

**SCHOOL BASED FACTORS INFLUENCING ACCESS TO EARLY
CHILDHOOD EDUCATION IN FLOOD PRONE AREAS OF KADIBO
DIVISION, KISUMU EAST DISTRICT, KENYA**

Benta Adhiambo

**A Research project Submitted in Partial Fulfilment of the Requirement
for the Degree of Master of Education in Education Emergencies
University of Nairobi**

2014

DECLARATION

This research project is my original work and has not been presented for a degree in any other university.

Benta Adhiambo
E55/66002/2011

This research project has been submitted for examination with our approval as university supervisors.

Dr. Loise Gichuhi
Lecturer
Department of Educational Administration and Planning, University of
Nairobi.

Dr. Caroline Ndirangu
Lecturer
Department of Educational Administration and Planning, University of
Nairobi.

DEDICATION

I dedicate this work to the Almighty God for giving me the strength to carry out the research. My late mother Sherry Okinda who was my inspiration and support while still on earth and to all my siblings for supporting me financially and psychologically throughout the research period.

ACKNOWLEDGEMENT

I sincerely acknowledge the support of my supervisors; Dr. Loise Gichuhi and Dr. Caroline Ndirangu, whose outstanding professional guidance and patience encouraged me throughout the duration of the project. I would also like to thank all the lecturers in the Department of Educational Administration and Planning for their personal encouragement during the course work.

My gratitude to the Education Officers, Head Teachers and Pre-School teachers in Kadibo Division for their co-operation and provision of the necessary information required for the study. Special thanks also go to the ECCE learners who participated in the focus group discussions, may they be blessed abundantly.

May the Almighty God bless all who in one way or another, contributed in facilitating the completion of this research work, especially my colleagues in the University of Nairobi (Group 30) and my work mates at Shaurimoyo Primary School.

Thank you all for your support.

TABLE OF CONTENT

Content	Page
Declaration.....	ii
Dedication.....	iii
Acknowledgement.....	iv
Table of content.....	v
List of tables.....	ix
List of figures.....	xi
Abbreviations and acronyms.....	xii
Abstract.....	xiii

CHAPTER ONE

INTRODUCTION

1.1 Background of the study.....	1
1.2 Statement of the problem.....	6
1.3 Purpose of the study.....	7
1.4 Objectives of the study.....	7
1.5 Research questions.....	8
1.6 Significance of the study.....	8
1.7 Basic assumptions.....	10
1.8 Limitations of the study.....	9
1.9 Delimitations of the study.....	9

1.10 Definition of significant terms	10
1.11 Organization of the study.....	11

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction.....	12
2.2 Learners’ health factors influencing access to ECCE in flood prone areas	12
2.3 Influence of damaged school infrastructure on access to ECCE in flood prone areas	14
2.4 Influence of displacement of teachers on access to ECCE in flood prone areas	17
2.5 Strategies that can be used to enhance accessibility to ECCE in flood prone areas	18
2.6 Summary of literature review	20
2.7 Theoretical framework.....	21
2.8 Conceptual framework.....	23

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction.....	24
3.2 Research design	24
3.3 Target population	24
3.4 Sample size and sampling procedure.....	25
3.6 Instrument validity	27

3.7 Instrument reliability.....	27
3.8 Data collection procedure	28
3.9 Data analysis techniques	29
3.10 Ethical Considerations	29

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction.....	30
4.2 Questionnaire return rates	30
4.3 Demographic information of respondents	32
4.4 Findings on learners’ health factors influencing access to ECCE in flood prone area of Kadibo Division.....	38
4.5 Findings on the damaged school infrastructure that influence access to Early Childhood Care and Education in flood prone area of Kadibo Division	45
4.6 Findings on the influence of displacement of teachers on access to Early Childhood Care and Education in flood prone area of Kadibo Division.....	59
4.7 Strategies that can be put in place to ensure access to ECCE in flood prone area of Kadibo Division	66

CHAPTER FIVE

CONCLUSION, SUMMARY AND RECOMMENDATIONS

5.1 Introduction.....	71
5.2 Summary of the study	71
5.3 Conclusion	74

5.4 Recommendations.....	75
5.5 Suggestions for further research	75
REFERENCES	77

APPENDICES

Appendix I: Introduction letter	80
Appendix II: Questionnaire for the headteachers	81
Appendix IV: Focus group discussion with ECCE learners.....	88
Appendix V: Research permit.....	89

LIST OF TABLES

Table	Page
Table 1.1: Percentage of enrolment of learners in Early Childhood Care and Education centres in Kadibo Division.....	5
Table 1.2: Public ECCE centres affected by floods in Nyang’ande Zone, Kadibo Division.....	6
Table 3.1: Target population.....	25
Table 4.1: Questionnaire return rate	31
Table 4.2: Distribution of head teachers by gender	32
Table 4.3: Head teachers’ highest level of professional training.....	33
Table 4.4: Headship experience	34
Table 4.5: Distribution of teachers by gender.....	35
Table 4.6: Teachers’ highest level of professional training.....	36
Table 4.7: Teachers’ teaching experience in Kadibo Division.....	37
Table 4.8 Influence of floods on the learners’ attendance	38
Table 4.9: Ailments that affected learners’ attendance in different schools.....	40
Table 4.10: Learners’ absenteeism from class due to illness during floods	41
Table 4.11 Learners missing school due to hunger.....	44
Table 4.12: Damage of school infrastructure according to the head teacher respondents	46
Table 4.13 Damage of teaching/learning materials	53
Table 4.14 Schools that realised damages due to the school being used as an	

LIST OF FIGURES

Figure	Page
Figure 2.1: Conceptual framework: Showing school based factors influencing access to Early Childhood Care and Education in flood prone areas ..	23
Figure 4.1: Influence of floods on learners' enrolment	39
Figure 4.2: A damaged school block	47
Figure 4.3: A classroom whose walls are damaged.....	48
Figure 4.4: A damaged ECCE latrine	50
Figure 4.5: A flooded playground	52
Figure 4.6: A damaged toilet during floods	57
Figure 4.7: Number of teachers displaced	60

ABBREVIATIONS AND ACRONYMS

ADEA	Association for the Development of Education in Africa
DICECE	District Centre for Early Childhood Care and Education
ECCE	Early Childhood Care and Education
EFA	Education for All
IASC	Inter- Agency Standing Committee
JICA	Japan International Co-operation Agency
KIRA	Kenya Initial Rapid Assessment
OECD	Organisation for Economic Co-operation and Development
UNESCO	United Nation Educational Scientific and Cultural Organization
UNICEF	United Nation Children Education Fund
UNISDR	United Nations International Strategy for Disaster Reduction

ABSTRACT

Access to education refers to the ways in which educational institutions and policies ensure that students have equal and equitable opportunities to take full advantage of their education. This study was to investigate the school based factors influencing access to Early Childhood Care and Education in flood prone areas of Kadibo Division, Kisumu East District, Kisumu County, Kenya. Four objectives were formulated to guide the study. They were: to establish the learners' health factors influencing access, examine how the damage of school infrastructure and displacement of teachers can influence access and establish strategies that can be used by Early Childhood Care and Education school communities in making ECCE more accessible in Kadibo Division. The study was conducted using the descriptive survey method. The target population of the study comprised of 42 head teachers, 97 teachers and 3680 learners. The sample for the study comprised of 10 head teachers, 30 teachers and 180 learners. Data was collected using questionnaires for the head teachers and teachers and focus group discussion questions for the learners. Descriptive statistics were used to analyze quantitative data while qualitative data was analyzed thematically according to the objectives. The findings revealed that water borne diseases and nutrition were the learners' health factors influencing access to Early Childhood Care and Education. The damage of school infrastructure such as classrooms, toilets, playgrounds and the teaching/learning materials greatly influenced the learners' attendance and participation. The displacement of teachers which was at 71%, caused teacher absenteeism and had great influence on the learners' enrolment, making it go down by 81% percentage. The study established that there are just a few basic strategies in place that can enhance access to Early Childhood Care and Education in the division. The study concluded that during floods, learners' access to ECCE is greatly affected and flood drills and early preparations are some of the mechanisms needed to ensure enhanced access to ECCE in the area. The recommendations made were: School management personnel should engage qualified professionals in designing and construction of classrooms and toilets to ensure their resilience in face of known disasters; schools should develop and implement disaster management plans; the community leaders should mobilize their members to participate in construction and maintenance of trenches around the ECCE centers; Ministry of Education Science and Technology should include disaster management in the ECCE teacher training curriculum and also come up with lasting solutions on floods in order for learning to go on without disruption; there is a need for mandatory school feeding programmes in all ECCE schools. The study suggested further studies in private ECCE centers in flood prone areas; a study on home based factors influencing access to ECCE in flood prone areas; a study on flood Disaster Risk Reduction in ECCE centers in the division and this study on school based factors influencing access be replicated in other areas affected by floods in the country.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

Access to education refers to the ways in which educational institutions and policies ensure that students have equal and equitable opportunities to take full advantage of their education. Kamel (2006) observes that, the principle of access embodies the premise, that all children have an equal right to Early Childhood Care and Education (ECCE) provision during times of crisis, and encompasses the goals of child protection and harm prevention. However, Youdi (2005) in EFA (2007) notes that in sub-Saharan Africa, early childhood programmes are available only to a small fraction of the population, typically affluent urban families. For instance, the Democratic Republic of Congo, with 12 million children aged 0-6, has only 1,200 pre-primary schools, and 60% of these are private schools located in the capital province of Kinshasa, where just 10% of the total population lives.

Early Childhood Care and Education, refers to education programs and strategies geared towards children from birth to the age of eight. According to Jyosha (2009), early schooling has been viewed as one of the pillars of EFA movements-goal 1 which aims at, “expanding and improving comprehensive early childhood care and education, especially for the most vulnerable and disadvantaged children”(UNESCO, 2010). ECCE is an instrument to guarantee children’s rights and adopts a holistic approach encompassing health, nutrition, hygiene and children’s cognitive development and socio-emotional well-being (EFA Global Monitoring Report, 2007).

Flood-prone areas are usually on the flood plains. The flood plain is generally a flat or gently sloping area beside a river channel or shore, which is inundated during periods of high water (Government of New Brunswick, 2004). ECCE centres found within such areas are bound to be adversely affected if preventive measures are not put in place, leading to missed school days. For example, United Nations Development Programme (UNDP), (2000) and Asian Disaster Preparedness Centre (ADPC), (2000), note that, Cambodia is frequently affected by floods. The schools normally close up to one and a half months every year following floods. In the year 2000, floods affected half a million students and destroyed at least 1,000 schools.

Learners' health factors influence access to ECCE in flood prone areas. Shah (2013) notes that, children from conception to eight years are especially very vulnerable. He further notes that, malnutrition and preventable diseases are major threats to young children's lives in disaster situations. Bryce (2008) contends that, the mortality rate for children below five is considerably higher than in other age groups and is intimately related to malnutrition. In South Asia and sub-Saharan Africa, it is estimated that two out of three deaths of children under five are due to malnutrition (EFA Global Monitoring Report, 2013/4). Nutritionists also agree that under-nutrition during the first 1,000 days of a child's life after conception can cause irreversible damage to the brain (Sanchez, 2009). Victoria (2008) notes that, numerous studies have shown negative impacts of child under-nutrition on adult health, cognitive development and school achievement. Malnourished children, when compared

to well-nourished ones, are likely to start school late and have lower academic out-comes (Sanchez, 2009).

Infrastructure such as classrooms, toilets/latrines, books and playground contribute greatly to ensuring access to ECCE in flood prone areas. According to the Zambia Vulnerability Assessment Committee (ZVAC) (2007), floods in Zambia in the year 2007 disrupted learning of school children. The toilets collapsed making sanitation a major problem and leading to the closure of schools. The most affected districts reported 40 to 50% reduction in attendance. In April 2012, floods in Fiji caused damages in the education sector estimated at Fijian Dollars (FJD) 888,332. The infrastructure damaged were classrooms, teacher's quarters, boarding facilities, equipment, text and library books and furniture (UN-OCHA, 2012). Similarly, when Koshi River in Nepal breached its embankment in 2008, the floods affected 67 schools of the districts. Walls of 13 schools collapsed causing damage to school facilities. 23,000 school going children were deprived of education (Dennison & Keim, 2009).

Parker (2000) notes that, flood plains are important locations for settlement almost everywhere in the world and they sustain a predominantly poor rural population, teachers being among them. During floods, the population that has settled along the flood plains are usually displaced. This makes availability of teachers and teaching/learning materials to be very low in such places. For instance, Sacks (2005) notes that, the Hurricane Katrina displaced thousands of teachers from Louisiana and Mississippi, moving them to states faced with

influx of displaced students and were hired on provisional basis. Damage of or loss of books, supplies and years of accumulated teaching/learning materials during a disaster is also a nightmare to teachers (Snider, Hoffman, Fry & Thornburg, 2005). Thus the teachers, while focusing on routine during the disaster, also have to improvise to make ends meet (Peek & Fothergill, 2006).

