOH Procurement Unit purchases several types of HIV/AIDS commodities. PSU follows Zambia National Tender Board rules and regulation on local and international procurement. To that end, it established a procurement services contract with the International Dispensary Association (IDA) to assist with the purchase of ARVs and other supplies with GFATM funds. The USG funded PEPFAR program directly procures and supplies products to the MOH, and other NGO programs.

The Procurement Unit, in an effort to increase efficiency, is now establishing longer-term framework contracts with suppliers. These contracts run about 2 years and provide the MOH with more flexibility in ordering supplies and decrease the organizational effort associated with developing tenders.

MOH procurement performance and capacity has been historically inadequate, but improvements in capacity are underway. However, procurement of HIV/AIDS commodities remains fragmented. CHAZ manages its own procurement of ARVs, CD4 machines, test kits, etc., and will continue to do so until the MOH is in a position to centralize purchasing more efficiently. Crown Agents procures on behalf of

CHAZ, and CHAZ, in turn, procures on the behalf of the Zambia National AIDS Network (ZNAN). The current procurement agreement b/w CHAZ and ZNAN is under negotiations.

Management Information Systems

The Health Management Information System (HMIS) is a public sector health system that captures information on health service delivery and incorporates a surveillance system at all levels of health care. This system captures information on the key service delivery indicators. Indicators on the first GFATM service delivery area – “Provision of ARVs to people living with HIV/AIDS.” Additionally, Zambia is developing a Logistics Management Information System (LMIS), and with support from NGO partners, providing training and extending the system from the central level to health centres. The MOH, with assistance from CPs is working to enhance the system so that it will routinely capture the essential HIV/AIDS logistics data items: *consumption* from the service delivery points, *stock data* from all levels in the system, and *losses and adjustments*. The MOH and partners also recognize that the lack of consumption data has been a key weakness in the overall logistics and forecasting system. Zambia has already moved to increase monitoring of stock levels for ARVs from the central level through the use of the software PIPELINE, which is now in use at MSL, and with key partners providing HIV commodities.

Inventory Management

Crown Agents (CA) was awarded a five year contract by the MOH in 2004 to manage MSL. The contract is reviewed periodically for performance. CA’s primary mission is to build-out the physical infrastructure, including revamping the warehouse, developing “cool” storage conditions, establish pallet racking system, buying and operating forklifts, install new roofing, and enhance distribution performance and data collection. It has hired and trained a number of new staff. Training is conducted at local institutions, by pharmacy associations, and supported by SCM activities within SCMS.

Consumption Data

A key challenge for the development of the LMIS is inadequate consumption data. Monthly issues data from MSL to the districts is used as a proxy, but active efforts are being undertaken to ensure enhanced consumption data from facilities through a more fully developed LMIS. Standard operating procedures recently adopted by the MOH require consumption data from the district level should be reported and aggregated by the provincial pharmacist. However, reporting has been very sporadic due to several reasons, including the high attrition rate of personnel at the district level. With the implementation of the human resource retention strategy in the health sector and an improved LMIS, including further training to ensure regular reporting, new computers at district level, and implementation of an electronic reporting and LMIS system, it is expected that the gathering of consumption data will improve markedly in the coming year.

All partners have not integrated stocks of HIV/AIDS commodities at MSL. CHAZ and CIDRZ are using their own warehouse and Catholic Relief Services (CRS) uses the CHAZ warehouse, not MSL’s. This is a direct result of a perception problem with MOH storage capabilities. A number of implementers lack confidence in the MOH’s capacity to implement a number of logistics functions.

The MOH provides a grant to Medical Stores Limited (MSL) that is expected to cover costs related to storage and distribution for a number of essential drugs and ARVs. Crown Agents currently manages MSL operations through health sector basket funds (via the MOH) for warehouse operations, training, and infrastructure improvements. MSL also charges the MOH on a one-off basis for storage of other products not covered in the grant agreement. This, for example, included storage and distribution of bednets for the Malaria Control Programme (MCP). MSL costs fluctuate year-to-year, depending on the volume of product held inventory and distributed. In order to provide more “predictive” costs to the MOH, they are moving to a “flat fee” system that is based on trailing 12 month costs. Cost is not charged to the MOH based on product volume, but on actual expenditure.

Transportation

The current transport system for distributing cold storage products uses a “cool-pack” system that becomes unreliable for long journeys. Trucks leaving the MSL warehouse are often on 10-day trips. As a

result, MSL is buying new trucks fitted with refrigeration units powered by batteries. With the added capacity, the national vaccine program will store and distribute products through MSL to take advantage of the refrigerated trucks.

Spotlight on Key Challenges in the Supply Chain

Key Challenge: Consumption Data

A key challenge for the development of the LMIS is inadequate consumption data. Monthly issues data from MSL to the districts is used as a proxy, but active efforts are being undertaken to ensure enhanced consumption data from facilities through a more fully developed LMIS. Standard operating procedures recently adopted from the MOH requires consumption data from the district level should be reported and aggregated by the provincial pharmacist. However, reporting has been very sporadic due to several reasons, including the high attrition rate of personnel at the district level. With the implementation of the human resource retention strategy in the health sector and an improved LMIS, including further training to ensure regular reporting, new computers at district level, and implementation of an electronic reporting and LMIS system, it is expected that the gathering of consumption data will improve markedly in the coming year.

Key Challenge: Vertical Programming

Too many vertical programs leading to inefficient use of resources (ART, Malaria, TB, EDs, FP, etc...) Need integrated system for forecasting, storage distribution. Can continue to procure through different channels because donors have certain requirements, but need coordinate everyone's activities to ensure that all are following MOH STGs, ART regimens, etc... Vertical demands on MOH are creating administrative and planning difficulties.

Key Challenge: Data Capture

There is a general absence of adequate data collection for commodities and service statistics. This is inhibiting the ability to conduct acceptable forecasts for HIV/AIDS commodities. Issues include the use of different forms for reporting commodity consumption that is based on the program that supports it (e.g., CIDRZ). But also more importantly the division of the reporting function at the lower levels. For commodities, reports are filled by lab staff, pharmacists and VCT staff and sent to three separate places. Further, HMIS data is not reported and/or submitted on time or accurately to the MOH.

5.1.2 Major Constraints

- **Limited Client data:** HMIS data, service statistics unavailable to conduct forecasts
- **Fragmented LMIS reporting** requirements for ARVs, Test kits, and lab supplies
- **Low staffing** situation affects reporting percentages
- **General data capture:** getting better, but general absence of adequate data collection for commodities and service statistics.
- SDP staff unaware of some available products at MSL
- Limited **integration** of supplies at MSL, including HIV/AIDS commodities
- Dispersed storage of supplies results in reduced efficiency and inadequate coordination
- Need to consistently take measures **to build confidence** in MSL's growing capacity
- Inadequate cool, cold, and overall **storage space** at district levels.
- Critical need to build and sustain **human capacity**
- Transport from MSL to Districts is adequate. However, transport from Districts to facilities is inadequate. There is inadequate vehicles and budget allowance for transport.
- **Discord between the budget cycle and funds needed for procurement.** The MOH needs the approved funds to be in its account or the Tender Board will not allow a tender to be floated. Currently,

funds are released on a limited basis which does not cover proposed procurement amounts.

- Increasing transportation costs with expanding reliance on MSL, in an environment where MSL does not charge for storage or distribution costs
- Need to create confidence in **public sector procurement**

5.2 Service Delivery

5.2.1 Overview

The pattern of prescribing and dispensing commodities at the service delivery level affects the functioning of the supply chain. Consistent use of standard treatment guidelines, for example, not only improves quality of care but also increases forecasting reliability and aides procurement planning. If no standard organizing system exists for identifying, enrolling, and treating people living with HIV/AIDS, then the pattern of supplying commodities will be unpredictable and inconsistent across regions. Access to care will be inequitable, and forecasting will be difficult as people move locations to find more favorable treatment. Therefore, a clear national policy that provides consistent, orderly, and equitable standards for delivery of HIV/AIDS services and care is important.

There is inequitable access to basic health services in Zambia between provinces and between urban and rural areas. In urban areas, 99 percent of households are within 5 kilometers of a health facility compared to 50 percent in rural areas. In Zambia, household expenditures on health vary according to location. Poor households spend the highest proportion of their income on health, which can be up to 10% of total expenditure when in kind costs are included. Also, long distances and cost and lack of is a key factor affecting access to health services (ISF, 2006)

A lack of human resources is also present in Zambia which no doubt effects the delivery of services. This problem is due to four factors:

- Medical staff (doctors, pharmacists, nurses, etc.) leaving abroad mainly to the US, UK, and other countries in southern Africa
- Medical staff leaving the public sector for the private sector in Zambia
- Medical staff permitted to work at private clinics while employed by MOH
- The impact of HIV/AIDS on health workers

For example in 2003 from 42 graduates from the Medical School only 20 stayed in the public sector the rest went to the Private Sector or abroad. This is due to the financial resources and conditions of service not being very attractive compared to abroad and the private sector (ISF, 2006).

