

**THE ROLE OF SCHOOLS IN ENVIRONMENTAL
MANAGEMENT IN TANZANIA
A CASE OF URBAN SECONDARY SCHOOLS
IN MOROGORO MUNICIPALITY**

By

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**A Dissertation submitted in partial fulfilments of the Requirements for Award
of the Degree of Master of Arts in Education (MAED) of the Mzumbe**

University

2017

CERTIFICATION

We, the undersigned, certify that we have read and hereby recommended for acceptance by Mzumbe University, a dissertation entitled “***The Role of Schools in Environmental Management in Tanzania: A case of Urban secondary schools in Morogoro Municipality***” in partial fulfilment of the requirements for Award of the Master of Arts in Education (MAED) of the Mzumbe University.

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DEAN FACULTY OF SOCIAL SCIENCES

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ACKNOWLEDGEMENTS

The writing of this dissertation was a challenging task which required support from different people as well as institutions. This study has been successfully carried out due to the support I received from various individuals. It is my pleasure to recognize them and extend my sincere thanks.

Firstly, I would like to thank my supervisor Mr. Yona Matekere for his supportive directives and constructive comments he offered. I extend my deep thanks to him since his guidance, comments and timely feedback played a big role in the successful completion of this dissertation.

Secondly, I wish to thank the head of schools, teaching staff and students I visited; for their cooperation during the process of data collection.

Thirdly, I would like to extend my profound gratitude to my family for the support they offered to me throughout my study period. Specifically I would like to thank my beloved mother, Dr. Mary Kilowoko for sponsorship, love and encouragement I have been receiving.

Lastly, but not least, I would like to thank my friends Florian Tonya, Clarence Tindwa, Muba Saedo, Geoffrey Mteweale and Shukuru Kivale for their constructive advices during my study.

DEDICATION

This dissertation is dedicated to the Almighty God, my Lord for his grace throughout my study.

LIST OF ABBREVIATIONS

EE	-	Environmental education
EM	-	Environmental Management
HM	-	Head Master
IUNC	-	International Union for Conservation of Nature
MoEC	-	Ministry of Education and Culture
MoEVT	-	Ministry of Education and Vocational Training
NCERT	-	National Council of Educational Research and Training
PSLE	-	Primary School Leaving Examination
SPSS	-	Statistical Package for Social Sciences
TTC	-	Teacher Training College
UNDP	-	United Nations Development programme
UNESCO	-	United Nations Educational, Scientific and Cultural Organization
URT	-	United Republic of Tanzania
WEC	-	Ward Education Coordinators

ABSTRACT

This study aimed at analysing the role of schools in Environmental Management (EM) in Tanzania using urban secondary schools in Morogoro Municipality as a case study. The study specifically focused at revealing the schools' role in environmental management in Tanzania. This was done in consideration of a school as a place for transformation of the societal behaviour.

The study was supported by national and international empirical researches and theoretical published works by different scholars. Both qualitative and quantitative approaches under a case study design were employed. The sampling procedures used include purposive sampling and random sampling in selecting a sample size of 72 respondents. The sources of data were primary and secondary sources whereas collection methods applied in data collection were interview and questionnaires. Data analysis was conducted through content analysis, whereas data collected through questionnaires were organized using Statistical Package for Social Sciences (SPSS) software for a meaningful interpretation.

The findings show that secondary schools were taking considerable efforts in environmental management. Students were taught environmental management education inside and outside the classrooms through extra-curricular activities, such as debates and environmental clubs. The study also revealed that, not all the schools were implementing environmental management thus a varying role. Moreover the study found that lack of teaching and learning facilities, insufficient time and lack of funds were among the challenges hindering the environmental management in the schools.

The study has recommended that environment management education should be given a priority in secondary schools. Teachers should have in-service training to raise their competence in teaching environmental education. Tanzania Institute of Education (TIE) should prepare curriculum materials for environment management education.

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1 Introduction

This chapter introduces the study by providing the background of the study, statement of the problem, study objectives, research questions, and the significance of the study, delimitation of the study, study limitations, conceptual framework and organization of the study.

1.2 Background of the Study

According to Dewey (1907), a school is a place or an institution formed to support natural progress of children, their physical development, the growth of environmental knowledge and improvement of manners and habits. There are several philosophers in education who have conceptualized the term education and all of them have realized that education process leads into change in the learner's behaviour. The change in behaviour in a desirable manner is the focus of any education system, this doesn't mean that, the change in thinking, way of looking at things and mental perception are excluded. Holistically education is for liberation of human beings by empowering them to have a control on environment. Many attempts were made to define the term, particularly during the last 25 years when many critical problems facing our planet were acknowledged and publicized. IUNC (1970) defines environmental education as a practice in decision making and self-formulation of a code of behaviour about maintaining environment. It entails process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biographical surroundings.

At the international level it is claimed that, the term environmental education was used in Paris in 1948 at a meeting of the International Union for Conservation of Nature and Natural Resources (Disinger 1997). In India environmental management

knowledge has been included in academic courses by the National Council of Educational Research and Training (NCERT), an organisation set by the state to give advice on academic matters related to school education. The organization published a book called “Joy of learning” to insist the presence of environmental management education for an informed concern for active participation of learners in resolving environmental problems. Since that time workshops were being conducted to orient school teachers and educational functionaries of the state boards on various aspects of environmental management.

The idea of environmental management education is backed up by United Nations efforts in different conventions signed by different parts of the world. In 1972 the Human Environment Conference held participants recommended that environmental management should be recognized internationally. The newly formed International Environmental Education Programme UNESCO-UNEDP supported two major regional meetings of experts. Belgrade 1975 which aimed at drafting concepts and vision of environmental education and that of Tbilisi 1977 which approved the scope and actions plans, building itself from the previous conference (Sauve, 1999).

Our common future (1988) was a report published by the World Commission on Environment emphasizing on the environmental problems being eradicated by education and awareness creation to the mass. This has been seen as the problem solving thoughts (Ibid). Agenda 21 (1992) of the United Nation conference on environment and development in Rio de Janeiro focused on public awareness and training which confirmed the role of education and the importance of environmental management . UNESCO Thessaloniki Declaration (1997), called upon education for sustainable development. Education has been described as an ongoing process aimed at developing the capacity of adapting to rapid changes in the world, but first and foremost as a process of disseminating knowledge and information to make public understand the problems and stimulate awareness.

National Environmental Policy (1997) has explained the need of environmental management education to raise public awareness and understanding of the essential linkage between environment and development (URT, 1997). This has to promote individual and community participation in environmental action. The legal framework is among the initiatives the Environmental Management Act No. 20 (URT, 2004) spells out explicitly that, environmental education is a statutory requirement for bringing about sound environmental and natural resources utilization in Tanzania. The 2014 Education and Training Policy has emphasized on the provision of environmental education to all levels from primary schools to the universities the objective being to have graduates with the knowledge and skills and culture of conserving the environment (MoEVT, 2014. p 57). This marks the implementation of the National Environmental Policy (1997) which directs an introduction of environmental management particularly in primary and secondary school curricula to create an enduring awareness by including the values that support responsible environmental care (URT (1997). Sobel (2004) insists that, Tanzanian kind of EE existed over the past 20 years which was reflecting in the place-based education.

1.3 Statement of Problem

A large body of literature reveals the significant role of schools in behavioural change. Schools seem to be like an industry that change people's way of thinking and doing things (Dewey, 1907). Whenever a student is enrolled into a school, it is expected that, desirable new knowledge, skills and attitudes will be imparted and acquired (Ibid). With all efforts of incorporating Environmental Management topics in secondary school's curriculum to influence behavioural change among students the problem is still prevailing. The recent increasing number of secondary schools was to go hand in hand with improved environmental management. However there is a persistent environmental degradation in school and the society where the student as a product of school lives. This raises a doubt on schools' role in enhancing environmental management. The emerged doubt necessitated a study on the role of

schools in environmental management in Tanzania. Studies available have not concentrated on the schools' role thus a gap to be worked on.

1.4 Objectives

1.4.1 General Objective

The study was intended to examine the role of school in environmental management in Tanzania.

1.4.2 Specific Objectives

- i. To evaluate awareness of the urban secondary school's management, teachers and students on the importance of Environmental Management.
- ii. To identify the methods employed by urban secondary schools in enhancing Environmental Management.
- iii. To identify the challenges facing urban secondary schools in enhancing the Environmental Management.
- iv. To explore stakeholders' views in addressing the challenges facing urban secondary schools in enhancing Environmental Management.

1.5 Research Questions

- i. Are the urban secondary school's management, teachers and students aware of the importance of Environmental Management?
- ii. What are the ways employed by urban secondary schools in enhancing Environmental Management?
- iii. What are the challenges facing urban secondary schools in enhancing Environmental Management?
- iv. What are the stakeholders' views in addressing the challenges facing urban secondary schools in enhancing environmental management?

