

ASSESSMENT ON UTILISATION OF SANITATION FACILITIES IN PRIMARY SCHOOLS IN NDHIWA DIVISION, NDHIWA DISTRICT, KENYA

By
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Abstract

The provision of safe water and sanitation in schools is fundamental to realizing national commitments on “basic education for all” by the year 2015. Children with poor health have deprived learning ability and this influences their prospects in life. A study by Protos (2005), for instance, shows that children with worm infections have higher school absenteeism than non-infected children. Ideally, this means that children with worm infections spend less time in school and are disadvantaged in the learning process. Therefore, friendly and healthy environment play significant elements in learning process of the child and lead to increased school attendance and eventually better performance. The introduction of Free Primary School Education by the Government of Kenya (GOK) in 2003 created larger impact and positive result in terms of access to basic education among Kenyans. However, it led to an influx of children into schools worsening an already appalling school water and sanitation situation. Most schools do not have a provision for separate toilet facility for specific classes; the very young shares facilities with older pupils. Floors in most sanitation facilities in primary schools are poorly maintained, wet and dirty while walls are smeared with feaces. Other considerations including privacy, proximity to the other facilities, and access for the physically handicapped and waste disposal are not considered, thus schools fails to provide an enabling environment to pupils. The overall purpose of this study was to assess utilization of sanitation facilities in Primary school in Ndhiwa Division with specific emphasis on identifying the suitability and effectiveness of the different kinds of sanitation facilities available in the selected Primary schools. The research was guided by the social Exclusion theory by Raul Prebisch .It was conducted in Ndhiwa Division, Ndhiwa District, Homabay County, which has a total of 30 primary schools, 26 public and 4 private with an average of 8,900 pupils. Information was gathered through both primary and secondary sources. Secondary sources involved the review or relevant information on utilization of sanitation facilities. The primary information was gathered by use of semi structured questionnaires, focus group discussions, key informant interviews and observation. The categories of respondents focused on were the head teachers, pupils, School Management committee (SMC) and the Public Health Officer (PHO). The findings of the study showed that there is inadequate coverage of sanitation facilities in the schools in the whole Division, with considerable congestion for students trying to access school latrine in most of the sampled schools which leads to unhygienic conditions and greatly increases the risk of cross contamination and infection. It was also evident that the few sanitation facilities were poorly utilized with major reason being attributed to poor cleanliness of the available sanitation facilities. Therefore there is need to develop sanitation programs under which the challenges should be tackled right from the root rather than attempting to manage the resultant unpleasant consequences. School administrations need to prioritize the aspect of sanitation and hygiene and should ensure regular cleaning of the latrines and urinal sanitation facilities. Keep Regular maintenance to avoid possible break-down of the facilities which would comparatively make repairs more costly than maintenance and should design sanitation and hygiene policies and programs to groom pupils and general school population into practically responsible citizens with good knowledge and practices as far as sanitation and hygiene are concerned to ensure proper utilization of the sanitation facilities.

CHAPTER ONE: INTRODUCTION

Introduction

This chapter highlights the background of the study, the problem statement, objectives of the study, significance of the study, scope of the study and the conceptual framework.

1.0 Background to the Study

Sanitation in public schools (both primary and secondary) has always presented a big challenge to several actors in the health, education, water and sanitation and other sectors. The currently high and ever-increasing enrolment at schools since 2003 in the country as a result of the Universal Primary Education has made water, sanitation and hygiene issues of national significance urgency. The introduction of Free Primary School Education by the Government of Kenya in 2003, led to the dramatic increase in enrollment among Primary Public School. In 2007, the total enrollment in primary public schools was 8,229,266 with an estimated 18,000 public primary schools available in the country (MoE, 2006).

Although this educational program of the Government created larger impact and positive result in terms of access to basic education among Kenyans, the environmental situation on the ground still experiences many challenges. According to the National School WASH Strategy (2008), friendly and healthy environment play significant elements in learning process of the child. These include proper facilities, sufficient learning materials and well trained and equipped teachers as service providers. However, most of the public schools concerns are the basic infrastructure including water and sanitation.

International effort on sanitation was intensified in September 2000 by the United Nations' declarations known as the Millennium Development Goals (MDGs) and targets. Goal 7 focused on ensuring environmental sustainability. Target 10 of Goal 7 was aimed at reducing to halve, by 2015, the number of people without sustainable access to safe drinking water and basic sanitation (UN ,2011). As at 2008, an estimated 2.6 billion people all over the world still lack access to improved sanitation, 884 million

people are without access to improved sources of drinking water and 1.1 billion people practice open defecation (WHO, 2008).

Water, sanitation and hygiene are critical towards creating an improved learning environment. The government's commitment towards Education for All (EFA) has resulted in the over stretching of already inadequate water and sanitation facilities due to the dramatically increased enrolment and lack of adequate resources, (UNICEF,2002).

The direct consequences of lack of access to safe drinking water and sanitation services are enormous with incidences of water-borne diseases and parasitic infections highest among the poor, especially school-aged children. It was reported that inadequate access to safe water and sanitation services, coupled with poor hygiene practices, is the cause of at least one quarter of all child deaths and 20% of the total childhood disease burden globally (UNICEF, 2003).

According to the Kenya National Education Strategic Plan (2008), primary education still continues to experience many challenges relating to access and equity, including overstretched facilities, overcrowding, poor learning environments and lack of appropriate sanitation. Most public schools do not meet the minimum water, sanitation and hygiene school standards. Government efforts have focused on construction of toilet facilities in public schools, emphasis has been on facility development with less focus on changing practices in sanitation and hygiene in schools. Functional sanitation facilities are mostly pit latrines in rural schools and VIP latrines in urban schools.

Water, sanitation and hygiene are also linked to school attendance and performance (particularly among girls), safety and security of women and girls, and socio- economic development of communities. Therefore, providing adequate levels of water supply, sanitation and hygiene in schools is of direct relevance to the MDGs of achieving universal primary education, promoting gender equality and reducing child mortality, and supportive to achievement of other goals (UNICEF,2000).

According to Well (2003), the high expectations of school health and hygiene education programs have not always been fulfilled in many countries, schools are not safe for children due to neglect of the operation and maintenance of sanitation facilities. In

addition, hygiene education given to children has not always been relevant or good. Schools too often suffer from: Non-existent or insufficient water supply, sanitation and hand-washing facilities; Latrines that are not adapted to the needs of children, particularly, girls; Broken, dirty and unsafe water supply, sanitation and hand washing facilities; Unhealthy and dirty classrooms and school compounds and Children failure to wash their hands after visiting toilets.

Sanitation in Kenya has been traditionally accorded low priority in national development. It has been often marginalized and rarely talked about in national debates. Similarly, individuals and the private sector have not accorded sanitation priority. Other consequence, sanitation has previously suffered insufficient political and public support, lack of legislative and policy guidelines, obsolete technology, insufficient resources allocation (human, financial and material) as well as insufficient collaboration and coordination among all concerned parties (Ministry of Health, 1997).

Water, sanitation and hygiene are critical towards creating a child friendly environment in learning institutions. Improved water, sanitation and hygiene in learning institutions generate considerable benefits in terms of improved child health, attendance, performance, retention and transition. Provision of safe and adequate water, sanitation and hygiene services forms the basis of a sustainable solution to the threat of water, sanitation and hygiene related diseases among school children. The health benefits of safe and adequate water, improved sanitation and hygiene range from reduction in diarrhea, intestinal worms, ecto- parasites, infections and trachoma, to enhance psychosocial well-being afforded via such factors as the dignity that goes with using a clean toilet/latrine (NSHS, 2011).

A study conducted by the Ministry of Education in Nyanza Province shows that WASH facilities available in public primary schools are not commensurate to the current number of enrollments. The Ministry of Education recommendations on appropriate ratios and quality of sanitation infrastructure has not been achieved in most public schools In Nyanza province. It showed that the ratios where 1:46 for boys and 1: 41 for girls exceeding the average pupil-stance ratio for primary schools of 1:40 pupils (MoE, 2007).

Over the years, Kenya government has been beneficiary of donor, NGOs and the private sector supported programs aimed at improving sanitation situation. However, emphasis has majorly been on the provision of safe and clean water, with less emphasis on latrine construction and practically, no prominence on other sanitation facilities (MoH, 2000).

According to a Ministry of Education (MoE) survey in 2006, a paltry 29% of all schools in Kenya, at both primary and secondary levels, have access to clean drinking water and appropriate sanitation facilities. However, where these facilities are in place in rural schools, the quality is often awful and the situation inhumane. In most rural primary schools across Kenya, teachers and pupils often share a pit-latrine, which in some cases serve over 100 people (WSP- AF, 2002).

A survey of usable latrines conducted by Emory University and the Great Lakes University of Kisumu in 185 primary schools in Nyanza in 2007 found ratios more than twice as high in some districts and hand washing services, one of the least expensive disease prevention measures not provided at all in the schools. A good percentage of non-school going children are now entering the primary schools in Ndhiwa District which lies in the Nyanza province and the increased numbers of Pupils in Primary schools could have the same impact on sanitation facilities in this section as well.

1.2 Statement of the Research Problem

The introduction of Universal Primary Education resulted in a rapid increase in the number of children in the primary schools from 5.9 Million pupils in 2002 to 7.2 Million pupils in 2003 and currently at more than 8 Million pupils. This trend has continued in successive years and this number is set to double to 16 million school children by 2015. For most schools (especially rural schools) this means that within the last decade there has been a doubling or tripling of pupils at school despite the fact that the classroom infrastructures, latrines have not been adequate to cope with the sudden surge in numbers (Protos, 2005).

The implementation of the education policy which entitles all school age children to free primary education, has caused the number of Pupils per latrine to exceed the

recommended number by the Ministry of Education which requires a ratio of 1:25 for Girls and 1:30 for boys (MoE 2003).