At the policy level, the need to improve the delivery of health services has been recognized as an important component to sustain and expand access and use of prevention, treatment, and care programs. The NASF defines specific goals related to service delivery including universal access to ART, expansion of treatment for TB, STIs, and other OIs, strengthening of home-based care, expanded use of VCT services, and improved nutrition of PLHAs (NAC, 2006). To achieve these improvements in the delivery of health services, the human resource crisis in the health sector will have to be addressed, which will require a substantial investment of resources to retain current health staff and hire new workers. While the MOH has begun efforts in this direction – with the development of the, “Human Resources for Health Strategic Plan 2006 – 2010, efforts have not been adequate. Patient demand for ART and VCT services,

laboratory support, and palliative care is outpacing the ability to train and field new health workers. This is due in large part to the poor working conditions in the public sector that have failed to provide adequate incentives (e.g., salaries and family benefits) to workers. As a consequence, health workers, particularly doctors, nurses, and highly trained laboratory staff, have sought employment with NGOs, the private sector, or overseas.

The need to improve health services is not limited to the MOH. Non-governmental organizations, including Faith-Based Organizations (FBOs), account for over 30 percent of health care delivery in Zambia (MOH, 2006). The majority of these facilities are managed under CHAZ, which is fulfilling a vital and complementary role to the MOH by concentrating its services in rural areas.

5.2.2 Major Constraints

- Demand for HIV/AIDS related health services (especially ART and associated clinical care) is exceeding the supply and capacity of the public and NGO health delivery system.
- Poor working conditions, inadequate incentives, and inadequate funding are leading to a health worker attrition rate that will stop and reverse the scale up of HIV/AIDS programs.
- Many service providers are not adequately informed by the central level programs about policies, guidelines, reporting requirements, and prescribing methods (especially in rural areas) because of inadequate dissemination plans.
- Monitoring and follow up of patients in ART and PMTCT programs is inadequate due to lack of motivated and available staff, patient access to facilities, and inadequate counseling.
- Health care staff are spending a disproportionate amount of time traveling to Lusaka to pick up drugs and NDCs – compromising quality of care.
- Health worker training will not have the expected impact on service delivery unless the associated human resource retention challenge is addressed (i.e., trained workers are leaving the public sector).
- Human resource training must recognize that in the public sector the pharmacists deal with a wide range of commodities coming in through verticalized programs. Training at this level is verticalized, and should be expanded to allow clinic level staff to manage integrated set of commodities.
- There is a lack of routinely disseminated clinical information to service providers. In the logistics system, for example, service-level staff are often unaware of which products are available at MSL. As a consequence, HIV/AIDS commodities expire from nonuse.

5.3 Information, Education, and Communication

5.3.1 Overview

IEC was earlier indicated as an area where the assessment team was unable to collect substantial amounts of data for an adequate assessment of the situation. As such, the strategic planning process will include a session aimed at identifying the major IEC constraints to inform the HACS strategy.

To ensure the necessary institutional and public support for the supply chain of HIV and ART commodities and for the provision of HIV and ART services, all stakeholders must understand and receive communication about the priorities and policies of national programs, irrespective of the role they play in that structure. Without this communication and information, stakeholders may be unable or unwilling to provide support in their specific field which is necessary to enable the supply chain functions

to operate smoothly.

Client education about ART, for example, is essential to ensure proper treatment adherence and optimal treatment outcomes. Otherwise drug resistance can emerge, and inconsistent demand can cause oversupplies or commodity stockouts. IEC is also one of the mainstays of HIV/AIDS prevention campaigns. IEC is not just about the client, or patient, education. It includes providing information to caregivers, communicating to all stakeholders on their roles and responsibilities, advocating for resource mobilization, and so on. To ensure the necessary institutional and public support for the supply chain of HIV and ART commodities and for the provision of HIV and ART services, all stakeholders must understand and receive communication about the priorities and policies of national programs. Without this communication, stakeholders may be unable or unwilling to provide the supportive behavior necessary to enable the supply chain functions to operate smoothly.

5.3.2 Key Findings

Zambian HIV/AIDS stakeholders – including organizations such as NAC, CIDRZ, CHAZ, CPs, and community groups have mobilized to develop and distribute IEC materials to support prevention, treatment, and care programs. In 2006, over 2 million IEC documents were distributed throughout the country, with most focusing on prevention, followed by the benefits of ART treatment. The types of materials included posters, brochures, pamphlets, and flyers. (NAC, 2007). In addition, CIDRZ and CHAZ, and other stakeholder groups support the following:

- **Church Outreach Programs**
- **Neighborhood Health Committees**
- **Community Information Education Communication Teams**
- **Radio Shows**

The goals behind the distribution of materials and the support of community IEC programs reflect themes I and II in the NSF – “Intensifying Prevention and Expanding Treatment, Care and Support.” As such, the use of commodities for these efforts, is linked to effective IEC campaigns to increasing demand for services; increased delivery of services (by targeting providers with IEC materials) and improved quality through improved health worker performance.

6.0 CROSS CUTTING COMPONENTS

The HACS framework addresses six critical cross-cutting issues: (1) **leadership** at all levels; (2) the availability of sufficient **financing** for (commodities and systems); (3) **coordination** between all stakeholders; (4) the **quality** of all commodities and services; (5) the existence of adequate **monitoring and evaluation** for all activities; (6) and the availability of adequate **human resources** for all functions.



6.1 Financing

6.1.1 Overview

Adequate financing is needed for commodities and infrastructure, capacity, and human resources at all levels and for all programs. Forecasting, for example, for HIV/AIDS commodities can provide a useful advocacy tool for policymakers, identifying funding gaps and quantifying financing needs that can then be presented to technical partners.

Sustained financing for HIV/AIDS commodities will be a key challenge to HACS in Zambia. Considerations must go beyond ARVs, to include funding commodities for a comprehensive HIV/AIDS program. While the availability and use of GFATM Round 2 and 4 monies, World Bank grants and

loans, PEPFAR, and internal GRZ funds, have served to fill the short-term commodity financing gap, notably for ARVs, the volume and range of HACS commodities demands that sustainable commodity financing is considered for the range of HIV/AIDS commodities.

6.1.2 Key Findings

HIV/AIDS Program Funding

These considerations are addressed in the NSF because there is a keen awareness and anticipation of the need to achieve scale up targets. As more resources are made available, the challenge will be to prioritize the allocation of funds for the HACS commodity programs that will provide the most significant impact. Equally important, however, is the total funding envelop, than ensuring the timely allocation and disbursement of funds to the programs to, for example, ensure funds are available to issue tenders. Consequently, stakeholders, lead by the MOH, NAC, and others, are attempting to harmonize the input of all funding channels (e.g., donors, lending institutions, Global Fund, GRZ) to strengthen capacity and resource management for HACS commodities.

Table 6.0: Estimated HIV/AIDS Funding Zambia 2006 – 2010 (from NSF; NAC, 2006)

	2006	2007	2008	2009	2010	2006-2010
UN Family (Includes WB)	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	25,000,000
JICA	3,205,785	3,205,785	3,205,785	3,205,785	3,205,785	16,028,925
USG*	149,000,000	149,000,000	149,000,000	74,000,000	74,000,000	595,000,000
NORAD	2,850,000	2,850,000	2,850,000	2,850,000	2,850,000	14,250,000
Netherlands	1,210,090	1,210,090	1,210,090	1,210,090	1,210,090	6,050,450
DCI (Ireland)	3,751,279	3,751,279	3,751,279	3,751,279	3,751,279	18,756,395
SIDA	3,933,333	3,933,333	3,933,333	3,933,333	3,933,333	19,666,667
Global Fund**	52,800,000	52,800,000	52,800,000	19,800,000	19,800,000	198,000,000
DFID (UK)	7,065,200	7,065,200	7,065,200	7,065,200	7,065,200	35,326,000
EU	4,033,633	4,033,633	4,033,633	4,033,633	4,033,633	20,168,167
Private Charities & Foundations	10,000,000	10,000,000	10,000,000	10,000,000	10,000,000	50,000,000
GRZ***	15,000,000	15,000,000	15,000,000	15,000,000	15,000,000	75,000,000
TOTAL	257,849,320	257,849,320	257,849,320	149,849,320	149,849,320	1,073,246,604

Table 6.0 estimates the availability of funding from all partners through 2010 (NAC, 2006).⁷ These figures cover commodities, service delivery, program staff remuneration, vertical and integrated programs. The total figure for the five-year period exceeds \$1 billion U.S., and does not include, for example, recent announcements from the U.S. government indicating increased support for HIV/AIDS in Zambia. Estimates for GFATM monies may also change after 2008 if Zambia is able to successfully secure Round 7 monies. When broad program need estimates are compared against the estimated available resources, there is an estimated total five-year gap of over \$200 million U.S. through 2010. However, it must be cautioned that both estimates (available resources and need) are broad and subject to significant modifications. The key point to consider is that resource requirements both for general HIV/AIDS programming and, in particular commodities, will be a major challenge in determining if and for how long, Zambia can maintain CS for the wide-range of commodities it needs to secure.