1.6 Significance of the Study

Generally the study will be influential to both schools and the environmental management organizations in ensuring people get the required knowledge and make a use of it in realization of EE. In the first position teachers of secondary schools as well as administrators of the education systems in micro, meso and macro level towards achieving the goals and objectives of teaching EE. It has analysed the teacher side as an important part and key stake holder of EE, to whom all the success and failure of an education system are largely relied upon. Through the study's results on methods used by the teachers in teaching and enhancing environmental management inside and outside the classrooms, the pedagogical gap existing will be revealed which might be the reason for the unsuccessful environmental management in Tanzania. However the challenges facing teachers in implementing the EE in secondary schools has been investigated and the result helps the readers to work on them as a way of sustaining it. The documents will serve as a literature to other education researchers, regarding that there are very few educational researches conducted in the part of the schools' role in enhancing environment management.

1.7 Scope and delimitation of the study

The study focused the role of school in environmental management of urban secondary schools in Morogoro Municipality, specifically to evaluate awareness of the urban secondary school's management, teachers and students on the importance of Environmental Management, identify the ways employed by urban secondary schools in enhancing Environmental Management, identify the challenges facing urban secondary schools in enhancing the Environmental Management, and explore stakeholders' views in addressing the challenges facing urban secondary schools in enhancing Environmental Management. The study was conducted in Morogoro municipality because like other areas in the country it has a good number of secondary schools in the urban area; therefore there was an assurance of respondents' availability and accessibility as the targeted respondents were ward education officers, school administration, teachers, students and parents . It was also not easy to conduct this study covering the whole country due to inadequate time and of course

human and material resources. Lastly, Morogoro municipality is highly accessible which made the researcher assume that it could actually assist the easy collection of data.

1.8 The Limitations of the Study

The researcher encountered some limitations in the course of data collection; some of them are respondents reluctance in filling in the questionnaire on time, the researcher had to go to some schools more than once to pick up the questionnaires.

In the interview sessions some respondents refused to be interviewed, so the researcher had to use much time convincing the respondents to accept the interview. However the interview was finally well done. Some respondents were not confident enough to accept being recorded in interview sessions, therefore, the researcher had to use much of his time to write down the conversations. Despite these challenges or rather limitations, the researcher managed to collect sufficient and reliable data for this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The chapter presents the review of literatures related to the study. It includes both theoretical literature and Empirical literature.

2.2 Theoretical Literature Review

The theoretical literature review analyses the credible publications and other reliable documents including articles, reviews, monographs, books, and journals. The major purpose of reviewing theoretical literature is to broaden the mind on issues related to the study.

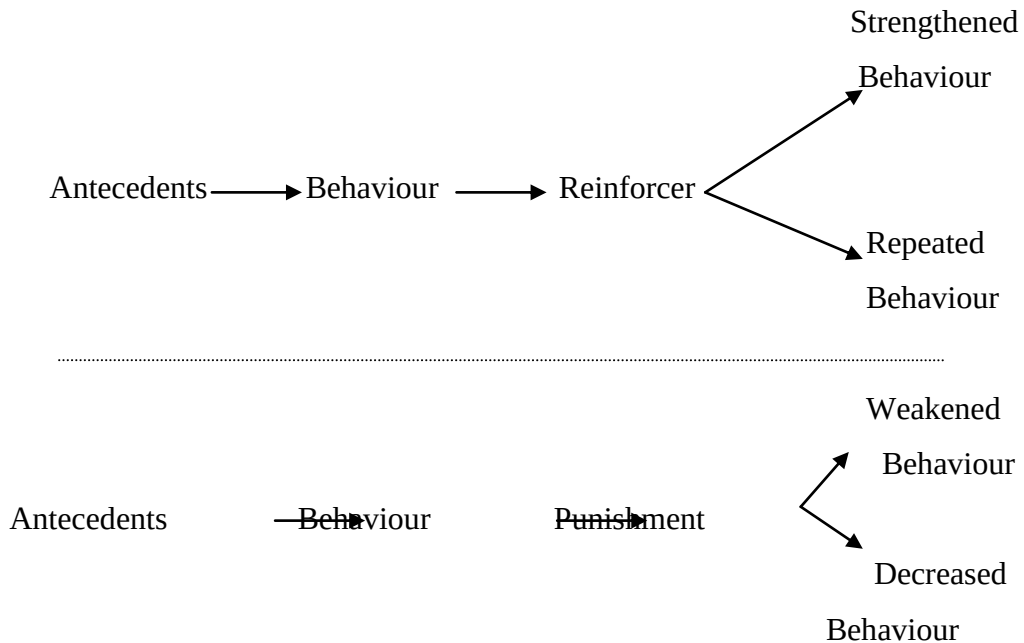
2.2.1 Behaviour Learning Theory

The study is linked to the Behavioural Learning Theory which focuses on changes in observable behaviour. The theory condemns that, learning takes place only when a learner is able to show some new behavioural practices in terms of skills, knowledge or attitudes. According to Lorenz (1998) learning is a relatively change in behaviour based on an individual interactional experience with the environment. Behaviour refers to the doings, performance animal or human being that should be verbal or non verbal, seen or heard by ears (Santrock, 2009).

2.2.1.1 Operant Conditioning Theory

Skinner's operant conditioning theory assumes that people have no free will; a person's environment determines their behavior and all behaviors are learnt from environment (McLeod, 2007). Therefore a learner requires environment, such as school environment which will be as a stimuli for his or her behavior change.

Figure 2.1: A Breakdown of Operant Conditioning Theory Adapted from Skinner, (1953).



Antecedents in the school are a composition of the preparation of events, classroom rules, classroom schedule, room arrangement, teacher's attitudes and extra-curricular activities. The ultimate aim of school is to affect the student's learning in different ways which in its totality has been named as antecedents in the figure above. Therefore good and acceptable behaviour are built to enhance students being the acceptable individuals in the society. From the Skinner's theory the learner will be reinforced positively so as to increase good behaviour, and get punished to discriminate negative behaviour.

The results will be a development of well responsible citizen specifically in terms of Environmental Management. However the entire role of school in Environmental Management is reflected in the operant conditioning theory in a sense that schools have the role of changing destructive behaviour to the environment into protective ones.

2.2.2 Secondary Education in Tanzania

A demand for skilled people in new independent Tanzania was said to be a corner stone for the national priority for secondary education (Kahama, Maliyamkono & Wells, 1986). Secondary education has been associated with production of skilled citizens who are capable of working efficiently to improve the weak national economy. Therefore, many teachers training institutions were built to counter the shortage of teachers to teach in secondary schools. A crash programme was begun at the University college of Dar es Salaam to produce graduate teachers for secondary schools. Several efforts to improve access in secondary schools, the abolition of school fee for the first time in 1964 is one of them (Ibid). Not withstand the reintroduction of the fees in some years ahead, today the secondary education is provided freely with the current government policy of free basic education from pre-school up to ordinary level secondary school.

2.2.3 Public Secondary School

Secondary school education in Tanzania entails the full time education provided in accordance with the government approved curricula available for the students who have completed primary education (URT, 1995). There are two levels of acquiring secondary education in Tanzania namely, ordinary and advanced secondary school level. The public secondary schools are obvious of three types, special, ordinary and community schools (Jidamva, 2012). Special schools are the ones considered academically competitive, receiving high achieving students from all over the country (Kitchen, 2004). They are characterized by high academic expectation strong sense of purpose, regular professional development among teachers and enough teaching resources (Ibid). In Tanzania such schools are very few, in such a way one school can be found in a region or zone, for example Ruvuma and Njombe regions the schools are not found. In Morogoro region there are two special schools Mzumbe Secondary School and Kilakala Girls Secondary School. The ordinary schools include the boarding and day schools, which are less competitive, compared to special schools, they are obvious given the second priority in the selection of students depending on their performances in Primary School Leaving Examination

(PSLE). The third category is community secondary schools, which are the products of decentralization process of education, which aim at integrating and bringing ownership to the community and serve as an alternative provision of secondary education (Buchert, 1994). Community secondary schools in Tanzania mostly are day schools where students reports in the morning and departing by evening and some have managed to construct hostels. They are built in the wards, villages, where people lives so as to accommodate the students and secure them from the distance of go and back to school and home respectively. According to Wedgwood (2007), the introduction of community secondary schools in Tanzania was meant to improve access to secondary school education and to people who cannot afford the conditions of other types of schools.

2.2.4 Environmental management

Environmental management entails a feeling of care and responsibility for the environment and its sustainability. Chawla, (2006) argues that, there are two sides of environmental management education namely the search for scientific and technical knowledge on how to manage and solving environmental problems and helping individuals develop a sense of care and responsibility for the earth. Sauve (2005), described EE in a cognitive perspective as a tool to increase knowledge and understanding of natural processes and systems, supporting thinking critically in analysing the environmental problems. It has been referred from the side of moral responsibility, where individual duty and responsibility towards nature as a way towards commitment to solve environmental problems (Stern, Dietz, Abel, Guagnano, and Kalof, 1999). Environmental management education has an ability of not only fostering the learning of discrete environmental concepts and facts as it as in the school curricula, but also adoption of more environmental sympathetic attitudes and behaviours among students (Legault & Pelletier, 2000).