In the Association for the Development of Education in Africa (ADEA) (2000), as cited in Kamerman (2006), Africa is the region with the highest mortality rate, malnutrition, inadequate supply of food and experiences serious natural/man-made disasters and severe poverty. Mulugeta, Ayunghe and Daby, (2007) in Headey & Kennedy (2011) observe that, in sub-Saharan Africa, floods are among the most devastating natural disasters. The floods cause loss of life, damage property and promote spread of diseases such as malaria and cholera. Save the Children (2003) notes that, the floods of 2000 in Mozambique caused losses estimated at about 500 million US dollars, which included school facilities. In Kenya, recurring disasters such as floods have often disrupted learning, adversely affected school systems and substantially damaged the education infrastructure (MOEST, 2003). An estimated 723,000 pupils were affected by the devastating floods in November 2006 (Relief Web Organization, 2007).

Kadibo Division is in Kisumu East District. Kenya Red Cross Society (2011) noted that the floods of 2011 disrupted education, with cases of students being displaced and schools used as shelter by displaced people. There were also

cases of toilets being submerged, posing great health and hygiene dangers. Kenya Initial Rapid Assessment (KIRA) (2013) also observed that, in April 2013, rains again wrecked-havoc in the division, where by 15 households were affected and displaced. A camp site was set up at Orongo Primary School, denying learners access to the learning facilities. The situation led to early closure of many schools thus shortening the school term. The disruptions cited recur annually thus the concern and need to establish school based factors influencing access to ECCE in flood prone area of Kadibo Division.

Table 1.1: Percentage of enrolment of learners in Early Childhood Care and Education centres in Kadibo Division.

Year	2009	2010	2011	2012	2013
Population (3-6years)					
Total population	10,057	10,237	10,470	10,710	11,207
Number enrolled in ECCE centres	3,488	3,693	3,902	4,116	4,792
Percentage %	34.6	36.1	37.3	38.4	42.8

Source: Kenya National Bureau of Statistics (Kisumu) and DICECE Office, Kisumu East District, 2013

Table 1.1 shows the percentage enrolment of learners in Kadibo Division from 2009 to 2013. The average percentage for the five years is 37.8%, an indication that 62.2% of school going age children did not get access to ECCE. Clearly, with this, EFA goal number 1 as stipulated in the Dakar Declaration cannot be achieved by 2015 in the division.

Table 1.2: Public ECCE centres affected by floods in Nyang’nde Zone, Kadibo Division

Year	2009	2010	2011	2012	2013
No. of Centres	18	18	18	18	18
No. affected	18	18	15	15	15

Source: DICECE Office, Kisumu East District, 2013

Table 1.2 explains the low enrolment in the division as the centres are seasonal. Most parents would rather the older children who at lesser risk during the rainy season go to school and not the younger ECCE going age.

1.2 Statement of the problem

Education is important in enabling people to reach their full potential (International Finance Corporation, World Bank Group, 2010). However, annually, floods prevent millions of children from attending a full year of school. In Kenya, flood is one of the recurrent disasters. Emergency Appeal Kenya (2013), notes that, floods deepen the vulnerability of many almost every year, an indication that, most communities have no emergency plan in place to help in reducing the impact of the disaster.

Kadibo Division is mainly affected by floods between the months of March to May and October to December. DICECE office Kisumu East District (2013) notes that, the floods cause a lot of destruction on infrastructure and have great negative impact on the learners’ health due to prevalence of water borne diseases. Hygiene is normally at its lowest. The community is usually

overwhelmed by the floods, every time calling for outside intervention. The displacements by the floods usually lead to teachers' inability to carry out their duties well. It is not clear whether there are any strategies in place to ensure continued access to ECCE during floods in the division. The mentioned reasons have caused a concern in the researcher, thus the need to establish the school based factors influencing access to ECCE in flood-prone Kadibo Division.

1.3 Purpose of the study

The purpose of the study was to investigate the school based factors influencing access to Early Childhood Care and Education in flood prone area of Kadibo Division, Kisumu East District, Kisumu County.

1.4 Objectives of the study

The objectives of the study were:

- i. To establish how the learners' health influences access to Early Childhood Care and Education in flood-prone area of Kadibo Division.
- ii. To examine how the damage of school infrastructure influences access to Early Childhood Care and Education in flood prone area of Kadibo Division.
- iii. To examine how the displacement of teachers influences access to Early Childhood Care and Education in flood prone area of Kadibo Division.

- iv. To establish the strategies that are used by Early Childhood Care and Education school communities in making ECCE accessible in Kadibo Division during floods.

1.5 Research questions

The study was guided by the following questions:

- i. What are the learners' health factors influencing access to Early Childhood Care and Education in flood-prone Kadibo Division?
- ii. How do the damages of school infrastructure influence access to Early Childhood Care and Education during floods in Kadibo Division?
- iii. How does the displacement of teachers influence access to Early Childhood Care and Education in flood-prone Kadibo Division?
- iv. What are some of the strategies that can be put in place by Early Childhood Care and Education school communities to make ECCE accessible in Kadibo Division during floods?

1.6 Significance of the study

This study will benefit both parents and teachers by sensitizing them on the need to have preparedness plans in ECCE centres, for better accessibility of their children. It is hoped that the teachers and school managers will use the findings to create awareness to all ECCE stakeholders on the importance of flood preparedness to enhance access to ECCE. The findings are expected to help policy makers come up with policy framework that would ensure

enhanced accessibility to the learning centres by ECCE learners during different emergencies and in particular floods. The findings if taken keenly will ensure improved access to ECCE by learners in flood prone areas.

1.7 Limitations of the study

According to Best and Khan (2009), limitations are conditions beyond control of the researcher that may place limitations on the conclusion of the study and their application to other situations. This study covered only Kadibo Division, Kisumu County due to finance and time constraints. The researcher also had no control over the attitude of the respondents, which might have affected the validity of the responses. The responses provided in the study might have been affected by wrong interpretation by the respondents and therefore affect the result of the study. The study also only concentrated on school based factors ignoring other factors that can influence access to ECCE too.

1.8 Delimitations of the study

Delimitations are boundaries of the study (Best and Khan, 2009). The study was carried out in public ECCE centres in Kadibo Division, Kisumu County. The findings may not apply to public ECCE centres in other districts due to other school based factors that may influence access in those areas. The level of accessibility strategies in place may also differ between different public ECCE centres.

1.9 Basic assumptions

The study made the following assumptions;

- i. The respondents had been affected by the floods and would give correct information
- ii. The head teachers, teachers and learners in Kadibo Division were prepared for floods

1.10 Definition of significant terms

Access refers to the way in which educational institutions and policies ensure that learners have equal and equitable opportunities to take full advantage of their education in school.

Disaster refers to a sudden overwhelming and unforeseen event that cannot be handled by the affected school without outside assistance.

Flood plain refers to a flat school surface that maybe submerged by flood waters.

Flood refers to inundation of school land, which is not normally covered by water.

Preparedness refers to activities and measures taken in advance to ensure effective response to the impact of hazards that may threaten schools.

Participation – refers to the opportunity to actually carryout duties and activities related to the learning and teaching processes in public primary schools in Katito zone. It also meant that apart from teaching, the teacher should be able to complete their syllabus and reduce the educational wastages that may occur as a result of floods.

1.11 Organization of the study

The study was organized in five chapters. Chapter one consists of background of the study, statement of the problem, purpose of the study, research objectives and questions, significance, basic assumptions, limitation, delimitation and organization of the study. Chapter two contains literature review on school based factors influencing access to ECCE programs in flood prone areas. Chapter three concentrates on research methodology and comprises of the research design, target population, sample size and sampling procedures, research instruments, validity and reliability of instruments, data collection procedures and data analysis techniques. The fourth chapter presents data analysis, interpretation of data and discussions of findings. Finally, chapter five provides the summary, conclusions, recommendations and suggestions for further studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter presents literature review related to school based factors influencing access to ECCE in flood prone Kadibo Division. The review focused on learners' health factors, damaged school infrastructure, displacement of teachers and strategies that can be put in place to ensure access to ECCE in flood prone areas. The chapter ends with a summary of the literature review, theoretical and conceptual framework of the study.

2.2 Learners' health factors influencing access to ECCE in flood prone areas

More than 10 million children aged 5 or under die every year (EFA Global Monitoring Report, 2007). The Report further notes that more than half die from waterborne diseases such as malaria, cholera, typhoid and diarrhoea, which are preventable and treatable. These diseases are more prevalent during the rainy seasons. (UNICEF, 2002; Tinh, 2003) observe that, the flooding in Mekong Delta of Vietnam in 2001 claimed hundreds of lives, the vast majority being young children. Over 300 child deaths were recorded. In 2002, 99 children died out of a total of 106 in the Delta due to waterborne diseases.

Rashid (2000) observes that, children are mainly affected by cholera as many of them swim in dirty water to fetch relief items, and some of them play in the dirty water out of boredom, even drinking and bathing in it. Achoka and

Maiyo (2008) concur that children are in greater danger in flood regions because they fall victim of drowning and disease.

Shah (2013) notes that, malnutrition is a major threat to young children's lives in disaster situations. Child mortality is intimately related to malnutrition. For example, in South Asia and Sub-Saharan Africa, it is estimated that two out of three deaths of children under five are due to malnutrition (EFA Global Monitoring Report, 2010). Nutritionists note that, under nutrition during the first 1000 days of a child's life after conception can cause irreversible damage to the brain (Sanchez, 2009).EFA Global Monitoring Report, (2007) further contends that, under-nutrition resulting in height or weight below normal impairs development of large number of children. Under-nutrition has negative impact on cognitive development, including language skills, both in the short term and until adolescence or adulthood; on motor development; and socio-emotional development.

Ayieko (2006) reveals that, after disasters such as floods, children and families may lack sufficient food. Ariyabandu and Wickramasinghe (2005) observe that children easily become malnourished because they are more vulnerable. Malnourished children, when compared to well-nourished ones, are likely to start school late and have lower academic out-comes (Sanchez, 2009). He further observes that, a study carried out by the University of Oxford; Young Lives Survey, found out a strong association between stunted height during the first two years of life and cognitive achievement four years later. Nutrition and

health literally saves life and help prevent irreversible damage to children's cognitive development (Plan, 2013).

Fredrich (2009) observes that, in Kenya, the education sector consumes about 30% of public expenditure however; still 1.8 million children are out of school. This is due to natural and human induced disasters such as floods, drought and conflict, which have devastating impacts on education. The disasters have disrupted learning for days, weeks, months and in some cases years. The after effects of such occurrences including trauma, displacement of families, health impacts and the common decrease in food security all have contributed to negative impacts in the education sector (Republic of Kenya, 2010).

2.3 Influence of damaged school infrastructure on access to ECCE in flood prone areas

According to UNESCO and UNEP (2004), emphasis is laid on the importance of school safety by stating that, 'The upgrading and construction of schools that will be relatively safe during the occurrence of disasters, should be part of a nation's long- term planning'. UNISDR (2007) explains that, this is due to the fact that occupants of schools are young and vulnerable people who need special attention and protection. In addition, schools are repository centres of important documents such as certificates and books. Learners and teachers also spent a great amount of their time in schools. Therefore, care should be

taken in constructing classrooms and other buildings that can withstand natural disasters as floods, earthquakes and strong winds (Ocholla, 2009).

Peek and Fothergill (2006) note that, in 2005, the storm surge from Hurricane Katrina breached the levee system that protected New Orleans, flooding the city and caused heavy damage along the coast of Alabama, Louisiana and Mississippi. Golden (2006) further contends that, the hurricane damaged 240 Early Childhood Care and Education Centres in New Orleans, with 91 remaining closed two months after the storm. The centres served 7,200 children who missed access to them during the period. Similarly, in April 2012, floods in Fiji caused damages in education sector estimated at Fijian Dollars (FJD) 888,332. The infrastructure damaged were classrooms, teachers' quarters, boarding facilities, equipment, text and library books and furniture (UN- OCHA, 2012).

According to UN- OCHA (2012), during the Pakistan floods in 2010, some 7,800 schools were reported to have been partially or fully damaged in Punjab, Sindh, Balachistan, Khyber, Pakhtunkhwa, Gilgit-Balsitan and Pakistan Administered Kashmir. Likewise, in 2008, when Koshi River in Nepal breached its embankment, the floods affected 67 schools of the district. Walls of 13 schools collapsed causing damage to school facilities. 23,000 school going children were deprived of education (Dennison and Keim, 2009). In the year 2000, floods in Cambodia too, affected half a million students and destroyed at least 1,000 schools (UNDP, 2000; ADPC, 2000).