Commodity Funding

Within the broader financing program, a comprehensive approach to obtaining sustainable financing for *HIV/AIDS commodities* should first begin with estimating the procurement costs of the range of diverse products for treatment, care, and prevention. This is critical so that NAC, the DSBL, Directorate of Clinical Care and Diagnostic Services, the MOF, and CPs, understand the total amount of funding required to meet the patient targets set out in the National Scale Up Plans of the various programs.

A 2006 quantification exercise concluded that there is a funding gap of \$18 million for the purchase of ARVs to meet the 75,000 patient target in 2006. This figure was later reduced following additional commitments by the GFATM and the realization that unit prices for ARVs procured under Round 4, Phase I were significantly lower than expected, which had narrowed the funding shortfall considerably. Using the projections for 2007 – 2009, a national gap analysis was conducted to determine the financing needs for the three-year period 2007 – 2009 as part of the Global Fund Procurement and Supply Management (PSM) response for Round 4 Phase II. The “net need” for HIV/AIDS commodity financing for ARVs – after accounting for the expected contributions of the PEPFAR program, planned procurements of the other Principal Recipients, and remaining ARV procurement funds from Round 1

⁷ The Clinton HIV/AIDS Initiative (CHAI) is also financing procurement of pediatric ARVs and Co-trimoxazole.

Phase 2 – are detailed in Table 6.1 (GRZ, 2006).

Table 6.1: Estimated Financing Requirements for ARVs – Zambia

	2007	2008	2009	Total
Estimated National Need	\$ 38,827,537	\$ 56,284,701	\$ 65,290,254	\$ 160,402,493
PEPFAR	\$ 20,000,000	\$ 20,000,000	\$ -	\$ 40,000,000
Global Fund Round 1 Phase 2	\$ 300,000	\$ 252,000		\$ 552,000
GRZ				\$ -
CHAZ Round 4 Phase 2 (est.)	\$ 955,967	\$ 1,356,860	\$ 1,784,173	\$ 4,097,000
ZNAN Round 4 Phase 2 (est.)	\$ 400,000	\$ 600,000	\$ 800,000	\$ 1,800,000
Other (donations)				
Potential Gap	\$ 17,171,571	\$ 34,075,841	\$ 62,706,081	113,953,493

Gap Analysis Assumptions

As with the broader program funding, these figures are estimates. The gap does not account for resources from the Global Fund as part of Round 4 Phase 2, which will provide significant funding for commodity procurement through 2008. The PEPFAR program has also indicated that it will increase available allocations for ARV procurement in 2008. In 2007, reduced unit prices and Global Fund supported ARV financing reduced the gap significantly. The cost of HIV test kits for VCT, surveillance, blood safety and clinical diagnosis during the same period will also be substantial. As the data becomes available, procurement financing estimates for commodities to prevent and manage STIs, OIs, TB, laboratory reagents and the host of other drugs and consumables will also need to be developed to inform program planning and provide data for advocacy efforts.

6.1.3. Major Constraints

- **Reliance on Donor Funding**

There is an impression that HIV/AIDS commodities should be funded by partners. When there are shortfalls, the sentiment within many parts of the public sector is that they should ask the partners, and not think about the GRZ as an option. Nonetheless, HIV/AIDS financing, especially ARVs, is a huge financial burden that cannot be met by GRZ alone. However, there is a need to diminish the reliance on partners by advocating for the GRZ to fund more of the HIV commodity budget. External Aid is likely to be a finite and future donor commitments, beyond one – two years, is unpredictable.

- **Limited GRZ Funding for Commodities**

Related to the above, there is very limited funding commitment by GRZ for HIV/AIDS commodities (especially ARVs). The latest MOH budget for all pharmaceuticals and NDCs is only \$3 million (that

includes DBS and basket). This figure, key informants suggested, is inadequate, and does not correspond to the expected funding levels by the GRZ.

- **Synchronizing Budget and Procurement Cycles**

A key challenge to improve public sector procurement for HIV/AIDS commodities and other essential drugs and supplies is to maintain and increase the improvements in public sector drug financing. The Expanded (health) Basket funds provide a source of revenue for drug procurement and other initiatives. The MOH can decide to use funds from the Expanded Basket for drug procurement. The MOH Budget contains a Drug Account which holds funds budgeted for under the Annual Procurement Plan for essential drugs and medical supplies. That Drug Account is separate from the Expanded Basket. Under a new mandate, the Drug Account is now managed by the DSBL Manager through its Secretariat. The Drug Account is ring fenced. While funds are not currently ring- fenced per commodity group, there remains a financing tool for commodity security in this approach, since the main activity is to replenish all stock lines at MSL, rather than respond to only individual program needs for supply. Therefore, the ‘first come-first served’ approach does not take place, as that has been consigned to the past. This is therefore another basis for commodity security at the MOH: All products are handled equitably.

- **Limited Diversification of funding sources**

Though several CPs, NGOs, foundations and GRZ agencies participate in and support HIV/AIDS programs, funding for key program initiatives including ART, HIV testing and PMTCT is channelled through a handful of major sources. The US government’s PEPFAR program and the Global Fund provide the principal funding for these programs, and so the need to diversify sources to help ensure long-term sustainability is an issue that needs to be addressed in the present to ensure future sustainability.

Long Term Role of the Zambian population in funding Health Care

The critical scenarios described above may revive discussions on the role of the Zambian population in the funding of health care, and in particular essential medicines consumables. A decision may be forced in the future to rely more on household financing to meet the commodity funding gap. These decisions will have to be considered carefully and take into account that the majority of Zambians, especially those in need of ART for example, live below the poverty line. But it also needs to be appreciated that the cost of HIV/AIDS in respect to commodities, is very likely to be impossible to be met by any country, especially those that are least developed. The cost of commodities for diagnostic services, treatment, and for related infections, will not necessarily come down to a level where low income countries could independently finance those costs. Therefore, it is unlikely to be that even with public participation through some form of cost recovery programme, the public contribution to HIV/AIDS programming would make a major difference.

6.2 Human Resources

6.2.1 Overview

Human resource gaps are probably one of the greatest constraints facing HIV/AIDS programs in developing countries. Countries have problems finding, training, and retaining skilled medical personnel. This issue applies to all programs and functions. As with HIV/AIDS commodities, the focus initially is often on training ART providers, with a later realization that ensuring commodity security also requires the training of support staff members, such as supply chain managers and laboratory personnel.

In Zambia the health sector – including the programs that supply HIV/AIDS commodities – is in the middle of a significant human resources crisis, which is the shortage of trained, motivated health workers at every level of the system and across all major programs. In 2005, the MOH developed a *Human Resources for Health Strategic Plan* that outlined the key constraints and made recommendations to improve the situation. The strategy outlines four HR challenges and associated objectives to address those challenges:

The Challenges:

- The health sector is operating at approximately one-half the needed number of trained workers
- “Brain drain” amongst key staff – notably physicians, pharmacists and nurses – is depriving Zambian citizens of quality care.
- Substantial attrition is caused by resignations and deaths
- Large imbalances in the distribution of health workers between urban and rural areas.

How the HR Crisis is affecting ART in Zambia

The ART program in Zambia has proven very successful in rapidly meeting patient treatment targets. The program went from treating several hundred patients as little as a few years ago, to managing patient load of over 75,000 patients today. However, the most significant constraint for ART service delivery is the shortage and high turnover of trained staff. This is due in large part to an inadequate recruitment efforts, insufficient re-training (and initial training), poorly funded monetary incentives, and an increased workload. In a recent survey, only 30 percent of ART sites reported that they have staff retention schemes operating in their facility, and 47 percent of sites surveyed reported that (in general) training was not having the desired effect because of the high attrition rate (MOH, 2005).

