

**FACTORS AFFECTING IMPLEMENTATION OF HEALTH SYSTEMS
STRENGTHENING: A CASE OF THE ROUND 9 GRANT IN SOUTH SUDAN**

BY

RHODA KASUSE KOMBO

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DECLARATION

This research project is my original work and has never been submitted for an award of a degree in any other university.

Signature

Date.....

Rhoda Kasuse Kombo

L50/78823/2009

This research project has been submitted for examination with my approval as the university supervisor.

Signature.....

Date.....

Prof. Harriet Kidombo

School of Continuing and Distance Education

University of Nairobi

DEDICATION

This study is dedicated to Marion Gleixner, Global Fund, Senior Fund Portfolio Manager for South Sudan, for her passion and continuous efforts towards the improvement of health systems in South Sudan.

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ACRONYMS AND ABBREVIATIONS

AMREF	Africa Medical Research Foundation
CCM	Country Coordinating Mechanism
CHAS	Christian Health Association of Sudan
GoSS	Government of South Sudan
GHI	Global Health Initiative
HSDP	Health Sector Development Plan
HSAFP	Health Sector Aid Financing Plan
MDGs	Millennium Development Goals
MoH	Ministry of Health
PUDR	Progress Update and Disbursement Request report
SHHS	Sudan Household Health Survey
SSDP	South Sudan Development Plan
UNAIDS	Joint United Nations Program on HIV/AIDS
UNDP	United Nations Development Programme
UNICEF	United Nations Children Fund
WHO	World Health Organization

ABSTRACT

The presence of poor health conditions in a country slows economic growth directly as societies lose potential workers and consumers to disease and disability. Without greater and more effective investment in health systems and services, the achievement of millennium development goals becomes impossible. Health outcomes are unacceptably low across Africa, owing to failing or inadequate health systems. The Republic of South Sudan boasts of being the newest nation in Africa. However, decades of war has left its health systems in disarray and in a state of collapse. The purpose of this study is to establish factors affecting implementation of health systems strengthening grants in South Sudan. The objectives of the study include: how the existing infrastructure, security of the country, procurement regulations and health personnel affect the Round 9 grant, which is funded by the Global Fund. This study employs a survey research design. The target population for this study is 49 staff involved in this project in UNDP, the MoH and CHAS. Purposive sampling was used to select program staff and technical experts in health systems strengthening from the target population. Both primary and secondary data was used. Primary data was collected using self-administered questionnaires while secondary data was collected by reading through grant reports, health system strengthening published journals from WHO and other international health organizations, the Global Fund published reports, brochures and health journals. Descriptive analysis was used to analyze the data. The study revealed that the current state of infrastructure negatively affects the implementation of the Round 9 grant in South Sudan. The poor state of roads, especially during the rainy season leads to delays in transporting construction materials to the sites. The study also concludes that the security situation prevailing in certain regions of South Sudan negatively affects the implementation of the grant. Insecurity has delayed the construction of health facilities. Health equipment in some completed facilities has been destroyed and looted as a result of conflict. In addition, construction of facilities in some regions has been cancelled as a result of conflict. Quality assurance procedures in procurement is one of the major aspects causing delays in grant implementation. Procurement of health products and equipment is normally delayed as a result of the quality assurance requirements at donor level and procurement regulations at the PR level. Finally, there is a critical shortage of health personnel in South Sudan. This has forced program management to recruit from neighboring countries. Some of the facilities constructed under the grant are not operational due to lack of skilled health personnel in the country.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The promotion and protection of the health of the people is essential to sustained economic and social development and contributes to a better quality of life (Declaration of Alma-Ata, 1978). The presence of poor health in a country slows economic growth. Without greater and more effective investments in health systems and services, it becomes almost impossible to achieve the millennium development goals, (WHO, 2007). According to the Global Health Initiative (GHI) report of 2012, many countries, particularly those in Africa, are not on track to reach the Millennium Development Goals (MDGs) with less than a year down the road despite considerable growth in financing and technical support for the health sector from global development partners and governments during the last two decades (Institute for Health Metrics and Evaluation, 2011).

A Report by UNAIDS indicates that only 19 of 68 priority countries worldwide (28%) are on track to achieve MDG 4 (child mortality reduction) by 2015; forty-nine (72%) have either made insufficient or no progress. Almost all maternal deaths (99%) occur in developing countries and progress toward MDG 5 (maternal mortality reduction) is less than half of the 5.5% annual decline needed to achieve the target (WHO, 2011). Significant progress has been made toward MDG 6 (combat HIV/AIDS, malaria, and other diseases); however, important work remains and the overall target will likely not be met. UNAIDS estimates that of the 14.2 million people eligible for ARV therapy only 6.6 million (< 50%) had been covered by the end of 2010 (UNAIDS, 2011).

Weak health systems are often identified as a binding constraint to further and sustained progress. According to the G8 report on Global Action for Health Systems Strengthening (2009), problems in health systems performance are considered major causes for the delays in achieving key targets for health related MDGs. In 2009 at the launch of the United States Global Health Initiative (GHI), President Obama indicated that success will not be achieved in the efforts to end deaths from AIDS, malaria, and

tuberculosis unless more is done to improve health systems around the world, (GHI Report, 2012). In fragile states, particularly those that have experienced extended periods of conflicts, health systems are seriously eroded and damaged. Moreover, health infrastructure is normally destroyed or nonfunctional (GHI Report, 2012).

A global perspective of health systems portrays huge differences between health systems in developed countries and those in developing countries. Health Systems in developed countries are characterized by highly skilled and specialized health work force, efficient health infrastructure and technologies and highly specialized, quality service delivery (Laura & Peter, 2012). Countries in Europe, particularly the 27 countries under the European Union have effective health coverage and go to an extent of providing free health care services to its citizens. Due to effective health systems, these countries focus more on health research and the development of efficient health technologies. In these countries, the focus is more towards e Health initiatives, for example, having electronic health records, which can be accessed in any of the member states regions (Karl, 2011). France, which was ranked the top health system by WHO in the year 2000 spends 11.6% of its GDP in health. Moreover, it has 3.3 physicians per 1000 population and has the best health outcomes whereby, infant mortality is 3.5 per 1000 live births, while maternal mortality is 8.5 per 100,000 (Emily & Elliot, 2013).

Health Systems in developing countries and particularly in sub-Saharan Africa are weak and are characterized by insufficient financial and human resources, limited institutional capacity and infrastructure, weak health information systems, lack of comprehensiveness, embedded inequity and discrimination in availability of services, absence of community participation, lack of transparency and accountability, and a need for management capacity building. Egypt, the first African country, was ranked 63 in the WHO health systems ranking. (Emily & Elliot, 2013). Egypt is ranked as a lower middle income country. As the first African country in the WHO ranking, the performance in health indicators is poor compared to a country like France as indicated above. Infant mortality rate is at 19.2 per 1000 live births, while maternal mortality rate is 44.6 per 100,000.

South Sudan is emerging from two decades of civil war which has devastated the region's structures for social services. Most of the population lacks access to health care, education, clean water and sanitation. The region's lack of services coupled with chronic insecurity and debilitating poverty has had profound implication on its health structures and health conditions leading to poor health indicators. Health infrastructure in many states have been abandoned or destroyed by decades of conflict (WHO, 2012). In addition, the government's austerity measures have cut its already limited financial support to basic services including healthcare. The government's budget allocation for the health sector is at 3% (SSDP, 2011 – 2013). During the conference that led to the Abuja Declaration, African Heads of States and Governments had pledged to allocate at least 15% of their national budgets to health. The amount allocated by South Sudan is far much below the target set during the Abuja Declaration.

According to a survey carried out jointly by GoSS, WHO and AMREF in South Sudan, there are approximately 220 doctors to care for a population of over 8 million people (WHO, 2012). The lack of services and infrastructure in many areas of South Sudan is a significant obstacle. Major challenges facing the health sector include inadequate health infrastructure and facilities, as well as insufficient qualified health personnel. Substantial support is required to improve access to basic medical services, including rehabilitation of facilities and increased training and education for medical personnel (Sudan and UNICEF, 2002). According to the SHHS Report (2006), South Sudan reports some of the worst health indicators in the world, infant mortality rates stands at 102 per 1,000 live births, while the under-five mortality rate is 135 per 1,000 live births. In addition, South Sudan also reports the highest maternal mortality rates in the world with more than 2,054 out of every 100,000 live births mainly due to inadequate access to primary and curative health services. It is estimated that only 20% of the Sudanese population use any kind of health facility during their lifetime (UNOPS, 2011).

Since the signing of the Comprehensive Peace Agreement in 2005, South Sudan embarked upon addressing the challenges of establishment and reconstruction of the

much needed social services, including health, water and sanitation as priority areas. Access to quality primary healthcare is problematic due to under-development, conflict and remoteness. South Sudan is among the poorest economies in Africa, and was ranked number 169 out of 187 countries on the Human Development Index in 2011. Data from the SHHS (2006) indicated that the number of service delivery facilities is limited and the existing ones are poorly equipped. The capacity to deliver adequate health services in existing facilities is very weak. The human resources situation is grossly inadequate. Overall, existing infrastructure and equipment are extremely poor. Most hospitals and health centers are in a state of despair. The material resources and managerial and technical expertise for the health sector are insufficient and largely dependent on external financial and technical assistance.

The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM) is a financing institution that was created to dramatically increase resources to fight three of the world's most devastating diseases, and to direct those resources to areas of greatest need. Established in 2002, the GFATM has now become a major source of financial assistance in the fight against these diseases in the world. In South Sudan, the Global Fund finances programs that cater for the three disease components (Malaria, TB and HIV). In addition to that, GFATM funds a Health Systems Strengthening (HSS) program referred to as Round 9 HSS. The program is implemented by UNDP as the Principal Recipient and two Sub-recipients namely; CHAS and the MoH.

The Round 9 program seeks to strengthen South Sudan's health system to enable scale up HIV/AIDS, tuberculosis and malaria services. The program addresses four main constraints to effective service delivery: lack of skilled manpower at all levels of the health system, lack of appropriate equipment and supplies, lack of effective health management systems and poor infrastructure and support services. The Global Fund funding to this program is aimed at improving access to safe and effective drugs, development of skilled health workforce and strengthening of the existing health information system and other health related services such as laboratory services, safe blood banks, equipped anti-natal clinics and maternity wards among others.

(www.globalfund.org). The program activities include: construction/rehabilitation of health facilities, recruitment of health workforce, training of the health workforce and procurement of health products and equipment for the health facilities.

1.2 Statement of the Problem

The challenges of meeting the Millennium Development Goals (MDGs) for health remain formidable. While the current decade has seen significant advances in the health sector of low and middle-income countries, this progress has been slower than expected. Despite a strong range of health interventions that can prevent much of the burden of disease in the poorest countries, with ever-improving interventions in the pipeline, effective coverage of these interventions is expanding too slowly and health inequities are widening. In many cases, the fundamental problem lies with the broader health system and its ability to deliver interventions to those who need them. Weaknesses and obstacles exist across the system, including overall stewardship and management issues; critical supply-side issues such as human resources, infrastructure, information and service provision and demand side issues such as people's participation, knowledge and behavior (WHO, 2009).

Data from the SHHS (2006) indicated that South Sudan has the highest levels of infant mortality rate and maternal mortality rate anywhere in the world. Communicable diseases remain a major concern, while the main causes of morbidity and mortality are infectious and parasitic diseases including tuberculosis and malaria. Moreover, the number of service delivery facilities is limited and the existing ones are poorly equipped. It appears that despite the important funding and initiatives by international donors, the quality and coverage of health services in South Sudan continues to be insufficient. South Sudan's MDG record remains among the lowest worldwide.

South Sudan is in dire need of functional health systems. For the country to achieve the millennium development goals, increased efforts and investments are required to strengthen the health systems. Even after financial interventions from the donor community, progress towards strengthening of the health systems in South Sudan

is still at a snail pace. This in turn contributes to poor results as far as the achievement of health indicator targets is concerned. The Round 9 grant is one of the interventions aimed at strengthening the health systems in a country with weak health infrastructure and poor health indicators. Although this is a commendable intervention which is welcomed in the country, progress towards the achievement of the objectives of the project is still slow.

The Round 9 grant, which started on 1 October 2010, involved the construction of 45 health facilities. However, at the end of Phase 1 which was two years after the inception of the grant, only 21 facilities had been completed and only 1 was operational (UNDP, 2012). Construction of facilities under Phase 2, which is currently ongoing has not commenced, nearly 2 years after the start of Phase 2 in October 2012. Some of the facilities that are complete are not operational. In a country that is in dire need of improved health systems and increased access to health services, it is important to establish why there is such slow progress as far as this grant is concerned. This study therefore sought to establish the factors affecting the implementation of health systems strengthening grants in South Sudan, particularly the Round 9 grant financed by the Global Fund.