According to the Zambian Vulnerability Assessment Committee (ZVAC) (2007), floods in Zambia in the year 2007 disrupted learning of school children. The toilets collapsed making sanitation a major problem, leading to the closure of schools. The most affected districts reported 40 to 50% reduction in attendance. In Mozambique, the floods of the year 2000 caused losses estimated at about 500 million US Dollars which included school infrastructure (Save the Children, 2003).

In Kenya, flooding in Nyanza in 2009 led to limited useable toilets and unreachable health facilities, causing learners to suffer from illnesses, hence inability to attend school (Kenya Red Cross Society, 2009). A research done by Ocholla (2009) established that 40% of schools in Nyando District were affected by the floods, whereby walls of some classes collapsed, toilets got destroyed, floating the wastes on flooded areas exposing learners to high risks. In May 2013, River Nyando in the district burst its banks, displacing more than 1000 people. Three schools closed down as their classrooms, toilets and kitchens were submerged and learning was seriously paralysed (Muraya, 2013). Similarly, in Kadibo Division, the 2011 floods caused loss of lives, destruction of property and infrastructure. Education was disrupted with cases schools being submerged, books destroyed and toilets damaged, (Kenya Red Cross Society, 2011). KIRA(2013) notes that, the destructions of schools and toilets led to early closure of schools thus shortening of the school term, making learners get missed school days.

2.4 Influence of displacement of teachers on access to ECCE in flood prone areas

Sinclair (2002) in Kamel (2006) notes that, during emergencies, pre-school teachers and child care professionals are likely to be in short supply, or absent altogether. Those that do exist are likely to have poor levels of qualification and little experience. For instance, Sacks (2005) notes that, the Hurricane Katrina, displaced thousands of teachers from Louisiana and Mississippi, moving them to states faced with influx of displaced students and were hired on provisional basis. There were waivers on requirements such as proof of certification. Similarly, in the aftermath of the 2005 Tsunami, UN agencies and others, such as Plan International (2005), trained volunteers to deliver basic education in camps for the displaced in India, Indonesia and Sri Lanka (Sinclair, 2002).

Damage of or loss of books, supplies and years of accumulated teaching materials during disasters is a nightmare to teachers (Snider, Hoffman, Fry and Thornburg, 2005). Peek and Fothergill, (2006) note that, in New Orleans, teachers had to be flexible after Hurricane Katrina, because they did not know who would be in class from one day to the next. Some families were relocating to other areas. With the influx of new students, there was shortage of books, desks, school uniform and school supplies. Thus the teachers, while focusing on routine also had to improvise to make ends meet.

2.5 Strategies that can be used to enhance accessibility to ECCE in flood prone areas

It is estimated that at any given time, more than 200 children under the age five in developing countries are not reaching their potential due to malnutrition, poor health and lack of early year support (Eagle, 2007). When disaster strikes, children may not get sufficient nutrition, health and learning opportunities. ECCE in emergencies builds children's resilience against risks, present and future. It focuses on the immediate and unique needs of children by ensuring development and learning continues as normally as possible (Plan, 2013).

Between 2002 and 2006, 1.5 billion children in 42 countries were affected by crises (UNICEF, 2007). They may have survived immediate dangers, but without interventions specifically aimed at their developmental needs, many may suffer the adverse effects for the rest of their lives (EFA Global Monitoring Report, 2010). The interventions would include strengthening children's protective environment; increasing children's nutrition and health; and reducing vulnerability to future disasters (Plan, 2013). Children from conception to eight years are exceptionally vulnerable and depend on the protective environment of parents and caregivers for their survival (Shah, 2013).

Shah (2013) further notes that, emergencies can weaken or destroy this protective environment, negatively influencing the children and intervention is needed. For example, during the 2011 floods in Bangladesh, Plan immediately

set up child- friendly spaces for children of various ages, including the under eights. Parents were involved in the spaces and this strengthened the bond between them and their children, promoting a sense of safety, security and trust (Plan, 2013). The activities at the spaces ensured improved learner attendance in school. Nutrition and health interventions literally save lives and help prevent irreversible damage to children's cognitive development (Plan, 2013). For instance, before the 2004 Asia tsunami, the Indonesian government's education and health/nutrition departments, who share responsibility for ECCE, were not working together. However, after the tsunami, Plan brought the departments together and they began to provide basic health and hygiene education and services as well as nutrition for young children. Through Plan's advocacy, the District Health office agreed to increase its share to the ECCE sector. This intervention ensured that many affected children's nutrition and health were catered for at the ECCE centres thus improving access.

UNICEF (2007) notes that, between 2002 and 2006, 1.5 children were affected by crisis in 42 countries. However, (Shah, 2013) observes that very little is being done to reduce their risk. As a result, many humanitarian bodies have seen it fit to put in place strategies to curb the situation. Plan 2013 thus suggests that, crisis- sensitive planning can save lives and strengthen school resilience to disasters. Inclusion of information and activities on various types of hazards and risks can increase children's knowledge and understanding of potential disasters in their schools (Plan, 2013).

In Philippines, the Department of Education developed a learning resource called ‘Tales of Disaster’, a series of films that use puppetry to introduce school- centred DRR concepts to children of all ages. The key issues in the resource address disaster preparation and safety needs, as well as helping children understand why natural disasters occur and the potential impacts they might have on school communities. Similarly, during Plan’s flood response in Bangladesh in 2012, pre-school children aged three to five years began learning about hazards and risks in their school community and how to deal with them. Once children had learnt these preparedness measures, they then educated their families. Presently, there are 100 children’s organizations in schools, contributing to DRR development programs in the Barguna district of Bangladesh.

2.6 Summary of literature review

The literature review is on school based factors influencing access to ECCE in flood prone areas in various countries across the world. It includes; learners’ health and nutrition factors influencing access to ECCE, influence of damaged classrooms, toilets and playgrounds on access to ECCE, the influence of the availability of teachers and teaching/learning materials have on access to ECCE and the strategies that can be put in place to ensure access to ECCE in flood prone areas. Ariyabandu and Wickramasinghe (2005) note that, children are more vulnerable to floods than others as floods cause waterborne diseases such as cholera, malaria and typhoid which often make them have poorer health and cause absenteeism from school.

According to Ocholla (2009), in some cases, schools are used as emergency shelters during flooding times, resulting into damage of school structures. This denies the learners access to the facilities. Parker (2000) notes that during floods, the population that has settled along the floodplains is usually displaced, among them are teachers. This results into teachers not attending to their normal lessons, causing reduced access to ECCE by the learners. According to EFA Global Monitoring Report (2013), children may survive immediate dangers of disasters but without interventions specifically aimed at their developmental needs, many may suffer adverse effects for the rest of their lives.

The above subtopics helped the researcher to equip herself with in-depth knowledge of school based factors influencing access to ECCE in flood prone areas and reveal the glaring gaps that may need more research to be done upon them.

2.7 Theoretical framework

This study was based on Emile Durkeim's Functional Theory (1858-1916). Functionalism interprets each part of society in terms of how it contributes to the stability of the whole society. The different parts are primarily the institution of society, each of which is organised to fill different needs and each of which has particular consequences for the form and shape of society. The parts all depend on each other. It focuses on how it is essential that elements of a society work together in order to function fully as a whole. It emphasises the effort on the functioning of a supposedly stable, cohesive

system. It attempts to provide an explanation on how human society is organised and what each of the various institutions does in order for the society to continue existing (Kombo & Thromp, 2006).

This can be seen in how Ministry of Education has set safety standards for schools which it expects managers of schools to adopt to ensure resistance of schools to floods. The school is expected to pass knowledge and skills on disaster risk reduction to its members. The learners belong to the community that is expected to adopt building standards and economic activities that will not risk the lives and livelihoods of its members in case of floods. The community is dependent upon the school to teach learners how to reduce risks of floods. In the process the learners access ECCE despite the floods.

2.8 Conceptual framework

The conceptual framework in figure 2.1 illustrates how variables under the study were related and influenced each other.

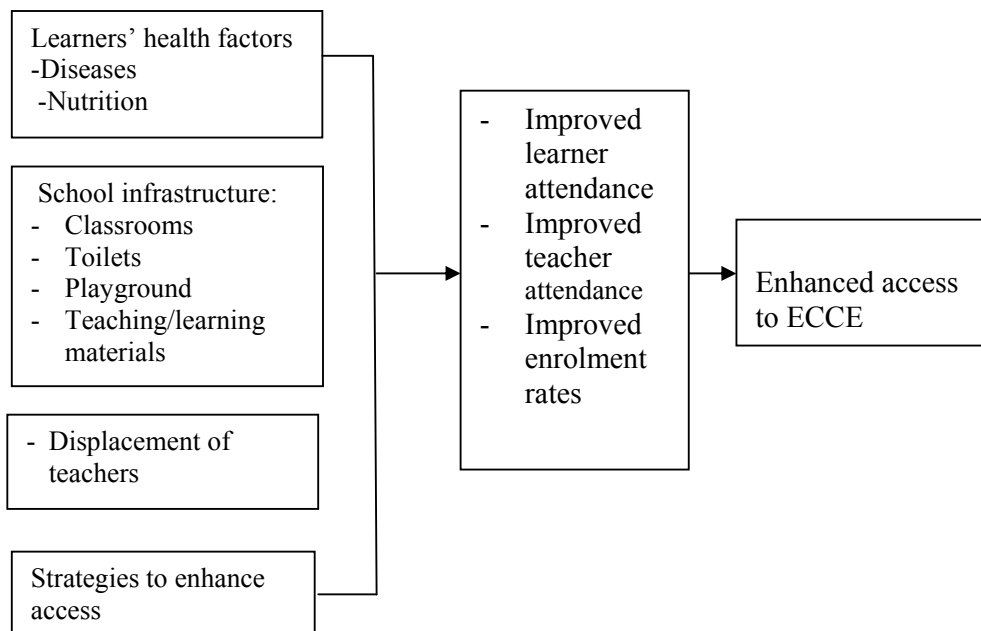


Figure 2.1: Conceptual framework showing school based factors influencing access to Early Childhood Care and Education in flood prone areas.

The figure shows that access to Early Childhood Care and Education in flood prone areas is influenced by learners' health factors, damaged school infrastructure, displacement of teachers. With proper strategies in place, there will be regular learner and teacher attendance and improved enrolment rate.

Access to Early Childhood Care and Education in flood prone areas would then improve.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter covered the various methods that were used by the researcher in carrying out the study. It contains the research design, target population, sample size and sampling techniques, research instruments, validity and reliability of instruments, data collection procedure and data analysis techniques.

3.2 Research design

This study was conducted using descriptive survey design. A survey is an attempt to collect data from members of a population in order to determine the current status of that population with respect to one or more variables (Mugenda & Mugenda, 2003). The descriptive survey design provided insight into intensive descriptive and holistic analysis of the data that was collected for study. The data presented the school based factors that influence learners' access to ECCE in flood prone area of Kadibo Division.

3.3 Target population

A target population is defined as a complete set of individuals, cases or objects with some common observable characteristics (Mugenda & Mugenda, 2003).

The study was conducted in flood prone area of Kadibo Division which is composed of two zones; Rabuor and Nyang'ande. The division has 42 public ECCE centres, therefore the target population was, 42 head teachers, 97 teachers and 3,678 learners.

3.4 Sample size and sampling procedure

A sample is a small portion of a target population. Sampling means selecting a given number of subjects from a defined population as representative of that population (Orodho, 2002). Mugenda and Mugenda (2003) argue that, for descriptive studies, ten percent of the accessible population is enough. Purposive sampling was used as the researcher intended to study only the most affected public ECCE centres in the flood prone areas of Kadibo Division. (Mugenda & Mugenda, 2003) further note that, purposive sampling allows a researcher to use cases that have the required information with respect to the objectives of his/her study.

Table 3.1: Target population

	Target population	Sample size	Percentage (%)
No of schools	42	10	25.0
No of head teachers	42	10	25.0
No of teachers	97	30	30.0
No of ECCE learners	3678	180	5.0
Total	3817	230	

In table 3.1, the 10 most affected schools were sampled. 10 head teachers and 30 teachers; 3 from each of the 10 sampled schools, were administered with questionnaires. In each of the sampled centres, the final class was purposively sampled as they could easily participate in group discussions. The average enrolment of the final class in the centres was 36. This was too large for one sitting of a focus discussion group and so the researcher took half of that, which was 18 from each school. This was 5% of the targeted learner population.