The Objectives:

- A coordinated approach to planning across the health sector
- An increased number of trained and equitably distributed staff
- Improved productivity and performance of health workers
- Strengthened human resource planning, management, and development of systems at all levels.

6.2.2 Major Findings

Significant attention and focus has been paid to the broader human resource crisis in the health sector. The

issue has been well documented in several reports and detailed in the Human Resources Strategic Plan. The issue is not specific to Zambia. Much of Sub-Saharan Africa is faced with a similar crisis with similar causes and effects. Though the delivery of HIV/AIDS commodities is part of the broader health system, limited resources and planning have gone into how the MOH and partners will coordinate and implement the necessary human resource initiatives to ensure commodity security.

The lack of trained human resources is one of the most significant challenges to scaling up the health sector response to HIV/AIDS in Zambia. The high prevalence of HIV-related illness in Zambia has seriously overburdened the health care system at all levels, accentuating the burden on a thinly stretched workforce whose numbers are also diminishing due to HIV/AIDS. The basic issue is that the MOH does not at present have the necessary trained staff in place to scale up VCT, PMTCT and ART programs to reach the targets it has set out. The government of Zambia will need to recruit additional staff in order to scale-up HIV/AIDS services. For VCT, PMTCT and ART, additional counselors, pharmacy staff, laboratory staff, and physicians are needed. In order to manage human resources in a cost effective manner and provide quality services, government needs to focus on standardized training curriculum, and institutionalize a supervisory system for HIV/AIDS counselors, service providers, and logistics staff.

6.2.3 Major Constraints

- **50 percent vacancy** across the health sector.
- There is a **40 percent attrition rate** and many unfilled positions in the public sector. Many staff, particularly at the lower levels, have not been paid for months. The consequences of this is that individuals (who are in place) responsible for many key HACS systems (logistics, service delivery, procurement) are unmotivated to provide services. This is related to the absence of a commitment to the financing needed for payroll.
- There is an “HR scheme” not a “strategy.” Currently, the view, misguided according to a number of key informants, is that salaries should be “topped up,” not permanently raised, which may be more in line with a longer-term solution.
- **Heavy focus on upstream HACS components** such as procurement and financing, but, up until recently, there was a poor focus on the human resource challenge on the part of the MOH. The HACS challenges are also “downstream” in the supply chain at the clinical level, especially LMIS and service delivery, which require a stable cadre of health professionals.
- **Dependency on outside technical assistance:** The MOH has become very dependent on outside technical assistance. For example, JSI (SCMS and USAID | DELIVER) organize and lead the quantification exercises for test kits and ARVs. Outside technical assistance groups are often asked to initiate and push the process along. There has been training, for example, on forecasting using the software *Quantimed*, but it is not used regularly by programs so they do not use it to manage commodities.
- **Limited success in implementing** the key components of the Human Resources Strategy for Health, chiefly retention, training, and timely salary payments and adjustments

6.3 Coordination & Leadership

6.3.1 Overview

Most countries face a complicated system of funding channels, programs, and supply chains for HIV/AIDS commodities. They serve multiple vertical programs with independent procurement, storage, and distribution functions, in public, private, and nongovernmental organization sectors. As a result, ensuring an effective supply of commodities as part of the national response to HIV/AIDS is very difficult and requires leadership at all levels that can implement a concerted effort to coordinate programs within all sectors involved in the response to HIV/AIDS.

Effective coordination of strategies, workplans, and activities requires leadership. These attributes are nearly synonymous. Leadership must begin at the highest levels of government, flow down to the service delivery level, and be practiced within organizations and between them.

The NSF II document highlights the need for improved coordination and leadership in the response against HIV/AIDS. The document states that because substantially more resources are being provided to Zambia, coordinating programs efficiently will be even a greater challenge than in the past. The NSF also underscores that coordination begins, but does not end with adherence to the Three Ones principle:

- 1) *One HIV/AIDS Action Framework* that provides the basis for coordinating the work of all partners;
- 2) *One national AIDS coordinating authority* with a broad based multi-sectoral mandate for HIV/AIDS overall policy and co-ordination; and
- 3) *One country level monitoring and evaluation system.*

The NSF is the overarching policy and program document addressing HIV/AIDS in Zambia. As such, the HACS approach will be designed to complement the decentralized, multi-sectoral and coordinated approach outlined in the document.

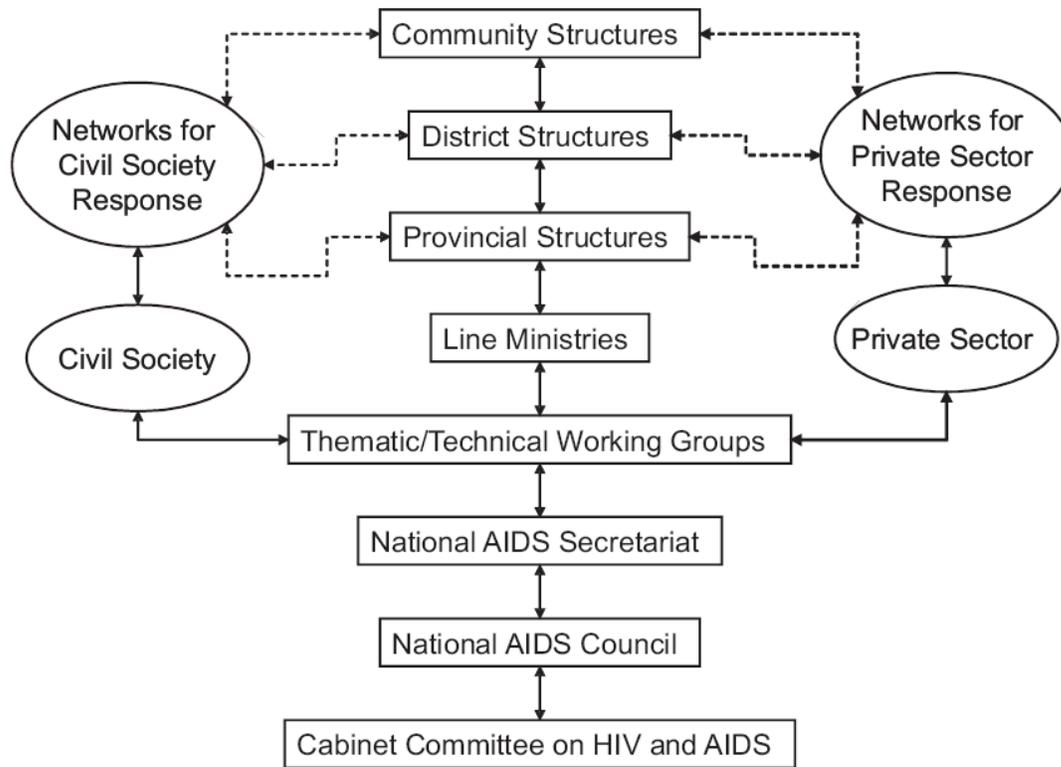
Figure 6.3 details the conceptual framework in the NSF document for the coordinated and multi-sectoral response to HIV/AIDS. As can be seen, the figure suggests that coordination is necessary within and between each level of the system – from the cabinet (national policy level) to communities (and even health centers).

Coordination in Practice

The Clinton HIV/AIDS Initiative (CHAI) was seeking to procure pediatric ARVs using funds from UNITAID. Instead of proceeding on their own, they took time to contact and collaborate with the Zambia National ART Program for guidance, asking about proper dosage, packaging, suppliers, and brands. Then CHAI also received the current stock levels of pediatric ARV formulations to ensure the procurement took into account quantities in the pipeline – helping to avoid expiry and stockouts

The challenge in specifically coordinating effective HACS programming is to ensure that it is not done in a vacuum because each of the components identified as critical to HACS (e.g., logistics, financing, service delivery, and leadership) are also all necessary to address the broader, multi-sectoral response described in Figure 6.3.

To that end, the MOH and its cooperating partners has established a coordinating framework that underpins commodity security. This is done through the office of the Drug Supply Budget Line (DSBL) and the Procurement Technical Working Group (PTWG). While these two initiatives are in their infancy, the MOH demands that these be supported for the reason of coordinating activities.