2.2.5 Environmental Management in Tanzania Secondary School Curriculum

Among the tasks of the 21st century the world provides for the schools is to teach an environmental management education. The introduction of environmental management elements in both ordinary and advanced secondary education levels in

Tanzania seems to be done through incorporation of topics themes related to environment in different subject syllabuses. Topics like environmental management, widely covers the problems like water sources depletion, air and soils pollution, deforestation, and their solutions are immersed in teaching subjects (MoEVT, 2007). Issues of greenhouse effect, global warming and their impacts over the lives of plants and animals are included in the secondary syllabus of social science subjects Geography and History, as well as in natural sciences such as chemistry (Ibid). One of the aims of teaching environmental education in schools is to make learners develop concern for the environmental. Therefore, the teaching of environmental education has to influence care for the environment and concern for the environment among learners.

2.2.6 The Rationale of Teaching Environmental Management in Tanzania Urban Secondary Schools

Barnett, et al. (2006), argues that, giving the EE to Urban Students is very important especially for improving their participation in the environmental conservation activities. The kind of education is transformative in such a way that, it brings an environmental stewardship attitude to those who earlier were less concerned. Moreover, Ballantyne, Fien, & Packer, (2000) suggest that, the EE increases eco-literacy of all adults and children. Because of the urgency of the environment issues, there is no need of waiting for the secondary school children to be adults in age of 18 years and get involved and participate in the conservation activities. Presence of EE in urban secondary schools supports children in fostering personal and intimate relationship with their environments (Hart, 1994).

2.2.7 The Power and Position of Teachers in Education

Teachers are most powerful individuals than most individuals understood; they have greater influence in the society, as their impact on pupils. Teachers determines the product of the school since, students emulate their doings. What they teach, how they live and behave obviously considered as a model to the students. Omar (2011) argues that, students a large part of what a person learns occurs through imitation and

modelling. According to Lema, Mbilinyi, & Rajani, (2004), Nyerere has emphasized the position of teacher in the speech addressed at Morogoro Teachers' College, by arguing that;

When teacher come into a class tired or looking tired, dispirited and without any enthusiasm for work: when the teacher demands that, every bit of physical labour is done by the children while he watches; or when the teacher acts as if every pupil were a nuisance, a dullard in such cases a student will develop the idea that work is something to be avoided, that learning is simply something which one gets through, and the way to use authority is to get other people to work for you. (p.39).

2.2.8 Ways of Teaching Environmental management

The environmental conscious practices on the school campuses complements to what students learnt in the classrooms. Whenever they integrate with these activities which seem to be common with what teachers have always being insisting in their classrooms. The importance of outside the classroom teachers influence on the environmental management is that, students are realizing the fact of what they are learning is not only important but also it is relevant.

2.2.9 The Roles of School Administration in Enhancing Environmental Management

According to Marzano, Waters and McNulty (2005) there is no difference between leadership in school and that of other institutions. Clear mission and goals devoted by school leaders will likely determine the direction of the practices, codes of conduct and extracurricular activities be prioritised in the school (Bamburg & Andrews, 1990; Duke, 1982). The attitude of teachers and their class practices reflects their effectiveness on teaching and enhancing environmental management. However; there is a call for school administration to provide favourable learning environment for environmental management by accepting some environmental promotion schemes from different clubs.

2.2.10 Challenges for Teaching Environmental Management in Urban Secondary Schools

Regarding the interdisciplinary nature of environmental management, there are so many challenges that encounter urban secondary schools in practicing it effectively. Shulman (1987) insists on the pedagogical content knowledge (PCK) for the teacher to influence positively the environmental management. Lack of pedagogical knowledge is among the challenge that makes failure of teaching methodologically (Kimaryo, 2011). The pedagogical content knowledge is influenced by subject matter Knowledge (SMK), pedagogical knowledge (PK) and knowledge of Content (KofC) (Abel, 2007; Shulman, 1987). The other challenges are insufficient teaching and learning facilities and absence of independent subject for environmental issues.

2.2.10.1 Poor knowledge of the content of Environmental Management Education by the teachers

Teacher as environmental educator has a responsibility to ensure that, the issues related to environment are clearly known, the lesson objectives are realized and the students are aware of their duties in the sustainability of the environment.

2.2.10.2 Insufficient Teaching Materials

Castalsi (1971) defined teaching materials as those things of education which enables a skilful teacher to achieve a level of instructional effectiveness that far exceeds what is possible when they are not provided. Newton (1997) professed that the magnitude of instruction are more scientific base; make instruction more powerful; make learning more immediate and finally make access to education more equal. According to Osahon (2001) cited Ogbodo (1996), educational facilities are those material things that facilitate teaching and learning processes in the school. According to Muthamia (2009), teachers can only be effective and productive in their work if they have adequate and relevant facilities. In addition, Makau (1986) stated that instructional materials such as textbook and science equipment for both teachers and students are key variable in student's learning and performance at all school levels.

According to URT (2014) the pit-latrines are not enough to accommodate the existing number of students which made the ratio to be 29 students per latrine. In the school environments alike, to practice environmental education is very challenging, in case break time arrives some students won't be able to get service hence can opt to use inappropriate areas around the school.

2.2.10.3 Absence of Self-Identity as a Core Subject in Secondary Education Curriculum

Environmental management and its holistic nature don't have an identity as subject rather it has been subsumed in the topics of secondary school's subject (Kimario, 2011). The subjects are integrated with elements of environmental management

2.2.10.4 Poor sense of motivation in to teachers on enhancing Environmental Management Education

According to Lortie, (1975); Nespor, (1987); and Pajares, 1992) teachers holds some beliefs particularly those formed through their own experiences as students, more tenacious and that these beliefs may have influence on their decisions in teaching. Regarding social learning profounder idea that, learning occurs in a social environment, teacher's negative attitude on the EE may affect students who learn from those who believe they are the right people to draw knowledge.

2.2.11 Possible Solutions

2.2.11.1 Teacher In-service Training

EE is a dynamic discipline, which takes some sort of changes in its' content. The patterns of environmental issues are becoming more complex as the industrial and other destructive human activities get complex. It is a matter of fact the world is receiving new environmental issues as days goes. The environmental challenges the world and international conventions have been speaking of back in days are not exactly the same as the current one. This insists the necessity to train the in-service teachers to understand well the current environmental issues, so that as they master, it is easy to share it with their students. Research in teacher learning has suggested

that, the effective professional development integrate several crucial elements related to competence and creativity. Teachers knowledge after participating in a training, the ability to improve and use the existing resources to teach effectively the EE in a way that limited time, insufficient teaching materials doesn't affect student's learning (Borko, & Putnam, 1996; Cohen & Hill, 1996; Kagan,1992; Little,1993: Smylie 1989).

2.2.11.2 Introduction of Place-based Curriculum for Environmental management

According to Dewey (1915), people are learning by observing nature changing over time, through actively involvement knowledge is constructed. Considering the challenge which resists the effectiveness of the teachers on enhancing EE due to the shortage of teaching materials, incorporation of place-based education is required. As a matter of fact, the curriculum is centralized and the contents of environmental issues are taught in secondary schools regardless of the variation in ecology and economic activities.

One of the approaches of implementing environmental education in the school curriculum is to include it as a separate subject. The single subject pattern of organizing the curriculum treats each subject as a discrete component of the curriculum (Jackson, 1992). This has been the traditional way of organizing the curriculum in many countries, Tanzania integrated. When environmental management education is accorded the status of a subject, it will have its own syllabus, time allocated on the schedule and it will be taught like other subjects English, Biology and History.

There have been arguments against establishing environmental education as a separate subject. It has been acknowledged that environmental education is not a subject with a body of knowledge and skills like the other disciplines. Rather, it is considered as a situation in which learners may be involved to develop knowledge, skills and attitudes towards the environment. It is therefore a curriculum orientation

permeating the whole curriculum, as stated by UNESCO (1976, 1978). However, in practice it is not the case. There has been evidence that environmental education has been taught as environmental studies or environmental science as an independent subject in the school syllabus (Gough, 1997). For instance, in Nigeria, the government has designed curricula with strong elements for a brand new subject called citizenship education, both at the primary and secondary levels (Adedayo & Olawepo, 1997). Similarly in England, after treating it as a cross-curricular issue for a number of years, in 1995 the national curriculum was revised and environmental education became one of the main subjects in the revised curriculum (Chatzifotiou, 2006).

2.3 Empirical Literature Review

Empirical literature review refers to the analysis of studies and documents which have drawn their conclusions directly from the primary sources of information through research studies. The empirical Literature entails research reports or dissertations. The review is for the discovery of knowledge gaps that has been filled by this study.

Edge & West, (2011) revealed the role of school in environmental management. In Europe Most of the countries' education systems insisted on the establishment of environmental education around 1980s (Ibid). The study was developed by European Union Education Commission by assessing the government documents from different countries, and reported that, by the time many countries were promoting environmental management. The report revealed that Greece started earlier by 1989 to support environmental management education, where by 1991 EE have been recognized as part of primary and secondary curriculum at national level, others were Austria 1996; Belgium 1996; Sweden 1998 and France in 2000.