1.3 Purpose of the Study

The purpose of the study was to establish factors affecting implementation of health systems strengthening, particularly the Round 9 grant in South Sudan.

1.4 Objectives of the study

The study was guided by the following objectives:

- i. To establish how the existing infrastructure affects the implementation of the Round 9 grant in South Sudan;
- ii. To evaluate how security of the country affects the implementation of the Round 9 grant in South Sudan;

- iii. To determine how procurement regulations affect the implementation of Round 9 grant in South Sudan; and
- iv. To evaluate how health personnel affect the implementation of Round 9 grant in South Sudan.

1.5 Research Questions

The study sought to answer the following research questions:

- i. To what extent does the existing infrastructure affect the implementation of the Round 9 grant in South Sudan?
- ii. How does security of the country affect the implementation of the Round 9 grant in South Sudan?
- iii. How do procurement regulations affect the implementation of Round 9 grant in South Sudan?; and
- iv. To what extent do health personnel affect the implementation of Round 9 grant in South Sudan?

1.6 Significance of the study

The study was significant since, it was hoped that, through its findings, the factors affecting the implementation of the Round 9 health systems strengthening grant in South Sudan. The findings are aimed at assisting UNDP, CHAS and the Ministry of Health (MoH) management in designing interventions that scale through the challenges experienced in Phase 1 of program implementation to promote improved implementation and achievement of the goals set for Phase 2, which is already in progress until the year 2015. By using the lessons learnt in Phase 1, the objectives under Phase 2 can be met without delays. The information gathered is important to the Global Fund Secretariat to assist them in making informed disbursement decisions in the future in line with the Global Fund mission of development with an impact. In addition, the information obtained is of great importance to the Government of Southern Sudan, as it will assist it

in implementing various health systems strengthening projects, which are aimed at attaining the MDGs. Finally, the findings from this study will be of great importance to future scholars as it will form the basis for future research.

1.7 Delimitations of the Study

The study was delimited to employees of three organizations (UNDP, MoH and CHAS) who are directly involved in the implementation of this grant in South Sudan. The study was also delimited to factors affecting implementation of health systems strengthening grants in South Sudan, particularly the Round 9 grant financed by the Global Fund.

1.8 Limitations of the Study

In administering questionnaires, non-response is identified as the biggest challenge. To address this challenge, the researcher did not leave the questionnaires with the respondents to collect them at a later date but requested the respondents to spare a few minutes to complete the questionnaires and waited for the respondents to complete them.

The researcher held informal interviews with the project managers in each organization, read the health sector development plans and the grant reports to obtain additional information. This strategy was used to avoid brief information contained in the questionnaires.

The researcher attached a letter from the university together with the questionnaire and convinced the respondents that the information was for academic purposes only. This was aimed at addressing the challenge uncooperative respondents, and particularly those who were initially unwilling to fill the questionnaires out of fear.

1.9 Assumptions of the Study

The study assumed that the respondents were to complete the questionnaire freely without fear of their employers. It also assumed that the researcher got all the support required from relevant sources in getting information needed. The researcher also assumed that the respondents gave all the information required in an accurate manner.

1.10 Definition of Significant Terms

Health System: refers to all the activities whose primary purpose is to promote, restore and/or maintain health including the people, institutions and resources, arranged together in accordance with established policies, to improve the health of the population they serve.

Health System Strengthening: is any array of initiatives and strategies that improves one or more of the functions of the health system and that leads to better health through improvements in access, coverage, quality, or efficiency.

Round 9 grant: This is a health systems strengthening grant funded by the Global Fund in South Sudan

Existing infrastructure: Refers to the current state of roads, air transport and health facilities in South Sudan.

Security of the country: The state of a country being

Procurement regulations: Rules and procedures provided by the donor and at the PR level that dictate how the procurement process is to be undertaken.

Health personnel: also referred to as health workforce or human resources for health is defined as all people engaged in actions whose primary intent is to enhance health.

1.11 Organization of the study

This study is organized in five chapters.

Chapter one deals with the background of the study, the statement of the problem, purpose of the study, objectives of the study, research questions, significance of the study, assumption of the study, limitation of the study, delimitations of the study, definition of terms and the organization of the study.

Chapter two reviews the literature along the study objectives. It also presents the theoretical framework of the study.

Chapter three gives the research methodology that was used in this study. It gives the research design, the target population of the study, the sample size and sampling techniques, research instruments, data collection methods and data analysis methods used.

Chapter four deals with data analysis, interpretation, presentation and discussion.

Chapter five documents summary of findings, discussion of the findings, conclusion and recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter brings out the literature review related to the objectives of the study. It contains an overview of health systems strengthening and a discussion on factors affecting the implementation of the health systems strengthening grants in South Sudan. The chapter also has a conceptual framework and is concluded with a summary of literature reviewed.

2.2 Existing infrastructure and implementation of health systems strengthening grants

The crucial role of transport in economic development has been universally accepted. For example, the rural urban linkages and the pull effects of urban growth centers have long been recognized to be essentially dependent on transport and communications linkages. Again, transportation and communications were the central foundation for the opening up of new colonies like Australia and America. Rural transport also has an important impact on the rural economy. Investment in rural roads and transportation results in reducing the cost of transportation of goods and passengers and tends to increase the share of farmers in the final realization of farm produce, thereby increasing their welfare.

The availability of health infrastructure tends to reduce infant and child mortality, as well as fertility rates and leads to eradication of certain diseases (World Bank, 1993). Health infrastructure contributes to growth in several ways such as: reducing production costs; permitting the use of natural resources as accessibility increases; enrolment of children in schools; freeing resources that would have been spent on treatment of prevalent diseases (World Bank, 1993); education, health and age of women at marriage, leading to a decline in birth rates, infant and child mortality rates; and enhancing women's ability to improve their own life and status as well as the lives of their children.

South Sudan is a landlocked country depending on its neighbors, both in the north and the south to access the sea. The road sector in South Sudan is said to be the worst in the world. According to the Africa Infrastructure Country Diagnostic Report for South Sudan (World Bank, 2011), road transport networks are either nonexistent or in extremely poor conditions. Road density in South Sudan is amongst the lowest in Africa whereby connections to its neighbors are limited. Connectivity is mainly via river or air. There are limited roads and the heaviest traffic is normally between Juba and Uganda. This is the only route by road that links South Sudan to the rest of the world. Less than 2 percent of the primary roads are paved and during the rainy season, the unpaved roads become impassable (World Bank 2011). The distant port at Mombasa, Kenya provides connectivity to the sea.

Decades of war left behind weak infrastructure systems and air transportation was not spared. Failure to attain adequate levels of air safety has led to blacklisting of airlines from South Sudan to the EU region. According to the AICD report on South Sudan (Rupa and Cecilia, 2011), South Sudan has virtually no air transport market within its own region. Most flights from its capital Juba are to Kenya or Uganda. Construction materials are expensive since they are obtained from neighboring countries such as Uganda and Kenya. Construction materials in South Sudan are imported and costs are said to be 50% more compared to neighboring countries due to shipping and logistic costs.

The health system in South Sudan is structured in four tiers: Primary Health Care Units (PHCU), Primary Health Care Centers (PHCC) county hospitals, state hospitals and the central ministry of health. According to the International Medical Assistance (IMA World Health) annual report for 2010, decades of civil war has left South Sudan with damaged buildings and hospitals, and no warehouses or refrigeration to store the little medication that exists. In regions characterized by sporadic conflicts, the situation is made worse since militia groups target health facilities and destroy medicine and equipment. The limited health infrastructure makes accessibility a great challenge and creates situations whereby patients walk for days to get to the nearest health facility.

Access is greatly hampered in the rainy seasons due to flooding whereby certain regions are rendered inaccessible for weeks.

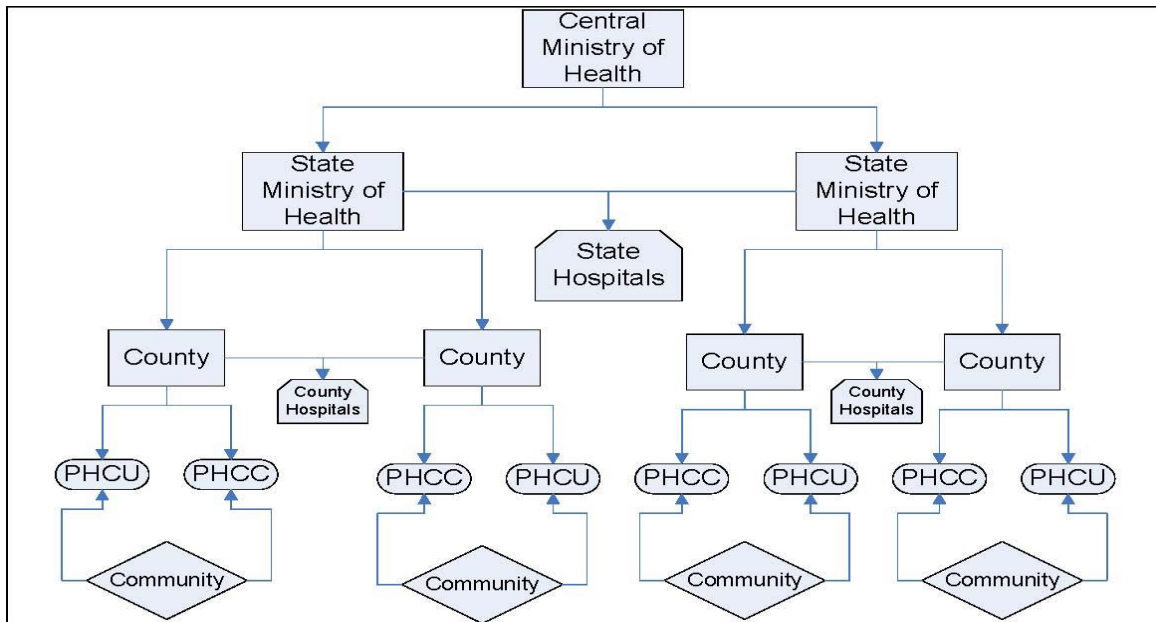


Figure 1: Structure of the South Sudan Health System (Source: HSDP 2012 – 2016)

2.3 Security of the country and implementation of health systems strengthening grants

Lessons from countries that have implemented political reform such as Uganda, Cameroon, Zambia and Ghana highlight the facts that reform are inherently political, and may not be sustained without a strong political will and legal framework (Bossert et al, 2000). Other factors mentioned concern the resource intensiveness of sustaining a reform process, the necessary improvements in managerial systems and capacity, the need for good data as a basis for action, and pacing the reforms within each country's absorptive capacity. Even more important is the preparation to manage and mitigate the inevitable tensions that arise. Managing the reform process and setting out clear policy intentions and objectives are critical in avoiding the processes becoming forums for negotiating

individual interests of stakeholders. Decentralization and other public service reforms, if poorly conceptualized and managed, can have negative results that then may become a constraint to further change (Bossert et al, 2000).

An overwhelming majority voted for the secession of South Sudan from Sudan in January 2011. This was followed by an election on 9 July 2011 whereby South Sudan became the world's youngest nation. Independence came with commitment for support from international donors to the health sector with the aim of moving the country from emergency response towards post conflict health system development. However, the relationship between South Sudan and its neighbor Sudan continued to be fragile. Tensions rose steadily throughout the year 2011 as a result of post secession issues such as oil revenue sharing and ownership of the contested Abyei region. The decision by South Sudan to shut down its oil production, which is its main source of revenue meant that plans for the development of health infrastructure was scaled down.

In South Sudan, there are many people displaced from the turmoil in Abyei (Crisis Group Africa, 2011). They have been uprooted from their homes and are displaced southwards. That movement of people is already instituting a complex emergency situation for the health system to try to absorb. Among the Internally Displaced People (IDP) population, there are many who are considered more vulnerable populations such as children and pregnant women. Additionally, the movement of IDPs into other areas is creating a high burden on the existing health system, which is already suffering from a lack of access and availability for the population. The health system access only extends to 25-30% of the population in South Sudan. The more people are coming to safer areas, the more stressed the health system is becoming. There is need to intervene to address this emergency situation (Crisis Group Africa, 2011).

Government-support systems could be designed to cover the most critical effective-elements of care for those who are unable to pay. These can be provided at a standard price by state or private sector agents to consumers to cover a defined package of services, no matter what the direct costs are. This ensures economic access for all and

distributes costs among users of the services. The service providers contracted by the agent are then paid based on the number of clients they have served according to agreed cost per service and per consumer rather than the actual cost of treatment received. (Kivumbi and Kintu, 2002).