3.5 Research instruments

The data for this study was collected using questionnaires and focus group discussion questions. The researcher collected primary data from the head teachers and the teachers through questionnaires. The questionnaires consisted of five sections; section A dealt with general information of the respondent, section B dealt with learners' health factors, section C dealt with damaged school infrastructure, section D with displacement of teachers and section E with strategies that can be put in place to ensure access to ECCE in flood prone areas. Information from the learners was collected through group discussions by administering questions for the focus group discussion to them. The questions enquired from learners, how the learners' health factors, the damaged school infrastructure, displacement of teachers influenced and strategies that can be put in place to enhance their access to learning in the area.

3.6 Instrument validity

This is the accuracy and meaningfulness of the inferences which are based on the research results (Mugenda & Mugenda, 2003). To ensure validity, the supervisors who are research experts in the area scrutinized the instruments; gave suggestions which helped revise the questionnaires and focus group discussion questions before final copies were prepared. A pilot study was conducted in two ECCE centres to determine the suitability of the questionnaires and focus group discussion questions. The piloting involved two head teachers, six teachers and thirty six learners. This was to ensure the researcher got the intended information and also assisted in identifying problems of respondents.

3.7 Instrument reliability

According to Mugenda & Mugenda (2003), reliability is a measure of the degree to which a research instrument yields consistent results after repeated trials. The test retest technique was used to assess reliability. The Pearson product moment correlation formula was used to determine how the scores of questionnaire correlate. A correlation of about 0.8 shall be considered high enough to judge the instruments as reliable for the study (Orodho, 2008). The formula is:

$$r_{xy} = \frac{\sum(x - \bar{x})(y - \bar{y})}{\sqrt{\sum(x - \bar{x})^2 \sum(y - \bar{y})^2}}$$

Where;

Σ = Is the symbol of summation

x = Are the score of the first test

y = Are the scores of the second test

\bar{x} = Is the mean of x

\bar{y} = Is the mean of y

Simple and clear questions were used across all categories of respondents so as to make their responses consistent across variables. The pilot study was done in Winam Division to ensure that the Kadibo Division respondents were not subjected to the same instruments after pre-tests. The reliability of the instruments was established by computing a test re-test reliability coefficient. This was done by administering the test twice, but allowing an interval of two weeks to elapse between the tests. The response in the two tests were compared and found to be consistent across the respondents.

3.8 Data collection procedure

The researcher obtained a permit from National Council of Science and Technology after getting a letter from the Department of Educational Administration and Planning, University of Nairobi and then paid a courtesy call to the DICECE Kisumu East District office. The researcher then contacted

the head teachers and teachers and administered the instruments herself. She also conducted the group discussions with the sampled learners. The researcher waited until all the questionnaires were filled, after which, she collected them back.

3.9 Data analysis techniques

This being a descriptive survey, data was analysed both qualitatively and quantitatively. The raw data was systematically organised, coded, tabulated and then analysed. Data was cross-examined to ascertain their accuracy, competence and identify those items wrongly responded to, spelling mistakes and blank spaces. Due to the large amount of quantitative data, the Statistical Package for Social Sciences (SPSS) version 12.0 was used. This generated the frequencies and percentages which were used to discuss the findings. Frequency distribution tables were used to present the data while descriptive statistics such as percentages and frequencies were used to present the qualitative data (research questions). Qualitative data was analysed thematically according to the themes in the research objectives.

3.10 Ethical Considerations

The researcher sought permission from the County Director of Education to go to schools and from the head teachers to administer questionnaires to the teachers and the focus discussion group questions to the learners, before commencing the study. The respondents; the head teachers, teachers and learners were assured that the study was meant for academic purpose only, and

that their responses would be treated with utmost confidentiality. The learners were assured that not even their teachers would know their responses.

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter focuses on the questionnaire completion rate, learners' return rate, demographic information of respondents, presentations interpretation and discussion of findings. The presentations were done based on the research questions. Items addressed in the research questions were grouped together and discussed together to draw conclusions on each research question. Demographic information was discussed first then the data analysis. Tables were used to present data while frequencies and percentages were used to interpret the findings.

4.2 Return rates

4.2.1 Questionnaire return rate

The respondents involved the head teachers and teachers. They returned the questionnaires as tabulated in table 4.1

Table 4.1: Questionnaire return rate

Respondents	Sample	Returned	Percentage (%)
Head teachers	10	10	100.0
Teachers	30	21	70.0
Total	40	31	85.0

Table 4.1 shows that out of 10 head teachers sampled, 10 filled and returned the questionnaires. Out of 30 teachers sampled, 21 of the questionnaires were returned and useable. This was on average a return rate of 85%. The respective response rate for head teachers and teachers were good representative and conform to Mugenda and Mugenda (2003) stipulation that a response rate of 50% is adequate for analysis and reporting; whereas a rate of 60% is good and a rate of 70% is excellent. Therefore, the response rate was excellent for analysis.

4.2.2 Learners returns

There were 180 learners who participated in the focus group discussions. 18 learners of the final class from all the 10 schools participated. The sample size was 180; therefore, this was 100% participation.

4.3 Demographic information of respondents

This section covers the demographic information of the respondents. It focuses on the background information of the head teachers and teachers in the study.

4.3.1 Demographic information of the head teachers

The demographic data for the head teachers focused on their gender, highest level of professional training and the duration they have served as head teachers.

4.3.2 Distribution of head teachers by gender

The head teachers were asked to indicate their gender and they responded as shown in table 4.2

Table 4.2: Distribution of head teachers by gender

Gender	Frequency (f)	Percentage (%)
Male	9	90.0
Female	1	10.0
Total	10	100.0

N=10

Data on the gender of the head teachers as presented in table 4.2 showed that 90 % were male while 10 % were female. The data showed that there was less representation of female ECCE head teachers in Kadibo Division. This is

because most of the public ECCE centres are attached to the primary schools in the area. However, this great difference did not hinder their responses to the items in the questionnaire.

4.3.3 Head teachers' highest level of professional training

The head teachers were also asked to indicate their highest level of professional training level. Their responses are presented in table 4.3

Table 4.3: Head teachers' highest level of professional training

Level of training	Frequency (f)	Percentage (%)
Certificate	2	20.0
Diploma	5	50.0
Others (B.ED)	3	30.0
Total	10	100.0

N=10

Data on the highest level of professional training of the head teachers indicates that 30% were holders of B.Ed, 50% were Diploma holders while 20% were certificate holders. The data implies that all head teachers in the study had a minimum qualification enabling them to provide reliable information on the school based factors influencing access to ECCE in flood prone area of Kadibo Division.

4.3.4 Headship experience

The head teachers were further asked to indicate their years of experience in the position and they responded as shown in table 4.4.

Table 4.4: Headship experience

Duration as head teacher	Frequency (f)	Percentage (%)
1-5 years	4	40.0
5-10 years	4	40.0
Above 15 years	2	20.0
Total	10	100.0

N=10

The response on the duration of headship indicates that 40% head teachers had served for a period of less than 5 years in the position, 40% had served for 5-10 years and 20% had served for over 15 years. These findings imply that the durations were adequate for them to provide information on school based factors influencing access to ECCE in flood prone area of Kadibo Division. This is because they had witnessed a number of flooding seasons in the area.

4.3.5 Demographic data of the teacher

After addressing the demographic data of the head teachers, attention was drawn to the demographic data of the teachers. The data focused on their gender, highest level of professional training, and the duration they had been teaching in the division.

4.3.6 Distribution of teachers by gender

The teacher respondents were asked to indicate their gender and they responded as shown in table 4.5.

Table 4.5: Distribution of teachers by gender

Gender	Frequency (f)	Percentage (%)
Male	1	5.0
Female	20	95.0
Total	21	100.0

N=21

Data on gender of teachers indicates that 95% the teachers were female while only 5% were male. However this disparity did not affect the respondents' provision of information about the school based factors influencing access to ECCE in flood prone area of Kadibo Division.

4.3.7 Teachers' professional training

The teacher respondents were further asked to indicate their highest level of professional training. Their responses are as shown in table 4.6

Table 4.6: Teachers' highest level of professional training

Qualification	Frequency (f)	Percentage (%)
Untrained	3	14.0
Certificate	12	57.0
Diploma	5	24.0
B.ED	1	5.0
Total	21	100.0

N=21

Data on the highest level of professional training of teachers indicates that 14% were untrained, 57% had certificate training, and 24% had diploma training, while 5% were B.Ed holders. Therefore, 86% of the teacher respondents had a minimum of certificate training and were in a position to provide information on school based factors influencing access to ECCE in flood prone area of Kadibo Division.

4.3.8 Teachers' teaching experience

The teacher respondents were then asked to indicate the range of years they have been teaching in the division. They responded as shown in table 4.7.

Table 4.7: Teachers' teaching experience in Kadibo Division

Duration of teaching	Frequency (f)	Percentage (%)
1-5 years	7	33.0
5-10 years	4	19.0
10-15 years	3	15.0
Above 15 years	7	33.0
Total	21	100.0

N=21

Data on duration the teachers had taught in the division showed that; 33 % of the teachers had taught in the division for a period of between 1-5 years, 19% had taught for a period of 5-10 years, 15% had taught there for a period of between 10-15 years and 33% had taught for a period above 15 years. The duration could be considered adequate for them to have had exposure to the school based factors influencing access to ECCE in Kadibo Division.

4.4 Findings on learners' health factors influencing access to ECCE in flood prone area of Kadibo Division

The respondents were presented with statements that they were supposed to respond to on attendance, enrolment and participation in relation to floods. They included the head teachers and the teachers. The learners participated in the focus group discussions.

4.4.1 Influence of the floods on the learners' attendance

The head teachers were asked to indicate whether the recent flood affected the learners' school attendance. Their responses are as shown in table 4.8

Table 4.8 Influence of floods on the learners' attendance

Response	Frequency (f)	Percentage (%)
Affected attendance	9	90.0
Did no affect attendance	1	10.0
Total	10	100.0

N=10

Nine out of ten head teachers indicated that the latest floods affected the learners' school attendance while one indicated the learners were not affected.

The nine represent 90 % of the schools while one represents 10%. This means that 90% of the schools in the division had their learners affected by floods. This was an indication that access to ECCE was affected by the floods.

4.4.2 Influence of floods on enrolment of learners

The head teachers were then asked to indicate whether the floods had affected the enrolment of the learners. They indicated that the enrolment of the learners in the 10 schools was 876 before the floods. After the floods it fell to 656, an indication that 220 learners had left the 10 schools. 110 were from baby class, 57 from middle class and 53 from the final class. The responses were as shown in figure 4.1.

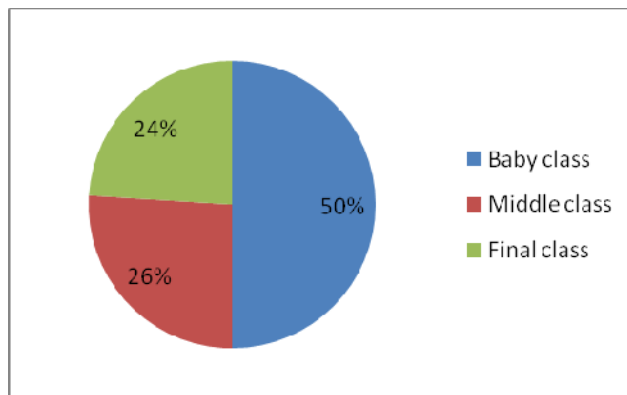


Figure 4.1: Influence of floods on learners' enrolment

From the figure, it is clearly seen that the most affected were the learners of baby class at 50%, followed by middle class at 26% and the final class was the least affected in enrolment at 24%.

The head teacher respondents were further asked to suggest ways of how to encourage the enrolment of learners. Their responses included; parents escorting their children to and picking them from school at the end of school day, introduction of school feeding programme and participation of the surrounding community who can help by opening up of the blocked water channels around the school. There was also the provision of alternative learning space and one respondent suggested that; *“the teachers too can escort the learners to and from school, since most of them live near the schools.”*

4.4.3 Ailments that affected the learners

The head teachers were asked to indicate the waterborne ailments that affected their learners. Their responses are shown in table 4.8

Table 4.9: Ailments that affected learners’ attendance in different schools

Disease	SA		A		SA		NA	
	f	%	f	%	F	%	F	%
Malaria	3	30	5	50	1	10	1	10
Cholera	0	-	3	30	1	10	6	60
Typhoid	2	20	3	30	2	20	2	20
Colds	5	50	3	30	1	10	1	10

SA – Seriously affected A – Affected SA- Slightly affected

NA- Not affected

From the indication in table 4.8, the learners were mostly affected by malaria and colds, in nine schools out of ten. Typhoid affected learners in eight

schools out of ten, while cholera least affected the learners with only 3 schools affected. This would be supported by Rashid (2000) in his writing; *The Urban Poor in Dhaka City: their struggle and Coping Strategies during Floods of 1998*; when he observed that children are mainly affected by waterborne diseases as many of them swim in, drink and even bathing in dirty water.