In the report of the study administered in the Scottish secondary schools, it has been explained that teacher's commitment is the core determinant of their work efficiency. Nixon, Sankey, Furay and Simmons, (1999) in explaining ministry officials' views in

Scottish ministry of education, argue “the extent of teaching depends on the personality of the teacher”. This implies that, coverage of environmental management topics, units or modules depends on the interest and commitment of teachers. Generally some lazy teachers fail to cover the topics, so the in case they are many the curriculum content would appear uncovered then demotion of Environmental Management.

In assessing the environmental education in European Union education systems Stokes, Edge and West (2011) realized that environmental education is taught in Europe as a compulsory course in upper secondary education. The courses are; Environmental Studies of Belgium and Flemish Community, Principles of Environmental Science in Greece, Environmental and Consumer Education in Portugal, Earth and Environmental Science in Spain, Environmental Science and Environmental Politics in Sweden and Managing Environmental Resources UK and Scott land.

The role of school in enhancing Environmental Management is not just the new idea happening in Tanzania only rather it is a movement taking place worldwide (Benedict, 1999). In the research he made in Chinese secondary schools and their role on environmental management, Benedict found that, the government had invested much in teacher in-service training. With the notion that environmental education is a new discipline in schools and formal education at large, there were a need of training fist the teachers who are the facilitators and implementers of the school curriculum (Ibid).

In a study done in 2011 in Norway revealed that, the Norwegian government started in training the teachers about the environmental management before changing the curriculum by incorporating EE elements. The focus of teacher’s in-service trainings was to build and improve efficiency, competence, corporation and commitment (Nam, 2011).

Bureau Environmental Report (2009) argues that, environmental management inside the school can be delivered through extra –curricular activities. School based environmental activities through environmental clubs rise the attention of students to protect the environment.

Regarding the fact that environmental management is a product of environmental management education, schools doing great job in enhancing environmental management should be awarded (Wong & Wong, 1999). The report suggests that, by providing awards the schools which have performed well in teaching and practicing environmental management it will be as a catalyst to others. Currently Hong Kong secondary schools are among the best in environmental management. The awards are prepared by the Hong Kong Institute of Education, Hong Kong Productivity Council and the Vocational Training Council (Ibid).

According to the results of a study done by Kellert & Derr (1998), teaching environmental management outside the classroom enhanced self-esteem, self-confidence, independency autonomy and initiatives to the learner.

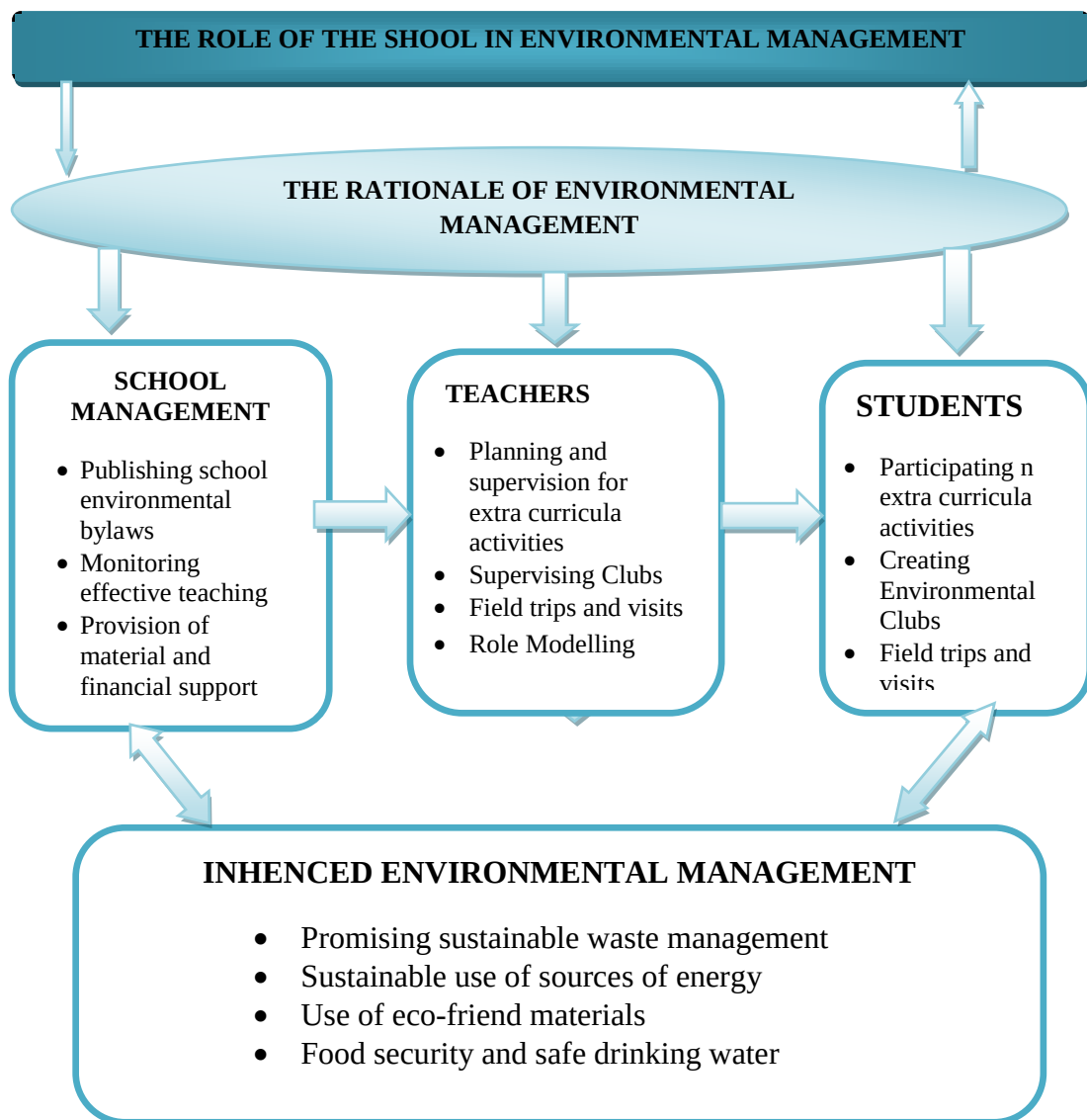
2.4 The Conceptual Framework

The study conceptual framework was systematically drawn from the environment as an independent variable and role of school as a dependent variable. The school as an institution comprised of different group of people from whom true and valid information concerning the schools could be drawn. The school management/ administration was not only the only source of all codes of conducts and extra-curricular activities in school but had the mandate to ensure availability of teaching and learning materials. A teacher plays a significant role in implementing the curriculum, by teaching in the classes and supervising extra-curricular activities. Students perceive teachers as their role models in the sense that, what is portrayed in teachers' life has direct effect on student's deeds. Moreover; students as a part of school have a lot to do since they are ones who are school for the purpose of learning. They attend classes where Environmental Management Education is taught,

and in a special way they practically act as they are directed by teachers. The result of school stakeholders to work and play their parts will be enhanced environmental management at school. Sustainable waste management and use of sources of energy, use of eco-friend materials, food security and safe drinking water are the indicators of enhanced environmental management.