Politics in South Sudan is still dominated by a military culture and it appears that SPLM has a clear monopoly on political power. (ICG, 2011) Ethnic divisions and tribal identities still pose a risk of ethnic politics. The country suffers from inter and intra tribal conflicts throughout the country, most of which are caused by competition for resources such as water and land, particularly during the dry seasons between migrant pastoralists tend to clash with agriculturalists. Some parts of the country, particularly the northern regions such as Upper Nile state and Jonglei state that are prone to sporadic conflicts become difficult regions to transition from humanitarian response status. Due to attacks by militia groups on the PHCU and PHCC, some NGOs who manage these facilities have opted to pull out of such regions due to security reasons. This further cripples the health system, which is already in a state of despair.

2.4 Procurement regulations and implementation of health systems strengthening grants

Procurement and supply chain management involves a myriad of activities which include: acquisition of commodities, storage, quantification and forecasting, distribution and logistics management. A critical aspect of strengthening health systems lies with improved governance, based on principles of decentralization; inclusive representation; defined constituency and mandate; and democratic mechanisms of selection and accountability. Creating new efficiencies can result from new organizational structures and processes (Bossert et al, 2000). Mikaya et al. (2003) demonstrated that democratically elected governing structures markedly improved the quality and sustainability of health and development initiatives. This is particularly so when they have full control of the income generated by themselves.

The empowerment elements include internal resources, enhanced ability through training, authority to participate in decision making and responsibility for action, enhancing capacity for partnership engagement. The governing structures that are built on existing family networks, administrative, or faith based structures and improve performance continuously through a regular process while informed by timely information for decision-making and accountability. The information sources, indicators, collection, and processing mechanisms are based on the people's priorities for improvement (Mikaya et al, 2003).

Access to essential medicines and supplies is fundamental to the good performance of the health care delivery system. Availability of medicines is commonly cited as the most important element of quality by health care consumers, and the absence of medicines is a key factor in the underuse of government health services. WHO estimates that one-third of the world's population lacks access to essential medicines. Problems in access are often related to inefficiencies in the pharmaceutical supply management system, such as inappropriate selection, poor distribution, deterioration, expiry, and irrational use (WHO, 2007). Where medicines are available, price may be a barrier for the poor. Pharmaceutical subsidies, fee waivers, and availability of affordable generic medicines are some of the pharmaceutical financing approaches that can mitigate barriers to access. Weak regulation of the pharmaceutical market is associated with poor quality control, presence of fake and substandard medicines on the market, growing drug resistance problems due to irrational use, dispensing by unqualified practitioners, and self-medication in lieu of seeking qualified health care (USAID, 2010)

Improved pharmaceutical supply management is an element of many health sector reform efforts. Promising improvements in pharmaceutical supply systems have been made in some countries; however, many continue to struggle with a mix of inefficient public sector and private supply systems. Decentralization of health sectors has in some cases intensified the problem, establishing logistics systems in the absence of trained human resources, infrastructure, and management systems at the decentralized levels.

Where more efficient systems have been established, countrywide access may still remain weak. (USAID, 2010)

New technologies have emerged and have been adopted globally to address procurement issues (Baggot, 2000). Borrowing from various disciplines beyond epidemiology and biostatistics has led to an expansion in the scope of public health; embracing all issues that affect social determinants of health status. This implies an increasing range of stakeholders and service providers, setting the stage for a renewed public health revolution. The renewed public health system must promote justice in health and development, addressing the marginalizing factors such as gender, ethnicity, and economic differentials that deny the majority in Africa the enjoyment of their basic rights.

According to an assessment carried out by USAID in October 2011, procurement and supply chain management systems in South Sudan are generally weak. They are characterized by insufficient and poorly trained personnel, inadequate storage space at all levels of the country, uncomputerized inventory systems, poor forecasting and procurement systems and lack of efficient information systems that support logistics operations (USAID, 2011). Moreover, distribution and transportation systems are considered a “nightmare” in South Sudan due to appalling road conditions, particularly during the rainy season.

2.5 Health personnel and implementation of health systems strengthening grants

WHO notes that human resources are the most important part of a functional health system (WHO, 2000). Recently, attention has focused on the fact that progress toward health-related Millennium Development Goals (MDGs) is seriously impeded by a lack of human resources in health, with serious implications for child survival and health goals.

Evidence shows that, for government health workers, effective public management can contribute to improved performance of workers. New public sector management philosophy calls for responsibilities to be delegated to local areas with responsibility for specific tasks and decision making at the local level, a focus on performance (outputs and outcomes), a client orientation, and rewards or incentives for good performance (World Bank, 2004).

As illustrated in Figure 2.4.4 below, the appropriate training, distribution, and support of health care workers has multiple management, technical, and resource dimensions. A key human resources challenge concerns compensation for health workers. Government or local remuneration norms are often too low to motivate workers, and policy to guide international agencies to apply standardized rates is often lacking.

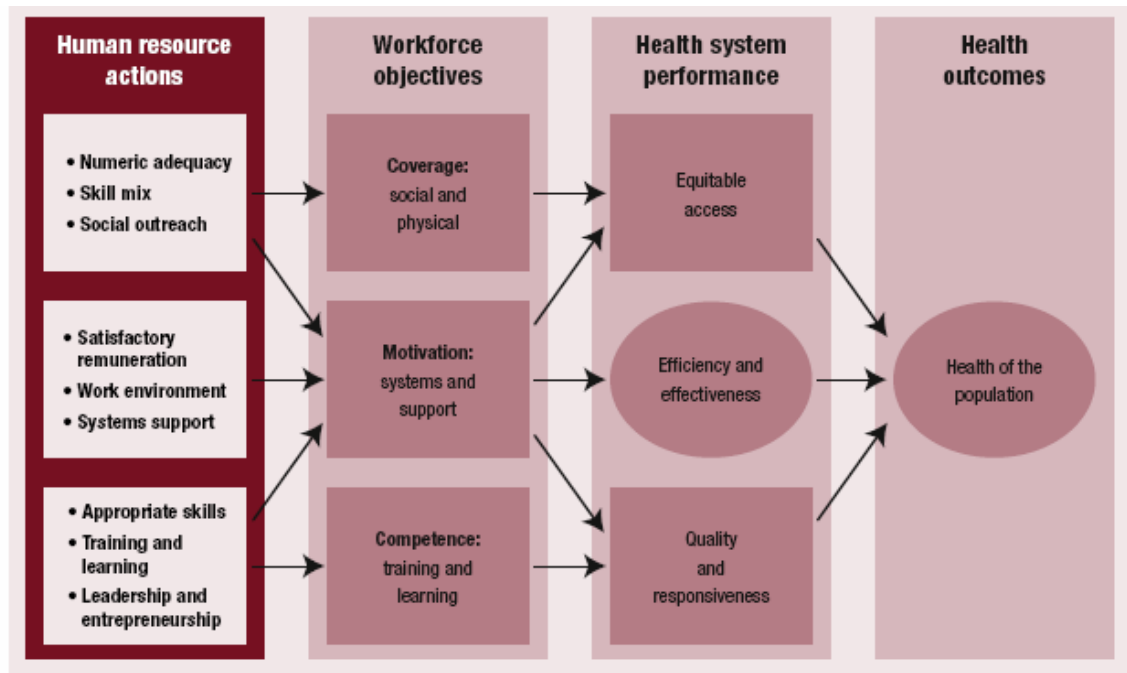


Figure 2: Human Resource Issues and their impact on the health system (Source: Joint Learning Initiative (2004, p. 5).

Key human resources issues and their impact on the health system (Joint Learning Initiative, 2004) include the following:

Low, and possibly declining, levels of medical human resources; In many developing countries, medical education programs are not producing enough doctors and other health workers. This deficit is compounded by the outflow of trained staff from the public sector to the private sector and from developing countries to industrialized countries and, particularly in Africa, by the loss of health workers to HIV/AIDS.

Geographic imbalances; Urban areas have higher concentrations of trained health care personnel than rural areas; incentives to work in remote areas are lacking.

Imbalance of skills' mix and poor skills; Unskilled staff provide services for which they are unprepared. Training is often poor, and little or no training to update skills is available. As a result, mistreatment and misdiagnosis can be commonplace.

High degree of absenteeism; Related to inadequate compensation and supervision, civil service laws or cultural obstacles preclude terminating staff who do not perform well.

Appropriate solutions to these issues are affected by a wide range of related problems, including the lack of public funds for health programs, inadequate training facilities, and competing regional efforts for health workers.

A rapid review of the economic changes that happened in East Asia (Bloom et al., 2004) suggests that improvement resulted from the growth of physical, human, and social capital. The model must promote investment in human capital to expand people's capabilities and access to opportunities in the social, economic, and political arenas (Kenya Human Development Report, 2001) leading to improved quality of life by achieving the essential elements of dignified living (Kaseje & Oyaya, 2002). It must

promote investment in social capital to ensure complete well-being, as well as a sense of identity and belonging, giving people the ability to live and to be what they wish to be (UNDP, 2004).

South Sudan already faces challenges of infrastructure, especially in terms of human resources. According to the HSDP (2012-2016), South Sudan has a critical shortage of all professional health cadres. Only about 10% of the civil service posts are filled with qualified health workers. There are very few doctors, nurses, and midwives in the country—some hospitals are not even staffed with a doctor—and the need for more services, especially in light of the returnee population, is huge. Consequently, health services are provided by less skilled health workers.

South Sudan has seen an influx of returnees from the north and neighboring countries in anticipation of independence. The country was divided into two countries, so there has been a large influx of returnees coming back to their homelands. When people return they are included into their communities, but it puts a large burden onto the existing health services. The population returning from the north and other countries are coming back with skills, so there is a hope that as people return, these skills will be used in improving service delivery. One challenge the system is facing is that most medical professionals want to work in urban areas like Juba, Wau, or Malakal, but most of South Sudan is rural. This means that access to formal health facilities is very low.

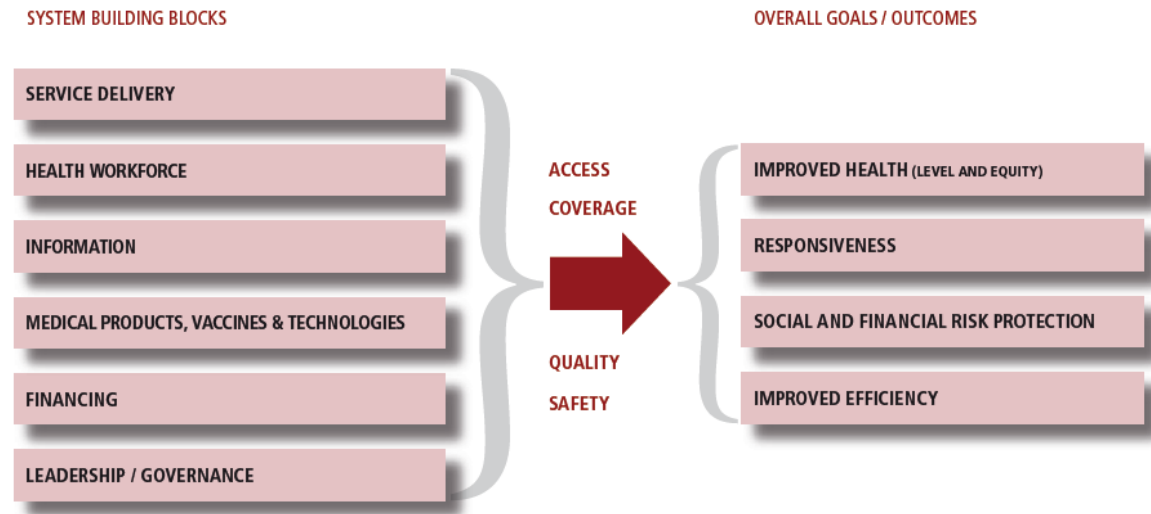
Health professionals also need re-orienting by an experienced facilitator for them to work with communities and clients as partners. This approach requires relational, leadership, and communication skills that they may not currently have. Regularized dialogue, as well as forums for recognition and celebration are necessary to keep partners enthusiastic (Kawachi, 2001). There is a huge need to increase the capacity and delivery of community based health care. The Basic Package for Health Services, outlined by the Government of Southern Sudan, stresses the importance of training Home Health Promoters (called Community Health Workers or Community Case Managers in other countries) to undertake community based interventions like health promotion, family planning counseling, as well as community case management of common childhood

illnesses like malaria, pneumonia, and diarrhea. This will reduce the burden of disease of children under five years old and ultimately reduce the mortality of children under five.

2.6 Health Systems Strengthening

Health system strengthening (HSS) is defined as any array of initiatives and strategies that improves one or more of the functions of the health system and that leads to better health through improvements in access, coverage, quality, or efficiency (Health Systems Action Network, 2006).