This trend has resulted in straining hygiene and sanitation facilities in schools. Thus, insufficient sanitation has been found to be a major problem in primary schools with the introduction of Free Primary Education (FPE) and subsidized secondary school education by the Government of Kenya (GoK) in 2003 and 2008, respectively. This led to an influx of children into schools worsening an already appalling school water and sanitation situation, especially availability of enough and safe toilet facilities, hence the pressure on sanitation facilities becoming a major concern. Moreover, nearly all studies that have been done on sanitation facilities in schools have mostly been concentrated on secondary schools, leaving out primary schools.

Despite the efforts directed towards addressing the issue of bad sanitation facilities in schools, little investment has been directed in Ndhiwa District (DEO Ndhiwa, 2003). Though the Ministry of Education provides guidelines for sanitation standards in schools, enforcement to ensure the utilization of these facilities in the Primary schools in Ndhiwa District has not been up to date. This is in spite of the knowledge that access to clean drinking water and appropriate sanitation in schools has social, economic and health benefits not only to the school going children, but also to their families and community generally. Research has shown that schools with proper water and sanitation facilities report less illnesses, reduced drop-outs (especially of girls) and better school results.

1.3 General Purpose

The overall purpose of this study was to assess the utilization of sanitation facilities in Primary school in Ndhiwa Division.

1.3.1 Specific Objectives

The specific objectives of the study are to:

- a) Examine the suitability of the different kinds of sanitation facilities available in selected Primary schools in Ndhiwa Division
- b) Assess the effectiveness in utilization of the available sanitation facilities in selected Primary schools in Ndhiwa Division

1.4 Research Questions

The research questions of the study seek to found out:

- a) If the sanitation facilities available in the schools are appropriate to meet the needs of the primary school pupils?
- b) If the pupils in the selected schools utilize the available sanitation facilities effectively to avoid spread of diseases?

1.5 Significance of the Study

Improving water, sanitation and hygiene in our learning institutions generates considerable benefits in terms of improved child-health, attendance, retention, performance, and transition of all learners including girls, boys and children with special needs. The aim for improving school Water, Sanitation and Hygiene (WASH) is reducing water-born and sanitation-related diseases e.g. cholera and other diarrheal diseases, worm infestation, skin infections(WHO,2000).

The provision of safe water and sanitation facilities in schools is an important component in improving learning outcomes, but good facilities needs to be linked with an improvement in crucial behavioral change, particularly hygiene and latrine maintenance behaviors' to be effective and sustainable. School sanitation is a top priority within the Kenyans Policy of which has committed to ensuring that every school has separate boys and girls sanitary facilities by 2015. It affirms children's right to basic facilities, such as toilets, safe drinking water, clean surroundings and information on hygiene. If these conditions are created, children go to school, enjoy learning, and take concepts and practices on sanitation and hygiene back to their families. Children can become agents of change at home and in the community (NSHS 2008).

According to UNICEF Report (2000), People learn about sanitation technologies mostly from their neighbors, public health workers, public meetings and community workers. Some implemented strategies include the creation of health awareness and training of community leaders, construction of demonstration facilities, provision of construction materials and equipment and enforcement of the Public Health Act and the Chief's Act in the event of epidemics.

These have been successful to some extent. Therefore, Learners being positive change agents within their communities, instilling habits early is the most effective way to change current practice. Consequently, the multiplier effect of appropriate and positive messages on hygiene promotion will influence the larger communities. This influence will translate in reduced ill health and ignorance and will ultimately result in a well-informed society, (UNICEF, 2002).

It has been noted that although water supply has over the past two decades increased in terms of coverage, sanitation facilities have lagged far behind. Nonetheless, there is some effort being made to improve the situation (UNICEF, 2002). By investigating the utilization of the sanitation facilities in schools, this study will set to provide valuable insights into what should be done.

This is important to education policy makers and government funding agencies concerned with sanitation in schools given that this study will be a form of evaluation of their work and to awaken them to put in more effort. The findings and the successive recommendations may be useful for schools policy guidelines particularly in relation to requirements for opening up new schools. The study highlights the divergence between schools sanitation policy guidelines and what is actually in place; this should help the concerned schools to address the shortfalls.

The findings are also expected to be useful to other school stakeholders like parents in the sense that the parents will be able to know whether their children are studying in schools with sanitary conditions or not. In case of unsanitary conditions, this may lead parents to demand better facilities or encourage them to be more involved in contributing to the provision, maintenance and utilization of facilities in the schools for their children.

1.6 Scope and Limitation of the Study

Geographically, the study was restricted to Ndhiwa Division and was conducted among selected Primary schools in the District. Within the broader field of sanitation which includes several aspects like solid waste disposal and human excreta disposal, this study focused on human waste disposal with specific attention to the utilization of the

facilities and the practices. The major limitation of this study was the Sample size , which was likely to have a bearing on generalization of the findings.

1.7 Theoretical Framework

1.7.1 Social Exclusion Theory

This study was based on the theory of Social Exclusion as advanced by Raul Prebisch in 1950. He argued that, it relates not simply to a lack of material resources, but also to matters like inadequate social participation, lack of cultural and educational capital, inadequate access to services and lack of power. In other words, the idea of social exclusion attempts to capture the complexity of powerlessness in modern society rather than simply focusing on one of its outcomes, (Hills, 1998).

The term social exclusion has also been most generally used to refer to persistent and systematic multiple deprivations, as opposed to poverty or disadvantage experienced for short periods of time (Walker, 1997). So, for Hills (1998) a focus on social exclusion can highlight the links between problems and the way that the resultant dynamics affect the lives of individuals, families or whole neighborhoods over lengthy periods of time. A study of processes is also claimed to be important because it can be used to identify the factors which lead into situations of decline and exclusion, and, more positively, to chart mobility out of the problems.

Broader applications of the idea, in contrast, emphasise:the vulnerability of large proportions of the population to situations of exclusion for at least some of their lives; social exclusion has benefit over current development discourse not only because it emphasizes the dynamics between individual capability and societal structures, underscoring the important question of who or what is causing or contributing to the exclusion but also because it explicitly identifies key dimensions of deprivation and emphasizes longitudinal processes, thus adding breadth and depth to deprivation analysis(Walker, 1997).

Health and Sanitation are an essential component of individual and societal livelihood. A growing body of literature demonstrates the negative two-way relationship between deprivation and health. However, fewer studies have explored relationships between the structural factors that contribute to deprivation and health status. Health is not a

dimension typically included in social exclusion analysis. Health inequities, in turn, influence one's position in society and affect individual capabilities and resources. Multiple dimensions of inclusion or exclusion have impact to greater or lesser degrees, depending on the individual or group (Bhalla & Lapeyre, 2000).

According to Hills (1998), Education is a basic right provided by the state. Higher levels of education are linked to greater social cohesion and to more informed decision-making and actions regarding health and sanitation. These actions will support evidence-based planning to address societal and health inequities. Ideally, such actions would re-invigorate the concepts of social inclusion and sanitation equity as essential elements (Bhalla & Lapeyre, 2000). As applied in this study, the Social Exclusion theory holds that the provision of safe water and sanitation facilities in schools is an important component in improving learning outcomes, but good facilities needs to be linked with an improvement in crucial behavioral change, particularly hygiene and latrine maintenance behaviors' to be effective and sustainable. However, in adopting the Social Exclusion theory, the researcher is not ignorant of its shortcomings. In this context, the assessments upon which this study is based demonstrate the need for the development and implementation of indicators that can be used in measuring degrees of social, economic, political and cultural exclusion; implementation of a system of measuring the impact of policies and actions that have the potential to mitigate exclusionary processes; systematic measurement of relationships between exclusion and health and sanitation status; and promotion of processes that reduce exclusion and improve health and sanitation equity in Primary schools. The interplay of the political, economic and social factors in learning activities has to be recognized and understood by all people involved.

CHAPTER TWO: LITERATURE REVIEW

Introduction

This chapter reviews the literature related to utilization of sanitation facilities in schools and the community at large with a view to investigating what has been researched/written before delineating what the current study would accomplish.

2.0 Suitability of Available Sanitation Facilities

The 2009 population and housing census showed access to sanitation facilities to be 82%. However, the Ministry of Health puts the national coverage of adequate sanitation at below 50%, mainly because the ministry's classification does not consider pit latrines in urban areas as coverage. Sanitation falls into two broad categories; (i) onsite, mainly pit latrines and (ii) offsite or waterborne. Onsite sanitation is the common mode of human waste disposal in rural, suburban and unplanned settlement areas (UNICEF, 2007).

The waterborne sewerage systems, which are prevalent in cities and larger municipalities, are under the Ministry of Water and Irrigation, while promotion of onsite sanitation is in the Ministry of Health's docket (MoH, 2002). The latest coverage statistics give a mixed message: the world has met the MDG water target, but has fallen dangerously behind in sanitation. Two and half billion people are still without access to improved sanitation – including over 1 billion who have no facilities at all and are forced to engage in the hazardous and demeaning practice of open defecation.

For both water and sanitation there continue to be major disparities among regions. Sanitation coverage is lowest in sub-Saharan Africa and South Asia, where 70% and 59% of people do not have access to improved sanitation respectively (UNICEF, 2006). A key headline on the report states that we are seriously off-track on the sanitation MDG target, which is to halve the proportion of people without access to sanitation by 2015. The new report's figures suggest that, if current rates of progress continue, the global sanitation goal will be met 30 years too late – that's a billion people too late. Such a failure is not an option, so global efforts on sanitation must be rapidly scaled up to avoid this scenario.

According to a report by WHO (2006), across the world, 2.6 billion people are still without access to a safe place to go to the toilet. In the meantime, 4,000 children across the world continue to die needlessly every day from diseases caused by poor sanitation and unsafe water. Sub-Saharan Africa needs particular focus. At the current rate of progress, the sanitation target in that region will not be met for nearly 200 years. This gives sanitation the dubious honor of being the second most off-track MDG in Sub-Saharan Africa, with only maternal mortality seeing slower progress.

This water and sanitation crisis is holding back improvements across all other MDGs including education and maternal and child health, affecting not only human development but also, crucially, economic growth. To prevent other development efforts from being undermined, we need world leaders to take firm action to reverse the global water and sanitation crisis before it's too late.