Figure: 2.2 A conceptual framework of the study

CONCEPTUAL FRAMEWORK



Source: Authors Creation, 2017

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

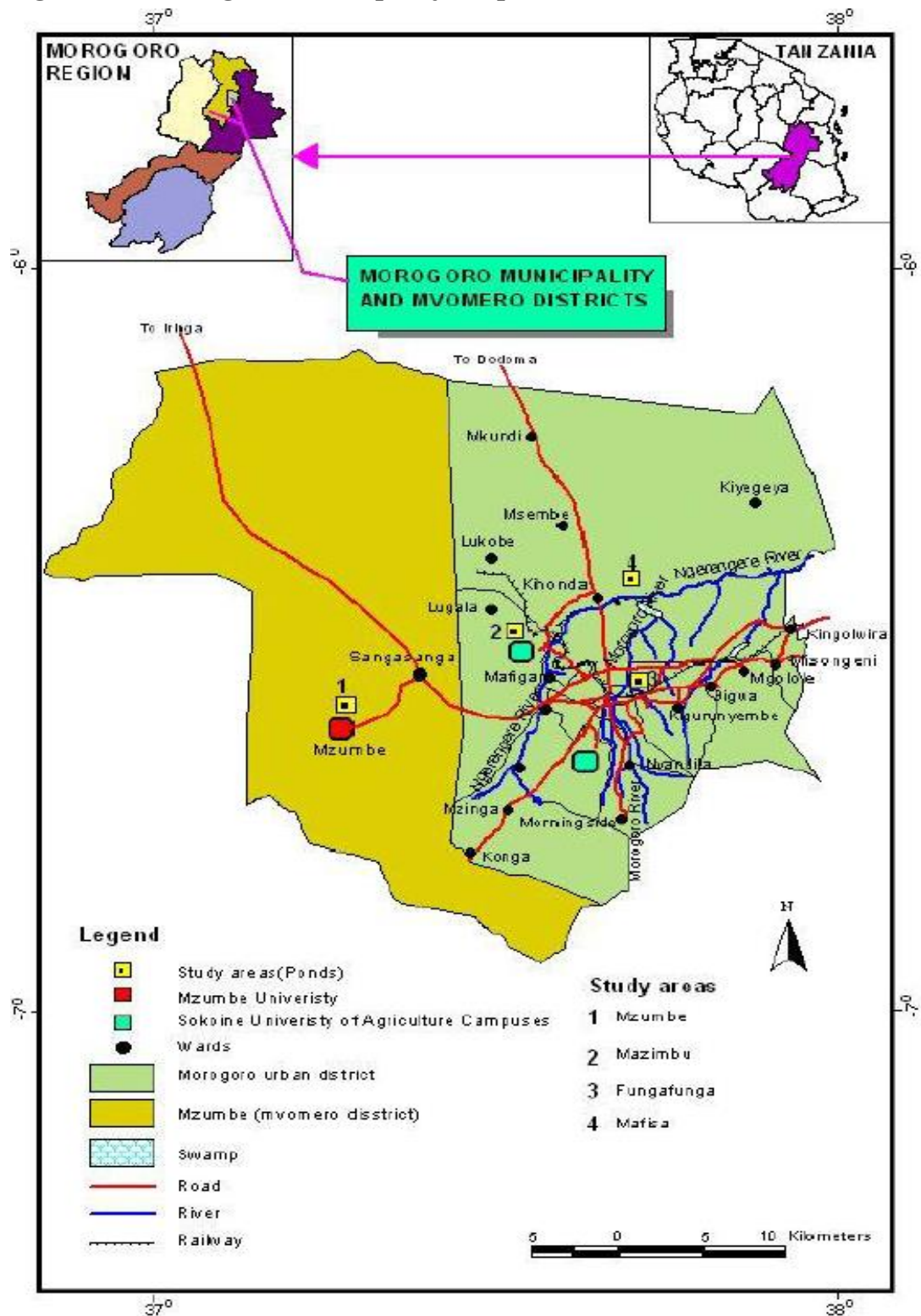
The chapter presents the methodology and procedures which guided the execution of the study. It is divided into several sections including the study area, sample and sampling procedures, research design, data collection techniques, data analysis, validity, reliability and ethical issues consideration.

3.2 Study Area

The study was conducted in Morogoro Municipality in Morogoro region. Morogoro is about 195 kilometres to the West of Dar es Salaam and it is found in lower slopes of Uluguru Mountains (URT, 1997). The region scenery is endowed with a diversity of ecosystems such as, mountains, wastelands and tropical forest. The Uluguru Mountains are the important habitation for a variety of biodiversities (Burgess, Doggart and Lovett, 2002). Parts of watersheds of the Great Ruaha and Rufiji rivers extend to the region's southern part. The river Ruvu which serve as a source of water to more than 4.3 Million inhabitants of Dar es Salaam originates from the Uluguru Mountains (URT, 2012). Nevertheless there are Mikumi and Udzungwa National Parks and a portion of Selous Game Reserve inside the region. These significant features cover a large part of the region, and make it to be among the environmentally potential regions in Tanzania (Paavola, 2008). Despite its potential Morogoro region is experiencing environmental degradation. Rapid population increase, lack of environmental awareness among the natives, overgrazing, poor farming practices among others are mentioned to be source of the deterioration of the environment. Morogoro region has 307 secondary schools considered in third position behind Dar es Salaam and Kilimanjaro (URT, 2014). According to Mukeen& Chen (2008) Urban Secondary schools have a plenty supply of teachers than rural school, many teachers prefer to work in urban schools in urban areas.

It is clear that many successful economic developed cities face real challenge in environmental terms (Digby et al, 1996). Morogoro Municipality was selected as a study area since it has enough secondary schools to meet the required sample than other regions. Not only that, but also the municipality is a subject of environmental degradation as many other towns in the country.

Figure 3.1: Morogoro Municipality Map



Source: Morogoro Municipal, 2017

3.3 Research Design

Brewer and Hunter (1989) argues the same way as Tashakkori and Teddlie (1998) that mixed method is becoming viable research approach that bridges the gap between qualitative and quantitative methodologies. Mixed research design was used in which both qualitative and quantitative approaches are involved. A case study dominates the study in the large context. The design allows the focus to be on a specific interesting case such as one individual case or one population case whereby this study has dealt with the urban secondary school teachers. In addition, case study design is good in exploring and illuminating meaning attributed by participants to certain events, actions and relationship of social phenomenon (Maxwell, 1996). Therefore head of schools, teachers and student's attitudes, ideas, behaviour has been studied, collected and presented qualitatively. Quantitative approach was partly employed through codification in analysing data collected through questionnaires as well as in presentation of the results using some of inferential statistics charts and graphs. In order to enhance pragmatism the research should not align itself with a single system philosophy and reality (Creswell, 2003). Creswell noted that, mixed method research can be classified as having both qualitative and quantitative portions in the study which can be conducted sequentially.

3.4. Study Population

The decision of choosing one group of contacts over others depends on its richness level of information (Flick, 2006). The targeted population were various stake holders of secondary education, Ward Education Officers, headmasters and or headmistress, teachers, students and parents of students studying in four wards of Morogoro Municipality. The inclusion of these people was due to the fact that, they were part and parcel of what was taking place in schools; obviously they possess important information useful or this study. School administration managers of the school activities, they planners and makes policy in their schools; they affect teachers influence on the environmental management in one way or another. Teachers on their part they are decision makers on instructional strategies and classroom management which have a lot of effects on the students learning (Marzano, 2009). Students of

today need teachers to be their role models of their adulthood (Wong and Wong, 2009). The implication is that, teachers' behaviour whether is environmental destructive or protective can be reproduced by the students. The role of school in transforming students can easily determined by the society live after school. That is a reason to add parents in the study population. Orodho (2005) explains targeted population as all items or people under consideration in any field of inquiry.

3.5 Sample Size

Recently there are many scholars insisting that, there are no specific rules in achieving an appropriate sample size in qualitative studies. Patton (1990) mentioned the time, resource available and study objectives as the best sample size determinants. The total sample size of this study included 72 key informants drawn from the four wards of Morogoro municipality. 40 subject teachers, 20 students, and 4 heads of schools, 6 parents 2 Ward Education Coordinators. The sample coverage of schools has been equal in within two representative wards out of nineteen wards of the municipality which is proportion to 11% of the wards. Each representative ward had two schools in the sample. The large proportion of the study came from the teachers, where they were about 55.6% of the total respondents. Their domination in the study has been regarded due to the vital role they play in schools.

Teachers are the key stake holders in education system, and are the transformers of the learner's knowledge and skills on environmental management. Students were accounted on 28.0% of the entire population, they are important in the study due to the fact that, they are the ultimate products of the secondary school education. Students differently from the other respondents were best at revealing their knowledge on environmental management whether have transformed them or not. Parents were about 8.3% of the total respondents in the study, they provided very basic sights over the role of secondary schools in environmental management, since they lives with their children after school. The parents or guardians are in the first position to understand the ability of their children in managing the environment and comment whether it is connected to with their attendance in secondary education.

Head Masters (HM) were accounted 5.6% and Ward Education Coordinators (WEC) were 2.8%.

3.6 Sampling Techniques

According to Akerlind (2007) forming a sample in any phenol monographic study ought to be done on the basis of strategic considerations and the purpose not just on the basis of representative selection. Both probability and non-probability sampling were used in the study.

3.6.1 Purposive Sampling

Teachers were selected purposively focusing on their education level, working experience and subject discipline. The use purposive sampling was necessary for this study since interpretive paradigm requires purposive sampling for the inclusion of the participants that were best help to understand the problem (Belk, John, and Wallendorf, 1989; Creswell, 2003; Denzin and Lincoln, 2000; Miles and Huberman, 1994). According to Akerlind (2004) teaching in schools involves more than the content, methods, and outcome. This argument implies the need of including teaching experience rather than dealing with the subject matter only during the selection of the sample. Therefore the experienced teachers were many representatives than inexperienced ones. This simplified the whole process of obtaining required information necessary for accomplishment of the study. Simple random were used to sample the headmasters, head mistresses or their deputies, as well as the parents and Ward Education Officers.

Sample becomes purposive if the selection is made on the basis of criteria which correspond to the intention of the investigation (Cohen, Manion, & Morrison, 2007). The sample of the study is drawn from the teachers in the urban secondary schools of Morogoro municipal.

3.6.2 Stratified Sampling

The students were sampled through Stratified sampling method, students who have been in school at least a year.