Figure 6.3: NSF Framework for a Coordinated Response to HIV/AIDS

6.3.2 Key Findings

Efforts are being made by MOH and partners to ensure coordination of procurement, distribution and general management of all health commodities that complies with the guidance in the NSF II framework. However, *institutionalizing* and *sustaining* the coordinated response to HACS will be a challenge because of the enormity of partners, overlapping programs, and funding sources. Historically, a wide range of uncoordinated administrative, operational and policy arrangements resulted in inefficient procurement and supply activities. Subsequently, there was pressure from within the public sector and among donors for a major shift in practices related to procurement and supply chain management specifically for essential drugs and medical supplies - hence the set up of the DSBL and the strengthening of the PTWG.

Previous to these efforts there has been a serious lack of confidence among some CPs and NGOs in the leadership of the MOH in procurement and supply chain management. The main focus of their concern was on the quality, efficiency, and transparency of procurement systems and, related, the unclear management and priority setting process with regard to procurement activities. These findings, however, must be tempered by the context in which health sector procurement in Zambia has operated. There have been, for example, some administrative delays in the transition from CBoH to MOH procurement. Also, release of funds to the MOH has hampered its ability to purchase commodities. If funds were not in the MOH account, procurement (according to rules/ regulations) could not take place, no matter how well planned. Indeed, there has been a sense that expectations by CPs and NGOs have been set too high because they did not consider the importance of adequate and timely financing to the procurement

function.

The GRZ has well established guidelines in place to carry out routine procurement consistent with public sector rules and regulations and those of CPs. It should, however, continue to improve the implementation and enforcement of these well-established procedures through a firmly established Procurement and Supply Unit that applies rules and regulations overseen by the Zambia National Tenders Board (ZNTB).

In response to the challenge a new structure has been established within the MOH to coordinate the inputs for the availability of all essential drugs, including HIV/AIDS commodities. This is called the Drug Supply Budget Line (DSBL) office. The name is a bit awkward and misleading because the mandate of the new office is broader than securing drug financing. The objective of the DSBL is to improve coordination and efficiency for access to all (pharmaceuticals) and medical supplies.

The DSBL was created as a response to inefficiencies in procurement, financing, distribution and general management of essential drugs in Zambia. The office aims to “connect” the different partners within the MOH and with outside to partners to improve availability of essential drugs and HIV/AIDS commodities. It wants to ensure, for example, that each of the public and private sector HIV/AIDS programs (supplying drugs) conducts accurate forecasts and is able to provide those forecasts to both MOH and those agencies that fund them. This, for example, could be CHAZ and the Global Fund, or between the ART program, the MOH procurement unit and any procurement agent selected to provide procurement services when that options is selected.

Indications are that cooperation between the DSBL and other partners, including NAC, the procurement unit, CPs, and the Directorate of Clinical Care are very positive, and many key informants interviewed in the assessment indicated that the creation of the office is a symbol of the CPs and MOH’s renewed commitment to take a strong leadership role in coordinating both MOH programs and those of implementing partners. As a result of the establishment of the DSBL, a number of donors have gained confidence in the MOH to manage drug supply. DFID, for example, the assessment team was told, contributed nearly four million U.S. dollars more to the direct budget support mechanism because of the additional oversight provided by DSBL. The DSBL has also already strengthened the MOH position on commodity security by stating the following points:

- CS committees should help the Drug Supply Budget Line Office (DSBL) develop broad CS strategies
- DSBL supports program specific CS technical working groups (e.g., HIV/AIDS, RH)
- These groups as necessary to provide technical data on CS issues
- MOH is taking a broad, long-term view of commodity security and would like to consolidate efforts for all essential commodities

6.3.3 Main Constraints

The major challenge is for the GRZ / MOH to win back the trust of partners in procurement so that they will allow the MOH to take a more active role in procuring with CP funds and will support the Ministry in taking the lead in the well coordinated procurement; it has been a weak and vulnerable spot in the MOH operations for too long.

Coordination

- **Inefficient Coordinating Structures:** Many coordinating committees at the national level resulting in “over-coordination. This has resulted in confusion and overlap. This is associated with the historical nature of development aid in Zambia as a whole. The Ministry has recognized the negative impact this proliferation of committees is having on management of resources and firming ownership. The burden is equally shared by CPs and implementing partners to recognize this shortcoming, and be first to seek improved coordination.
- **Continued Vertical Programming:** leading to inefficient use of resources (ART, Malaria, TB, essential drugs, and Reproductive Health). These demands from vertical programs on the MOH are creating administrative and planning inefficiencies that result in the MOH failing to meet targets.
- **Inconsistent support among some bilateral partners** for policy and program initiatives developed by the MOH. Some partners instead approach coordination with an overt emphasis on the “project approach,” leading to entrenched verticalization counter to GRZ objectives.
- More coordinated response needed for **international funding opportunities** (e.g. GFATM).
- Partners, donors, CPs need to be seen to support MOH’s efforts in assuming ownership and providing leadership. Partners have recognized very slowly the many positive changes that MOH has put in place. Change in public sector necessarily takes time as the institution has many sovereign steps to contend with.
- Partners need to support MOH’s responsibility in procurement activity, rather than uniformly demand application of their own procurement rules, which often conflict with national / sovereign rules and regulations if applied.
- **Rationalizing Staff Time:** getting the right people and sufficient representation of skills and levels of influence at the relevant meetings remains a problem. The principal reason for this is that health staff in Lusaka – MOH, NGOs, CPs, and technical agencies – is oversubscribed. There are a number of sub-committees, technical working groups, panels, and mandatory workshops senior line managers and directors are obligated to attend. As a result, some key informants argued that the health sector in Zambia is, “over coordinated.” In a way this is true. However, the challenge is to ensure that coordinating groups and committees involved in HACS related activities are not duplicating efforts, and that only the critical staff attend meetings where their competencies are needed.

Leadership

- **Confidence in MOH Capacity**

Lack of confidence in the MOH procurement and supply chain system by partners/other programs. The procurement challenge, for example, is for the GRZ is to win back the trust of partners to allow MOH to procure because there are currently too many financing and procurement channels which are difficult to coordinate. GRZ has well established procurement guidelines in place but has not always followed them. GRZ should apply its own regulations.

- **Exercising Authority with Partners**

MOH needs to more proactively organize partners under its leadership to ensure consistent adherence to GRZ policies and increase efficiencies in program implementation. While the situation is improving, the MOH needs to take continual steps to demonstrate active leadership at the senior technical level to organize partners.

- **Strengthen sub-National Leadership**

National political leadership on a range of HACS related issues has increased considerably over the past several years. However, leadership at the district and community levels from religious, political, and business leaders needs to be supported and strengthened to ensure the many leaders at this level continue to support and advocate prevention (including testing) and adherence.

6.4 Quality

6.5 Monitoring and Evaluation

Overview

National programs must be capable of measuring progress and outcomes to ensure that targets are being met and to determine the corrective actions to be taken when implementation is not effective. This component is a critical piece to the effective implementation of the national HACS strategy because existing M&E capacity will be needed to monitor HACS outcomes.

An identification of product quality issues and constraints will be included as part of the HACS strategic planning process. The assessment team, due to inadequate time and limited access to expert key informants, was unable to identify the (product) quality issues for HIV/AIDS commodities.

Below is an overview of how the issue of Quality is related to HACS, a description of the function of the main quality control organization in Zambia, and a list of key Quality assurance/control challenges highlighted by key informants.

Overview

Quality assurance is a necessary function of both the supply chain and of all other program elements and, as such, can be a cross-cutting issue. In terms of the supply chain, QA can be considered as the sum of all the policies and practices that ensure the quality of the commodities entering and moving through the logistics cycle. QA ensures that the right commodity reaches the right place in the right condition. The supply of quality commodities cannot be guaranteed without concrete QA measures. Sound policies are needed for the development and implementation of sound practices. Equally, all other programs and systems need sound QA policies and procedures to ensure that clients get the quality products and services they need.

The office responsible for setting, enforcing and regulating pharmaceutical products in Zambia is the Zambia Pharmaceutical Regulatory Authority (PRA). One of the many functions of the PRA is to ensure that products on the pharmaceutical market are safe for public use. Another function of the PRA is the registration of medicines, suppliers, manufacturers. Products available to the Zambian public are registered with the PRA. The PRA conducts or arranges Good Manufacturing Practice (GMP) site and/or product inspections. All ARV products entering the country must be registered by the Pharmaceutical Regulatory Authority (PRA). In addition, ARVs that have been pre-qualified by WHO receive favourable attention from the PRA. Products that are prequalified will also be subjected to quality testing at MSL prior to distribution. Plans are underway to conduct point of use sample testing.