Emerging research evidence demonstrates that health is a key component to good development policy (Saunders, 2004). The presence of poor health conditions in a country slows economic growth directly as societies lose potential workers and consumers to disease and disability. Attention to reducing child mortality and morbidity results in healthier children who can attend school and eventually contribute to economic growth when they become wage-earners. When child survival is the norm, parents tend to have fewer children and are able to invest more in their children's education and health. Priorities in health policy also need to be elaborated at the national and local levels through health goals that address improving the health of the poor and reducing the gap between the poor and non-poor for an impact on child survival (Gwatkin, 2000). Although the establishment of policy lays an essential foundation for a government's intention, its value depends on the evidence and effects of policy implementation. The WHO report: *Everybody's business* (WHO, 2007) identifies six building blocks of a health system: Service delivery, health workforce, information, medical products, vaccines and technologies, financing and leadership or governance.



THE SIX BUILDING BLOCKS OF A HEALTH SYSTEM: AIMS AND DESIRABLE ATTRIBUTES

Figure 3: The Six Building Blocks of a Health System (Source: WHO: Everybody's business 2007)

Good health systems are those which deliver effective, safe, quality personal and non-personal health interventions to those who need them, when and where needed, with minimum waste of resources.

A well-performing health workforce is one which works in ways that are responsive, fair and efficient to achieve the best health outcomes possible, given available resources and circumstances. i.e. there are sufficient numbers and mix of staff, fairly distributed; they are competent, responsive and productive. Human and physical resources in health systems involve the recruitment, training, deployment, and retention of qualified human resources; the procurement, allocation, and distribution of essential medicines and supplies; and investment in physical health infrastructure (e.g., facilities, equipment). WHO notes that human resources are the most important part of a functional health system (WHO, 2000). Recently, attention has focused on the fact that progress toward health-related Millennium Development Goals (MDGs) is seriously impeded by a lack of human resources in health, with serious implications for child survival and health goals. Evidence shows that effective public management can contribute to improved

performance of workers. New public sector management philosophy calls for responsibilities to be delegated to local areas with responsibility for specific tasks and decision making at the local level, a focus on performance (outputs and outcomes), a client orientation, and rewards or incentives for good performance (World Bank, 2004).

A well-functioning health information system is one that ensures the production, analysis, dissemination and use of reliable and timely information on health determinants, health systems performance and health status. In addition, well-functioning health system ensure equitable access to essential medical products, vaccines and technologies of assured quality, safety, efficacy and cost-effectiveness, and their scientifically sound and cost-effective use.

Health financing is a key determinant of health system performance in terms of equity, efficiency, and quality. A good health financing system raises adequate funds for health, in ways that ensure people can use needed services, and are protected from financial catastrophe or impoverishment associated with having to pay for them. Health financing encompasses resource mobilization, allocation, and distribution at all levels (national to local), including how providers are paid. Health financing refers to the methods used to mobilize the resources that support basic public health programs, provide access to basic health services, and configure health service delivery systems. The health financing system consists of the payers, providers, and consumers of health services and the policies and regulations that govern their behavior (Schieber and Akiko, 1997).

Health systems in developing countries are financed through a mix of public, private, and donor sources. The mix of sources varies widely. Public sources are governments that raise funds through taxes, fees, donor grants, and loans (Schieber and Akiko, 1997). Typically the Ministry of Finance allocates general tax revenue to finance the Ministry of Health budget. Most government health budgets are historical; that is, they are based on budgets from previous years that are adjusted annually to account for inflation or at the same rate as most other government spending. These budgets usually

have separate line items for personnel, hospitals, pharmaceuticals, supplies, fuel, and training, and they finance only recurrent costs. Capital investments are often found in a separate budget that may be paid for through donor grants or loans (WHO, 2000).

Private sources include households and employers who pay fees directly to providers in both public and private sectors, pay insurance premiums (including payroll taxes for social health insurance), and pay into medical savings accounts and to charitable organizations that provide health services. Household out-of-pocket payments form a large source of health financing in many developing countries (Zellner, et al., 2005). The private sector is an important source of health financing in most developing countries. Private expenditure is primarily in the form of out-of-pocket expenditures by households (WHO, 2006).

Out-of-pocket payment in the public sector is a common means of public financing for health (Schieber and Akiko 1997). A user fee is a type of cost sharing for public programs. In addition to resource mobilization, user fees can prevent excessive use of services. In Zambia, the government shares the cost of health services with the population through user fees, and the funds retained are usually used at the local level to supplement staff salaries or purchase supplies. To promote equity, countries implementing user fees usually have an exemption policy for certain groups of individuals or circumstances. Exemptions usually target specific services and populations, such as immunizations or children under five (Zellner, et al., 2005).

Donors finance health systems through grants, loans, and in-kind contributions. PVOs often are financed by donors and voluntary contributions. The sector-wide approach (SWAp) is a financing framework through which government and donors support a common policy and expenditure program under government leadership for the entire sector. A SWAp implies adopting common approaches across the sector and progressing toward reliance on government procedures and systems to disburse and account for all funds. Many countries with SWAp mechanisms have a diversified funding mix, including grant-funded projects. Under the SWAp, basket funding—a common

funding pool to which SWAp partners contribute—enables flexibility in allocating funds according to government priorities and programs. Another means by which donors can commit funds to government health programs is through budget support. These grants or loan contributions to the general treasury can have particular earmarks for sectors, such as health and education, and can be used for purposes identified by the relevant ministries.

The leadership or governance function reflects the fact that people entrust both their lives and resources to the health system. The government in particular is called upon to play the role of a steward, because it spends revenues that people pay through taxes and social insurance, and because governments makes many of the regulations that govern the operation of health services (WHO, 2000).The government exercises its stewardship function by developing, implementing, and enforcing policies that affect the other health system functions. WHO has recommended that one of the primary roles of a Ministry of Health is to develop health sector policy, with the aims of improving health system performance and promoting the health of the people (WHO, 2000).

2.7 Theoretical Framework

Systems Theory

A system may be defined as a set of social, biological, technological or material partners co-operating on a common purpose. System theory is a philosophical doctrine of describing systems as abstract organizations independent of substance, type, time and space. Systems theories are connected to both ontological and epistemological views. The ontological view imply that the world consist of “systems” or “integrative levels”. The epistemological view implies a holistic perspective emphasizing the interplay between the systems and their elements in determining their respective functions (Churchman, 1968) General Systems Theory is particularly an approach in philosophy of science, aiming at understanding and investigating the world as sets of systems. Systems approach is the name of a methodology or procedure in which problems are solved from a holistic perspective, not as bundles of small isolated problems. (Bertalanffy, 1968).

Systems' thinking has its origins in the early 20th century in fields as diverse as engineering, economics and ecology. With the increasing emergence of complexity, these and other non-health disciplines developed systems thinking to understand and appreciate the relationships within any given system, and in designing and evaluating system-level interventions. More recently, the suggestion of applying systems thinking into health systems has emerged, assisted in some ways by the WHO's 2007 articulation of the health system building blocks (discussed later in this chapter). Although that framework may be challenged as tilted towards supply-side inputs, it does provide a valuable device for conceptualizing the health system and appreciating the utility of systems thinking. (WHO - AHPSR, 2009).

Systems' thinking is an approach to problem solving that views "problems" as part of a wider, dynamic system. Systems' thinking involves much more than a reaction to present outcomes or events. It demands a deeper understanding of the linkages, relationships, interactions and behaviors among the elements that characterize the entire system. System-level interventions" target one or multiple system building blocks directly or generically (e.g. human resources for health), rather than a health problem specifically (Sterman, 2006).

To begin with, most systems, including health systems are said to be self-organizing. System dynamics arise spontaneously from internal structure. No individual agent or element determines the nature of the system. The organization of a system arises through the dynamic interaction among the system's agents, and through the system's interaction with other systems. The building block framework shows how the nature, dynamics and behavior of health systems is shaped by the multiple and complex interactions among the blocks and not by the behavior of any one block alone. For example, weak stewardship structures (the leadership and governance building block) often disregard or ignore valuable communication and feedback (the health information building block), leading to policies and practices that do not adequately respond to the latest information or evidence. The internal structure and organization marked in this case by a weak or malfunctioning link between the governance and information blocks

influences to a great degree the functions and abilities of the system itself (Sterman, 2006)

Constant change is another characteristic of systems. Systems adjust and readjust at many interactive time scales. Change is a constant in all sustainable systems. Indeed, systems that do not change ultimately collapse since they are part of wider systems that do. As systems are adaptive rather than static, they have the ability to generate their own behavior; to react differently to the same inputs in unpredictable ways; and to evolve in varying ways through interconnections with other parts of the system (which in turn are constantly changing). This element of change and adaptation poses particular and often hidden challenges in evaluating or understanding discrete health systems interventions (WHO - AHPSR, 2009).

In most instances, systems are governed by feedback. A positive or negative response may alter the intervention or expected effects. Systems are controlled by “feedback loops” that provide information flows on the state of the system, moderating behavior as elements react and “back-react” on each other (Meadows, 2008). Systems are also said to be tightly linked. The high degree of connectivity means that change in one sub- system affects the others. Related to the characteristic of change and adaptation is the notion that any intervention targeting one building block will have certain effects (positive and negative) on other building blocks. Anticipating these positive and negative effects within a context of inter- connection is key to designing and evaluating an intervention over time. Without a systematic framework to consider possible major synergies (or negative emergent behavior), the less obvious effect of an intervention may be missed (Meadows, 2008)

Relationships within a system cannot be arranged along a simple input-output line. System-level interventions are typically nonlinear and unpredictable, with their effects often disproportional or distantly related to the original actions and intentions. For instance, interventions to increase quality of care are likely to succeed initially, but as skills reach a certain level or caseloads increase beyond what health workers will accept,

the quality-enhancing effects of the intervention may flatten or actually decrease over time (Sterman, 2006)

Systems are historically dependent. This means that short-term effects of intervening may differ from long-term effects. Time delays are under-appreciated forces affecting systems. Interventions designed to change people's behavior require measuring the intervention effects over a longer period of time to avoid making incorrect conclusions of no or limited effects (Sterman, 2006). Systems can also be termed as counter-intuitive. Some apparently simple and effective interventions may not work in some settings. For example, providing a conditional cash transfer to communities to encourage them to seek care may only work effectively in settings where transport and access to those services is affordable, but not elsewhere (WHO - AHPSR, 2009). Last but not least, systems are resistant to change. Seemingly obvious solutions may fail or worsen the situation. Given the above characteristics of systems, and the complexity of their many interactions, it is sometimes difficult and delicate to develop a priori an effective policy without a highly astute understanding of the system. System characteristics can render the system “policy resistant,” particularly when all of the actors within a system have their own, and often competing, goals (WHO - AHPSR, 2009).

2.8 Conceptual framework

This section presents the conceptual framework of the study arising from the literature review and the research objectives.

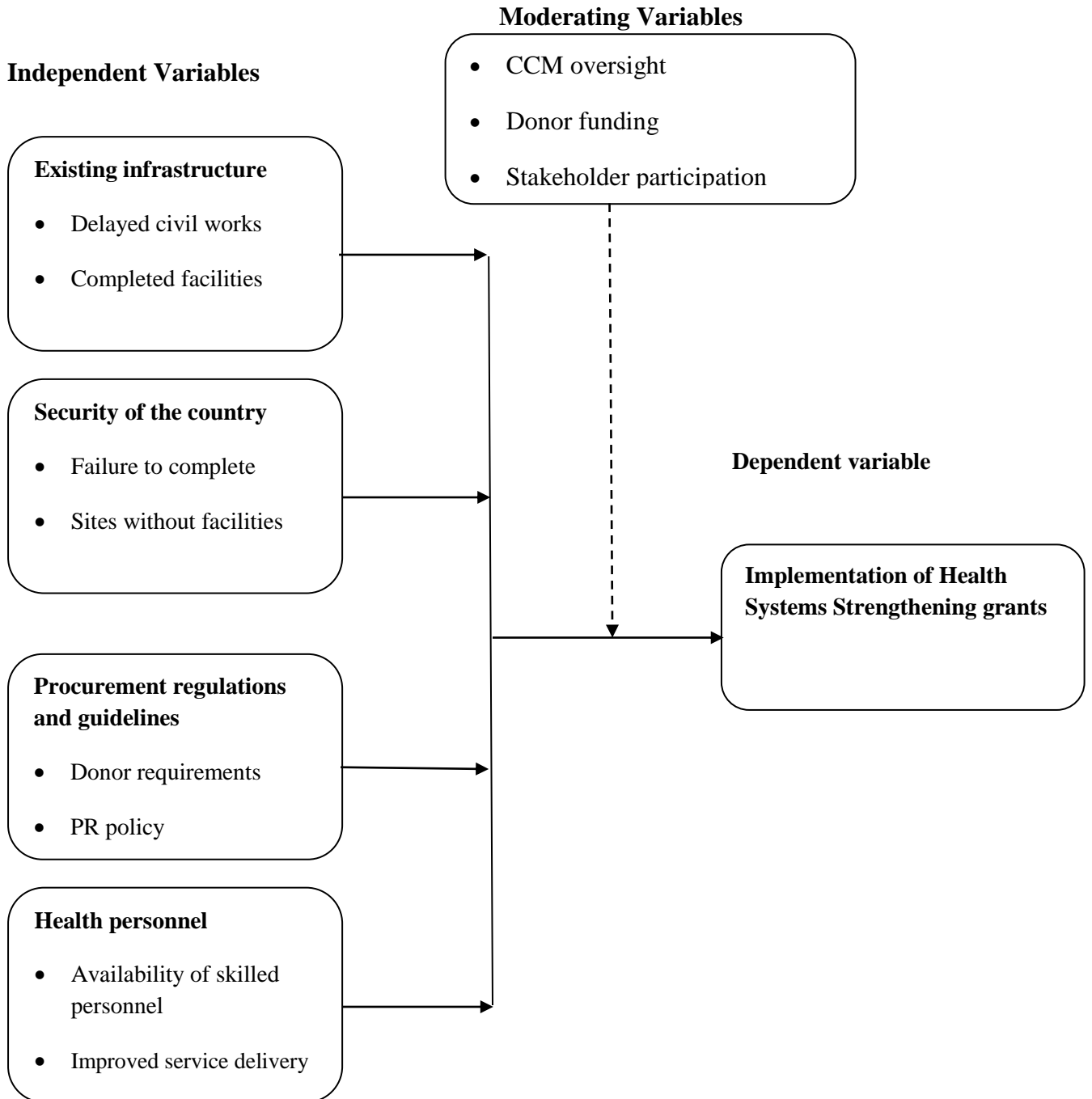


Figure 4: Conceptual framework.