4.4.4 Learners' absence from class due to illness

The teacher respondents were asked to rate their learners' absenteeism from class due to illness during the floods. Their responses are shown in table 4.9

Table 4.10: Learners' absenteeism from class due to illness during floods

Rate	Frequency (f)	Percentage (%)
Very high	13	62.0
High	4	19.0
Moderate	3	14.0
Low	1	5.0
Total	21	100.0

N=21

From the table, very high percentage of learner absenteeism was experienced in nearly all the classes during the floods due to various illnesses; with 62 % of them absent. This indicates that very many could not access ECCE during

the floods. Fredrich (2009) observed that natural disasters such as floods have devastating impact on education. Floods disrupt learning for days, months and in some cases years. Republic of Kenya (2010) also noted that one of the after effects of floods is health impacts which contribute to negative impacts in education sector.

Similarly, during the focus group discussions, the learners too were asked whether they missed school during the floods. Many learners indicated that they missed school because of the flood waters, illnesses and parents retaining them at home.

4.4.5 Effects of ailments on learners' participation in school

The head teacher respondents were asked to indicate how the ailments affected the learners' participation. They observed that due to the ailments, there was a lot of absenteeism from school by the learners. Those who manage to come to school were mostly inactive, looked tired and dull. Some came late to school; others would sleep in class, were not interested in school work and lacked concentration, while others were withdrawn. One head teacher observed that; *a few of them became harsh and aggressive to others*. These findings confirm Achoka and Maiyo's (2008) observation that children are in greater danger in flood regions because they fall victims of diseases.

4.4.6 Availability of feeding programme for learners in school

The head teachers were asked to indicate whether they have feeding programmes in their schools. Eight out of ten respondents indicated that their

schools had no feeding programme in place, while only two out of ten had a feeding programme. This means that 20% of the ECCE schools have a feeding programme, while 80% do not. This is an indication that learners had to stay hungry in school or carry their own snacks.

From the focus group discussions, learners were asked whether they are provided with meals at school. Only learners from two centres affirmed this. The rest noted that they have to carry their own snack to eat at break time. They also noted that during the rainy season, this becomes cumbersome, forcing them to leave their snacks behind and would remain hungry till they go back home. They also observed that at times, the snack is not there. Ayieko (2006) reveals that, after floods, children and families may lack sufficient food.

The head teachers were further asked to rate how the feeding programmes in their schools assist in improving their learners' attendance. Only the two respondents with feeding programmes in their schools gave indications. They rated the assistance as highly. Sanchez (2009) notes that, malnourished children, when compared to well-nourished ones have lower academic outcomes.

4.4.7 Learners missing school due to hunger

The teachers were asked to indicate whether there were learners who missed school due to hunger. Table 4.11 shows their responses.

Table 4.11 Learners missing school due to hunger

Response	Frequency (f)	Percentage (%)
Missed school	18	86.0
Did not miss school	3	14.0
Total	21	100.0

N = 21

Eighteen out of twenty one teachers indicated that their learners missed school due to hunger while only three of them indicated otherwise. Eighteen teachers represent 86% of the teachers while three represent 14%. This explains the large percentage of absenteeism realised earlier and shows the effect nutrition has on access to ECCE. Ariyabandu and Wickramasinghe (2005) observed that children easily become malnourished because they are more vulnerable and Plan (2013) notes that, nutrition and health literally save life and help prevent irreversible damage to children's cognitive development. When the learners are in good health, access to ECCE would not be affected.

The teacher respondents were further asked to tell some ways by which the schools responded to the issue of learners' absenteeism as a result of hunger. Seven out of twenty one teachers mentioned the school feeding programme. This is 33% of them. The majority talked of sensitizing parents on the

importance of feeding their children. This is because malnourished children are likely to have lower academic out-comes (Sanchez, 2009).

4.4.8 Ways that can help improve the learners' health during floods

The head teachers were asked to give their own views on how the learners' health can be improved even during the floods. There were varied views on how to improve the learners' health during floods in school. The idea of sensitizing the parents on proper hygiene and putting preventive measures against water borne diseases featured prominently, with nine out of ten respondents suggesting the two ways. There was also the idea of provision of school feeding programme for those who did not have one. Having well-built classrooms that cannot be flooded was another way. Keeping the toilets clean and having hand washing points with steady flowing water, having safe drinking water and drugs for emergency in school and sensitizing parents and learners on appropriate dressing during the floods were other suggestions. All these suggestions concur with Plan's (2013) idea which notes that, nutrition and health literally saves life and helps prevent irreversible damage to children's cognitive development.

4.5 Findings on the damaged school infrastructure that influence access to Early Childhood Care and Education in flood prone area of Kadibo

Division

The second research objective of the study was to find out how the damages of the school infrastructure influence access to the early childhood care and education during floods in Kadibo Division.

4.5.1 Damage of school infrastructure

The head teachers were asked to indicate whether any infrastructure in their schools was damaged during floods. They were also asked to indicate the infrastructure damaged and they listed classrooms, toilets/latrines, playground and the teaching/learning materials. Their responses on the extent to which the infrastructures were damaged are as shown in table 4.12

Table 4.12: Damage of school infrastructure according to the head teacher respondents

Name of facility	Badly damaged	Partially damaged	Not damaged
Classrooms	2	4	4
Toilets	5	3	2
Playground	5	3	2
T/L materials	0	7	3

Table 4.10 indicates the number of schools and the extent of their damaged infrastructure. Two schools had their classrooms badly damaged and four had them partially damaged. Five schools had badly damaged toilets and three had them partially damaged. Five schools had their playgrounds badly damaged while three had them partially damaged. Lastly, seven schools had their teaching/learning materials partially damaged. This was in agreement with

Parker (2000) who states that floods frequently cause major infrastructure damages.



Source: *Researcher (2014)*

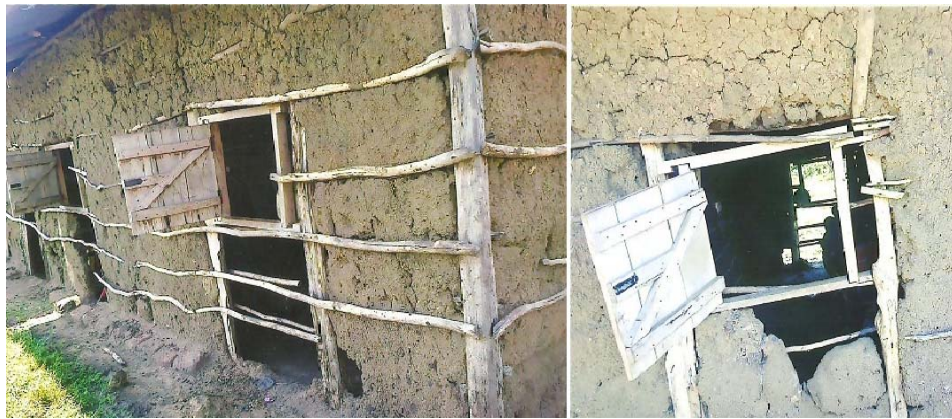
Figure 4.2: A damaged school block

The photograph in Figure 4.2 shows an ECCE school block in Kadibo Division, whose walls were corroded by the rain and flood waters. This left many openings and the learners would even use the windows to go in and out of the class. The head teacher of the particular school noted that, the walls also became shaky and were dangerous to the learners.

4.5.2 Damage of classrooms

The teacher respondents were asked to indicate whether any of their classrooms were damaged by floods. Eighteen out of twenty one teachers indicated that their classrooms were damaged while only three indicated they

were not damaged. Eighteen represent 86% of the teachers and three represent only 14%. The teachers noted that the walls and floors were damaged by the flood waters. Due to the damages, many learners had to remain at home thus lacking access to ECCE.



Source: *Researcher (2014)*

Figure 4.3: A classroom whose walls are damaged

Figure 4.3 shows a picture of a classroom whose walls have been damaged by flood waters making them very weak and dangerous to the learners. According to UNESCO and UNEP (2004), emphasis is laid on the importance of school safety by stating that, ‘The upgrading and construction of schools that will be relatively safe during the occurrence of disasters, should be part of a nation’s long- term planning’. The classrooms were not constructed according to the standards of flood prone areas, an indication of lack of preparedness. The teachers noted that this made learners not access ECCE in the division during the floods.

4.5.3 Alternative spaces for classrooms to ensure accessibility

The teachers were asked to indicate any alternative spaces they may have used as classrooms during the floods. It was noted that a big percentage had no alternative space for learning and the learners had to stay at home till the waters subsided. However a few had alternative spaces, for instance one centre was provided with a class from the primary school section, another was accommodated at a nearby church and yet another at a fish project building next to the school. The rest had to conduct their lessons under trees that were within the school compound. It is good to note that some teachers indicated that serious repairs were carried out in some of the centres. From the focus group discussions, the learners too noted that they had to be relocated to alternative spaces for their classes.

4.5.4 Usability of the toilets/latrines during the floods

The teacher respondents were asked whether their toilets were useable during the floods. Only eight out of twenty one teachers indicated that their toilets were useable. Thirteen out of twenty one indicated they were not useable.

This explains the high infections of typhoid among the learners. The teachers noted that the learners would relieve themselves anywhere and the waste would be carried away by the same water they play in. This confirms what Ocholla (2009) established in his research; that 40% of schools in Nyando District were affected by floods in 2009, where by toilets got destroyed,

floating the wastes on flooded areas exposing learners to high risks. Kadibo Division neighbours Nyando District.

The teachers were then asked to briefly explain how the damage of school toilets/latrines caused any school missed days to the learners. They explained that there was a big percentage of absenteeism among the learners. This, they noted was as a result of water borne disease infections such as typhoid and cholera; and the learners being ashamed as there was no place to go for calls.

The learners observed during the focus group discussions that, many toilets sunk or were swept away and they could not use them. One learner said, *“I did not like it because we were to go behind the sunken toilet.”* The teachers noted that the damages affected the learners’ access to the centres. This confirms Kenya Red Cross Society’s (2009) view when it noted that, flooding in Nyanza in 2009 led to limited useable toilets causing learners to suffer from illnesses, hence inability to attend school. The learners’ access to the ECCE centres was thus affected.



Source: *Researcher (2014)*

Figure 4.4: A damaged ECCE latrine

Figure 4.4 shows a picture of an ECCE latrine damaged during the floods. The researcher observed that the toilet was sunken on one side. This made it not useable and the learners had to share with the older children in the primary section.

4.5.5 Usability of playground during the floods

The teachers were asked to indicate whether the playgrounds were useable during the floods. The responses showed that seventeen out of twenty one teachers indicated that their playgrounds were not useable while only four indicated they were useable. Seventeen of the teachers represent 81% of the teachers and four represents 19%.

The teachers were then asked to explain briefly how the damage of the playgrounds affected the learners' participation in class. They indicated that the learners missed the out-door activities which are very essential to the ECCE learners. They observed that this made them dull, lacked concentration and even became destructive. They would play in the classroom and cause a lot of destruction to the furniture. Some just got bored and would miss coming to school the following day. So, in-usability of the playground also caused absenteeism. With the learners absent, access to ECCE was affected in the division.



Source: *Researcher (2014)*

Figure 4.5: A flooded playground

Figure 4.5 shows a picture of a flooded playground in one of the ECCE centres in Kadibo Division. This made the facility not useable during the floods. According to the teacher respondents, it led to some learners missing school, as some of them fell ill after playing in the flood waters while others just felt they had no place to play when they came to school. This concurs with Ariyabandu and Wickramasinghe's (2005) view in their book; *Gender Dimension in Disaster Management* where they note that, children are more vulnerable to floods than others as floods cause waterborne diseases such as cholera, malaria and typhoid which often make them have poorer health and cause absenteeism from school.

4.5.6 Damage of teaching/learning materials

The head teacher respondents were asked to indicate whether any of the teaching/learning materials were damaged during the floods. Table 4.13 shows their responses.

Table 4.13 Damage of teaching/learning materials

Response	Frequency (f)	Percentage (%)
Damaged	7	70.0
Not damaged	3	30.0
Total	10	100.0

N=10

Seven out of ten, which is 70% of the schools, indicated that their teaching/learning materials had been damaged while only 30% of the schools had no damages. The head teachers observed that, this made both teaching and learning very difficult and affected the participation of learners. It is almost impossible to teach learners of the ECCE level without teaching/learning materials. The learners would become bored and eventually miss coming to school thus affecting access.