Table 3.1: Characteristics of the teachers who were included in the Study

Characteristic	Profile	Number of Teachers
Level of Education	Diploma	15
	Degree	10
	Masters	5
Experience	2 – 5 Years	10
	6 – 10 Years	10
	Above 10 Years	10
Sex	Female	15
	Male	15
Subject Disciplines	Natural Sciences	5
	Geography, History & Civics	15
	Kiswahili & English	7
	Commerce	3

Table 3.2: Characteristics of the students who were included in the Study

Characteristic	Profile	Number of Students
Level of Education	Form two	4
	Form Three	6
	Form Four	10
Subject Disciplines	Natural Sciences	6
	Social Sciences (Arts)	10
	Commerce	4
Sex	Female	10
	Male	10

Source: Field Data 2017

Table 3.3: Sample size and Distribution

Occupation	Frequency	Percent
Teachers	40	55.6
Student	20	28.0
Parents	06	8.3
HOS	04	5.6
WEO	02	2.8
Total	72	100.0

Source: Field Data 2017

3.7 Sources of Data

According to Kruger and Casey (2000) primary data are the ones collected at the first time. They are collected with a purpose and for original used by the first time. The study has applied interview, observation and questionnaire as the methods for collection of primary data. These methods were used in the selected sample schools in Morogoro municipal and they were administered by the researcher himself. Secondary data refers to the data that has already collected for the other purposes (Ibid). This study used published books, researches, dissertations, newspapers, government documents, reports and journal articles from the internet and library. The use of secondary data is cost effective in terms of money and time, while the empirical data from the researches has broaden the knowledge of the researcher and understand more about the study.

3.8 Data Collection

Data were collected using the multiple methods, qualitatively using interviews as well as focus group discussions and quantitatively by questionnaires and observation. Interview questionnaire and observation techniques are ideal and precise techniques for capturing real life data (Morgan, 1997).

3.8.1 Interview

The method were useful for the heads of schools, ward education officers, teachers and students parents, in eliciting ideas and perceptions on the role they play in enhancing environmental management in their secondary school. The interview has helped to collect data in depth that came from Ward Education Officers, school administration, parents as well as few experienced teachers and those who works directly with the welfare of school environment. This study has employed the semi – structured interviews, there were some kind of little reflection on preconceived questions to cover areas that were to be explored. The method allows also the interviewer and the interviewee to diverge in (Britten, 1999).

3.8.2 Questionnaire

The questionnaire is a carefully designed instrument with questions for data collection administered to be filled and sent back to the researcher (Montello, 2006). This method not only enables gathering of quickly but also simplifies data analysis through software packages such as Excel and SPSS. The questionnaires were distributed to sampled teachers and students in the schools. The teachers had their own questionnaires different from those of students because the two owns varying experiences. The questions were both open ended so as to let respondents be free to discuss issues and closed ended questions to control answers (Freedman, 1960).

3.9 Validity

According to Maxwell, (2012) and, Uljeans, (1996) validity is correctness or credibility of a description, conclusion, explanation, interpretation, or other sort of account. While Polkinghorne (2007) argue that, it is a believability of statement or knowledge. In this study the validity were insured by giving the priority to three things, persuasiveness, correspondence and pragmatism. In the collection of data, the researcher used persuasive and kind language which attracted respondents to give the valid information without fear. Persuasive language assures the credibility and plausibility of the information (Dodge, Fold & Ospina, 2005; Wells, 2011). Pragmatism refers to the mixing of different methods in the study (Lieblich, Tival-Mashiach & Zilber, 1998). The use of interview and questionnaire addressed the validity of the gathered information. Correspondence was employed by testing conclusions and statements of the respondents after interrogations before final interpretation and presentation of the findings (Riesman, 1993). The selection of the respondents who are the experienced teachers worked in the field for a long time, also the teachers whose subjects are directly or indirectly linked with environmental issues. Moreover, the sample schools were taken are those located at centre urban in Morogoro town and Bigwa wards. This ensured the validity since it eliminated some wards which are in periphery of the urban to distort the findings of the study which aims at the urban schools which might have real challenges of pollution.

3.10 Reliability

According to Kvale, (1996) reliability refers to the replicability of the results which is assured by execution of appropriate methodological procedures to obtain the consistence in the results. The multiple transcriptions of the data are one among the ways used for attainment of reliable findings.

3.11 Ethical Issues

Qualitative research is more close to ethical risks and concerns than quantitative research simply because the interaction between the researcher, the research environment or field and the respondents are so close (Bowen, 2005). The informed consent were assured in this study including, clear description of the study and its purpose, researchers identity and the permission letter from the university's administration briefing the request for the respondents to give mutual corporation to the researcher was well done. The respondent's particulars like names were not displayed on the report without his or her permission. Moreover, like Britten, (1999) suggest that before an interview takes place, respondents were informed about the study in detail, the assurance that the ethical principles such as anonymity and confidentiality was observed.

3.12 Data Analysis

Data analysis was handled qualitatively to examine or uncovering meaningful contents from the data collected in different ways from the field. The inductive approach was used where the specific cases, explanation, situations and understanding of the individual respondents were used to get a big picture of the researchers' interest on the study. According to Ely (1997) in general qualitative analysis pulls together patterns from the text, whereas interpretation draws meaning from analysed data and explores those meanings in a large context. Content analysis was used where contents were described and interpreted to get the perception of t teachers on their roles to enhancing environmental management. Quantitative data was carried out to summarize the data by using statistics package for social sciences (SPSS) so as to analyse and present data.

3.13 Data Presentation

The study findings are presented in descriptions, charts, figures and bar graphs. The descriptions have been used to present different statements provided by respondents in interviews. Charts, figures and bar graphs were used to present qualitative data.

CHAPTER FOUR

RESEARCH FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter presents research results in six sections namely introduction, characteristics of respondents, awareness over the importance of Environmental Management in urban secondary schools, ways used by urban secondary schools in enhancing Environmental Management, challenges facing environmental management urban secondary schools and stakeholders views on the possible solutions on the challenges as suggested by contacts.

4.2 Characteristics of the Respondents

It was vitally important for the study to be acquainted with characteristics of respondents found in schools since like other people in the country they do interact with environment in their day to day lives. The considered characteristics includes sex of respondents, education level of teachers.

4.2.1 Sex of the Respondents

Respondents were asked to indicate their sex in the questionnaire administered. The findings were as shown in table 4.1.

Table 4.1: Sex of respondents

	Sex		
	Male	Female	Total
Ward education Coordinators	1(1.4%)	1 (1.4%)	2 (2.8%)
Teachers	27 (37.5%)	13 (18.1%)	40 (55.6%)
Students	11 (15.3%)	9 (12.5%)	20 (27.8%)
Parents	2 (2.8%)	4 (5.6%)	6 (8.4%)
HM	4 (5.6%)	0 (0%)	4 (5.6%)
Total	45 (62.6%)	27 (37.4%)	72 (100%)

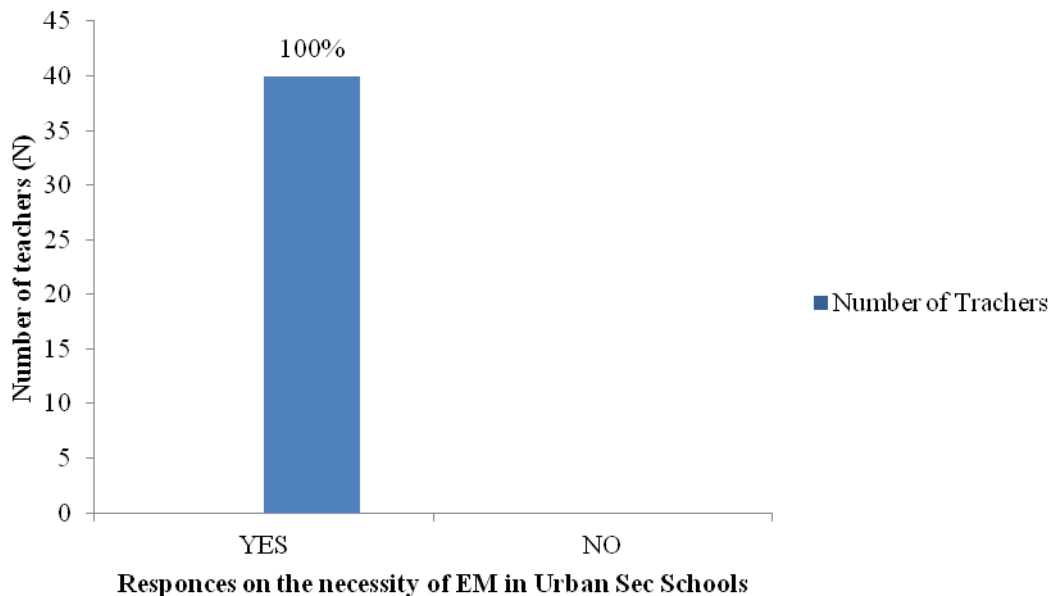
Source: Field Data 2017

Table 4.1 shows that among the respondents there were 45 (62.6%) males and 27 (37.4%) females. Specifically there were 27 (37.5%) male teachers 13 (18.1%) female teachers, 1 (1.4%) male and 1 (1.4%) female Ward Education Coordinators, 11 (15.3%) male students 9 (12.5%) female students, 2 (2.8%) male parents and 4 (5.6%) female parents and 4 (5.6%) head masters.

4.3 The awareness of the urban secondary schools' management, teachers and students on importance of environmental management

The first research specific objective was to evaluate awareness of the urban secondary school community covering teachers, heads of the schools and the students on the importance of managing the environment. Awareness in the context of the study refers to a general understanding of the term environmental management and its rationale especially in urban secondary schools. Study respondents were asked to give their opinion on the necessity of teaching practicing environmental management in schools, figure 4.1 presents their answers.