Main Constraints

1. Improving monitoring of storage and distribution conditions
2. Improve diagnosing and prescribing skills
3. Improve information to users
4. Conducting post market surveillance
5. Standardization of laboratory equipments and commodities
6. Monitoring of client acceptance of products and services delivery
7. Product efficacy (e.g. resistance monitoring)

The NAC has developed a National HIV/AIDS M&E system to monitor implementation progress of the

NSF II strategy. The national M&E plan has been published as an associated document to the NSF II. The themes are concurrent to those in the NSF II document – Intensifying Prevention, Expanding Treatment Care, and Support; Mitigating Socio-Economic Impact; Strengthening the Decentralized Response and Mainstreaming; Improving Monitoring; and Integrating Advocacy and Coordination of the Multisectoral Response. To avoid duplication and improve monitoring, HACS stakeholders will need to determine how the HACS M&E approach can be integrated within the National M&E Plan. Once indicators are developed for the HACS strategy, the strategy committee should determine which indicators are already monitored in the national plan, then determine under which themes the others may fit. It is likely that most of the HACS indicators will relate to themes 1 and 2 – Intensifying Prevention and Expanding Treatment, Care, and Support, as these areas address the majority of commodity security objectives.

It is further suggested that the HACS Coordinating Committee establish a relationship with the NAC M&E Technical Working Group (TWG) as they begin drafting the national HACS strategy. No doubt, many members of the TWG will also be involved in the HACS strategy development, facilitating coordination.

M&E and the HACS Strategy

The success of the HACS strategy depends in part on the human and institutional capacity to effectively manage and coordinate the activities of numerous partners across the framework components. Further, the DSBL office, NAC, and the Directorate of Clinical Care and Diagnostic Services, as the main HACS coordinating bodies, will be tasked, along with other partners, with implementing several of the activities, chiefly the collection, dissemination, and analysis of commodity data (quantification, stock levels and issues and consumption data) and coordination with the procurement unit. Consequently, a decision will need to be made as to which of these organizations will take the technical and operational lead to ensure that these tasks are completed by the range of implementors. This organization will have a broad mandate to manage the implementation of the HACS strategy both within the MOH and in collaboration with CPs and NGOs.

Explicit to this task will be the Monitoring and Evaluation function. HACS output indicators that correspond to each action and the expected outcomes will be developed. Using these indicators as the basis, a detailed M&E plan will be assembled which includes the routine progress evaluations implementation of the strategy. Following the adoption of the strategy, NACP will help ensure that regular evaluations are carried out and comparisons of the findings with the expected outcomes will be made and the results disseminated to all stakeholders.

Results Indicators

One of the main challenges to successful implementation of the HACS strategy will be the routine monitoring and evaluation of the “actions and sub-actions,” or, more precisely, the implementation. The intermediate result of the action and sub-actions at the program level are the *outputs*. The *outcomes* are the (beneficial) effect of programs on the targeted population. Following adoption and identification of funding, The MOH will work with partners to draft a more specific operational plan to measure the progress of implementation.

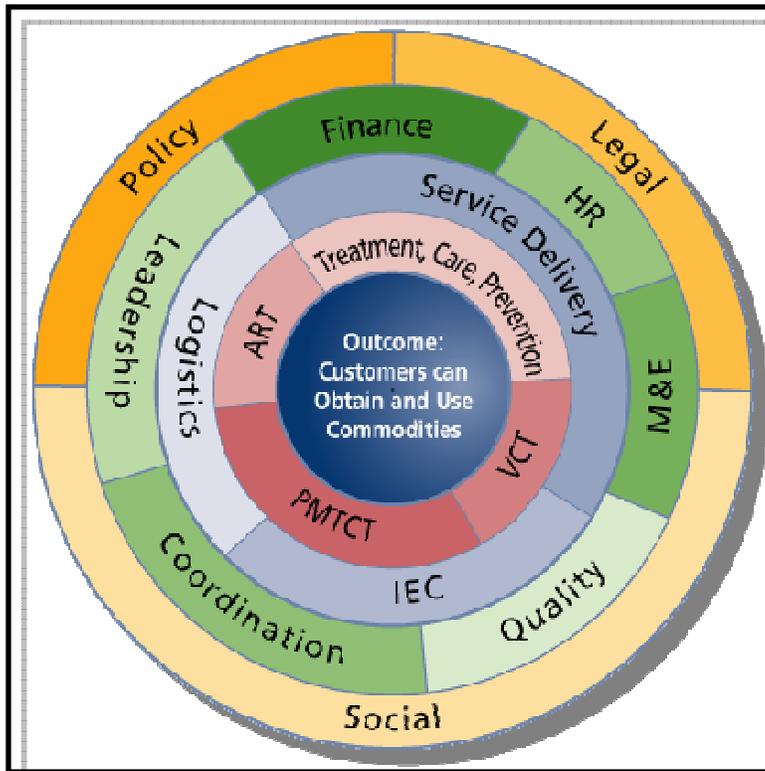
6.5.2 Main Constraints

The issues and constraints faced in developing a HACS M&E Plan and integrating that plan into the national M&E framework are similar to those faced by existing HIV/AIDS programs seeking to improve program evaluation. This includes the following:

- Collecting and integrating program information in a decentralized environment with vertical programs and the existence of numerous bilateral programs.
- Limited resources enabling sub-national program managers to conduct joint M&E planning with national-level counterparts
- Limited capacity and bureaucratic political will to report data – which might even look favorably upon the programs in question.
- Lack of M&E program skills at each level in the system – particularly the sub-national level where data collection is important.
- There is also a serious absence of monitoring and evaluation of programs in the commodity distribution system. Monitoring and supervision has historically been very weak. As a consequence, to even describe the logistic system was difficult because there was no performance data available. Staff used, for example, several different forms to record data, created forms, and reporting was irregular. A new system for ARVs, test kits, and laboratory supplies is being created that integrates supervision and routine monitoring as part of the management function. This includes training at the provincial and district levels. The challenge is tied directly to the human resource issues where staff are not motivated to perform M&E activities due to lack of salary payment, benefits, overall staff shortages, and limited incentives to work in rural areas.

7.0 CONTEXT

HACS, like all public health programming, is affected by (1) the broader **political and legislative environment** and (2) by **social attitudes and economic conditions**. National policies and regulations, for example, affect the ability of programs to provide HIV/AIDS commodities. Some policies may be supportive, such as the elimination of taxes and tariffs on health commodities, whereas others, such as weak HIV testing and workplace regulations, may act as barriers to achieving commodity security.



Moreover, pricing policies for laboratory services can affect uptake of ART. The broader contextual environment—from the social factors such as the general level of education, to economic factors such as income levels, to broader health factors such as HIV prevalence—also affects commodity security. Cultural beliefs on disease and health care in general affect all aspects of programming. Adherence levels may be influenced by the degree of social support patients receive. Stigma may affect rollout of various programs. HIV/AIDS programming may need to compete with other national priorities for resources.

7.1 Overview: Social & Economic Environment

Achieving HACS can help to mitigate the socio-economic impact of HIV/AIDS

because routinely available commodities for prevention, detection, diagnosis, treatment, and care can help alleviate the social and economic burden borne by millions of Zambians. Poverty, whether a cause of or caused by poor health, makes people vulnerable to behaviors that increase the chances of infection and reduces access to prevention and treatment services – particularly in rural areas. The increase in morbidity and mortality rates due to HIV and AIDS is limiting overall productivity in both the productive and services sectors as well as changing the Zambian population structure, decreasing life expectancy from 50 to an estimated 37 years and heavily impacting the availability of human resources. The social and economic consequences of the breakdown in the family structure further exacerbates the situation, making the availability of health commodities a vital tool to address and reverse these trends.

Social and Environmental Challenges

One of the main examples of a new approach to address the contextual environment in Zambia was the introduction of Health Reform from 1993 onwards. The political climate was most positive, convinced of the advantages of decentralization, delegation of responsibilities as well as related resources to the levels where the "actual work was done". Even the highest political level in the Health Sector, the Ministry itself, was prepared to split itself in a Policy Unit, the "reduced" Ministry as the Think-tank and Central Board of Health (CBOH) as the "Executive arm", the implementers of what the policy-core group had planned and decided. These days, some 14 years later, a number of these steps have been reversed.

Especially at the top-level, integration did not go smoothly and it resulted into inefficiencies, problems with management and related responsibilities, bureaucratic battles around "shares of the cake", etc.. The internal "service units" were the ultimate consequence of decentralization as these Units were established in duplicate, for the Ministry and the CBOH. Two transport units, two for procurement, and two for accountancy....