The teacher respondents too were asked to indicate whether any of their teaching learning materials were damaged by floods. Fifteen out of twenty one teachers indicated that their teaching/learning materials had been damaged. This represented 71% of the targeted teachers. Only six out of twenty one

indicated their teaching/learning materials had not been damaged. This was 29% of the teacher population. The teachers noted that, without the teaching/learning materials, learning in ECCE is very minimal. The learners need to manipulate the materials to enhance learning. The learners too noted during the focus group discussions, that their playthings were destroyed by the floods and were bored, as they could not play while in school.

The teacher respondents were then asked to give ways they think can best ensure that their teaching/learning materials are not damaged by floods in future. The following are some of the possible ways they suggested; construction of good buildings that can withstand floods, having proper storage facilities such as raised cupboards and shelves, opening of water channels around the school so that the flood waters do not get into the schools and getting well-wishers like the NGOs who can help with the management of floods.

4.5.7 Schools being used as evacuation centres

The head teachers were asked to indicate whether their school were used as evacuation centres. Only one school out of ten was used as an evacuation centre, a representation of 10% of the schools in the division. Nine out of ten, representing 90% of the schools were not used as evacuation centres. Most of their facilities were either badly or partially damaged and were in no condition of being used. It was observed that access to that centre was affected. From the

head teacher's indication, most of the ECCE learners had to stay away till after the floods.

4.5.8 School infrastructure damages as a result of being used as evacuation centres

The head teachers were further asked to indicate whether any of their school infrastructures was damaged as a result of the school being used as an evacuation centre. Their responses were as shown in table 4.14

Table 4.14 Schools that realised damages due to the school being used as an evacuation centre

Response	Frequency (f)	Percentage (%)
Damages realised	1	10.0
No damages realised	9	90.0
Total	10	100.0

N=10

Nine out of ten schools never realised any damages due to them being evacuation centres. These represented 90% of the schools in the division. Only one school realised damages as a result of it being an evacuation centre. This represented 10% of the schools. The school's head teacher gave an indication

that many of the school's facilities were not assessable to the learners effectively affecting their access to ECCE.

4.5.9 The extent of the damage of school infrastructure due to its use as an evacuation centre

The head teachers were asked to indicate the extent of the damages to the school infrastructure due to the school's use as an evacuation centre. The head teacher whose school was used as an evacuation centre responded as shown on table 4.15.

Table 4.15 Extent of the damage of the school infrastructure due to its use as an evacuation centre

Name of facility	Badly damaged	Partially damaged
Classrooms	-	2
Toilets	1	-
Playground	-	1

From the response, it can be seen that the school facilities were either badly or partially damaged. One toilet was badly damaged due to the use, while two classrooms and a playground and were partially damaged. This made them be not useable effectively affecting access to the learners. This concurs with Ocholla (2009), in his research where he noted that, in some cases, schools are used as emergency shelters during flooding times, resulting into damage of school structures.



Source: *Researcher (2014)*

Figure 4.6: A damaged toilet during floods

Figure 4.6 shows a picture of a toilet that sank during the floods in an ECCE centre that was used as an evacuation centre. The toilet was damaged after over use by evacuees in the centre. There is evidence of disuse from the picture with the toilet sunken backwards and grass growing in one of them.

4.5.10 Effect of damaged school infrastructure on learners' attendance

The head teachers were asked to indicate how the damages affected the learners' attendance. They observed that with the damaged classrooms, toilets, playground and teaching/learning materials, many learners were effectively denied access to the facilities. They had to stay away from the schools till the flood waters subsided. Those who managed to access the centres had to share the few facilities that were not damaged. One of the head teachers indicated that, *"This led to a lot of time wastage. For instance, the learners had to*

queue for a long time to use the few toilets left undamaged. This also made a good number of them stay away from school. “Another respondent indicated that this caused some ‘drop out’. This situation was similar to that of New Orleans when Hurricane Katrina damaged 240 Early Childhood Care and Education centres, making 7,200 learners miss access to the centres (Peek & Forthergill, 2006).

Majority of the learners who participated in the group discussions indicated that their classrooms and playgrounds were flooded. Many toilets sunk or were swept away. They noted that they were very bored in school as they could not play in the playground. This made them not to go to school till the waters in the playground had somehow dried up. Some said their teachers allowed them to play in class. A few noted that there were no toilets to use so they went behind destroyed ones but did not like it. Others indicated that they had to share with the primary children and would wait for so long in the queue. This made some of them to stay away from school thus missing access to ECCE.

4.5.11 Effect of the damage of the school infrastructure on the learners’ participation in school

The head teacher respondents were finally asked to briefly explain the effect of the damage of school infrastructure on the learners’ participation in school. They noted that, teaching and learning became very difficult. This confirms what Snider, Hoffman, Fry and Thornburg (2005) noted; damage of books, supplies and years of accumulated teaching material during disaster is a nightmare to teachers; the few teaching/learning materials that were left were

to be shared amongst the teachers for their lessons. The head teachers observed that some lessons would be handled without the materials and very little learning took place as the learners were not manipulating any material. They noted that teachers also had a difficult time as they were to make new ones at the same time teach and learners became very inactive. The bought materials could also not be bought as the schools had insufficient funds.

4.6 Findings on the influence of displacement of teachers on access to Early Childhood Care and Education in flood prone area of Kadibo Division

The third objective of the study was to examine how the displacement of teachers can influence access to Early Childhood Care and Education in flood prone area of Kadibo division.

4.6.1 Displacement of teachers

The head teachers were asked to indicate whether any of their teachers were displaced by the floods. Six out of ten indicated that they had teachers displaced while four indicated otherwise. The six represented 60% of the schools in the division and the four represented 40%. This means that 60% of the schools experienced shortages during the flood period. With such kind of a shortage, learners' access to ECCE was hampered.

The head teacher respondents were further asked to indicate the number of their teachers displaced. In six schools, two teachers out of three were displaced in each, giving a total of twelve. Three schools had each a teacher out of three displaced, giving a total of three, while one school had none

displaced. The total number of teachers displaced was 15 out of twenty one. This was 71% of the teachers displaced while 29% of them were not displaced. This is an indication of teacher shortage in the schools and is shown in figure 4.7.

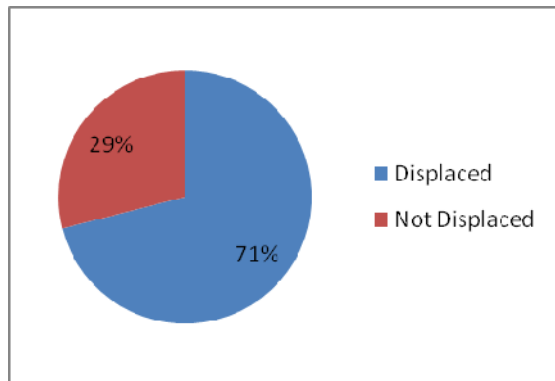


Figure 4.7: Number of teachers displaced

Figure 4.7 indicates that 71% of the teachers were displaced, while 29% of the teachers were not displaced. This is an indication of teacher shortage which in turn affects the learners' access.

The teacher respondents were also asked to indicate whether he/she was displaced by floods. Their responses indicated that fifteen out of twenty one were displaced while six out of twenty one were not. Fifteen teachers represent 71% of the teachers in the division. It was a huge percentage of displacement, indicating that access to ECCE in the division was affected. The six who were not displaced represented only 29% of the teachers. This is a confirmation of earlier finding from the head teachers' responses, which indicated that 71% of the teachers were displaced and only 29% were not

displaced, an indication of teacher shortage which in turn would affect the learners' access to the ECCE.

4.6.2 Teachers taking transfers due to the floods

The head teachers were asked to indicate whether any of their teachers took a transfer as a result of the floods. Table 4.16 shows their responses.

Table 4.16 Teachers taking transfers due to the floods

Response	Frequency (f)	Percentage (%)
Took a transfer	4	40.0
Did not take a transfer	6	60.0
Total	10	100.0

N=10

Four out of ten head teachers indicated that teachers in their schools sought for a transfer due to the floods. Six head teachers did not realise the seeking of transfers. Four head teachers represented 40% of the schools. Though 60% of the schools did not realise teachers seeking transfers, it should be noted that 40% is a huge percentage, that if all these schools lost their teachers through transfers, access to ECCE would automatically be affected. The percentages are an indication that the number left behind could not cope effectively with the teaching thus the inaccessibility to ECCE in Kadibo Division.

The teacher respondents too were asked to indicate whether their displacement made them seek for a transfer. Five out of twenty one sought for a transfer while the remaining fifteen did not. The five represented 24% of the teachers while the fifteen represented 76%. It was observed that the reason as to why just a small number sought for a transfer is because the teachers are employed by the school management committees thus not transferable. However there was an indication that they were not happy.

4.6.3 Teachers missing classes during floods

The head teacher respondents were asked to indicate whether any of their teachers missed class during the floods. Eight out of ten schools had their teachers missing class due to floods while only two schools had their teachers not missing. The eight represent 80% of the schools in the division. The data implies high percentage of absenteeism by the teachers since only 20% of the schools had their teachers not missing their classes. This is an indication that 80% of the schools had their learner's access to ECCE affected. Head teachers were then asked to indicate the duration their teachers missed class due to floods. Their responses were as shown in table 4.17

Table 4.17 Duration the teachers missed classes

Duration	Frequency (f)	Percentage (%)
Less than one week	2	20.0
One week	5	50.0
More than one week	1	10.0
Not applicable	2	20.0
Total	10	100.0

N=10

Data showed that in 20% of the schools, teachers were away from classes for less than one week, 50% of the schools had teachers away for one week, 10% had teachers away for more than one week while 20% did not have any of their teachers stay away during floods. The cumulative percentage of those schools that had their teachers missing school was 80%. This large percentage is an indication that learners' access to ECCE in the division was affected, as only 20% of the teachers were in school. From the group discussion with the learners, a large percentage of them indicated that at least one of their teachers was away from school during the floods. This confirms Sinclair's (2002) in Kamel (2006) view that, during emergencies, pre-school teachers or care professionals are likely to be in short supply or absent altogether.

4.6.4 Effect of the displacement of teachers on the enrolment of learners and teachers' attendance

The head teachers respondents were asked to briefly explain how the displacement of teachers affected the enrolment of learners in their schools. In the schools that the teachers missed school for a week and more, a drop in the enrolment was realised. However in those that the teachers missed for less than a week, absenteeism of learners was experienced for a few days after resuming the classes.

The teachers too were then asked to indicate how their displacement affected the learners' enrolment. Their responses were as indicated in table 4.18.

Table 4.18 Effect of teachers' displacement on learners' enrolment

Response	Frequency (f)	Percentage (%)
Dropped in enrolment	17	81.0
No change	4	19.0
Total	21	100.0

N=21

Seventeen out of twenty one teachers indicated that they realised a drop in the learners' enrolment. Only four out of twenty one had their learners intact. The seventeen represents 81% if the teachers in the division while four represent 19%. This is an indication that the displacement of teachers had an effect on

the learners' enrolment. The situation was similar to what Sack (2005) noted with Hurricane Katrina; it displaced teachers and learners from Louisiana and Mississippi, resulting in some states experiencing influx of students.

Similarly, the teacher respondents were asked to briefly explain how their displacement affected their school attendance. The responses of the 71% who were displaced included absenteeism from school, late arrivals to school and early departures from school as they feared being caught up by the rains that fell quite early.

From the focus group discussions, the learners indicated that in most cases, it was the baby class teacher who missed school. From earlier findings, baby class (3-4 years) had the highest absenteeism and perhaps their teachers' absenteeism would be a contributing factor. This is an indication the access to ECCE by the baby class in the division was very low.

4.6.5 Solutions to the problem of displacement of teachers in future

The head teachers were then asked to give suggestions on how the problem of teachers' displacement can be avoided in future. Their suggestions varied but building an evacuation centre and staff houses in the school were the most prevalent.

4.7 Strategies that can be put in place to ensure access to ECCE in flood prone area of Kadibo Division

The fourth objective was to establish strategies that can be put in place to ensure access to ECCE in flood prone areas.

The head teacher respondents were asked to indicate whether their learners have been prepared for floods in any way. Only one head teacher indicated that his learners had been prepared for floods while nine had not. Nine represent 90% of the schools in the division. Only 10% of the schools had their learner prepared for floods. This confirms the earlier finding from the head teachers, where there was high percentage of absenteeism of the learners during the floods. It was also from an earlier analysis of teacher respondents where cumulatively, up to 95% of learners would be absent from school due to illnesses related to floods. This is an indication that lack of flood preparedness of learners, highly affected learner's access to ECCE in the division.