2.9 Research gap

Most of the literature reviewed talk about the factors that affect implementation of all projects in South Sudan. However, the studies don't look at how these factors affect health systems strengthening grants in particular. Thus there is a research gap on factors affecting implementation of health systems strengthening grants in South Sudan, which is what this study seeks to establish.

2.10 Summary of literature review

The literature review indicates that health systems strengthening is a key aspect in the improvement of health for any country. WHO has demystified health systems strengthening by providing a framework containing the six building blocks of a health system. Good health systems are those which deliver effective, safe, quality personal and non personal health interventions to those who need them, when and where needed, with minimum waste of resources. This backdrop of how a good health system operates is vital in understanding the state of the health system in South Sudan. One of the key theories reviewed in this chapter is systems' thinking theory, which describes the characteristics of systems. These characteristics provide clarity and an understanding of the complex nature of systems and shed some light on why more often than not, initiatives undertaken in a system may not always be smooth sailing.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the research design, sampling techniques, data collection as well as data analysis techniques which were used in the study.

3.2 Research Design

This study employed a survey research design. A survey is suitable when a researcher wants to just describe events or opinions without manipulating variables (Cohen, 1988). The variables under investigation in this study are variables that the researcher does not have the capacity to change or alter at will: health infrastructure and facilities, security, procurement regulations and guidelines and health personnel are broad factors that the researcher cannot manipulate. It is therefore necessary to describe them as they are. It is this intention to describe “events as they are” that made the survey the ideal design for this study. Mugenda and Mugenda (2003) notes that a survey research attempts to collect data from members of a population by asking individuals about their perceptions, attitudes, behaviors or values in order to describe an existing phenomenon.

3.3 Target Population

A population is defined as a complete set of individuals, cases or objects with some common observable characteristics (Mugenda & Mugenda, 2003). The target population for this study was the Round 9 Technical Working Group (TWG) under the Ministry of Health, and staff working under this grant in UNDP and CHAS. All the staff targeted for the study are located in the capital Juba, South Sudan at their head offices. There are a total of 49 individuals working under the Round 9 grant in the three organizations as follows:

Table 3.1: Population of the Study

Organization	Population
Ministry of Health (R9 TWG)	13
UNDP	21

CHAS	15
Total	49

Source: UNDP human resource records, 30, June 2013.

3.4 Sample size and sampling procedure

3.4.1 Sample size

Out of the target population of 49 employees, the researcher considered 41 staff, who included: programmatic staff (18), construction engineers (8), HSS technical experts (13) and 2 procurement specialists. The researcher did not consider the remaining 9 staff, who included; 5 staff who were used in the pilot to test the reliability of the research instrument under UNDP and 4 volunteers working under CHAS.

3.4.2 Sampling procedure

Sampling is the process of selecting a number of individuals for a study in such a way that the individuals selected represent the large group from which they were selected (Mugenda and Mugenda, 2003). They further note that the purpose of sampling is to secure a representative group, which enables the researcher to gain information about an entire population when faced with limitations of time, funds and energy.

Purposive sampling was used in this study. According to Mugenda and Mugenda (2003), purposive sampling is a sampling technique that allows a researcher to use cases that have the required information with respect to the objectives of his or her study.

3.5 Research Instrument

Questionnaires were used to collect both qualitative and quantitative data. A questionnaire is a carefully designed instrument consisting of a set of items to which the respondents are expected to react, usually in writing. The questionnaire was used because of the simplicity in their administration, scoring of items and analysis of data (Mugenda and Mugenda, 2003). The study used self-constructed semi-structured questionnaires, with a mixture of focused and free-response items in a single instrument This enables the

study to collect quantitative data from the closed-ended sections, and qualitative data from the open-ended sections. (Kothari, 1990). This balance was necessary for a detailed explanation of factors affecting the implementation of the Round 9 grant in South Sudan.

3.6 Validity of the Instruments

Validity can be defined as the degree of accuracy with which results obtained from analyzed data represents the reality of the phenomenon under study. In other words, the instrument measures what it is supposed to measure (Mugenda and Mugenda, 2003). The researcher went through the questionnaire with these 4 staff to ascertain that each of the items was framed in the least ambiguous way. Further, the questions were shared with the university supervisor for review and comments, and appropriate adjustments and revisions were made before administering the questionnaires to the target respondents.

3.7 Reliability of the Instruments

Reliability refers to a measure of the degree to which a research instrument yields consistent results after repeated trials (Mugenda and Mugenda, 2003). For this study, a pilot study was carried out on 4 respondents as indicated above. This group of respondents was not included in final data collection of the main study. The researcher administered the instrument personally to the respondents. The results of the pretest survey helped in restructuring of the questionnaire by incorporating the missing information, omitting irrelevant questions and paraphrasing questions that appeared ambiguous to the respondents.

3.8 Data collection procedures

The questionnaires were delivered to the three organizations, starting with MoH, CHAS and finally UNDP. A total of 11 days were spent in administering the questionnaires: six days with the TWG at the MoH, three days at UNDP and two days at CHAS. The employees were issued with the questionnaires in the morning and the researcher would return at the end of each day to collect those that had been completed. The researcher also spent some time with the project managers when collecting the

questionnaires and carried out informal interviews and obtained additional information on the topic under study.

3.9 Data Analysis Techniques

This included analysis of data to summarize the essential features so as to establish the outcomes. Before processing the responses, the completed questionnaires were edited for completeness and consistency. A content analysis and descriptive analysis was employed. The content analysis was used to analyze the respondents' views about factors affecting the implementation of the Round 9 grant in South Sudan. The quantitative data was coded to enable the responses to be grouped into various categories. Data was grouped into frequency distribution tables to indicate variable values and number of occurrences in terms of frequency. The organised data was interpreted on account of concurrence and standard deviation to objectives using assistance of computer packages especially SPSS (Statistical Package for Social Scientists) and Microsoft Excel to communicate research findings. Tables were used to present the data collected for ease of understanding and analysis.

3.10 Ethical Issues in Research

Before administering the questionnaires, the management of these organizations were approached and informed about the nature of the study, through a formal letter, to request for permission to carry out data collection in their organization, stating the objectives of the study. The study adhered to the principles of research by ensuring that the findings obtained are purely for academic purposes only. The information gathered was also treated confidentially and complete anonymity was observed when gathering data.

3.11 Operational Definition of Variables

Table 3.2: Operational Definition of Variables

Objective	Variable	Indicators	Measure	Data collection tool	Type of Analysis
To establish how health infrastructure and facilities affect the implementation of the Round 9 grant in South Sudan	Independent variable Existing infrastructure	<ul style="list-style-type: none"> • Delayed civil works • Completed health facilities 	<ul style="list-style-type: none"> • Number of civil work delays attributed to status of roads • Status of completed health facilities 	Questionnaire	Descriptive statistics
To evaluate how security affects the implementation of the Round 9 grant in South Sudan	Independent variable Security	<ul style="list-style-type: none"> • Failure to complete facilities • Selected sites without facilities 	<ul style="list-style-type: none"> • Number of incomplete facilities • Number of sites without facilities 	Questionnaire	Descriptive statistics
To find out how procurement regulations and guidelines affects the implementation of Round 9 grant in South Sudan	Independent variable Procurement regulations and guidelines	<ul style="list-style-type: none"> • Donor procurement requirements • PR procurement policy 	<ul style="list-style-type: none"> • Procurement duration • Distribution duration 	Questionnaire	Descriptive statistics
To evaluate how health personnel affect the implementation of Round 9	Independent variable Health personnel	<ul style="list-style-type: none"> • Availability of skilled health personnel • Improved service delivery 	<ul style="list-style-type: none"> • Number of local skilled health personnel recruited 	Questionnaire	Descriptive statistics

grant in South Sudan			<ul style="list-style-type: none"> No of trainings carried out for health personnel annually 		
Implementation of health systems strengthening grants in South Sudan	<p>Dependent variable</p> <p>Implementation of health systems strengthening grants</p>	<ul style="list-style-type: none"> Increased number and access to health facilities Improved health outcomes Strengthened capacity of health workforce 	<ul style="list-style-type: none"> Number of facilities constructed that are functional Improved access and quality of service delivery Improved performance in health indicators 	Questionnaire	Descriptive statistics

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter discusses the interpretation and presentation of the findings obtained from the field. The chapter presents the response rate, background information of the respondents and findings of the analysis based on the objectives of the study. Descriptive statistics was used to discuss the findings of the study.

The purpose of the study was to establish the factors affecting implementation of health systems strengthening grants in South Sudan, particularly the Round 9 grant financed by the Global Fund. The study was guided by the following objectives: existing infrastructure, security of the country, procurement regulations and health personnel.

4.2 Questionnaire response rate

The study targeted a sample size of 41 respondents from which 40 filled in and returned the questionnaires making a response rate of 97.5%. This response rate was satisfactory to make conclusions for the study. The response rate was representative. According to Mugenda and Mugenda (2003), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent. Based on this assertion, the response rate was considered to be excellent.

Table 4.1: Questionnaire response rate

Table 4.1 represents the response rate for the target population.

	Questionnaires Administered	Questionnaires filled & Returned	Percentage
Respondents	41	40	97.5%

4.3 General Information

The study sought to obtain general information from the respondents in terms of their gender, age, level of education and period of study.

Table 4.2: Classification of respondents by gender

Table 4.2 represents the classification of the respondents by gender

	MoH	UNDP	CHAS	Total Frequency	Percentage
Male	7	11	8	26	65%
Female	6	5	3	14	35%
Total	13	16	11	40	100%

The studies found that 26 staff were male represented by 65%, while 14 staff were female represented by 35%. This is an indication that both genders were involved in the study. This shows gender imbalance as it appears that the project is male dominated.

Table 4.3: Classification of respondents by age

Table 4.3 represents the classification of respondents by age

	MoH	UNDP	CHAS	Total Frequency	Percentage
Below 20 years	0	0	0	0	0%
20-30 years	1	1	4	6	15%
31-40 years	6	9	4	19	47.5%
41-50 years	4	5	3	12	30%
Over 50 years	2	1	0	3	7.5%
Total	13	16	11	40	100%

The study requested the respondent to indicate their age category. Findings revealed that a majority of the respondents were aged between 31 to 40 years, represented by 47.5%. None of the respondents indicated that they were aged below 20 years. This implies that the respondents in the study are of mature age.

Table 4.4: Classification of respondents by highest level of education

Table 4.4 represents the classification of respondents by highest level of education.

	MoH	UNDP	CHAS	Total Frequency	Percentage
Secondary	0	0	0	0	0%
College	0	0	3	3	7.5%
University	4	14	7	28	70%
Post graduate	9	2	1	9	22.5%
Total	13	16	11	40	100%

The study requested the respondent to indicate their highest level of education. Out of a total of 40 respondents, 28 respondents (70%) indicated their highest level of education as university, an indication that most of the respondents focused in this study had university degrees as their highest level of education. None of the respondents indicated having secondary school education as their highest level of education. This implies that majority of the staff implementing the project are knowledgeable degree holders.

Table 4.5: Period of service

Table 4.5 represents the number of years a respondent has served in their respective organization.