According to the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (JMP), 2008, 37% per cent of the developing world's population – 2.5 billion people – lack improved sanitation facilities, and over 780 million people still use unsafe drinking water sources. Inadequate access to safe water and sanitation services, coupled with poor hygiene practices, kills and sickens thousands of children every day, and leads to impoverishment and diminished opportunities for thousands more. Poor sanitation, water and hygiene have many other serious repercussions. Children – and particularly girls – are denied their right to education because their schools lack private and decent sanitation facilities. Women are forced to spend large parts of their day fetching water. Poor farmers and wage earners are less productive due to illness, health systems are overwhelmed and national economies suffer. Without WASH (water, sanitation and hygiene), sustainable development is impossible (UNICEF, 2012).

Across the world, billions of people still lack basic sanitation unless it is controlled and safely disposed of. Human excreta pose a major threat to health, particularly infectious disease. But basic sanitation such as latrines can protect health, waste can also be a useful resource, for example human excreta and waste water are used and recycled in many countries for example in Agricultural and aquaculture and this can be done safely. (WSP- AF,2002). Despite continued effort to promote sanitation, 40% of the world's population is still without basic sanitation. This number does not tell the whole story.

Sanitation coverage is often much lower in rural areas than in urban areas for example in Africa 84% of urban, 45% of rural residents have access to basic sanitation. The number is similar in Asia where 78% of urban and 31% of rural residents has access to basic sanitation (WHO, 2008).

It is stated that 2.6 billion people lack access to basic sanitation. According to world health organization (WHO, 2002) assessment, it concluded that if the 1990/2002 trends hold, the world will miss the sanitation target by half a billion-nearly 2 billion people should gain access to basic sanitation by 2015. Hand washing facilities in rural schools have not been considered important, yet from a preventive health perspective hand washing is absolutely crucial. Without hand washing, all investment in fancy latrine construction is a complete waste of time and resources as faecal contamination from hand to mouth, food, friends etc is virtually guaranteed (WHO, 2000).

In Africa today, more than two thirds (2/3) of the populace lack sanitary means of excreta disposal (WHO, 2003). It further states that lack of access to safe drinking water and bad sanitation remains one of the causes of mortality especially among children and women who suffer most due to bad living conditions. Wambua & Mwanaria (2005), observed that sanitation conditions in rural Venezuela a developing country, infectious diseases like cholera and dysentery to escalate, will attributed to peoples' lack of access to clean water and insufficient facilities for excrement disposal.

The traditional pit latrine which is commonly used in the rural areas is one whose floor is made of rammed earth. The walls are usually composed of mud and wattle and roofing may be accomplished by temporary thatch materials like grass. These are temporary structures which are abandoned on filling. They have a disadvantage of being difficult to keep clean and free from flies although they are cheap to construct. The wittiness of the area near the squat hole renders them clammy and lucrative places of hook worm transmission and houseflies bleeding. Improved traditional pit latrines have concrete platform (the sun plat) surrounding the squat hole. This renders them easier to keep clean than the traditional ones, but for a higher cost. The Ventilated Improved Pit Latrines (VIP) has a concrete slab covering the whole floor, and a vent communicating from just under the slab to the atmosphere. At the atmospheric end the vent is covered with a fly screen. Bad smells are led away from the pit into the

atmosphere. Flies which are attracted from the pit into the atmosphere by light are attracted by the screen and die of heat and gases in the vent. VIPs therefore have least smells and the slab could be re-used or the pit emptied by a cesspool emptier. They are however more expensive to construct. (UNICEF, 2008).

Male urinals are important as they cut pressure on the use of pit latrine and are very convenient to use and easy to construct. They also have the advantage that they tend to help cut the urine build up in the pits which is critically helpful when considering the optimum requirements for good compost production where moist conditions are better than saturated ones. Female urinals are less common but still relative cheap to construct and are very well worth installing as they provide the same benefits as with the males' (UNICEF, 2002).

Safe water, sanitation and knowledge of hygienic behavior are the greatest of all public health breakthroughs. And the priority of human health and development in the early years of the 21st century must be to make sure that their benefits are finally made available to all (Water Sanitation and Hygiene, 1999). Studies on water handling during collection, storage and use have shown that there is progressive contamination from source to the point of consumption due to bad sanitation and insufficient/inappropriate hygiene. A rural water and sanitation study showed that only 9% of 57 household surveyed were consuming acceptable quality of water (WHO, 2003).

In Africa, lack of clean water and basic sanitation is the major reason for diseases transmitted by faeces to escalate (World Bank Report, 1993) faecal matter deposited near homes and on open ground normally contaminates drinking water. This accounts for the ten percent disease burden in developing countries. In Kenya, the Ministry of Health (1997) stated that insufficient facilities combined with unhygienic practices and the general lack of clean water supply as well as safe disposal of domestic waste water and solid waste present sanitation problems.

In Kenya, the huge backlog in sanitation coverage indicated by the current national coverage of about 57% in both rural and town areas is a challenge (Environmental report for Kenya 2000/2001). It further states that many town settings in Kenya do not have access to adequate sewerage facilities. It adds that piped water

and sewerage services are available to only ten of the eleven towns covered by National Water and Sewerage Corporation, and that even in these towns; it's only a small proportion of the populace (approximately 10%) that has access to this service. Wambua & Mwanaria(2005) states that, in many cities, waste disposal are a major problem. Garbage and rubbish tends to be dumped, burnt and converted into landfills at minimum distances commensurate with public opinion. As long as the process removes refuse, the disposal site is not a health hazard and does not affect aesthetic values too greatly; the operation is considered successful. However, the side effects on health, atmosphere, soil, water bodies and the appearance of the landscape may be considerable especially in terms of pests, smoke, odours, litter paper polythene bags and water pollution.

Wambua & Mwanaria (2005), writes that according to studies, the external assistance variables influence participation of a community in waste management. For Instance, community members become motivated to participate in sanitation programs if they are being aided with external resources in form of labour, funds and materials.

2.1 Effectiveness on Utilization of Sanitation Facilities

Improving water and sanitation facilities does not necessary lead to a decrease in water and sanitation related diseases. To bring about real improvement in health, the installation of facilities has to go hand in hand with their proper use and maintenance, hygiene promotion aims to ensure the proper use and maintenance of facilities by motivating people to change their behavior (IRC 2004).

Proper latrine use is a behavior much beyond structures. Using a latrine and hand washing after latrine use, in an adequately sanitary state, is in many cases factored by attitude and habit than existence of structures. According a report by MOEST, (2003), over 70% of children in primary schools knew washing their hands before meals and after latrine use and brushing teeth were important for disease prevention. They also knew that indiscriminate disposal of excreta caused diseases. Cholera count results from drinking contaminated water, yet, that water can be made safe to drink by boiling. A small percentage of children knew about the qualities of a good latrine.

In many cases improving sanitation can be as simple as installing a well-designed ventilated pit latrine (VIP) or composting latrine. However in other cases improving sanitation will be more challenging particularly in rapidly growing urban slums; moreover, building improved sanitation facilities is a crucial intervention. The full health benefit will not be realized without proper use and maintenance of the facilities and good personal and domestic hygiene (Carr and Stauss, 2001).

The provision of safe water and sanitation facilities in schools is a first step towards a healthy physical learning environment benefiting both learning and health. However, the mere provision of facilities does not make them sustainable or produce the desired impact (Well, 2003). It is the use of technical facilities and the related appropriate hygiene behaviors of people that provide health benefits. In schools, hygiene education aims to promote those practices that will help prevent water and sanitation-related diseases as well as promoting healthy behavior in the future generation of adults (Burgers, 2000 cited by Well, 2003).

Feachem (1982), asserts that much as the majority of the populace living around lake shores and river banks do realize the importance of water in life, with just minority ensuring its quality before use. This has greatly led to bad sanitation in many regions especially landing sites. A report by WHO, (2003) noted that, Wastes dumped in open areas or indiscriminately in surrounding environs are major source of surface and ground water contamination due to washing down of contaminants and deposition into water sources such as wells, streams and rivers. UNICEF (2007), reported that improper waste disposal is a universal problem. Worldwide, 2.6 billion people were without proper means of excreta disposal facilities by 1990 and the gap widened in 1994 to 2.9 billion people.

Viessman and Hammer (1990) stated that sanitation is also a very culture specific issue. Defecation in most cultures is an extremely personal practice and controlled by strict taboos and cultural norms. Due to its strong cultural dependence, sanitation improvements are very difficult to introduce to the general public, since improving sanitation in practice means intervention to the persons and personal life habits. Fishermen and pastoralists have beliefs attached to waste disposal. That they may not catch enough fish or their cows will not produce enough milk if they use latrines.

Moeller (1992) stated that until World War II, most solids or municipal wastes were leaves, grass droppings, newspapers, cans, bottles, coals and ashes, street sweepings and discarded materials. Such waste were not considered hazardous and would simply be transported to the local land disposal facility and set on fire to cut its volume and discourage the breeding of insects and rodents. Clean water, adequate sanitation and hygiene education in primary schools are essential to children's survival.

It is important to note that the environmental conditions in developing countries are generally deteriorating rapidly, mainly due to population growth and economic expansion. This descriptive and comparative study will highlight the environmental problems in developing countries.

The following section will describe the environmental problems in developing countries, which are mainly caused by rapid population growth and economic expansion.

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CHAPTER THREE: RESEARCH METHODOLOGY

Introduction

The chapter presents the research design, sample size and selection method, study population, data collection and data analysis methods used in the study.

3.1 Research Design

The research design was descriptive study in which information was collected without changing the environment, which sometimes is referred to as “correlational” or “observational” studies. According to Saunders et al (2007), a descriptive study is “Any study that is not truly experimental.” In human research, a descriptive study can provide information about the naturally occurring health status, behavior, attitudes or other characteristics of a particular group. This descriptive study involved a one-time interaction with the target groups of people, in which the researcher interacted with the participants through interviews to collect the necessary information.