4.7.1 Teachers trained in flood preparedness mechanisms.

The head teachers were then asked to indicate whether any of their teachers have been trained in flood preparedness mechanisms. Nine out of ten indicated that their teachers had no training in flood preparedness mechanisms, with only one indicating otherwise. The nine represent 90% of the school while 10% is represented by one. This again explains the high percentage of absenteeism by learners and teachers from school during floods, another indication that access to ECCE in the division is affected.

The head teacher respondents were further asked to indicate the number of their teachers trained in flood preparedness mechanisms. They responded as shown in table 4.19.

Table 4.19 Number of teachers trained in flood preparedness mechanisms

Response	Frequency (f)	Percentage (%)
More than one trained	0	0.0
One trained	1	10.0
None trained	9	90.0
Total	10	100.0

N=10

Table 4.19 clearly indicates that only 10% of the schools had at least one teacher trained in flood preparedness mechanism while 90% of the schools had none trained.

The teacher respondents were then asked to indicate whether he/she had undertaken any flood preparedness drills training. Only one teacher indicated having been trained while twenty indicated not being trained. Twenty represent 95% of the teachers while one represents only 5%. This finding confirms why 90% of the schools in the division had their learners not prepared for floods.

The teacher respondents were further asked to indicate the kind of flood preparedness drills training they undertook. From the data, out of the 21 teachers, only one had some basic training in flood preparedness drills. And even from this one trained teacher, no specific drill was identified.

4.7.2 Conducting flood preparedness drills with the learners

The teachers were asked whether they conduct any flood preparedness drills with their learners. Their indications were as shown in table 4.20

Table 4.20 Conducting flood preparedness drills with the learners

Response	Frequency (f)	Percentage (%)
Conducts	4	19.0
Do not conduct	17	81.0
Total	21	100.0

N=21

Four out of twenty one conduct while seventeen do not. Four represented 19% and seventeen represented 81% of the teachers. It should be noted that the four who are representing 19%, included even those who had no training in flood preparedness mechanisms. This would mean that the drills conducted may not be effective at all in an event of floods.

Learners on the other hand were asked if they knew what they would do if flood waters got into their classroom while inside. None had any idea of what they would do. This confirms the earlier finding that the 19% of the teachers who conducted flood preparedness drills included those with no training and whatever drills they conducted may not be effective in an event a flood occurred and the learners are in class. This is an indication that during the floods, access to the centres would be low.

4.7.3 School buildings

The head teacher respondents were asked to indicate whether their classrooms can withstand floods. The responses were as shown in table 4.21

Table 4.21 Classroom buildings

Response	Frequency (f)	Percentage (%)
Can withstand floods	1	10.0
Cannot withstand floods	9	90.0
Total	10	100.0

N=10

Their responses showed that only one school had building that can withstand floods while nine had buildings that cannot. The nine represent 90% of the schools while one represents only 10%. The finding confirms an earlier finding on damage of classrooms, where 86% of the teacher respondents indicated that their classrooms were damaged by floods, an indication that they could not withstand floods. They had also indicated that they had to look for alternative spaces for learning. This, they indicated affected the learners attendance.

4.7.4 Suggestions on how the ECCE centres can ensure continuous access during future floods

Both the head teacher and teacher respondents were asked to give suggestions on how they think the ECCE centres can ensure continuous access during future floods. Their responses included; construction and maintenance of water channels for the fast flow of water, construction and maintenance of classrooms that can withstand floods, learners having appropriate clothing during the floods, building of evacuation centres within the school premises, teachers being trained in flood preparedness mechanisms, involving parents by ensuring they escort their children to school and picking them when the school day is over, and having school feeding programmes in all the ECCE centres in the division. There was also the view of improvement of management of both material and human resources and the training of learners to be ready for floods. The training of the learners would be in line with Plan (2013) that observed that, ECCE in emergencies builds children's resilience against risks, present and future. It focuses on the immediate and unique needs of children by ensuring development and learning continues as normally as possible.

The learners too were asked whether they knew of anything that can be done to ensure that flood waters do not get into their schools. A few knew of the water channels being opened. Many of those who knew of the water channels being opened indicated that they got the idea from home. Due to this area being a flood prone area, they could have seen this being done even at home.

All the respondents noted that with the mentioned strategies, there would be enhanced access to ECCE in Kadibo Division.

CHAPTER FIVE

CONCLUSION, SUMMARY AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of the study, conclusion, recommendation and suggestions for further research.

5.2 Summary of the study

The purpose of the study was to investigate the school based factors influencing access to Early Childhood Care and Education in flood prone area of Kadibo Division in Kisumu East District. Four research objectives were formulated to guide the study. The first objective sought to establish the learner' health factors that influence access to Early Childhood Care and Education in flood prone area of Kadibo Division; the second research objective aimed to examine how damage of school infrastructure can influence access to Early Childhood Care and Education in flood prone Kadibo Division; the third objective aimed at examining how the displacement of teachers can influence access to Early Childhood Care and Education in flood prone area of Kadibo Division while the last objective sought to establish the strategies that can be used by Early Childhood Care and Education school communities in making ECCE more accessible in Kadibo Division during floods.

The study was conducted using descriptive survey which is a method of collecting information by interviewing or administering questionnaire to a

sample of individuals. The sample comprised of 10 head teachers, 30 teachers and 180 learners. The main instruments in the study were the questionnaire and questions for the focus group discussion.

5.3 Summary of the findings

Findings from the study revealed that, waterborne diseases and nutrition are the learners' health factors that influence access to Early Childhood Care and Education. Malaria, typhoid, cold and cholera were the water borne diseases identified to have affected the learners during the floods. Malaria affected most of the learners, standing at 90% of the schools sampled. It was followed by typhoid and cold at 80% of the schools and lastly cholera at 30% of the sampled schools. On nutrition, only 20% of the sampled schools had a feeding programme. 86% of the teachers indicated that there was learner absenteeism due to hunger. Many learners indicated that they opted not to go to school during the floods because they had to stay hungry till they went back home. It was also noted that the learners would not concentrate after break and some of them would fall sleep in class.

Findings also revealed that damage to school infrastructure influence access to Early Childhood Care and Education in the division. From the head teacher respondents, 90% of the schools had their infrastructure damaged. These included classrooms, toilets/latrines, playgrounds and the teaching/learning materials. However, toilets were the most affected with many of them sinking

and a few being washed away. This caused a lot of illnesses, leading to high percentage of absenteeism of learners.

The findings on displacement of teachers revealed that access to Early Childhood Care and Education is influenced by the displacement. The head teacher respondents indicated that 60% of the schools realised the displacement of teachers and 71% of them were displaced. This led to 24% of the teachers seeking for transfers, resulting into a high percentage of learner absenteeism and a drop in enrolment of learners in the schools where they sought for the transfers. This was an indication that, access to ECCE in the division was affected.

The study also revealed that with specific strategies in place, Early Childhood Care and Education can be enhanced during floods. The strategies included preparing learners for floods by conducting drills, training teachers in flood preparedness mechanisms and having buildings that can withstand floods. The head teacher and teacher respondents also had more suggestions on how to enhance access to ECCE during floods. These included; construction and maintenance of water channels around the schools that can fast drain the flood waters, having boarding facilities and evacuation centres in schools, having school feeding programmes, learners being trained in flood preparedness skills and having appropriate clothing during floods.

5.4 Conclusion

Based on the findings of the study, it was concluded that the learners' health factors that influence access to Early Childhood Care and Education in Kadibo Division were waterborne diseases such as malaria, cholera, typhoid and cold and nutrition. 90% of the schools had learners affected by the diseases while 86% of the schools had learners missing school due to hunger.

Damage of school infrastructure was realised in 90% of the schools. The damages included classrooms, toilets, playgrounds and teaching/learning materials. However, the toilets were the most serious of all the damages. From the teacher respondents, 62% of the toilets were not useable, which explained the high infections of typhoid among the learners during the floods. This affected the learners' attendance.

Displacement of teachers by floods too affected access to ECCE in the division. 60% of the schools experienced teacher displacement with 71% of them displaced. This led to teachers missing classes at a cumulative rate of 80%. The result was a drop in learners' enrolment, which was experienced in 81% of the school. Learner absenteeism was also realised due to teacher displacement.

The study also got suggestions of strategies that can be put in place to enhance access to ECCE in the division. They include; construction and maintenance of classrooms that can withstand floods, construction and maintenance of water channels around the schools that can fast drain the flood waters, having

boarding facilities and evacuation centres in schools, having school feeding programmes, teachers and learners being trained in flood preparedness skills and learners having appropriate clothing during floods. With all these strategies in place, access to Early Childhood Care and Education can be enhanced in Kadibo Division.

5.4 Recommendations

In order to improve the access to Early Childhood Care and Education in Kadibo Division, the researcher made the following recommendations based on the research findings:

- School Management Committees should engage qualified professionals to: design, construct and maintain school facilities so that they are resistant in the face of known disasters such as floods and other weather disasters.
- ECCE centres should develop and implement disaster management plan as School Safety Manuals.
- MOEST should include disaster management in the ECCE teacher training curriculum.

5.5 Suggestions for further research

- The study focused on school based factors influencing access to Early Childhood Care and Education in public schools and therefore there is

a need to carry out the same in private schools in flood prone area of Kadibo Division.

- There is a need to carry out a study on home based factors influencing access to Early Childhood Care and Education in flood prone area of Kadibo Division.
- There is a need to carry out a study on flood Disaster Risk Reduction in Early Childhood Care and Education schools in Kadibo Division.
- The study should be replicated in other areas that are affected by floods in the country.

REFERENCES

- ADEA, (2003).*Quality study*; BVLV Publication, Victoria.
- ADPC, (2000).*Monitoring Disaster Risk Reduction in Education Sector in Cambodia*. Bangkok: Asian Disaster Preparedness Centre.
- Amner, A.H (2007).*Responses to traumatised children*. Hampshire (N.Y): Palgrave Macmillan.
- Ariyabandu, M. M &Wickramasinghe, W. M (2005), *Gender Dimension in Disaster Management: A guide from South Asia*: Sir Lanka.
- Best, J.W. & Khan, J.V (2009).*Research Methods in Education*, New Delhi-Prentice Hall.
- Borg, W.R & Gall, M.D (1998).*Educational Research: an Introduction*. New York: Longman
- Children's Defence Fund (2009).*What it takes to Rebuild a Village*, W.K. Kellogg Foundation, New Orleans, Louisiana.
- Eagle, P. (2007).*Child development in Developing countries 3: Strategies to avoid the loss of development potential in more than 200million children in the developing world*.
- EFA Global Monitoring Report (2013/4), *Teaching and Learning: Achieving Quality for All*, UNESCO 2014, Paris, France.
- EFA Global Monitoring Report (2010), *Reaching the Marginalized*, UNESCO 2010, Paris, France.
- EFA Global Monitoring Report (2007).*Strong Foundations; Early Childhood Care and Education*, UNESCO 2006, Paris, France.
- Fox, S, Levitt, P. & Nelson, C (2010).*How the Timing and Quality of Early Experiences Influence the Development of Brain Architecture*, Child development (2010).
- Fredrich, H (2009). *International education statistics*, UNICEF, New York, USA.
- Golden, O. (2006). *Young Children after Katrina: A Proposal to Heal the Damage and Create Opportunity in New Orleans*, New Orleans.

- Headey, D. & Kennedy, A. (2011), *Enhancing Resilience in the Horn of Africa*, USAID, Washington DC, USA.
- Inter-Agency Standing Committee (IASC, 2007). *Guidelines on Mental Health and Psychology Support in Emergency Settings*, Geneva, IASC.
- Kamel, H. (2005). *Early Childhood Care and Education in Emergency Situations*, UNESCO.
- Kammerman, S. (2006). *A Global History of Early Childhood Education and Care*, UNESCO, Paris, France.
- Kenya Red Cross Society (2011). Kenya: heavy rains wreak havoc in many parts of Kenya and left 10,000 homeless, News Africa, Nairobi.
- Kenya Red Cross Society (2009), *Kenya Red Cross Society Disaster Response Programme*, Nairobi, Kenya.
- KIRA (2013), *Flooding in Kisumu East, Nyando, Nyakach, Nyatike, Muhoroni and Rachuonyo*, Kisumu Team, Kenya.
- Kombo, D. & Tromp, D.L (2006). *Details for Proposals and Thesis*, Paulines Publications, Nairobi
- MOEST (2003). *National Action Plan on Education for All*, Nairobi, Kenya.
- Mugenda, O.M & Mugenda, A.G (2003). *Research Methods: Qualitative And Quantitative Approach*: Nairobi University Press, Nairobi.
- National Scientific Council on the Developing Child, (2007). *The Timing and Quality of Early Experiences Combine to Shape Brain Architecture: Working Paper 5*.
- Ocholla, S.O. (2009). *Integrated Flood Hazard Vulnerability and Risk Assessment in Nyando District, Kenya: An analytical study*: Kenya.
- Orodho J, A. (2002), *Research Methods*, Nairobi, Kenya.
- Organization of Islamic Cooperation (2013), *Early Childhood Care and Education in OIC member countries*, Ankara, Turkey.
- Parker, D. (2000) *Floods*; Routledge, New York.
- Peek, L. & Fothergill, A. (2006). *Reconstructing Childhood: An Exploratory Study of Children in Hurricane Katrina*, University of Colorado.