	MoH	UNDP	CHAS	Total Frequency	Percentage
Less than 1 year	0	1	2	3	7.5%
1-5 years	9	14	6	29	72.5%
6-10 years	4	1	2	7	17.5%
Over 10 years	0	0	1	1	2.5%
Total	13	16	11	40	100%

The study requested respondents to indicate the number of years they had served in their respective organizations. From the findings, 29 staff (72.5%) have served in their organizations for more than one year. Only 2.5 % of the respondents indicated that they had served for a period exceeding 10 years. This implies that most of the staff working under the project were recruited specifically for this project, since the project has been operating for the last 3 years.

4.4 Existing infrastructure

Table 4.6: Respondents opinion on existing infrastructure

Table 4.6 represents the opinion of the respondents on whether the existing infrastructure affects the implementation of the Round 9 grant.

	Frequency	Percentage
Yes	35	87.5
No	5	12.5

Total	40	100
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The study sought to determine whether the existing infrastructure affects the implementation of Round 9 grant in South Sudan. From the findings, the study established that 87.5 % of the respondents were of the opinion that health infrastructure and facilities affects the implementation of Round 9 grant in South Sudan, whereas 12.5% were of contrary opinion. This implies that existing infrastructure affects the implementation of Round 9 grant in South Sudan.

Table 4.7: Extent to which existing infrastructure affects the implementation of Round 9 grant in South Sudan

Table 4.7 represents the extent to which existing infrastructure affects the implementation of the Round 9 grant.

	Frequency	Percentage
Very great extent	15	37.5
Great extent	19	47.5
Moderate extent	6	15.0
Total	40	100

The study sought to determine the extent to which existing infrastructure affects the implementation of Round 9 grant in South Sudan. From the findings, 85% of the respondents indicated that the existing infrastructure does affect the implementation of Round 9 grant in South Sudan to a great extent.

Table 4.8: Statements relating to existing infrastructure as they affect the implementation of Round 9 grant in South Sudan

Table 4.8 represents the respondents opinions on statements related to existing infrastructure

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Std deviation
The availability of adequate and proper health infrastructure tends to reduce infant and child mortality	10	24	5	0	1	1.38	0.04
There are limited roads in South Sudan making implementation a challenge	5	29	3	2	1	1.95	0.24
Failure to attain adequate levels of air safety has led air transport challenges in South Sudan	14	23	2	1	0	2.13	0.30
Health facilities are easily accessible	1	2	2	23	12	4.08	0.24
Health facilities have adequate and appropriate health equipment and supplies	0	0	0	29	11	4.05	0.25
Currently, the number of health facilities in South Sudan is sufficient	3	0	0	25	12	4.28	0.32
In South Sudan access to health facilities is greatly hampered in the rainy seasons due to flooding	13	25	2	0	0	1.73	0.27

The study sought to establish the level at which respondents agreed to the above statements which relate to existing infrastructure and the implementation of Round 9 grant. From the findings of the study, majority of the respondents agreed that the

availability of adequate and proper health infrastructure tends to reduce infant and child mortality as shown by mean of 1.38. This is consistent with the literature reviewed which attributed to poor health outcomes in South Sudan to lack of adequate and proper health infrastructures and facilities. In South Sudan, access to health facilities is greatly hampered in the rainy seasons due to flooding as shown by mean of 1.73. There are limited roads in South Sudan making implementation a challenge as shown by mean of 1.95. From the literature review, it was evident that flooding during rainy seasons is as a result of the poor status of roads. Most of the roads are unpaved and therefore they become impassable during rainy seasons hampering access to the health facilities. During the rainy season, access to the health facilities constructed under the grant reduces drastically.

Failure to attain adequate levels of air safety has led to air transport challenges in South Sudan as show by mean of 2.13. The study revealed that in some instances, construction of facilities under the grant is delayed as staff are restricted to WFP flights only when undertaking supervisory visits. When these flights are not available or are cancelled for one reason or another, supervision of construction work is delayed. The study also established that majority of the respondents disagreed the statements: health facilities in South Sudan have adequate and appropriate health equipment and supplies as shown by mean of 4.05, health facilities are easily accessible as shown by mean of 4.08, and that currently, the number of health facilities in South Sudan is sufficient as shown by mean of 4.28. These findings are consistent with literature reviewed which showed that existing health facilities are inadequately equipped, are not easily accessible and that there are inadequate health facilities in South Sudan. From the literature reviewed, it was clear that developing countries such as South Sudan rely heavily on donor funding to finance capital expenditure such as the construction of health facilities and the procurement of health equipment.

Informal interviews with the respondents reiterated that the government plays a key role in ensuring the existence of proper and reliable health infrastructure. According to the respondents, proper roads will increase access to remote regions of South Sudan. Construction of additional health facilities is also vital and increases access to health

services. When these are taken into consideration, they will enhance the implementation of the Round 9 grant.

4.5 Security of the country

The study sought to determine whether security of the country affects the implementation of Round 9 grant in South Sudan.

Table 4.9: Security of the country’s effects on the implementation of Round 9 grant in South Sudan

The table represents the respondents’ opinion on whether security affects the implementation of the Round 9 grant

	Frequency	Percentage
Yes	26	65
No	14	35
Total	40	100

From the findings 65% of the respondents indicated that security affects the implementation of Round 9 grant in South Sudan whereas 35% of the respondents were of contrary opinion. This implies that respondents believed that security affects the implementation of Round 9 grant in South Sudan. Informal interviews with the respondents revealed that insecurity in some regions of South Sudan affected the implementation of the Round 9 grant. Moreover, the study also established that majority of the respondents were of the opinion that the government of South Sudan should provide adequate security within the country. This will be extremely helpful in ensuring efficiency in delivery of health services.

Table 4.10: Extent to which security of the country affects the implementation of Round 9 grant in South Sudan

Table 4.10 indicates the opinions of the respondents regarding the extent to which security of the country and how it affects the implementation of the Round 9 grant

	Frequency	Percentage
Very great extent	16	40.0
Great extent	21	52.5
Moderate extent	3	7.5
Total	40	100

The study sought to establish the extent to which security of the country affects the implementation of Round 9 grant in South Sudan. Over 90% of the respondents indicated that security affects the project to a great extent. This implies that indeed security affects the implementation of Round 9 grant in South Sudan to a great extent and is consistent with literature reviewed which indicates that in some regions in South Sudan, implementation of projects is greatly hampered by insecurity.

Table 4.11: Statements relating to security effects on the implementation of Round 9 grant

Table 4.11 represents the respondents opinions of statements related to security of the country and how it affects the implementation of the Round 9 grant

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Std deviation
Insecurity in some regions of the country has slowed down efforts to improve health infrastructure	15	20	2	2	1	1.85	0.22
The country suffers from inter and intra tribal conflicts	12	22	3	2	1	1.95	0.22
Some NGOs who manage health facilities in South Sudan have opted to pull out of some regions due to security reasons	13	25	2	0	0	1.73	0.27
Insecurity normally contributes to delays in the implementation of grants	14	21	3	0	2	1.88	0.23
Conflicts have resulted in the destruction of health facilities in some regions	10	27	2	0	1	1.88	0.28

The study sought to determine the level at which respondents agreed or disagreed with the above statements relating to security of the country and its effects on the implementation of the Round 9 grant. From the findings, the study established that majority of the respondents agreed that; Some NGOs who manage health facilities in South Sudan have opted to pull out of some regions due to security reasons as shown by

mean of 1.73, Insecurity in some regions of the country has slowed down efforts to improve health infrastructure as shown by mean of 1.85, conflicts have resulted in the destruction of health facilities in some regions, insecurity normally contributes to delays in the implementation of grants as shown by a mean of 1.88, and that the country suffers from inter and intra tribal conflicts as shown by mean of 1.95. From the findings, it is evident that majority of the respondents agree with the statement that security status affect the implementation of projects and is consistent with literature reviewed whereby security status in South Sudan is vital in project implementation. When insecurity abounds, program implementation suffers greatly either due to delays.

4.6 Procurement regulations

The study sought to determine the extent to which procurement regulations affect the implementation of Round 9 grant.

Table 4.12 : Procurement regulations

The table represents the respondents' views on whether procurement regulations affect the implementation of the Round 9 grant.

	Frequency	Percentage
Yes	26	65
No	14	35
Total	40	100

The findings of the study revealed that 65% of the respondents agreed to the statement whereas 35% of the respondents were of contrary opinion. This implies that the existing procurement regulations indeed affect the implementation of Round 9 grant.

Table 4.13: Extent to which procurement regulations affect the implementation of Round 9 grant

Table 4.13 represents the extent to which procurement regulations affect the implementation of the Round 9 grant.

	Frequency	Percentage
Very great extent	14	35.0
Great extent	23	57.5
Moderate extent	3	7.5
Total	40	100

The study sought to establish the extent to which procurement regulations affects the implementation of Round 9 grant. From the findings 57.5 % of the respondents indicated to a great extent, 35% of the respondents indicated to a very great extent whereas 7.5 % of the respondents indicated to a moderate extent. This implies that procurement regulations and guidelines affect the implementation of Round 9 grant to a great extent.

Table 4.14: Statements relating to procurement regulations implementation of Round 9 grant

Table 4.14 represents the respondents' opinions regarding statements related to procurement regulations and implementation of the Round 9 grant

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Std deviation
Donor regulations on procurement contributes to delays in implementation of the grant	10	24	2	2	2	2.05	0.24
The country has adequate and skilled procurement and supply chain management personnel	1	0	2	25	12	4.18	0.27
Most of the procurement processes are still paper based and done manually	8	26	2	3	1	2.08	0.26
The country does not have adequate storage capacity for drugs procured	15	20	3	2	0	1.80	0.22
Distribution and transportation is always hampered by bad weather conditions	13	25	1	0	1	1.78	0.27

The study sought to determine the level at which respondents agreed or disagreed with the above statements relating to procurement regulations and the implementation of Round 9 grant. From the findings, the study established that majority of the respondents agreed that; Distribution and transportation is always hampered by bad weather conditions as shown by mean of 1.78, the country does not have adequate storage capacity for drugs procured as shown by mean of 1.80, donor regulations on procurement contributes to delays in implementation of the grant as shown by mean of

2.05 as that most of the procurement processes are still paper based and done manually as shown by mean of 2.08.

The study also established respondents disagreed that the country has adequate and skilled procurement and supply chain management personnel as shown by mean of 4.18. All the cases were supported by low mean which implies that majority of the respondents were of similar opinion. The study established that majority of the respondents were of the opinion that there is great need for the government to adopt (e-procurement method) the modern procurement techniques which are faster and more reliable compared to current paper based method being used. These findings are consistent with the literature reviewed which indicate that South Sudan has inadequate skilled procurement and supply chain management personnel. Based on literature reviewed, most of the procurement and supply chain management is paper based and is done manually.

4.7 Health personnel

The study sought to determine whether health personnel affect the implementation of Round 9 grant.

Table 4.15: Health personnel affect the implementation of Round 9 grant

Table 4.15 represents the respondents' opinions on whether health personnel affect the implementation of the Round 9 grant.

	Frequency	Percentage
Yes	27	67.5
No	13	32.5
Total	40	100

From the findings, the study established that 67.5% of the respondents agreed to the statement whereas 32.5% of the respondents were of contrary opinion. This implies that health personnel affect the implementation of Round 9 grant.

Table 4.16: Extent to which health personnel affects the implementation of Round 9 HSS grant

Table 4.16 represents the extent to which health personnel affects the implementation of the Round 9 grant

	Frequency	Percentage
Very great extent	12	30.0
Great extent	24	60.0
Moderate extent	4	10.0
Total	40	100

The study sought to establish the extent to which health personnel affects the implementation of Round 9 grant. From the findings, 90% of the respondents indicated that health personnel affect the implementation of the Round 9 grant to a great extent. This implies that indeed health personnel affect the implementation of Round 9 grant to a great extent.

Table 4.17: Statements relating to health personnel and the implementation of Round 9 grant

The table represents the views and opinions of respondents regarding statements related to health personnel and the implementation of the Round 9 grant

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	Std deviation
South Sudan has a critical shortage of health professionals at all health cadres	11	27	2	0	0	1.78	0.29
In South Sudan the health services are provided by skilled health workers.	1	0	2	25	12	4.18	0.27
Health workers are distributed equitably within the country	1	0	1	28	10	4.15	0.30
Health professionals need re-orienting and continuous training to build their capacity	10	23	5	2	0	1.98	0.23
There is decreased need to hire international health professionals	1	0	1	15	26	4.85	0.29

The study sought to determine the level at which respondents agree with the above statements which relate to health personnel. From the findings the study established that majority of the respondents agree that; South Sudan has a critical shortage of health professionals at all health cadres as shown by a mean of 1.78, health professionals need re-orienting and continuous training to build their capacity as shown by mean of 1.98 .The study also established that respondents strongly disagreed that there is decreased need to hire international health professionals as shown by mean of 4.85, others disagreed that in South Sudan, the health services are provided by skilled

health workers as shown by mean of 4.18, and that health workers are distributed equitably within the country as shown by mean of 4.15.