Bickman and Rog added that, descriptive studies are usually the best methods for collecting information that will demonstrate relationships and describe the world as it exists. These types of studies are often done before an experiment to know what specific things to manipulate and include in an experiment. Bickman and Rog (1998) suggest that descriptive studies can answer questions such as “what is” or “what was.” Experiments can typically answer “why” or “how”, hence the choice of this study design.

The study utilized both qualitative and quantitative methods of inquiry. The quantitative aspects were used to capture quantifiable patterns and the qualitative aspect used to explore in-depth the issues of effective utilization of sanitation facilities.

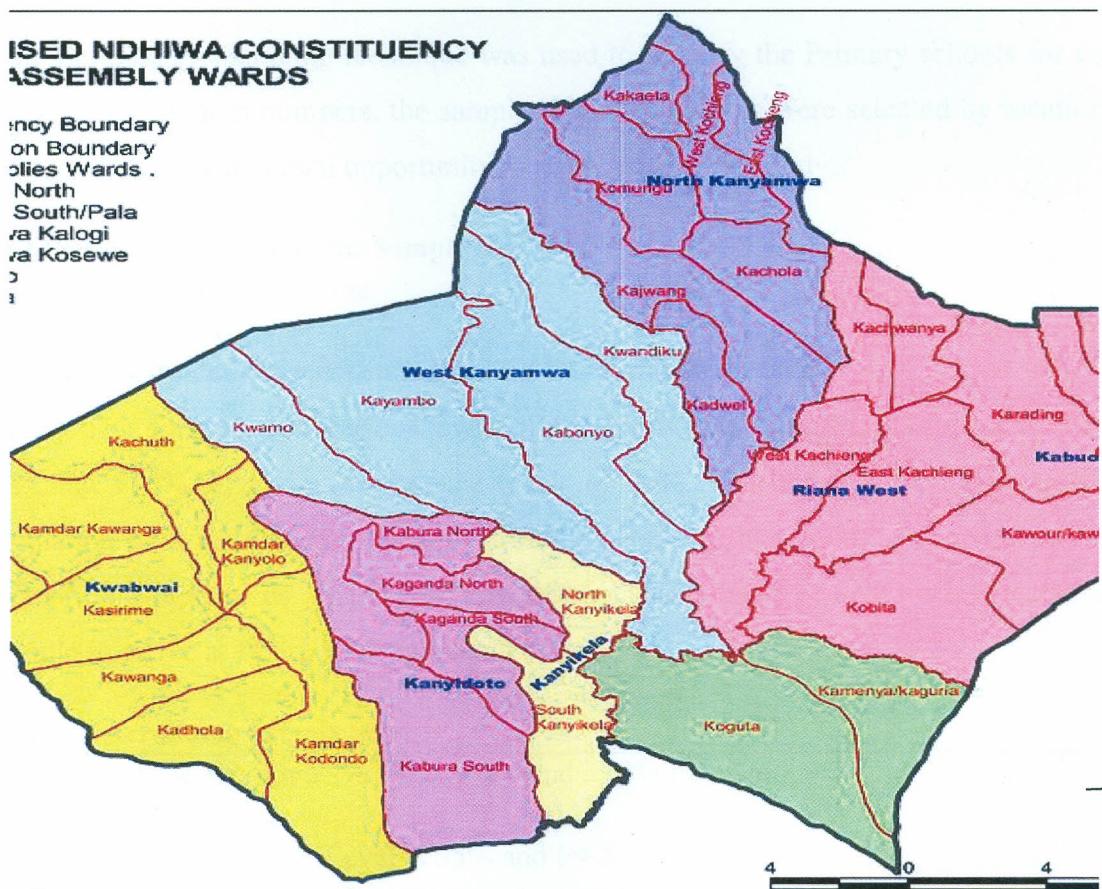
3.2 The Study Area

Ndhiwa District is one of the six districts in Homa Bay County. It was hived out of the giant Homa Bay district in the year 2009. The district borders Mbita district to the North Western side, Suba to the West, Homabay to the East, Nyatike to the Southwest, Rongo to the South East, Awendo and Uriri to the South. The district is situated in a region endowed with fair distribution of rainfall which makes it to be fairly productive agriculturally. The main cash crops in the District are sugarcane and tobacco. Major

subsistence crops include maize, potatoes, millet and beans. Other economic activities are tourism, trade, bee keeping, pastoralism and poultry keeping.

The district has 157 primary schools and 35 registered secondary schools. The district is predominantly occupied by the Luo ethnic community with major clans being Kanyamwa, Kanyindoto, Kwabwai, Kabuoch and Kanyikela. There is relative peace and tranquility in the district with the various clans co-existing. There is humble security in the district courtesy of the provincial administration. The district has six administrative divisions headed by district officers (D.Os) and six Education Administrative divisions headed by Area Education Officers (A.E.Os) namely Nyarongi, Riana, Ndhiwa, Kobodo, Pala and Kobama.

Map of Ndhiwa District



Source: IEBC Constituency Boundaries Maps , 2012

3.3 Study Population

Ndhiwa division is an administrative Division in Ndhiwa District, Nyanza Province of Kenya and it was the target division for this study. It is the administrative home to 5 locations namely: Upper Kayambo, Lower Kayambo, Central , East Kanyamwa and West Kanyama. The Division has 30 primary schools, 26 public and 4 private with a total population of 8,900 pupils. To qualify for this study, the respondents must be pupils and teachers from the selected primary schools and the Public health officer in the division.

3.4 Sample Size and Selection

A sample frame of all primary schools in Ndhiwa division was developed and a random sample of primary schools selected using probability proportion to size per location in the division. Purposive sampling technique was used to select the Head teachers for Key Informant Interviews (KII) and Students for Focus Group Discussions (FGDs).

A simple random sampling technique was used to identify the Primary schools for the study. Using random numbers, the samples Primary schools were selected by location, giving each school an equal opportunity to participate in the study.

3.4.1 Procedure for finding the Sample size

For Simple Random Sampling

This target population was selected using the formula by Israel (1992). (See table 1 below). This formula uses various levels of precisions with sample sizes for $\pm 3\%$, $\pm 5\%$, $\pm 7\%$ and $\pm 10\%$ all giving confidence levels of 95%. This formula tabulates various population sizes ranging from 50000 to 100000 people with approximate corresponding population sample sizes. The shaded row of population target of 8,900 was selected as formula to arrive at figure 99 as tabulated below.

Table 1.Determining Sample Size

Table 1. Sample size for $\pm 3\%$, $\pm 5\%$, $\pm 7\%$ and $\pm 10\%$ Precision

Levels Where Confidence Level is 95% and P=.5.

Size of	Sample Size (n) for Precision (e) of:
---------	---------------------------------------

Population	$\pm 3\%$	$\pm 5\%$	$\pm 7\%$	$\pm 10\%$
500	A	222	145	83
600	A	240	152	86
700	A	255	158	88
800	A	267	163	89
900	A	279	166	90
1000	A	286	169	91
2000	714	333	185	95
3000	811	353	191	97
4000	870	364	194	98
5000	909	370	196	98
6000	938	375	197	98
7000	959	378	198	99
8000	976	381	199	99
9000	989	383	200	99
10000	1000	385	200	99
15000	1034	390	201	99
20000	1053	392	204	100
25000	1054	394	204	100
50000	1087	397	204	100
100000	1099	398	204	100

>100000	1111	400	204	100
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a = Assumption of normal population is poor (Israel, G 1967).

The entire population should be sampled.

Source: (Israel, G. 1967) Florida University

In the table above 99 people as sample size has been picked from population frame of 9000.

3.5 Data Collection Methods

Data for this study was obtained from both primary and secondary sources, field observations, oral interviews and intensive literature search. The primary data was collected through the use of questionnaires, KIIs and FGDS. They were designed on the basis of the study objectives and differences in participants' roles in the study. The research employed both quantitative and qualitative tools to gather data. The advantage of this approach is that while quantitative methods tells us how many, how much, or to what extent a particular situation occurs, the qualitative methods explains why the situation occurs (ibid).

3.5.1 Semi - Structured Questionnaires

This was used for the quantitative data with the pupils. It involved administering structured questions based on a predetermined and standardized set of questions.

3.5.2 Key Informant Interview (KII) Guide

The researcher collected qualitative data through interviewing Key Informants. These included the SMCs officials, Head teachers, District Health Officer and District Education officer.

3.5.3 Focused Group Discussion (FGD) Guide

The researcher collected qualitative data through conducting focused group discussions in the schools with the pupils.

3.6 The Validity and the Reliability of the Instruments

The validity and reliability of the instruments was ensured in the research as discussed below.

3.7.1 The Validity of the Instrument

To ensure validity, the researcher asked experts to comment on the validity of the questions. The Researcher recruited and trained research assistants on the instruments to be used for data collection. Before the instruments were used for the actual data collection, they were pilot tested. This was to test the validity of the instruments and improve the questions and the formats used. This process enabled the researcher to ensure that the questions asked were valid. It also enabled the research assistants to get acquainted with the questions and how the answers were to be recorded.

3.6.2 Reliability of the Instruments

To ensure reliability of the instruments, the researcher considered the consistency with which the questions generated responses. This was established at the pilot testing level, where the flow of questions was analysed.

3.7 Data Collection Procedures and Ethical Consideration

The data collection for this study began with the researcher seeking permit to conduct the research from the National Council of Science and Technology. A letter introducing the researcher from Maseno University was obtained from the campus administrator. These documents were presented by the researcher to the Homa Bay district Social Services Department Officer to seek clearance and also assisted and supported during data collection.

The researcher conducted a three-day training for five research assistants to understand the study objectives, master the research tools, go through the ethics training and plan for the data collection. The research assistants were recruited from Ndhiwa division, in the five Locations within the division. After training, pre-tests were conducted on Primary schools in a different division from the one chosen for the actual study and each research assistant did the interview. After the first interviews the questionnaires were studied together and difficulties and challenges ironed out before the next set of interviews.