The main challenges to the success of these and other national and operational policies, related to the broader response and specifically to HACS, is in fact the social and economic environment because HACS is both affected by this environment and affects it. These environmental factors – or risks that must be considered when designing HACS interventions – include: political stability; increased programming complexity because of decentralization; availability of government resources; unemployment; literacy and poverty levels; and, on the broader level, sustainability and donor fatigue.

7.1.1 Main Constraints

1. As much as poverty makes people vulnerable to risky behaviors for HIV, the loss of the main income earner or earners in the prime of their lives due to HIV and AIDS is pushing many families into poverty - and the cycle repeats itself. The HIV and AIDS epidemic is as much a development concern as it is a health concern.
2. The increase in morbidity and mortality rates due to HIV and AIDS is limiting overall productivity in both the productive and services sectors as well as altering the Zambian population structure, decreasing life expectancy from 50 to an estimated 37 years and heavily impacting the supply of human resources. Consequently, the nation has continued to witness a breakdown in social service delivery, reduction in household incomes and a less than optimal national economic growth rate necessary for overall national development.
3. Estimates of number of orphans range from 750,000 to 1.2 million, of which 75% are HIV orphans . Throughout Zambia, there are growing initiatives in support of orphans and vulnerable children being implemented by government, international donors, NGOs, and several other groups. These are successful programs that keep children in the community rather than in orphanages, increase incomes to vulnerable households and provide psychosocial and physical help to families and caregivers who are often the elderly.

The above main concerns expressed in the NASF throw a completely different light upon the prospects for adequate financing of the HACS and, in particular, sustaining it. The biggest threat to all measures that might be proposed as part of the HACS strategy will be that external support is finite, whether it comes from the CPs or from the bigger Aids Relief / ART funding programs.

7.2 Overview: Policy and Legislative Environment

The economic and social consequences of the disease are not unknown to policymakers. The policy and legal responses in reaction to the effects of HIV is detailed in the NSF II, and is based on the expansion of Prevention, Treatment, Care, and Support. NSF II states that legislative, regulatory, policy, and financing initiatives are and will continue to focus on the following:

- Prevention of STIs and PMTCT

- Prevention through blood and related products
- Expanded use of prophylaxis
- Improve access to counseling and testing
- Provide universal access
- Expand treatment for co-infections and TB
- Strengthen home-based care
- Promote better nutrition for PLHAs

These policy initiatives are an abbreviated list of the strategic initiatives listed in NSF II. Many of the other themes also directly impact the social and economic consequences. Theme III, for example, is titled “Mitigating the Socio-economic Impact,” which addresses care for orphans, social protection for PHLAs and food security for PLHAs, caregivers, and family.

The policy response has been institutionalized through the creation of the NSF II and through the following:

- Cabinet level committees on HIV/AIDS;
- Establishment of the NAC
- National HIV/AIDS/STI/TB Intervention Strategic Plan (NAISP) 2002 – 2005)
- National HIV/AIDS/STI/TB Policy (2005)
- Health Sector Human Resource Strategy
- Strategic partnerships and support with GFATM, PEPFAR, CHAI, World Bank for ART

Outside of the formal NSF framework additional policy initiatives are underway to support both the broad national response and specific program requirements to strengthen HACS. The Poverty Reduction Strategy Program (PRSP), World Bank Multi-country AIDS Project (MAP), Global Fund, and other programs can be viewed as financing solutions brought about by effective policy implementation. The private sector has also taken policy decisions to support the response. Among firms that have implemented HIV prevention programs, for example, are Barclays Bank, Nakambala Sugar Estates, Caltex Oil, INDENI Petroleum Refinery Company, Copperbelt Electricity Corporation, Zambian Breweries, Mopani Copper Mines, British Petroleum, Konkola Copper Mines, and AHC Mining Municipal Services. However, the majority of Zambian employers have no HIV/AIDS policy or related program (Garbus, 2006).

Moreover, as the numbers of HIV/AIDS cases are still growing, the GRZ and the CPs or other partners might realize that the HACS can open up quite a few areas of care and interventions that remained under-serviced until now. The MOH could take this rather unique opportunity to analyze which policies can be strengthened under the program. It may also agree with its ministerial colleagues from other sectors, with the NAC and also with the CCM that the core decision to aim at rapid implementation of the HACS will lead to having a rather effective instrument to improve information, supply and care throughout the country. It will be within reach to strengthen prevention and ensure access to treatment, additional care and the highly needed long term support to Aids patients.

It will also strengthen the operations of the treatment provider and widen the scope of care. Many interventions reach across the borders of different sectors involved; the aim to achieve co-ordinated response may be achieved automatically and that will result into making HIV/AIDS-commodities available to the health staff and, implicitly to the patients. Again, the policy implementation will be a major role for the HACS/CC.

It can be expected that the HACS/CC will soon be in a position to develop, with others such as the DSBL,

and the RHCS Working Group, the capacity to manage the development of a national strategy and advocate for its implementation.

7.2.1 Main Policy & Legislative Constraints

In addition to the social and environmental factors, there are additional health sector focused policy constraints that must be addressed in any future HACS program. These constraints can be viewed as issues that the strategic plan will be in a position to address. They include:

- The concept and consequences of **decentralization** on local authorities has not been clearly defined in a policy context by the GRZ and MOH.
- If **NAC is to be an effective coordinating body**, policy decisions will need to be implemented to increase funding for its operations.
- Limited follow through on **disseminating policy** and legal documents and guidelines. Limited public awareness of HIV/AIDS/STI/TB Policy (GRZ, NAC, 2007).
- **Limited policy development and enforcement** by GRZ and MOH on current complex funding channels for HIV/AIDS. If GRZ's position is an increase in **pooled funding**, then formal policies must be developed and enforced in cooperation with all partners.
- **Lack of GRZ and partner financing** for health services and infrastructure at lower levels. The HACS requires to be implemented throughout the health structure, including the rural facilities that provide HIV/Aids addressing services. The funding at the lower levels is not regular and certainly not adequate. If HACS is expected to be effective at that level, both GRZ and its partners must consider increase in providing partner financing for health services and infrastructure at lower levels. If HACS might indeed receive the necessary support, it is also likely to affect other aspects of care, such as the IEC, a regularly missing issue at those levels.
- **Drug Policy Implementation** - Many drug regulatory policies in place, but need to be implemented by the PRA. The PRA lacks human capacity to enforce existing regulations. It is not likely that this can be solved exclusively through a national strategy, but strengthening drug policy enforcement can serve as a model for other categories of essential medicines.
- **Private Sector** - The private sector needs greater access to MOH ARVs to treat patients who can afford to pay subsidized prices. There is no clear structure yet for the payment, let alone for price setting itself. This, however, bears the risk that various uncontrolled pricing systems will appear in that "market".

8.0 CONCLUSIONS

The objective of the Zambia HACS assessment was more extensive than a straightforward situational analysis of the major components that constitute the analytical framework. Certainly, that was an important objective, and one it is hoped the authors of this report were able to meet. The assessment itself required the consultants to examine multiple programs, policies, and systems. As a result, this initial effort could be described as more breadth than depth. This was the expectation of the assessment team prior to the analysis, and one in which there is agreement by all parties not to “reinvent the wheel” but to use existing analysis to obtain agreement on HACS priorities as the basis for the strategic plan.

However, the assessment and this associated technical report also aimed to raise awareness of the concept and practice of commodity security and the unique, complex requirements of securing HIV/AIDS commodities. These requirements are worth noting in detail because it is something that stakeholders involved in the subsequent HACS strategic planning process must bear in mind as they devise ambitious, but also feasible strategies to address the issues raised in this report. These requirements include:

- ✓ HIV/AIDS: no cure; implies a lifetime commitment to treatment
- ✓ ART requires > 95% adherence, means consistent, continuous supplies
- ✓ Short shelf life of various products
- ✓ Specific storage requirements (i.e., cold chain)
- ✓ Service provider training & human resources
- ✓ Important laboratory component (treatment, prevention)
- ✓ Multiple users: patients, providers, counselors, lab personnel
- ✓ Complex, multi-drug regimens, large numbers of commodities and multiple donors implies huge need for coordination and forecasting
- ✓ Scale of financing: mobilizing, coordinating, sustaining
- ✓ Rapidly increasing global demand and limited supply means countries that do not plan may not get commodities
- ✓ Consequences of stockouts fatal for patients and threaten efficacy of drugs for all (resistance)

Finally, the purpose of the assessment process also included gaining an agreement to create an HIV/AIDS Coordinating Committee to coordinate the technical and policy direction of the HACS strategic Plan. (The TOR for this committee is located in Annex 3). While there is a dearth of committees in the health sector, and key stakeholders were not keen to create another structure, it was agreed that a group of technical and managerial stakeholders were needed to fulfill HACS planning functions. The HACS/CC will formally be assembled under the leadership of MOH offices – including the DSBL and the Directorate of Clinical Care and Diagnostic Services, and NAC – with secretariat support based in the Ministry. The decision by the senior leadership in the MOH to establish and provide political support to this committee was a key accomplishment of the assessment mission and one which is crucial to implementing activities to address the wide-range of challenges described in this report.