Figure 4.1: Necessity of teaching environmental management



Source: Field Data, 2017

The figure 4.1 shows that 100% of the teachers said ‘yes’ there is a necessity of teaching and practicing environmental management in urban secondary schools. Based on the findings it can be argued that, teachers are aware of the importance and necessity on environmental management since every teacher said yes it is necessary to have it in our urban secondary schools.

The following statement was given in interviews conducted with head master in one of the surveyed school;

...’I think it is really important to teach environmental management in urban secondary schools, regarding the pollution is largely done in urban areas. If the students learns the methods to control solid waste and others will reduce the rate of pollution...’

The findings show that the awareness in teaching environmental management is high. The fact that, urban secondary schools are exposed to many environmental problems, then it is a necessary programme in schools because it is a way to control visible pollution and conservation.

...The rate of pollution in towns is higher to compare with the rural environment, therefore from the school students are supposed to be taught how to manage their surroundings... students are the one to be the role

models in helping the community which is faced with a lot of environmental challenges...

Also the above statement from another head of the school was the proof that the schools are aware of the importance and necessity of teaching and practicing environmental management.

....from my understanding environmental management should involve taking conservation measures on the surroundings of human life, therefore in secondary schools students have to learn the skills of dealing with environmental degradation...

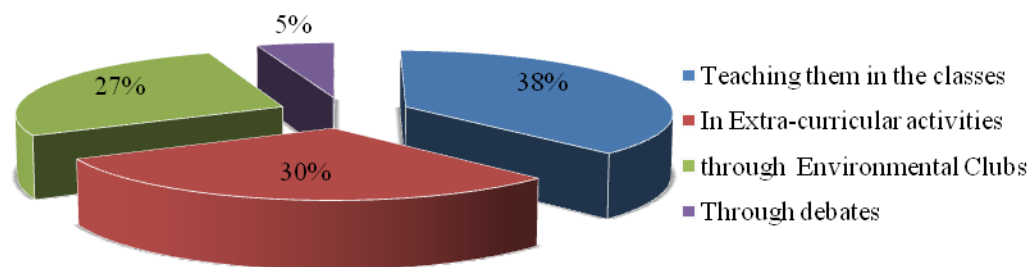
The statements from a teacher show that having environmental management programmes in the urban secondary schools will be useful to students since they are going to use learned skills and knowledge in the life after school. Therefore the general awareness of the secondary school management, teachers and students on the importance of environmental management is high. These findings are reflecting the statement of the Education and Training policy which directs the learning of environmental education for the sustainable life styles of the learners resulting into protection and conservation of our environment. (MoEC, 1995; MoEVT, 2014) Moreover the study done by Kimaryo (2011) show that, teachers are aware of the importance of environmental management as the policy requests them to enhance it.

4.4 Ways that urban secondary schools use in enhancing environmental management

The second objective of the study was to identify the ways which are used in urban secondary schools in enhancement of environmental management. In order to fulfil this objective the respondents were given a list of questions to select the ways they use. The list of ways consisted teaching environmental management in classes, in extra-curricular activities, through environmental clubs and the last was in debates. The figure 4.2 presents the results.

Figure 4.2: Ways used in teaching environmental management (N=40)

Environmental Management in Sec. School



Source: Field Data 2017

4.4.1 Teaching environmental management in classroom

The findings as it is shown in Figure 4.2 shows that the most used method in enhancing environmental management in urban secondary schools in Morogoro Municipality is through teaching. About 37.7% of the teachers involved in the study appeared to teach environmental education in the subjects they teach. This seems to be a benefit from integration of contents of environmental management in the secondary school curriculum.

In an interviews with one of the head of schools the following statement was made;

“Well, I think the students are taught it in the classroom periods, since in the syllabus of some subjects there are some elements of environmental management. The coverage is not such wide enough but it helps the

learners to know the basics in managing the environment. Geography and chemistry have some topics in environmental management...”

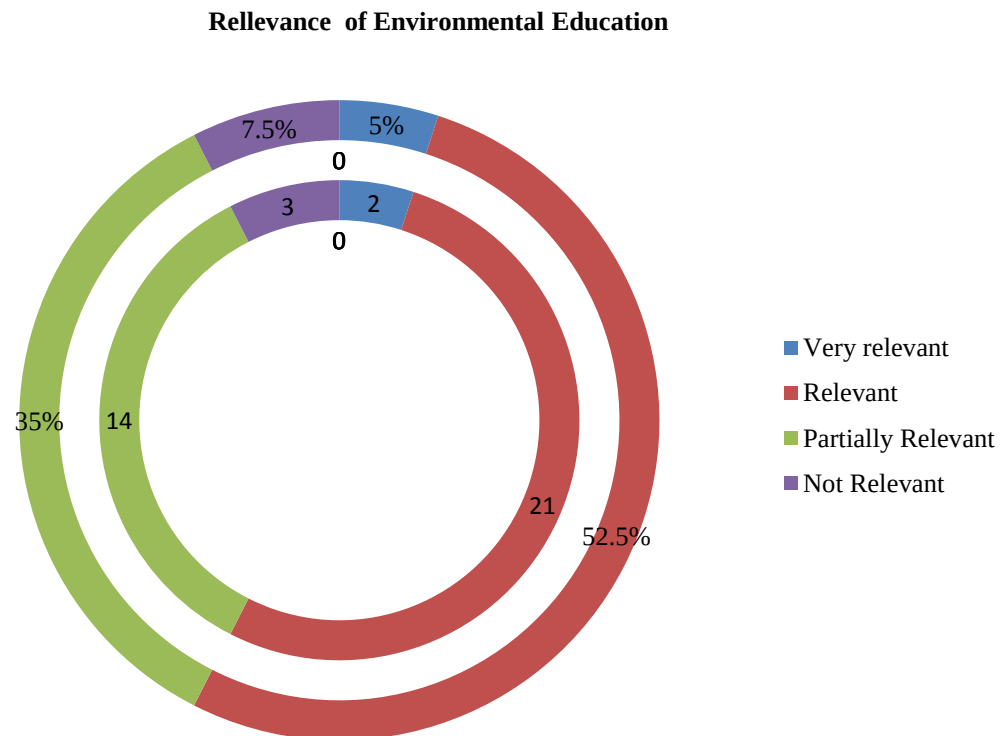
The statement above reveals that, environmental management is taught in classes. Students were also asked in interviews on if they were taught about environmental management one of them was quoted saying;

‘...Our Geography teacher gives us a new knowledge about environment almost in every new topic. In English and Kiswahili subjects there are no specific titles of the environmental topics rather you can find in stories, passages, comprehensions and alike. We are learning environmental management skills like controlling solid waste using different ways such as, recycling and reuse. In addition to that, we are taught the conservation measure to environmental degradation such as a forestation...’

The implication of these findings is that, teachers were playing their part in fulfilling the directives of the syllabus. The study shows that Environmental management in secondary schools starts in the classrooms, students are taught on how to sustainably use the resources so as to minimize the side effects over the environment. The study done by Praveen & Nasheen (2010) found that, implementation of National Curriculum Framework 2005 the new syllabus is implemented in Secondary school in India. Students are taught practical problem solving skills.

Figure 4.3 shows the responses of the respondents when they were asked about the relevance of the content the syllabus wants them to teach in the classrooms.

Figure 4.3: Relevance of environmental education taught in secondary school



Source: Field Data 2017

From the figure 4.4 the proportions are revealing that, what is taught in secondary schools is generally relevant since only 7.5% of teachers said it is not relevant. 35% have said it is partially relevant, 52.5 said it is relevant and 5% claimed it to be very relevant.

The findings also show that the teachers who perceived environmental education as irrelevant one said;

You know environmental education it is not an independent subject, then it has been integrated in some subjects like geography...I wonder there are some topics needs to be covered and they are carrying contents of the European environment. For instance the topic so called Glaciations. There we teach the things which are not found in our environment.

The implication of the findings is that, some teachers are not comfortable with the content on environmental management.

4.4.2 Extra-curricular activities

In the study as it is indicated in figure 4.2 about 29.9% of the teachers confirmed to use extra-curricular activities to enhance environmental management in their schools. Extra-curricular activities were performed and entered in schools' daily routine. The headmaster in one of the surveyed schools argued, "...Under the supervision of teachers, students are assigned with environmental cleanness tasks which are to be performed in scheduled manner". The advantage of extra-curricular activities is that, students learn by doing. In his days the author and 6th president of Pennsylvania Franklin said, "Tell me and I forget, show me and I may remember, Involve me and I understand". The power of involving learners in practicing good things for sustainable use of different resources is the most effective way to use.

Figure 4.4: The head of school (rector) in one of the surveyed schools is pruning flowers on the school compound



Source: Field-research 2017

Figure 4.5: Students in one of the urban secondary school at extra-curricular activities



Source: Field Data 2017

The findings show that there were schools that have been practicing environmental management activities in their daily school routine. Figure 4.4 shows the rector in one of the schools trying doing some environmental activities. He also insisted in the interview that “I need to show the students that the task of keeping our environment has nothing to do with the titles, instead it is everyone’s duty. We need to keep them so that they can sustain us as well.” Figure 4.5 shows students who were in extra-curricular activities. The implication is that, although the role of school in environmental management in Tanzania can be too light, but on the same rate extra-curricular activities has a remarkable contribution.