The quantitative data was collected by research assistants who were recruited and trained by the researcher on the study objectives and the data collection instruments while the qualitative data, the researcher conducted the KIIs herself assisted by one research assistant who was the note taker during the FGD sessions. The research assistants were distributed and assigned to each of the five locations that the data collection was to be carried out. The data collection for this study involved both primary and secondary sources. The primary sources included administration of 99 semi - structured questionnaires to the Primary School Pupils and conducted 10 FGDs pupils from 10 selected primary schools (2 from each location). 10 KIIs were conducted with 5 selected primary school Head teachers, 3 SMCs officials, the District health Officer and Divisional Education Officer. The secondary source entailed in-depth perusal of relevant documentations. This included desk reviews of other related information about the sanitation facilities in Primary schools.

3.8 Data Analysis Techniques

Statistical Package for Social Sciences (SPSS) software was used to analyse the quantitative data where tables and charts with frequencies and percentages were generated and critical analysis and description of the outcome made accordingly. The qualitative data was used to enhance more understanding in the description of the quantitative figures guided by the aims and objectives of the study.

CHAPTER FOUR: FINDINGS AND DISCUSSIONS

Introduction

This chapter highlights the data analysed from the study, the interpretation and presentation of the findings which are discussed as per the study specific objectives. Methods that involve graphical illustrations and frequency tables have been used in the presentation to reflect statistics that accompany explanations for better understanding.

4.1 Suitability of Sanitation Facilities Available in Primary Schools in Ndhiwa Division

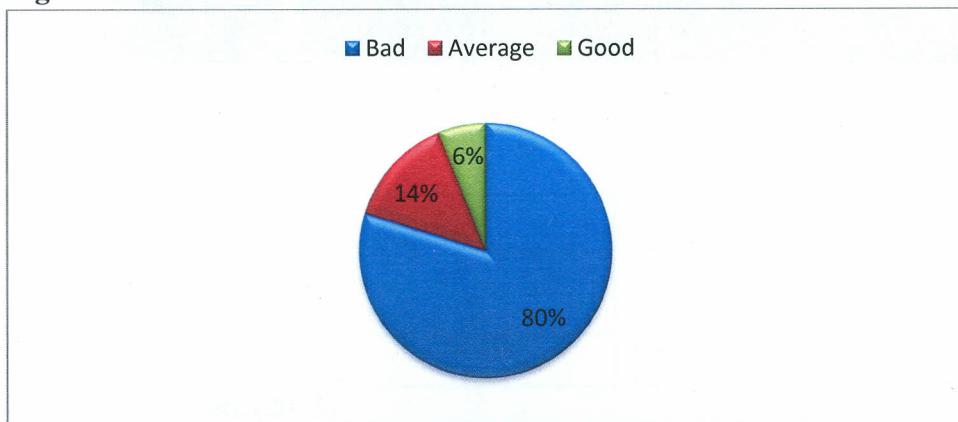
According to a report released by the ministry of education, Ndhiwa District situational analysis report (2012) it shows that, the district had an average of 3, 2 latrines for boys and girls respectively in primary schools against average populations of 184 and 169 for boys and girls. This translated to latrine – boys/girls ratios of 1:61, 1:84 for boys, girls respectively against Ministry of Education's recommendation of 1:30, 1:25 for boys and girls respectively. This was an indicator of great deficiency of latrines in schools across the district.

In this study the status of sanitation facilities available in the primary schools was grouped into five categories, Availability of pit latrines, Availability of Urinals, hand washing facilities, Water sources and anal Cleansing materials. Out of the sampled primary schools, the interviews conducted indicated poor availability and distribution of sanitation facilities especially the latrines and urinals as presented below.

4.1.1 Status of the Latrines and Urinals Available in Primary school

However, through observations and response from the pupil's focus group discussion, it was also noted that, the pit latrines were not in good condition. From the interview the pupils were asked to rank the cleanliness of the latrines from bad, average and good. 80% ranked the latrines cleanliness as bad, 14% ranked them as average, and 6% as good as shown in figure 1 below.

Figure 1: General Cleanliness of the Latrines in Your School



Source: Field Data (2013)

For instance, in 7 of the 10 schools visited, the walls looked very old and dirty and the doors that had been fixed in the entrance to ensure privacy had been broken and some had been completely removed thus defeating the overall purpose. Worse still some of the existing latrines were in poor conditions without doors, vent pipes and closely positioned depriving both boys and girls of their privacy.

The Boys' latrines were graded to be of bad condition as compared to the girls latrines in all the schools visited. The pit latrines reported to be available in all the sampled schools were not adequate, to cater for the pupils in the schools as shown in Table 1 below, where 57% of the pupils said there was a lot of overcrowding and queuing as they waited for their turns. This as reported by the pupils during the focus group discussion, made the pupils waste a lot of time as they queued outside waiting. Others were forced to use one latrine two people, thus dirtying the whole place. Others who could not withstand waiting reported to use the nearby bushes to ease themselves as they would be pressed to a limit they could not hold. Some pupils especially those in lower classes would soil themselves as noted during the discussions with the pupils.

Despite of each sampled school having indicated to have a pit latrine; both latrines and urinals did not match the number of pupils in the school. From the observation, most of the schools had between 1 -2 pit latrines. 57% of the pupils reported that the latrines and urinals were not enough, compared to the number of pupils in the school which resulted to overcrowding in the latrines as shown in the table below.

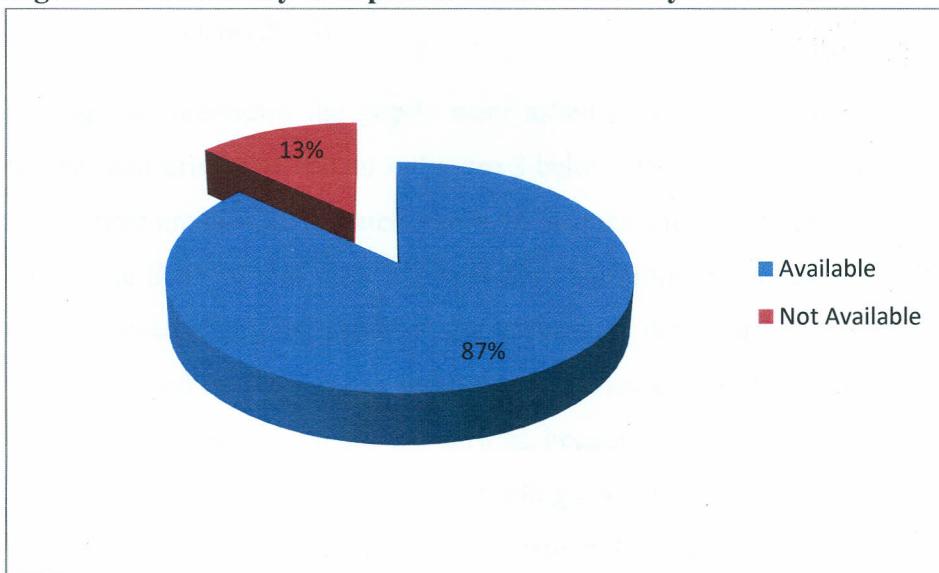
Table 2: Adequacy of the Latrines

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not enough but somehow we manage	42	42.4	42.4	55.1
	Not enough, there is overcrowding	57	57.6	57.6	100
	Total	99	100	100	

Source: Field Data (2013)

The study also revealed that, despite the Ministry of Education requiring the schools to have separate latrines for boys and girls, 3 primary schools had both girls and boys share the latrine. Although the head teachers said it was for a short time, the pupils reported to have used them for a long time. In our observation, the latrines under question which the head teachers claimed to be under construction, in two of the schools there was no sign of any construction /renovation in progress. Two schools according to the District health officer had been ordered to close down but they were still in operation.

Figure 2: Availability of Separate Latrines for Boys and Girls



Source: Field Data (2013)

The study also revealed that, 47.5% of the schools have cemented urinals as shown in table 2 below, 29% use the nearby bush, 9 % use soak –Pit and 14% of the schools did have the urinals and the pupils admitted of using the nearby bush. From the observations made, the cemented urinals were not in good condition, and the cement was no longer visible, majority had not been cleaned hence posing a great health hazard to the pupils. There was also notable inadequacy of the urinals as shown in the table below.

Table 3: Types of Urinals in the Primary schools

Valid		Frequency	Percent	Valid Percent	Cumulative Percent
	Cemented Urinals	47	47.5	47.5	47.5
	Soak-Pit (a dug hole with stones in it)	9	9.1	9.1	56.6
	We just go to the nearby bush	29	29.3	29.3	85.9
	we only have pit latrines	14	14.1	14.1	100
	Total	99	100	100	

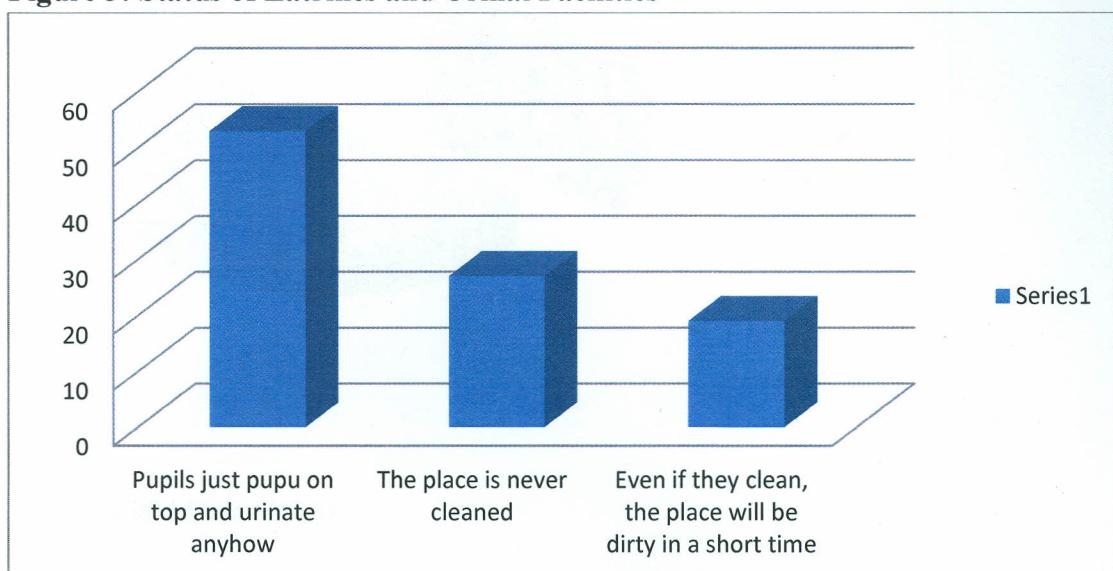
Source: Field Data (2013)

During the interviews the pupils were asked to state the general cleanliness of the latrines and urinals as shown in Figure 3 below. 59% stated that they just pupu on top and urinate anyhow,25% stated that both latrines and urinals are never cleaned, so the pupils use them in that state which is very alarming and a health hazard. While 16% said that even if they are cleaned , the latrines get dirty within a very shorty time. This was confirmed during the key informant interviews were the teachers said most of the pupils don't know how to use the latrines, because they don't own them in their homes. The graph below clearly explains the findings as collected from the field.