As the HACS process moves forward, it will be important to ensure that stakeholders have the available time to commit to the functions expected and agreed to during the debriefing meeting at the MOH. These functions include providing feedback on the technical report, finalizing the HACS committee structure, and serving as the primary technical body for the development of the strategic plan. This will be a challenge. Many of the stakeholders (MOH staff, donors, NGO reps.) are invited and required to attend multiple workshops and meetings making scheduling difficult. In one sense, this is in fact a positive finding because it shows that movement is being made on many of the same systems and functions identified in the assessment. Nonetheless, it will be important for the SCMS office, the consultant team,

the primary MOH contacts, and the USAID mission to stay engaged with the HACS process during the interim period (between finalization of the technical report and the planned strategic planning workshop in fall, 2007).

8.1 Next Steps

The completion of the Zambia HACS assessment report is only one, but a critical step in a larger process to improve HACS in Zambia. This technical report will have limited value unless the primary group of stakeholders and experts – who are largely to thank for the content of this report – are able to apply the findings to a strategic planning process and, in practical terms, implement activities aimed at resolving the challenges detailed in this report. The development of the strategic plan and its implementation must fall under the policy and implementing framework in NSF II and the ministry agencies responsible for its implementation such as NAC, DSBL, and the Directorate of Clinical Care and Diagnostic Services. The HACS strategic plan, in this arrangement, can then be viewed as providing support and technical direction to existing programming (e.g., improved forecasting and storage and diversifying financing sources).

Consequently, the next steps that must be undertaken following the finalization of the assessment report are critical to making sure that the way forward for HACS is linked and directed by existing MOH structures and can achieve the benchmarks in the planning and implementation process agreed to by the MOH in June, 2007. These steps are:

- a. **Identify HACS issues and constraints** for components not adequately addressed in this report, including, at minimum, Product Quality and IEC.
- b. **Establishing a HACS Coordinating Committee** whose main functions will include: Direct technical, policy, and advocacy efforts aimed at developing a national strategic plan; Coordinate the implementation of activities in the national strategic plan; Mobilize resources among GRZ bodies, CPs, and other groups for implementation.
- c. Plan a technically focused **national strategic planning workshop** to include the participation of HACS/CC members and other invited technical experts. At the workshop, objectives will be:
 - Ensure that appropriate issues in each framework component have been identified
 - Prioritize issues by potential impact, cost, and feasibility
 - Determine issues and strategies that may either be outside the area of a commodity-based strategy or part of on-going programs
 - Develop strategic objectives for each component area applicable to the HACS strategy and create associated activities
 - Identify coordinating and implementing organizations
 - Develop risks and assumptions
 - Establish output indicators and outcomes for each objective
 - Develop a feasible and detailed budget
- d. Develop and execute **advocacy plan to obtain resources** to implement the strategy
- e. **Coordinate with NAC and other related bodies to ensure harmonization and avoid duplication of activities and M&E functions.**

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ANNEXES

Annex 1 – HACS Methodology Workshop Participant List

HIV AIDS COMMODITY SECURITY WORKSHOP – PARTICIPANT LIST (24th May 2007)				
	Name	Organization	Contact Number	Email
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Annex 2 – Key Informants Interviewed

Person(s)	Organization	Title
E.O. Meassick	CDC	Associate Chief, BS
Dr. Simon Mphuka	CHAZ	Executive Director
Walter Proper	DELIVER/ SCMS	Country Director
Mika Bwembya	DELIVER/ SCMS	Logistics Officer
Gamariel Simpungwe	DELIVER/ SCMS	Logistics Officer
Chama Chisala	DELIVER/ SCMS	Laboratory Logistics Officer
Farouk	DELIVER/ SCMS	Laboratory Logistics Officer
Jane Miller	DFID	Health Advisor
Lynn Lederer	JHUHCP	Chief of Party
U.B. Kumara	JHUHCP	Dept. Chief of Party
Tomoko Sichone	JICA	Health Advisor
Dr V Mtonga	Ministry of Health	Director, Technical Support
Caroline Yeta	Ministry of Health	Senior Pharmacist, CCDS
John Ngosa	Ministry of Health	RH Coordinator
Dr. V. Mkunka	Ministry of Health	Director, OPH
A. Lupupa	Ministry of Health	Chief, Purchasing & Supplies
Dr Simpungwe	Ministry of Health	Director, CCDS
Dr B. Fundafunda	Ministry of Health	Director, DSBL
Dr Mwango	Ministry of Health	ART Coordinator, CCDS
Mr Nicholas Chikwenya	Ministry of Health	Donor Coordinator
David Thompson	MSL	Director
Tom Brown	MSL	Director of Logistics
Richard Harrison	SFH	Deputy Country Director
Lisa Luchsinger	USAID	Senior Health Advisor
Gail Bryan	ZPCT	Senior Advisor

Annex 3 – TOR for HACS Coordinating Committee

TERMS OF REFERENCE (TOR) ZAMBIA'S HIV/AIDS COMMODITY SECURITY COORDINATING COMMITTEE

The definition of HIV/AIDS commodity security: *"To ensure that patients and service providers can obtain and use commodities when and where they need them."*

The Ministry of Health (MOH) is leading the development process of a "National HIV/AIDS Commodity Security (HACS) Strategic Plan." The basis of the strategic plan is an assessment of the systems and policies involved in commodity security (CS)⁸ guided by the input of Zambian experts.

Principal functions will be to:

- Serve as a resource and body of reviewers for the HACS technical assessment report
- Direct technical, policy, and advocacy efforts aimed at developing a national strategic plan
- Coordinate the implementation of activities in the national strategic plan

It is proposed that a *HACS Coordinating Committee* is formed to manage the activities and guide the direction of these efforts. While an attempt should be made to use existing structures, the Committee should ideally include, though not necessarily be restricted to:

- the Government (particularly representatives of NAC, MOH, Finance, Education and Transport);
- other state and private bodies responsible for prevention, treatment, and care issues,
- NGOs (including those focusing on RH, HIV/AIDS approaches) and technical agencies,
- technical partners and donors (e.g., USAID, UNICEF, GFATM, World Bank)
- private sector and trade associations that could contribute to national HACS efforts

Background

A multi-sectoral and coordinated programmatic response is necessary to combat HIV/AIDS in Zambia. Effective interventions must integrate prevention, treatment and care. These service components require a large *variety* and *quantity* of commodities for (ART), (PMTCT) and (VCT) programs – in addition to other treatment, detection and monitoring functions including (PEP), blood safety monitoring, sentinel surveillance, laboratory testing. These programs cannot be effective unless Zambian stakeholders can help ensure a range of necessary commodities including ARVs, drugs to treat OIs, HIV test kits, laboratory reagents, non-drug medical consumables and information materials for all levels of society, including primary education.⁹

Purpose

- (1) Guide and serve as a technical resource for the HACS assessment;
- (2) Direct technical, policy, and advocacy efforts aimed at developing a national strategic plan
- (3) Coordinate HACS implementation activities

Activities

Phase I – HACS Assessment

- (1) Identify a preliminary list of HIV/AIDS commodity issues and challenges

⁸ See attached HACS Framework

⁹ Information / Education-programs; all focusing upon "behavior before" and "treatment adherence after!"

- (2) Identify and reach consensus on priority commodities
- (3) Recommend an adapted assessment framework to fit Zambia's priorities and needs
- (4) Provide feedback on the proposed assessment methodology
- (5) Serve as a technical resource (key informant) for the assessment
- (6) Provide feedback on the preliminary findings

Phase II – Strategic Planning

- (1) Identify a Technical Working Group (TWG) from Committee members
- (2) Detail priority issues and objectives
- (3) Identify expected outcomes, output indicators, assumptions and risks
- (4) Develop budgets for the selected activities
- (5) Advocate for funding and mobilization of other resources for implementation
- (6) Seek to integrate HACS activities into existing programs and strategies
- (7) For the long-term - consider options for expanding Commodity Security strategies to the entire Health Sector.