The findings above are consistent with the literature reviewed, which depicted critical shortage of skilled health personnel in South Sudan. In addition, based on literature reviewed, health personnel are not equitably distributed in South Sudan. There is need for increased training so as to increase the skill set and numbers of health personnel. From informal interviews with the respondents, the researcher was able to obtain the opinion of respondents as far as health personnel are concerned. The respondents were of the opinion that the government of South Sudan in collaboration with N.G.Os should consider employing qualified health care providers from other countries like Kenya or Uganda to fill the big deficit currently being experienced.

CHAPTER FIVE

SUMMARY OF FINDINGS CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter contains the summary of the findings, discussion, conclusion, recommendations, and suggestions for further studies. At the end of the chapter, some useful recommendations are proposed by the researcher to the implementing organizations under study in order to solve the problem under study, based on the research findings.

The purpose of the study was to establish the factors affecting implementation of health systems strengthening grants in South Sudan, particularly the Round 9 grant financed by the Global Fund. The study was guided by the following objectives: existing infrastructure, security of the country, procurement regulations and health personnel.

5.2 Summary of the findings

This section highlights the findings of the study.

5.2.1 Existing infrastructure

From the analysis, the study established that the existing infrastructure affects the implementation of Round 9 grant in South Sudan to a great extent. The study also established that the availability of adequate and proper health infrastructure tends to reduce infant and child mortality. In South Sudan, access to health facilities is greatly hampered in the rainy seasons due to flooding. In addition, there are limited roads in South Sudan making implementation a challenge. Failure to attain adequate levels of air safety has led to air transport challenges in South Sudan. The study also established that health facilities in South Sudan have inadequate and insufficient health equipment and supplies. Health facilities are not easily accessible, and currently, the number of health facilities in South Sudan is not sufficient. Based on the findings, the current state of health infrastructure and facilities in South Sudan is poor.

5.2.2 Security of the country

The study established that the current security situation affects the implementation of Round 9 HSS grant in South Sudan to a great extent. The study further revealed that Some NGOs who manage health facilities in South Sudan have opted to pull out of some regions due to security reasons. Insecurity in some regions of the country has slowed down efforts to improve health infrastructure, mainly due to conflicts which have resulted in the destruction of health facilities in some regions. Insecurity normally contributes to delays in the implementation of grants. Moreover, the country suffers from inter and intra tribal conflicts.

5.2.3 Procurement regulations

The study established that distribution and transportation is always hampered by bad weather conditions. The country does not have adequate storage capacity for drugs procured. Regulations on procurement processes contribute to delays in implementation of the grant to a great extent. Most of the procurement processes in South Sudan are still paper based and done manually. The study also established respondents disagreed that the country has adequate and skilled procurement and supply chain management personnel. The study also established that majority of the respondents were of the opinion that great need for the adoption of e-procurement methods i.e. the modern procurement techniques at facility level since these methods are faster and more reliable compared to current methods being used.

5.2.4 Health Personnel

The study established that, a health personnel affects the implementation of Round 9 HSS grant to a great extent. It was further revealed that in South Sudan there exists a critical shortage of health professionals at all health cadres. Health professionals need re-orienting and continuous training to build their capacity. Moreover, the study further revealed that there is increased need to hire international health professionals. In South Sudan the health services are provided by less skilled personnel, and that health

workers are not equitably distributed within the country. Based on the findings, there is lack of adequately skilled personnel in South Sudan

5.3 Discussion of findings

The following section discusses the findings of this study and relates these to other research previously done on the same.

5.3.1 Existing infrastructure

The study reveals that the existing infrastructure is poor and affects the implementation of the Round 9 grant. The poor state of road networks hampers access to health facilities constructed under the grant, particularly during the rainy season. This is consistent with the Africa Infrastructure Country Diagnostic Report for South Sudan (Rupa and Cecilia, 2011), which indicates that road transport networks in South Sudan are either nonexistent or in extremely poor conditions. The report also indicated that less than 2 percent of the primary roads in South Sudan are paved and during the rainy season, the unpaved roads become impassable. Based on the study, when roads become impassable, it becomes difficult for essential drugs and health equipment to be transported to the health facilities. The rains are a major contributor of delays in the construction of the facilities under the grant because the unpaved roads become muddy. Lack of access by road means that construction materials cannot be transported to the sites in time. In some instances, flooding has led to construction activities being halted by contractors. This has contributed to delays in the completion of health facilities under Phase 1. Flooding also contributes to the closure of some air strips in the country leading to transport and distribution challenges.

5.3.2 Security of the country

The study reveals that security of the country affects the implementation of the Round 9 grant. Construction works have been affected particularly in regions bordering Sudan such as Jonglei State, Warrap State and Northern Bahr El Ghazal States. The

fighting between Sudan and South Sudan for the contested Abyei region has resulted in delays in construction of health facilities in these three states as contractors opted to pull out workers until the security situation was under control. Moreover, some sites have been rejected by construction companies due to insecurity, particularly in Jonglei State. This is consistent with the report by Crisis Group Africa Report No. 179 (2011) which indicated that in South Sudan, there are many people displaced from the turmoil in Abyei. Insecurity in some regions in South Sudan has been identified as a factor that affects the implementation of projects in the study. The country recent faced a crisis in December 2013 affected the grant as it heightened insecurity due to sporadic fighting between the government and rebel groups. This fighting resulted in looting of equipment in existing facilities constructed under the grant. Furniture and equipment procured under the grant in the blood bank, maternity wards and ante-natal clinic in Malakal, Upper Nile State were looted. From the study, none of the construction works under Phase 2, which is already in progress has commenced. Insecurity, particularly in Upper Nile, Jonglei and Unity States has affected the grant.

5.3.3 Procurement regulations

The study revealed that procurement regulations cause delays in the implementation of the Round 9 grant. This grant involves the construction of health facilities such as anti-natal clinics, maternity wards, blood banks, laboratories, resource centers and warehouses to bridge the gap of lack of adequate storage of drugs in the country. In addition, health products and equipment for the maternity wards, anti-natal clinics, blood banks and laboratories are also procured under the grant. However, delays are brought about by procurement regulations and guidelines stipulated by the donor and at the organization level. All procurements are done by UNDP since it is the Principal Recipient (PR) in this grant. Due to quality assurance policies at donor level, procurements can only be done from WHO pre-qualified companies such as UNICEF and IDA (International Development Association through the World Bank). Most of these companies are in Asia and Europe. In addition, the limited cargo trips to South Sudan always lead to delays. At the PR level, all procurements have to go through a quality

assurance processes. The findings revealed that it takes at least 60 days from the commencement of the selection of the contractors for the construction of the health facilities to the time of signing of the contracts with the contractors. At the health facility level, procurement processes are mainly paper based. The low capacity of health workers at the sites results in frequent emergency orders due to poor inventory management and lack of completion of inventory cards. This is consistent with the assessment carried out by USAID in October 2011, which indicated that procurement and supply chain management systems in South Sudan are generally weak. They are characterized by insufficient and poorly trained personnel, inadequate storage space at all levels of the country, uncomputerized inventory systems, poor forecasting and procurement systems and lack of efficient information systems that support logistics operations (USAID, 2011).

5.3.4 Health Personnel

Based on the findings of the study, there is a critical shortage of health personnel in South Sudan and this has affected the implementation of the grant to a great extent. As indicated in chapter one, one of the objectives of the grant is the development of a skilled health work force. Currently, the grant has recruited International United Nation Volunteers (IUNVs) from Kenya and Uganda to work at the teaching institutions to train in midwifery due to a shortage of qualified midwives and nurses in South Sudan. The study also revealed that facilities such as blood banks are not operational one year after completion because of lack of qualified staff to manage them in South Sudan. Moreover, a lot of trainings carried out under this grant are aimed at equipping health personnel i.e. nurses and midwives with skills in basic hygiene, pharmaceutical management, emergency obstetric, maternal and neo-natal care. These trainings are carried out every six months and also include on-the job trainings. This is consistent with the literature reviewed in the Health Sector Development Plan (2012-2016), which indicates that South Sudan has a critical shortage of all professional health cadres. Only about 10% of the civil service posts are filled with qualified health workers. There are very few doctors, nurses, and midwives in the country.

5.4 Conclusions

From the findings and summary, the study concludes that, the current infrastructure negatively affects the implementation of the Round 9 grant in South Sudan. Poor road networks is one of the major factors contributing to delayed implementation of the grant. The state of roads leads to delays in transporting construction materials to the sites. Moreover, when it rains, it becomes a logistic nightmare to ferry equipment to the health facilities. The study also concludes that the current security situation prevailing in certain regions of South Sudan negatively affects the implementation of the Round 9 grant. Insecurity has delayed the construction of facilities and has led to some regions being rejected by contractors during selection of sites for construction. This means that individuals living in those regions are likely to suffer since the facilities may not be accessible as they would wish. This further reduces their chances of accessing health services when urgently required. Quality assurance procedures in procurement also cause delays in grant implementation. The process it takes from selecting contractors for the civil works and the contracting for the work to commence delays construction and completion of the facilities. In addition, the requirement by the donor to procure from specific sources leads to delays in procurement of health equipment for the facilities constructed. Finally, there is a critical shortage of health personnel in South Sudan. It appears that international staff will continue to be recruited to bridge the existing gap as far as skilled health workforce is concerned.

5.5 Recommendations

In order to ensure effective implementation of the grant in Phase 2, the study recommends that:

- I. The government should put mechanisms in place to improve road infrastructure in order to promote ease of accessibility to healthcare services by its citizens. The County Governments should be requested to prepare budgets for road construction and donor funding sought to complement the budget allocated by the government for infrastructure improvement;
- II. The construction of health facilities in states that are normally affected by rains such as Unity, Jonglei and Upper Nile should be targeted mainly during the dry

seasons i.e. between August – March. During this time, the roads are passable and construction materials can be ferried without problems. This will avoid delays in completion of facilities;

- III. Insecurity may be caused by sporadic acts of violence which are not planned as the one experienced in the country recently. The PR (UNDP) should review all facilities to be constructed under Phase 2 to determine whether it is feasible to construct facilities in conflict prone regions such as Jonglei, Upper Nile and Unity State. This is key in guarding the investment by the Global Fund. The funds allocated for these facilities can be re-programmed to other activities to benefit the program, for instance capacity building and training of the health work force;
- IV. Quality assurance in procurement is an aspect that is key and may not be avoided. Since the donor regulations may not be altered, the PR should ensure that, while reporting progress on a particular period, forecasts and procurement plans for the next period are also prepared and submitted to the Global Fund. This will ensure that the Global Fund knows in advance the procurement needs and thus funds for procurement will be disbursed in advance to avoid delays in procurement.
- V. The Principal Recipient (UNDP) in collaboration with the Sub-recipients (MoH and CHAS) should work together and develop a plan of introducing e-procurement methods at facility level to improve efficiency in stock management and enhance the procurement processes. On-the-job training on stock management should be included as a component under the list of planned trainings. Refresher trainings should also be carried out on a regular basis;
- VI. The grant includes trainings aimed at building the capacity of health personnel. Pre-tests and post tests should be carried out during the trainings to ensure knowledge retention, and improve the quality of service delivery.
- VII. The Global Fund should commission an evaluation of the operationalization of the already completed facilities before the construction of the Phase 2 facilities. This will assess the impact and need of additional facilities in the country

5.6 Suggestion for further studies

The following are recommendations for further research:

- I. A study on the impact of the Round 9 grant to the health systems in South Sudan;
- II. Health financing and its impact on health strengthening grants in South Sudan;
and
- III. Factors affecting procurement and supply chain management systems in South Sudan

REFERENCES

- Baggot, R. (2000). *Public Health policies and Politics*, Palgrave, Britain.
- Bertalanffy, L. (1968). *General Systems Theory: Foundations, Development, Applications*. Rev. ed. New York: George Braziller.
- Bloom, DE, D Canning & DT Jamison. (2004). "Health, Wealth, and Welfare" *Finance & Development*. Vol. 36(3), pp 498-499.
- Bossert, Thomas, Joel Beauvais & Diana Bowser. (2000). *Decentralization of Health Systems: Preliminary Review of Four Country Case Studies*. Major Applied Research 6, Technical Report No. 1.
- Churchman, C. W. (1968). *The Systems Approach*. New York: Dell Publ. Co.
- Cohen, J. (1988). *Statistical Power Analysis for the Behavioral Sciences*, Second Edition. Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Crisis Group Africa Report No. 179: *South Sudan, Compounding Instability in Unity State*. 17 October 2011
- Declaration of Alma-Ata. In: *International Conference on primary health care, Alma-Ata, USSR*, 6-12 September 1978. Geneva, World Health Organization, 1978.
- Dodd, R. and Cassels, A., (2006). Health, development and the Millennium Development Goals. *Annals of Tropical Medicine & Parasitology*, 100, (5/6), pp. 379–387.
- Emily, K & Elliot, B. (2013). *Healthcare Systems: France*. January Report.
- Global Health Initiative Report, The US Government 2012
- Gwatkin, D. 2000. Health Inequalities and the Health of the Poor: What Do We Know? What Can We Do? *Bulletin of the World Health Organization* 78(1):3–15.
- Gwatkin, D, M Guillot & P Henveline. (1999). The Burden of Disease Among the Global Poor. *Lancet*. Vol. 354.
- G8 report on Global Action for Health Systems Strengthening; *Policy Recommendations to the G8 Japan Center for International Exchange*, 2009.
- Health Systems Action Network. 2006. Website. <<http://www.hsanet.org/>> (accessed Sept. 12, 2006).