In agreement with these findings, the reviewed literature shows that a study conducted by Ministry of Health (MOH, 2012), found that almost all schools surveyed did not meet the minimum sanitation and hygiene school standards. This is quite a recent study

and the situation couldn't have changed in an instant, thus the authenticity of the current study findings.

Figure 3: Status of Latrines and Urinal Facilities



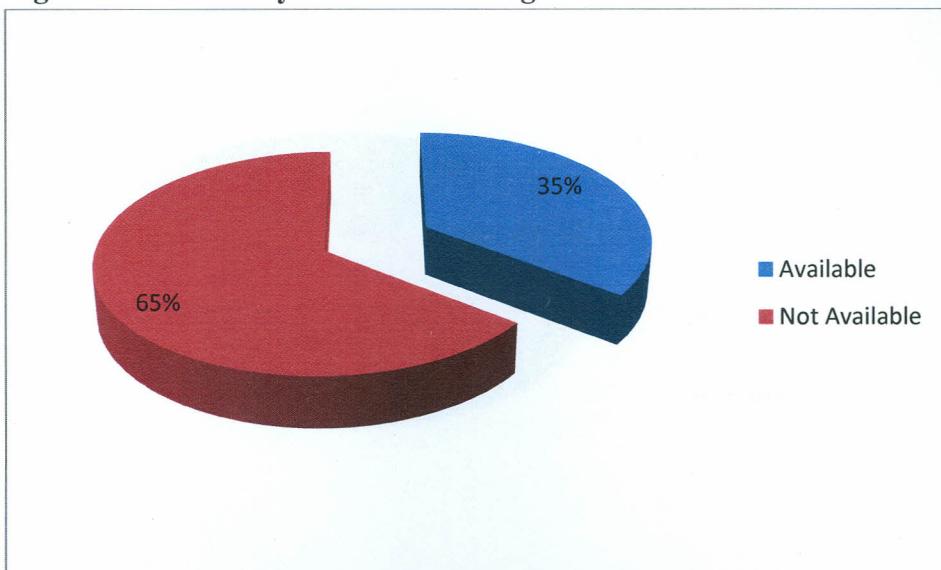
Source: Field Data (2013)

4.1.2 Status of the Hand Washing Facilities

Hand washing facilities are vital sanitation requirement. The Ministry of Health recommends to have installed hand washing facilities next to the latrines and urinals, however, during the study it was noted that 65% of the respondents reported not to have Hand washing facilities, while 35% reported to have hand washing facilities. Out of the 35 % with hand washing facilities, only 5 % reported to have them functional. The others said most of the time there was no water in them whenever they wanted to use. And those who used them said they washed with only water but there was no soap provided.

The pupils were asked to give a general statement on the use of hand washing facilities, and the response were sampled as shown in the table below. It is clear that pupils are not aware of the importance of hand washing, and this explains why most of the pupils suffer from diseases that can be prevented. Given that hand washing facilities are part of the sanitation framework, the study went ahead to find out whether the sampled primary schools have these facilities. The findings are represented in the figure that follows:

Figure 4: Availability of Hand Washing Facilities



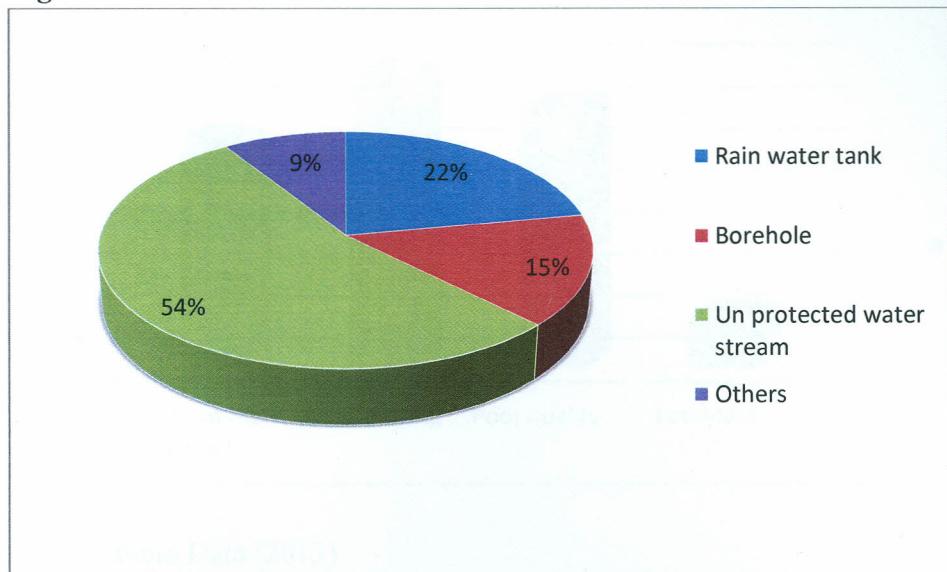
Source: Field Data (2013)

From the focus group discussions, the types of hand washing facilities the pupils mentioned were plastic Jerri cans, leaky tins and metallic tanks. It was important to know despite of the availability, if they are functional, as shown in the figure below, it was surprising that, the facilities are just for show as there is no water in the containers. This was discovered through observation to the school, the few which had water, it was dirty and had been there for quite some time. The key informants stated that sometimes it was difficult to get water to put in those containers, as the water sources are far from the school.

4.1.3 Water Sources, Adequacy & Safety

From the study on water sources and its availability, it was revealed that 54% of the pupils get water from unprotected water streams which they cited as rivers, water pans and ponds. During the discussion, the pupils said the same water streams they fetch water for drinking, are the same stream they bathe from and animals take water. This means that, the water the pupils use in the school is not clean and not treated either as it was gathered from the key informant's interview. Rain water served 22% of the schools and 15% utilized water from boreholes. The schools that used rain water had plastic tanks for storage however small. Primary schools that used water from rivers/water pans relied majorly on the pupils to fetch water from the rivers. This not only deprived the pupils of valuable study time but also placed their lives at risk as well as predisposed them to human rights abuse especially girls risked being victims of rape.

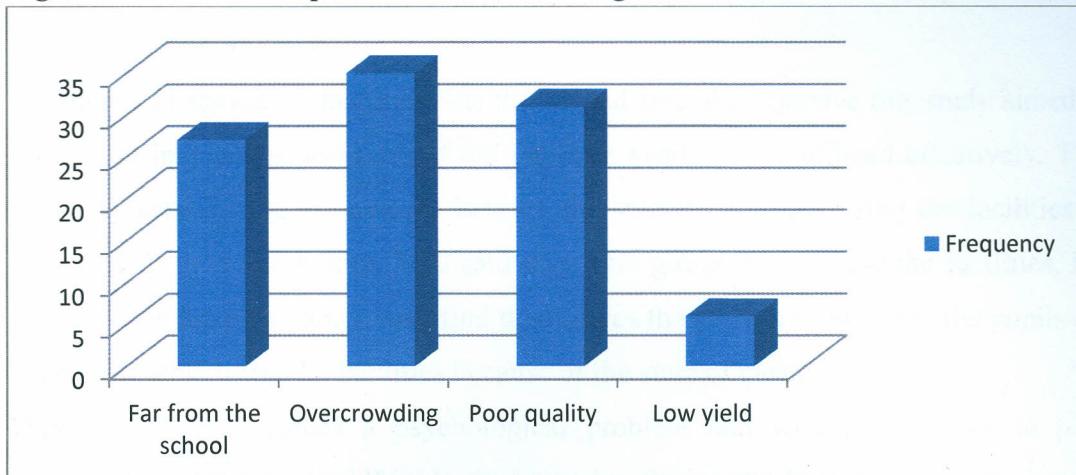
Figure 5: Water Sources



Source: Field Data (2013)

28% of the schools in Ndhiwa felt the water they had was adequate, while the majority, standing at 72% termed their sources as inadequate as it was pegged on the availability of rainfall. Majority of the schools (67%) felt they used unsafe water while only 33% enjoyed safe water. Untreated water from rivers, water pans and open ponds posed great health risk to children in the affected schools. Under normal circumstances, schools in Ndhiwa District cover a distance of 0 – 3.5 Kilometers to access water. During the dry spell, the situation is worse as schools cover between 0 – 7 kilometers to access water. The pupils cited several problems they experience in search of water as indicated in the figure below. Overcrowding was mentioned by 35% of the pupils, these were mainly from all the water sources especially during the dry spell. 31% cited distance.