- Plan (2013), *Early Childhood Care and Development, Survey*, United Kingdom.
- Rashid, F.S. (2000). *The Urban Poor in Dhaka City: their Struggle and Coping Strategies during Flood of 1998*. Journal, 24 (3): 240-253.
- Relief web organization (2007), *Horn of Africa Fact Sheet#2 (FY 2007)*, OCHA Kenya, Nairobi, Kenya.
- Sanchez, A. (2009). *Early Nutrition and Later Cognitive Achievements in developing countries*, Paper Commission 2012, reaching the Marginalized, Geneva: UNESCO.
- Shah, S. (2013). *Investing in the youngest, Early Childhood Care and Development in emergencies*, Woking: Plan.
- Snider, L. Hoffman, Y. Littrell, M. Fry, W. & Thornburgh, M. (2009). *Supporting Children after Hurricane Katrina: Reflections on Psychological Principles in Practice*, New Orleans.
- UN- OCHA (2012). *OCHA in the pacific*, Philippines.
- UNESCO (2004). *Creating a safe and welcoming school*, Bangkok.
- UNICEF (2007). *Progress for Children: A world fit for children*. Statistical review. Geneva, UNICEF.
- UNICEF (2002), *Annual Report*, New York NY10017, USA.
- UNISDR (2007), *Hyogo Framework for Action 2005-2015; Building the Resilience of Nations and Communities to Disasters*, Geneva, Switzerland.
- UN-OCHA, (2012). *United Nations Office of the Coordination of Humanitarian Affairs*.
- Victoria, C. (2008). *Natural and Child Under- Nutritional: Consequences For Adult Health And Human Capital*, Lancet
- Wessells, M. (2005). *Child Protection, an Emergency Response*. Presentation at the African International Conference on Early Childhood Development, Moving Early Childhood Development Forward in Africa, Accra, Ghana.
- Zambia Vulnerability Assessment Committee (2007). *Rapid Flood Assessment Report*; Lusaka, ZVAC.

APPENDIX I

LETTER TO THE HEAD TEACHERS

Adhiambo Benta,
University of Nairobi,
P.O. Box 92,
Kikuyu.

THE HEAD TEACHER

Dear Sir/ Madam,

Re: Permission to conduct a research in your school

I am a post graduate student at the University of Nairobi, currently carrying out a research on school based factors influencing access to ECCE in Kadibo Division in Kisumu County.

Your school has been selected to take part in the study. I kindly request your authority to gather the required information from you and a few of your teachers through questionnaires and conduct a focus group discussion with your learners regarding the same. The questionnaires are specifically meant for this study and therefore, no name of respondent or that of your school will be required.

Your assistance and support on this matter will be highly appreciated.

Yours faithfully,

Adhiambo Benta.

APPENDIX II

QUESTIONNAIRE FOR THE HEAD TEACHERS

The purpose of this questionnaire is to investigate the school based factors influencing access to Early Childhood Care and Education in flood-prone Kadibo Division. Please read through and indicate appropriate response in the spaces provided. Your answers will only be used for the purpose of this study. Do not write your name anywhere in this questionnaire.

Section A: General information

1. What is your gender? Male..... Female.....
2. What is your highest level of professional qualification? Diploma..... Certificate.... Untrained..... Others (specify).....
3. How long have you been a head teacher?
1-5 years.... 5-10 years..... 10- 15 years.... Above 15 years.....

Section B: Learners' health factors and access to Early Childhood Care and Education

4. Did the most recent flood affect learners' school attendance?
Yes.... No....
5. If Yes in (4) above please state how?
.....
.....

6. Please fill the table on enrolment

Enrolment	Baby class (3-4 years)	Middle class (4-5 years)	Final class (5-6 years)
Before floods			

After floods			
% of the difference			

7. What remedy did you have on enrolment to improve on access?.....

8. Did any of the following ailments affect the learners' attendance? Please indicate using a tick (✓)

Ailment	Seriously affected	Affected	Slightly Affected	Did not affect
Malaria				
Cholera				
Typhoid				
Cold				

9. How did the ailments affect the learners' participation in class?.....

10. Do you have a feeding programme in your school? Yes No

11. If yes in (10) above, how would you rate its assistance in improving the learners' attendance during floods? Please indicate using a tick (✓).

Very Highly	Highly	A little	Not at all

12. In your opinion, how can the learners' health be improved even during floods?

Section C: Damaged school infrastructure and access to Early Childhood Care and Education

13. Were any of your school infrastructures damaged during the flood?

Yes.... No....

If Yes in, please indicate what was damaged and the extent

Name of facility	No. Badly damaged	No. Partially damaged	Not Damaged
Classrooms			
Toilets			
Play ground			

14. How did the damages affect the learners' attendance?.....

15. Was your school used as an evacuation centre? Yes No

16. If Yes in (15) above, did you experience any damages to the infrastructure? Yes.... No.....

17. If Yes in (16) above, which one and to what extent?

Name of facility	No. Badly damaged	No. Partially damaged	Not damaged
Classroom			
Toilets			
Play ground			

18. Were any of the teaching/learning materials damaged? Yes.... No....

19. Was the learners' participation in school affected by the damages in any way? Please explain

Section D: Displacement of teachers and access to Early Childhood Care and Education

20. Were any of your teachers displaced by the floods? Yes No.....

21. If Yes in (20) above, state how many

22. Did any of the teachers take a transfer? Yes..... No.....

23. Did the teachers miss class? Yes..... No.....

24. If Yes in (23) above, for how long?

25. Briefly explain how the above affected the learners' enrolment.....

26. In your opinion, how can the above problems be avoided in future?
.....

Section E: Strategies that can be put in place to ensure access to ECCE in flood prone areas,

27. Have your learners been prepared for floods in any way? Yes No...

28. If Yes in (27) above, state how this improves on their school attendance
.....

29. Are your classrooms built to withstand floods? Yes No.....

30. (a) Have your teachers been trained in any flood preparedness mechanisms? Yes No.....

(b) If yes in (a) above, how many have been trained?

31. Please give suggestions on how the ECCE centre can ensure continuous access during future floods.
.....

Thank you for your cooperation

APPENDIX III

QUESTIONNAIRE FOR TEACHERS

The purpose of this questionnaire is to investigate the school based factors influencing access to Early Childhood Care and Education in flood-prone Kadibo Division. Please indicate appropriate response in the spaces provided. Your answers will only be used for the purpose of this study. Do not write your name anywhere in this questionnaire.

Section A: Background information

- 1. What is your gender? Male Female
- 2. What is your highest level of professional training?
 Diploma Certificate
 Untrained.... Others (specify)
- 3. How long have you been a teacher in this division?
 1- 5 years 5- 10 years Above 15 years

Section B: Learners’ health factors and access to Early Childhood Care and Education

- 4. How would you rate the learners’ absence in your class as a result of illness during the floods? Please indicate using a tick (✓)

High	High	Moderate	Low

- 5. Were there learners who missed school as a result of hunger?
 Yes No
- 6. If Yes in (5) above, how has the school intervened in the situation?

Section C: Damaged school infrastructure

- 7. Were any of your classrooms damaged? Yes No....
- 8. If Yes in (7) above, what alternative did you use to ensure accessibility?

9. Were the toilets/latrines useable? Yes... No
10. If No in (9) above, were there learners who missed school due to this?
Please explain.....
.....
11. Were the playgrounds useable during the flood?
Yes No
12. If No in (11) above, was the learners' participation affected in class by
this? Briefly explain.....
.....
13. Did the flood damage any of your teaching/learning materials?
Yes.... No
14. If yes in (13) above, how can this be avoided in
future?.....
.....

**Section D: Displacement of teachers and access to Early Childhood Care
and Education**

15. Were you displaced by the flood? Yes No
16. (a) If yes in (15) above, how did this affect your attendance? Briefly
explain
.....
.....
- (b) Did this course a need for you to look for a
transfer?.....
.....
17. How did the displacement of teachers affect the learners'
enrolment?.....
.....

Section E: Strategies that can be put in place to ensure access to ECCE in flood prone areas

18. Have you been trained in any flood preparedness drills? Yes... No...

19. If Yes in (17) above, which one(s)?

20. Do you conduct any flood preparedness drills with the learners?

Yes No

21. In your opinion, how can the problems experienced during floods be reduced in future?

.....

Thank you for your co-operation

APPENDIX IV

FOCUS GROUP DISCUSSION WITH ECCE LEARNERS

General information

Date of assessment: Date Month Year

Name of assessor: Adhiambo Benta,

University of Nairobi

Location of assessment:

Name of school..... Division.....

Type of group.....

Number of learners.....

Informed consent:

My name is Benta Adhiambo. I would like to ask you some questions about floods in your school and the learning activities. What you say here will not be told to anybody else. You can choose not to answer any or all questions.

Questions:

1. Have floods ever affected your school?
2. Did you miss to come to school at that time?
3. Why did you not come to school?
4. Are you given any meals in school during floods?
5. Did any of your classrooms become flooded?
6. Were you able to use your toilets and play ground?
7. Were any of your playthings destroyed by floods?
8. Did your teacher miss coming to school?
9. Do you know of anything that can be done to ensure that flood waters do not get into your school?

Thank you for your cooperation

THIS IS TO CERTIFY THAT:
MS. BENTA ADHIAMBO NYANGODO
of UNIVERSITY OF NAIROBI,
19145-40100 kisumu, has been
permitted to conduct research in
Kisumu County

Permit No : NACOSTI/P/14/9894/3208
Date Of Issue : 3rd September, 2014
Fee Received :Ksh. 1000

on the topic: **SCHOOL BASED FACTORS
INFLUENCING ACCESS TO EARLY
CHILDHOOD EDUCATION IN FLOOD
PRONE AREAS OF KADIBO DIVISION,
KISUMU EAST DISTRICT, KENYA**



for the period ending:
31st December, 2014

.....
Applicant's
Signature


.....
Secretary
National Commission for Science,
Technology & Innovation

CONDITIONS

1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit
2. Government Officers will not be interviewed without prior appointment.
3. No questionnaire will be used unless it has been approved.
4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.
5. You are required to submit at least two(2) hard copies and one(1) soft copy of your final report.
6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice.



REPUBLIC OF KENYA

NACOSTI

National Commission for Science,
Technology and Innovation

RESEARCH CLEARANCE
PERMIT

Serial No. 8066

CONDITIONS: see back page

APPENDIX V: RESEARCH PERMIT

APPEDIX VI: RESEARCH PERMIT



NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:

3rd September, 2014

NACOSTI/P/14/9894/3208

Benta Adhiambo Nyangodo
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

Handwritten signature
COUNTY COMMISSIONER
KISUMU COUNTY
5th Sept 2014
KISUMU

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on *“School based factors influencing access to early childhood education in flood prone areas of Kadibo Division, Kisumu East District, Kenya,”* I am pleased to inform you that you have been authorized to undertake research in **Kisumu County** for a period ending **31st December, 2014**.

You are advised to report to **the County Commissioner and the County Director of Education, Kisumu County** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

Handwritten signature
DR. S. K LANGAT, OGW
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
The County Director of Education
Kisumu County.

APPENDIX VII

RESEARCH AUTHORIZATION LETTER

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
STATE DEPARTMENT OF EDUCATION

Telegrams: "schooling", Kisumu
Telephone: Kisumu 057 - 2024599
Email: Ckisumu@education.go.ke



COUNTY DIRECTOR OF EDUCATION
KISUMU COUNTY
PROVINCIAL HEADQUARTERS NYANZA
3RD FLOOR
P.O BOX 575 – 40100
KISUMU

When replying please quote

CDE/KSM/GA/19/3/22

8th September, 2014

TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION – BENTA ADHIAMBO NYANGODO

The above named is a student at University of Nairobi.

This is to certify you that, the above person has been given authority to carry out research on the topic "School based factors influencing access to early childhood education in flood prone areas of Kadilbo Division, Kisumu East District, Kenya".

The research will run up to 31st December, 2014.

Kindly accord her necessary assistance.

A handwritten signature in black ink, appearing to be 'PA'.

PAUL AJUOGA
For: COUNTY DIRECTOR OF EDUCATION
KISUMU COUNTY