- Health 21, *Regional Health for All, policy and strategy for the 21st century*. WHO regional office for the eastern Mediterranean region. EM/RC46/5, AUG 1999.
- Health promotion department, Federal Ministry of health, Sudan (2002)" *Vision and Strategic plan for health promotion- Sudan 2002-2007*)
- Institute for Health Metrics and Evaluation (2011). *Development Assistance for Health Database 1990-2009*. Seattle, U.S.: Institute for Health Metrics and Evaluation (IHME), 2011.
- International Crisis Group (ICG). (2011). *South Sudan: Compounding Instability in Unity State*
- International Medical Assistance (IMA) South Sudan, 2010 annual report.
- Joint Learning Initiative (2004). *Human Resources for Health: Overcoming the Crisis*. Cambridge, MA: Harvard University Press.
- Karl, S. (2011). *European countries on their journey towards national eHealth Infrastructure: Final European Progress Report*.
- Kaseje, Dan & Omondi Oyaya. (2001). *Health, Poverty and Dignified Living. Development*
- Kathuri N. J. & Pals, D. A. (1993). *Introduction to educational research*. Njoro, Kenya: Educational Media Centre, Egerton University.
- Kawachi, I. (2001). *Social Capital for Health and Human Development. Society for International Development, Vol. 44 No. 1, SAGE Publications*.
- Kivumbi, G W & F Kintu. (2002). *Exemptions and waivers from cost sharing: ineffective safety nets in decentralized districts in Uganda*. *Health Policy Plan* 2002 Dec;17 Suppl:64-71.
- Kothari, C.R. (1990). *Research Methodology methods and techniques- Second edition*.
- Laura, J & Peter, S. (2012). *Infrastructure 100: World Cities Edition*. Haymart Pre-press. Publication no. 120803
- Levin, R & Rubin, D. (1998). *Statistics for Management*. Prentice Hall
- Meadows, D. (2008). *Thinking in systems : A primer*. White River, VT, Sustainability

- Institute,.
- Mikaya, E., S Sohani, M Barasa, Dan Kaseje, & R Nyawa. (2003). *Community Participation in promoting sustainable quality of Health Care within the District Health System*. Tropical Institute of Community Health Publication, Publication Nairobi, Kenya.
- Mugenda, O.M., & Mugenda, A., G. (2003). *Research methods quantitative and qualitative approaches*: Nairobi. Applied Research and Training Services Press.
- National Health Information Centre, (2003) "Annual Health statistical Report 2002," Federal Ministry of Health, Khartoum.
- Rupa, R. & Cecilia, M (2011).Africa Infrastructure Country Diagnostic (AICD). *South Sudan's Infrastructure*.
- Saunders, M. K. 2004. *Investments in Health Contribute to Economic Development*. Bethesda, MD: Partners for Health Reformplus Project, Abt Associates Inc.
- Sanders, D, D Dovlo, W. Meeus & U Lehmann. (2003). "Public Health in Africa" in Robert Beaglehole (Editor) "Global Public Health: A New Era". Oxford University Press. (Chapter 8, Page 135-155).
- Schieber, G., and M. Akiko. 1997. *A Curmudgeon's Guide to Financing Health Care in Developing Countries. Innovations in Health Care Financing* (World Bank Discussion Paper No. 365). Washington, DC: World Bank.
- South Sudan Development Plan (SSDP) 2011 – 2013
- South Sudan Health Sector Development Plan (HSDP) 2012 - 2016
- Sterman JD. Learning from evidence in a complex world. *American Journal of Public Health*, 2006,
- Sudan and UNFPA (2001) National Safe Motherhood Survey: Sudan,1999, Khartoum.
- Sudan and UNICEF (2002) " Multiple Indicator Cluster Survey, 2000 Sudan – Final Report," Federal Ministry of Health and Central Bureau of statistics, Khartoum,

Sudan Central Bureau of Statistics (2001) "Sudan in Figures, 1988-2000," ministry of the Council of Ministers, Khartoum.

Sudan comprehensive National Strategy 1993-2002, health development strategy

Sudan Expanded Program on Immunization (2000) "Annual Report" Federal Ministry of Health, Khartoum,.

Sudan Household Health Survey, 2006

Sudan National AIDS Control Program (2002) "*Situation Analysis: Behavioral & Epidemiological Surveys & Response Analysis, HIV/AIDS Strategic Planning Process.*" Federal Ministry of health, Khartoum.

UNAIDS, World Aids Day Report, 2011.

UNAIDS. (2006). *Report on the Global AIDS Epidemic.*

UNDP Human Resource records as at 30 June 2013.

UNDP South Sudan Annual Report 2012

UNOPS (2011). *Improving the Health Systems in South Sudan.*

USAID (2011) Pharmaceutical Logistics Assessment South Sudan. USAID, October 2011 <http://resources.ghitechproject.net/content/pharmaceutical-logistics-assessment-south-sudan>

USAID (2010) Assessment of Southern Sudan Pharmaceutical Management System. MSH/SPS & SCMS, USAID, Oct2010

World Bank. 2004. *The Millennium Development Goals for Health, Rising to the*

- Challenges*. Washington, DC: World Bank.
- World Bank (2003) " Sudan stabilization and reconstruction-Country economic memorandum"
- World Bank. (1993). *World Development Report 1993: Investing in Health*. New York: Oxford University Press, 1993.
- WHO South Sudan Quarterly Report (October – December 2012)
- WORLD HEALTH ORGANIZATION (2011) Health statistics. [WWW document] <http://www.who.int/whosis/whostat/2011/en/index.html> (accessed 20 March 2012).
- WORLD HEALTH ORGANIZATION (2010) *Monitoring the Building Blocks of Health Systems: A Handbook of Indicators and Their Measurement Strategies*, pp. 1–110, World Health Organization, Geneva, Switzerland.
- World Health Organisation Report, 2010:, *Equity, social determinants and public health programmes*, <http://whqlibdoc.who.int>.
- WHO. *Everybody's business. Strengthening health systems to improve health outcomes. WHO's Framework for Action*. Geneva. 2007.
- WHO: *The right to health - the fact sheet*. Geneva, World Health Organization, 2007.
- WHO (World Health Organization). 2007. *The World Health Report 2007: A safer future: Global Public Health Security in the 21 Century*.
- WHO (World Health Organization). 2000. *The World Health Report 2000. Health Systems: Improving Performance*. Geneva: WHO. <http://www.who.int/whr/2000/en/whr00_en.pdf>(accessed Sept. 12, 2006).
- Zellner, S., B. O'Hanlon, and T. Chandani. 2005. *State of the Private Health Sector Wall Chart*. Bethesda, MD: Private Sector Partnerships-One (PSP-One) Project, Abt Associates Inc.

APPENDICES

Appendix 1: Introduction Letter

P.O. Box 17163,
00100 GPO,
NAIROBI – Kenya

25 July 2013.

Dear Respondent,

**RE: STUDY ON FACTORS AFFECTING IMPLEMENTATION OF ROUND 9
GRANT IN SOUTH SUDAN**

The researcher is approaching you as a university student to canvass your views on factors affecting the implementation of Round 9 grant in South Sudan. She wants to identify how existing infrastructure, security of the country, donor procurement regulations and health personnel affect the implementation of this grant.

Please complete the attached questionnaire that has been compiled to gauge your views and opinions in this regard. Complete anonymity and confidentiality is assured in this survey. No questions are asked which would identify you as an individual. All responses will be aggregated for analysis and the results will be used for academic purposes only.

Thank you for your time in completing this questionnaire.



Yours Sincerely,
Rhodah KOMBO,
M.A Project Planning & Management – University of Nairobi

Appendix II: Questionnaire

FACTORS AFFECTING IMPLEMENTATION OF HEALTH SYSTEM STRENGTHENING GRANTS IN SOUTH SUDAN

Please complete this questionnaire. Complete anonymity and confidentiality is assured in this survey.

Section A: General Information

1. What is your Gender?
Male Female

2. Age bracket?
Below 20 years 20 - 30 Years
31 - 40 years 41 – 50 years
Over 50 years

3. Highest Level of Education attained?
Primary Secondary
College Bachelors' degree
Post Graduate

4. Years of service/working period in the organization?
Less than 1 year 6-10 years
1-5 years Over 10 years

Section II: Factors affecting implementation of Health System Strengthening (HSS) grants in South Sudan

A: Existing infrastructure

1. In your opinion, does the existing infrastructure affect the implementation of Round 9 grant in South Sudan?

Yes [] No []

If no, please go to part B

2. To what extent does the existing infrastructure affect the implementation of Round 9 grant in South Sudan?

Very great extent []

Great extent []

Moderate extent []

Low extent []

Very low extent []

3. What is your level of agreement with the following statements relating to the existing infrastructure and the implementation of Round 9 grant in South Sudan?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The availability of adequate and proper health infrastructure tends to reduce infant and child mortality					
There are limited roads in South Sudan making implementation a challenge					

Failure to attain adequate levels of air safety has led air transport challenges in South Sudan					
Health facilities are easily accessible					
Health facilities have adequate and appropriate health equipment and supplies					
Currently, the number of health facilities in South Sudan is sufficient					
In South Sudan access to health facilities is greatly hampered in the rainy seasons due to flooding					

4. How is the existing health infrastructure affecting the Round 9 grant?

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5. What do you think should be done to the existing infrastructure in order to enhance the implementation of Round 9 grant in South Sudan?

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B: Security of the country

1. Do you think security of the country affects the implementation of Round 9 grant in South Sudan?

Yes [] No []

If no, please go to part C

2. To what extent does security of the country affect the implementation of Round 9 grant in South Sudan?

Very great extent []

Great extent []

Moderate extent []

Low extent []

Very low extent []

3. How does security of the country affect the implementation of Round 9 grant in South Sudan?

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4. What is your level of agreement with the following statements relating to security of the country and how it affects the implementation of Round 9 grant?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Insecurity in some regions of the country has slowed down efforts to improve health infrastructure					
The country suffers from inter and intra tribal conflicts					
Some NGOs who manage health facilities in South Sudan have opted to pull out of some regions due to security reasons					
Insecurity normally contributes to delays in the implementation of grants					

Conflicts have resulted in the destruction of health facilities in some regions					
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C: Procurement regulations

1. Do you think procurement regulations affect the implementation of Round 9 grant?

Yes No

If no, please go to part D

2. To what extent do procurement regulations affect the implementation of Round 9 grant?

- Very great extent
- Great extent
- Moderate extent
- Low extent
- Very low extent

3. In your opinion, do internal procurement processes and procedures affect the implementation of Round 9 grant?

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4. In your opinion, do donor procurement regulations affect the implementation of Round 9 grant?

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5. What is your level of agreement with the following statements relating to procurement regulations and the implementation of Round 9 grant?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Regulations on procurement contributes to delays in implementation of the grant					
The country has adequate and skilled procurement and supply chain management personnel					
Most of the procurement processes are still paper based and done manually					
The country has adequate storage capacity for drugs procured					
Distribution and transportation is always hampered by bad weather conditions					

6. What do you think should be done as far as procurement regulations are concerned in order to facilitate the implementation of Round 9 grant?

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D: Health personnel

1. Do you think health personnel affect the implementation of Round 9 grant?

If yes, please proceed to question 2.

Yes [] No []

2. To what extent does health personnel affect the implementation of Round 9 grant?

Very great extent []

Great extent []

Moderate extent []

Low extent []

Very low extent []

3. What is your level of agreement with the following statements relating to health personnel and the implementation of Round 9 grant?

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
South Sudan has a critical shortage of health professionals at all health cadres					
In South Sudan the health services are provided by skilled health workers.					
Health workers are distributed equitably within the country					
Health professionals need re-orienting and					

continuous training to build their capacity					
There is decreased need to hire international health professionals					

4. In your opinion, what should be done to health personnel in order to facilitate effective implementation of Round 9 grant?

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Thank you for your time.