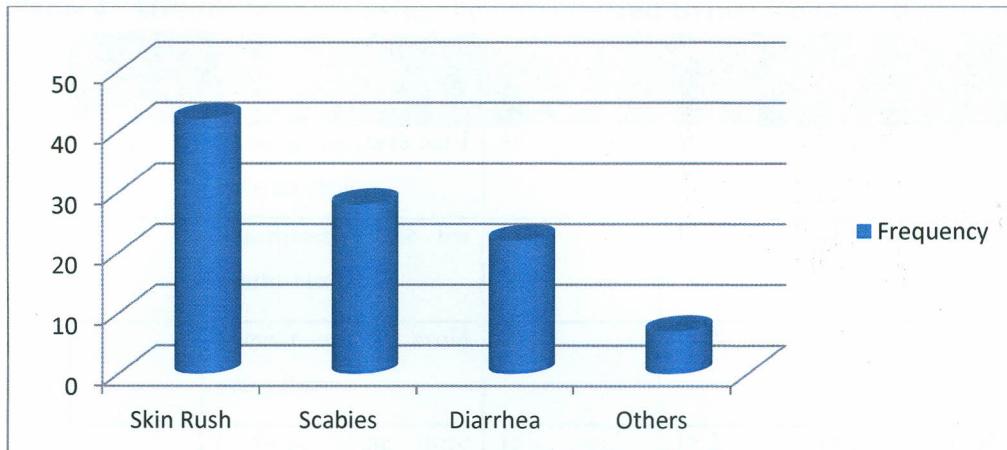
Figure 6: Problems Experienced when Getting Water



Source: Field Data (2013)

The study further sought to establish if the pupils were aware of the diseases associated in drinking, or bathing using unsafe water as shown in the diagram below.

Figure 7: Diseases Associated with Drinking, Bathing and Washing using Bad or Unsafe Water



Source: Field Data (2013)

4.2 Effectiveness on Utilization of Sanitation Facilities in Primary Schools in Ndhiwa Division

Utilization of sanitation facilities was the second specific objective this study aimed to achieve. It intended at assessing if the facilities available are utilized effectively. This began by establishing the attitude held by the students towards using the facilities as presented in the table below. 56% said they hate going there to use the facilities, but because they have no choice they find themselves there. This shows that, the pupils are not comfortable using the facilities because of the state of cleanliness.

This sometimes becomes a psychological problem and would contribute to poor performance of the pupils. 11% admitted to using the nearby bush to ease them instead of using the facilities. This by itself brings into question issues of open defecation which pose a great health hazard to all the people within that environment. 18% of the pupils said they avoid going there sometimes. During the focus group discussion with the pupils, they said they try to hold their urge to use the facilities, and wait until the time they are going home; to use the bushes. 15% said they avoid going there altogether.

Table 4: Attitude towards using the Latrines and Urinal facilities in your school

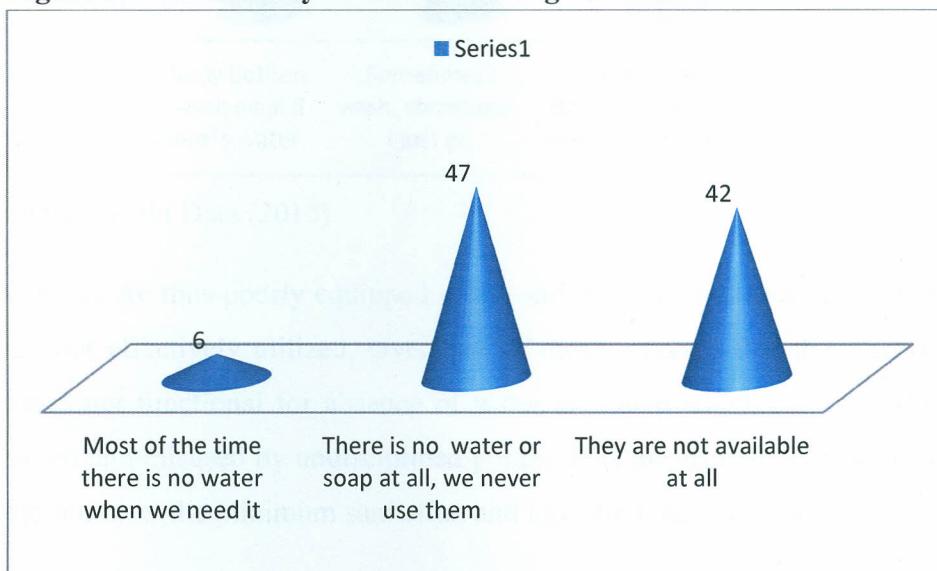
Valid		Frequency	Percent	Valid Percent	Cumulative Percent
	I hate going there but I have no choice	55	55.6	55.6	55.6
	Sometimes I use the nearby bush	11	11.1	11.1	66.7
	Sometimes I avoid going there	18	18.2	18.2	84.9
	I avoid going there altogether	15	15.2	15.2	100.0
	Total	99	100	100	

Source: Field Data (2013)

However, some of the key informants blamed the poor cleanliness of the facilities to students who they say come from poor backgrounds are not used to safe sanitation and hygiene practices. They said that in some of the latrines, walls are stained with fecal markings revealing poor practices by students especially the boys. And for the girls, urine was said to be flooding the floors of their places of convenience. These practices were said

to have led to presence of maggots in and around the sanitation facilities in some of the sampled schools. All the schools sampled reported not to use any anal cleaning material. During the focus discussion with the pupils, they said that, they don't see the usefulness in it. A few pupils carry tissue paper from their homes, others use the leaves near the toilets and others use their hands and smear on the walls.

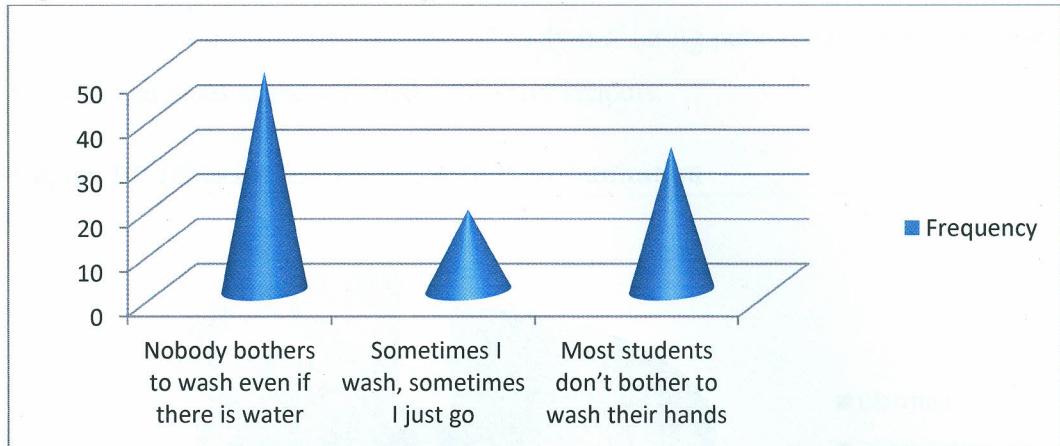
Figure 8: Functionality of Hand Washing Facilities



Source: Field Data (2013)

Information gathered from the key interviews with the head teachers, shows that , over 70% of children in primary schools knew washing hands before meals and after latrine use and brushing teeth were important for disease prevention and also that indiscriminate disposal of excreta caused diseases. This they said it's a subject matter that is included in the curricula. However from the interviews with the students it proved otherwise as shown in the diagram below. only 14% of the pupils admitted to sometimes washing their hands, the rest don't bother to wash even if there is water in the hand washing facilities or not after using the latrine or the urinals. Most of the key informants blamed the lack of toilet manners and poor knowledge that lead to such poor usage / utilization of the hand washing facilities provided at the places of convenience.

Figure 9: Use of Hand-Washing Facilities



Source: Field Data (2013)

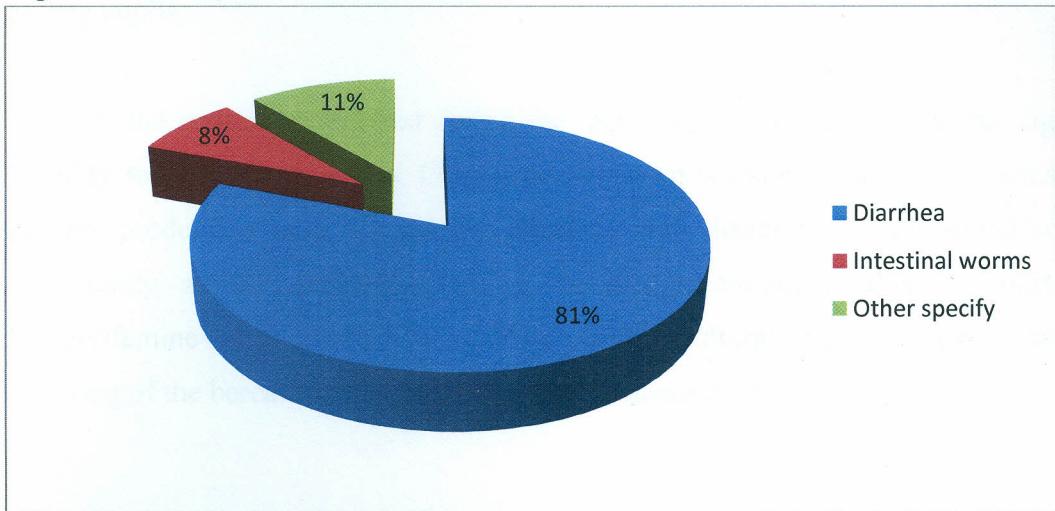
Schools are thus poorly equipped with hand washing facilities but still, those available are not effectively utilized. Over half of these reported that the facilities are at most times not functional for absence of water and soap which the key informants said is stolen and misused by undisciplined pupils. This means that, almost all schools studied did not meet the minimum sanitation and hygiene school standards.

Proper latrine use is behavior much beyond structures. Using a latrine, hand washing after latrine use, maintaining a latrine in an adequately sanitary state, is in many cases, more of factors of attitude and habit than existence of structures. 34% of pupils interviewed reported to opting in using the bush. Pupils in such schools defecate and urinate on open grounds within the school compound. This practice puts everyone within the school compound at risk of acquiring soil-transmitted diseases.

Cholera count result from drinking contaminated water and that water can be made safe to drink by boiling it. This was gathered by Others (11%) who mentioned that adoption of poor sanitation and hygiene practices like drinking of unsafe water would lead to contracting typhoid fever and cholera. 8% of the Pupils from the schools mentioned that poor sanitation and hygiene practices may lead to contracting of stomach worms while 81% indicated that poor sanitation and hygiene may lead to diarrhea. This shows that pupils are knowledgeable of the dangers of poor sanitation and hygiene practices.

During the discussion with the key informants, they added that such diseases have been common in their respective schools of study indicating poor standards of sanitation and hygiene practices in the sampled secondary schools.

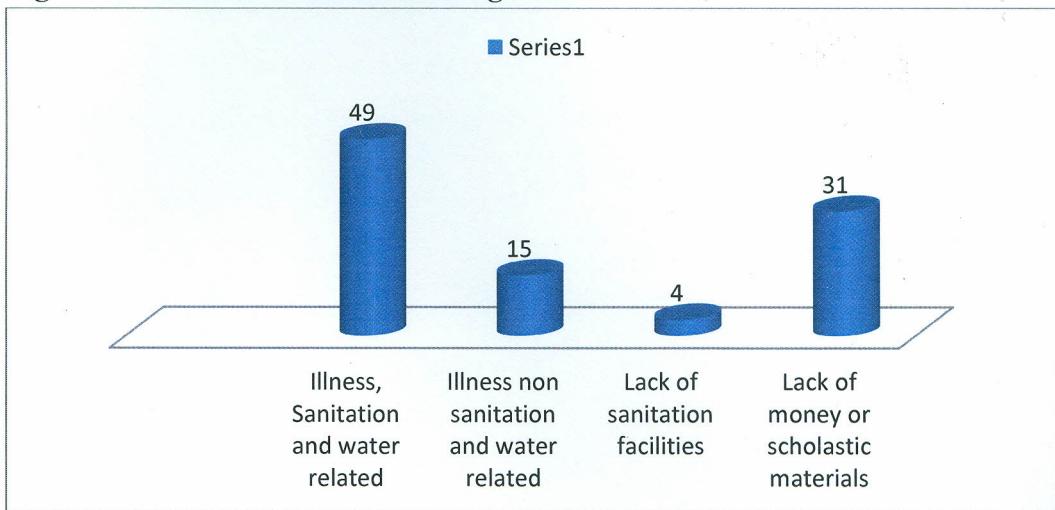
Figure 10: Diseases Associated with Poor Sanitation



Source: Field Data (2013)

Efforts were also made to establish whether students have missed classes as a result of any sanitation related illness. 49% were as a result of sanitation and water related diseases.

Figure 11: Reasons for not Attending Classes



Source: Field Data (2013)

From all the pupils interviewed, none of them attended all classes for a whole term. This was not just a one day absenteeism as it was established from the focus discussion with the pupils and the key informant. It was from seven days and above, and this impacted negatively on learning and contributed immensely to undesirable conducts among pupils.

Some of the reasons established during the focus discussions were, Sickness, Jiggers, Inability to meet school levies, Child labor: children working in sugarcane farms and juggery production units for money, Children with disability do not attend school consistently as the available facilities do not accommodate them comfortably, Hunger/famine keep children away from school, Cultural rites as regards funerals (Shaving of the bereaved, "tero buru") and Night dances/prayers.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the summary and conclusion on the major findings of the study and gives tailor-made / suiting recommendations basing on what was found out as regards the availability and utilization of sanitation facilities in primary schools in Ndhiwa Division.

5.1 Summary of Findings

The findings of the study clearly indicate poor availability and utilization of sanitation facilities present in the sampled primary schools. The study shows, inadequate latrines and Urinals, Inadequate hand washing facilities to effectively serve the population in the sampled schools. Inadequate availability of the related materials such as anal cleansing tissues, prompting the pupils to smear feaces on the latrine walls and the water sources available were inadequate and far from the schools.

The study also reveals that the available sanitation facilities are not suitable for the pupils. For instance, the pupils use same type of latrine from ECD pupils to class Eight. There is no consideration done on the size of the hole of the pit latrine, and the height of the hand washing facilities available. Consideration has also not been done in constructing the latrines for the pupils with disability. This makes it difficult for such categories of the pupils to be comfortable when using these facilities.

It was further stated that even the quality of water from the sources whose supply to which access has increased has been degraded. According to Lake Victoria Environmental Programme report (2008), there has been drastic deterioration of water quality ecology of the lake during the last two decades which in turn has affected the quality of water, further leading to disease. This could explain why some of the students reported a problem of poor quality of water collected from the respective sources.

It is true that in several cases, cleanliness of the sanitation facilities would have been maintained only if the numbers of users do not exceed the capacity of the available

facilities to support. As stated in the earlier incidences of facilities like water sources used by the sampled schools, the condition of the toilets, urinals, hand washing facilities is affected by the size of the population using those facilities and determines their rate of wear and tear.

The drastic changes in the climate have contributed to the reduction in the amount of water released by the protected springs and also those which have completely dried up yet the population in such areas has continued to grow steadily. This justify why there is overcrowding at many of the stated sources of water in the findings.

It is important to note that, improving water and sanitation facilities do not necessary lead to a decrease in water and sanitation related diseases. To bring about real improvement in health, the installation of facilities has to go hand in hand with their proper use and maintenance, hygiene promotion aims to ensure the proper use and maintenance of facilities by motivating people to change their behaviour (IRC 2004). The study findings show poor cleanliness of the facilities in all the sampled schools. This was said to be partly as a result of practices of pupils who come from poor backgrounds as they are not used to safe sanitation and hygiene practices, this is according to the school head teacher's remarks during the interview.

Drawing from the reviewed literature proper latrine use is a behavior much beyond structures. Using a latrine, hand washing after latrine use, maintaining a latrine in an adequately sanitary state, is in many cases, more of factors of attitude and habit than existence of structures. According to the findings, children in the sampled primary schools knew washing hands before meals and after latrine use and brushing teeth were important for disease prevention and also that indiscriminate disposal of excreta caused diseases. Cholera count result from drinking contaminated water and that water can be made safe to drink by boiling it. A less of children knew the qualities of a good latrine. Despite of that knowledge and the general unpleasant condition of the latrines and urinals, when nature calls, the respondents continued to utilize the available facilities simply because they have no option. Not even maggots in and around the sanitation facilities in some of the sampled schools would stop the people from utilizing them.

UNICEF (2004) noted that water being not just for drinking, its scarcity contributes to illness through bad hygiene and this in turn fosters the spread of infections that affect

the eyes, skin and the intestinal tract. This was reported by the pupils as major diseases, caused by use of untreated water. According to the study, the focus group discussion revealed that the pupils were fully aware of the dangers associated with poor hygiene practices. They even stated that, washing hands, food or eating utensils in unclean water risk catching typhoid, cholera, dysentery, gastroenteritis and hepatitis. In summary, it shows that, even with the high knowledge of the pupils on the importance of proper use of sanitation facilities that they continue to ignore these basic practices. Availability alone of the sanitation facilities cannot eliminate the spread of diseases associated with poor sanitation but goes hand in hand with their proper use.

5.2 Conclusions

Given the doubling and tripling of enrolment of children in primary schools, population growth in schools has not matched the development of the necessary infrastructure. As a result, sanitation facilities too have been overloaded as evident in the study findings. Thus, despite the schools having a range of available sanitation facilities, which range from pit latrines, hand washing facilities, urinals and water sources, they are not appropriateness considering the number they are serving, and their state. There is generally inadequate coverage of sanitation facilities in the schools in the Division. School administrations seem to find a big challenge with increasing the quantity of the facilities saying that it required relatively large budgets to set-up the facilities.

There is considerable congestion for students trying to access school latrine in most of the sampled schools. This leads to unhygienic conditions and greatly increases the risk of cross contamination and infection. The useful life of a latrine is reduced to a fraction of what it should be; a ratio of 180 : 1 rather than 40 : 1 which means a feeling rate or five times faster, thus a pit which should have a designed life of five years is reduced to one year. Land availability becomes a problem if latrines need to be replaced so frequently (after every 1 to 5 years).

In addition, the few sanitation facilities are poorly utilized which is a result of many factors including students' background and upbringing, discipline regarding personal hygiene and school weakness in implementation of sanitation and hygiene policies. For instance, key informant interviews and physical observations revealed poor disposal of

solid waste especially where dustbins were ignored but disposed solid materials /waste just outside the bins yet the bins were not necessarily full.

The cleanliness of the available sanitation facilities is not at its best. This forms part of the reasons why some of the students ignore using the facilities and instead opting for the bushes around the schools. This exposes the students to illnesses related to poor sanitation and hygiene as evidenced by the cases of students who missed some classes during the school term.

5.3 Recommendations

There is need to develop sanitation programs under which the challenges should be tackled right from the root rather than attempting to manage the resultant unpleasant consequences. School administrations need to prioritize the aspect of sanitation and hygiene. The excuse of inadequate financial resources is not genuine enough to explain the inadequacy and inappropriateness of the sanitation facilities in the schools. It is expected that the increase in enrolment comes with increase in income to the schools. It is therefore strongly recommended that a separate budget is put aside and strictly observed by the schools to cater for this indispensable service in the schools. This should go hand in hand with proper planning for the schools' carrying capacity to guide the recruitment of students into the schools where school administrations should not only focus on the income benefits but the wellbeing of the students who enroll.

The school administration should ensure regular cleaning of the latrines and urinal sanitation facilities, Regular maintenance to avoid possible break-down of the facilities which would comparatively make repairs more costly than maintenance, should design sanitation and hygiene policies and programs to groom pupils and general school population into practically responsible citizens with good knowledge and practices as far as sanitation and hygiene are concerned to ensure proper utilization of the sanitation facilities. And lastly, The Ministry of Education should conduct regular monitoring and evaluation of school sanitation and hygiene standards as part of its regulatory roles. Schools which do not meet the standards should be closed until they upgrade to desirable and acceptable sanitation standards.

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