4.4.3 Environmental clubs

Figure 4.2 shows about 27.3% of teachers revealed that the environmental clubs are working seriously to support environmental management. In consideration with the other ways used in environmental management around Morogoro Municipality this was the third in popularity. Out of four schools included in the study; two of them were processing active environmental clubs. Students were members of regional

secondary school environmental clubs. Mali Hai is an example of the clubs which works with the policy objectives in planting trees to reduce greenhouse gasses.

Students were asked to explain the extent to which environmental clubs are active and the following statement was given by one of them;

...In clubs we get more knowledge which we missed in the class due to some reasons... through environmental clubs we get platform for discussing issues about environment. For instance, soil erosion factors and measures to be taken in order to control it...not only that, but also we are visiting some affected areas and make sure we secure the risks by planting vegetation cover especially trees..

Implication of the above statement is that environmental clubs are used in enhancing environmental management in secondary schools. They supplement time for learning more different skills about how to practice environmental management. Clubs are very useful in case they are under strictly supervision of either teachers or students themselves through their leaders.

4.4.4 Debates

According to the figure 4.2 about 2 (5.2%) of the teacher respondents have admitted the use of debate in enhancing environmental management in the surveyed secondary schools. Results show that the use of debates in secondary schools as a way to learn environmental management is very low.

Moreover in understanding the pace in the use of debates as one of the environmental management program for raising environmental awareness, the researcher used interview. One of the students in her response to the question which required them to say how often they sit for debates in their school, she said; “I am in this school for two years of my studies; I don’t know why but I have never heard a debate motion which required us to discuss environmental management issues”. From this statement it can be argued that, even though debates were conducted in secondary schools they were not all the time covering the issues related to environmental management

4.5. Challenges facing environmental management in urban secondary schools

The third objective of the study was to find out the challenges that the urban secondary schools were facing in enhancing environmental management. Table 4.2 presents the findings.

Table 4.2: Challenges for environmental management in urban secondary schools (N = 40)

Challenge	Frequency	Percentage
Teacher's incompetence	30	75%
Shortage of teaching and learning conveniences	26	65%
Absenteeism in extra curricula activities	10	25%

Source: Field Data, 2017

Table 4.2 shows that, 30 (75%) teachers mentioned teachers' incompetence, 26 (65%) teachers mentioned shortage of teaching and learning conveniences, when 15 (35.5%) teachers mentioned absenteeism in extra-curricular activities.

4.5.1 Teacher's incompetence

The study reveals that, teacher's competence in teaching and enhancing Environmental Management in urban secondary schools is a challenge. Table 4.2 shows that about 30 (75%) of teachers mentioned incompetency as a problem in teaching environmental management in both classes and extra-curricular activities. There were teachers who felt that they lacked competence enough to support student's learning of environmental management. Teachers who said they were not competent enough in enhancing environmental management were of two groups, those who attributed their incompetence with the changing nature of environment and those who linked it to inadequate training.

The teachers who attributed their incompetence to the changing nature of the environment argued that, the environments keep changing day after day, the changes which modify it and other destroys it. The teachers named as examples new patterns

of environmental problems associated with urbanization and industrialization are currently dominating every part of environmental science. Therefore for teachers who don't have access to in-service training loses the competence in teaching students issues concerning the environmental management.

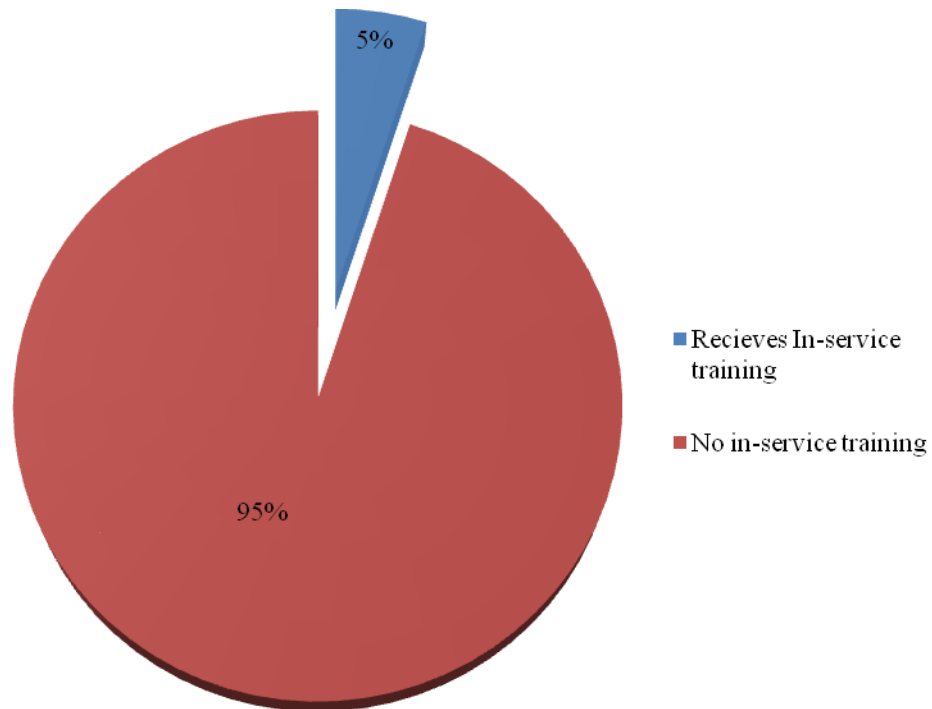
On the other hand there were teachers who claimed that they didn't attain environmental education when they were trained as teachers in Teachers Training Colleges (TTC). The result concurs with that of Lindhe (1999) who concluded that there are secondary schools teachers in Tanzania who have neither pre-service nor in-service training about environmental management. One of the respondents argued during the interview and she said;

...The problem with environmental management starts within the class, because in order for student to be good in protecting and caring the environment, they need to be taught theoretically to gain knowledge and skills on how to go for it. Unfortunately there are some teachers who have not been trained about the environmental education as teachers in Teacher Training Colleges...

The statement above shows that, beside the efforts done to allow components of environmental management in secondary education curriculum, there is a challenge in the side of teachers incompetence as implementers. From the statement it can be argued that, environmental management in secondary schools was not doing well because teachers were not competent. The incompetency of teachers was contributed by the poor plans and linkage between the teachers training colleges; universities curriculum and that of secondary schools. The Teacher Training Colleges (TTCs) curriculum overlooked environmental management education even though it's a necessary subject matter the teachers are expected to cover in their entire career (MoEVT, 2007).

Figure 4.6 presents teachers responses on whether they attended any in-service training for capacity building in teaching environmental management.

Figure 4.6: Secondary School Teachers In-service Training on Environmental Management



Source: Field Data 2017

4.5.2 The shortage of teaching and learning conveniences

Table 4.2 shows that, about 30% of the teachers mentioned the shortage of teaching and learning conveniences as a challenge on environmental management in their schools. The implication of this result is that, secondary school leavers will have insignificant life style on environmental management due to the shortage of learning conveniences. A learner understanding depends much on availability of both printed and unprinted learning materials. From interviews with teachers, the following statement was given by one teacher from the geography department

...A single session has an average of 40 to 80 minutes which are not enough for environmental education....if we have to teach relying on competence based methods there will be no way we can cover the syllabus...Environmental Management is a broad process which needs sufficient time so as to get best results...

The lack of proper time planning seems to be a bottleneck to the acquisition of competencies to the students. They learn many things but more theoretically without transforming them into practice, for instance recycling method of controlling wastes, ways to control desertification, are learnt in the classes only. The implication of these findings is that, the output of the secondary schools which is the form four leavers cannot be competent and skilled enough to help community in environmental management. They don't practice what they learn in the class they can't be perfect on it.

Furthermore in attempting the same question of the challenges that face environmental management in their schools one of the teachers said;

...We have few facilities especially in geography room, the simulation cannot take place to explain concepts like greenhouse effects.... the facilities available for extra-curricular activities...are fewer than the number of our students...

From the above statement, limitation of teaching and learning facilities has explained as a challenge pedagogical process. The deficiency of the facilities makes the teaching process to be very passive. Therefore that makes a teacher to be the knower and the learner to listen as the facilities which could have made them active are not there. Learning could be very interesting if facilities are available, since some of environmental contents require visual demonstration, so in schools which don't have projectors it is quite a challenge.

Figure 4.7: An employee working with environment in one of urban secondary school in Morogoro Municipality



Source: Field Data 2017

Figure 4.9 shows a gardener working on school environment, students are not involved in this exercise, and this pulls back the efforts of attaining the society which is pro-environment. Students were supposed to do those activities by themselves so as they can master and be able to do when they are at home.

Moreover in interviews one of the head of the school were asked why environmental activities are done by workers employed by the school and not students regarding that national curriculum directs schools to have a schedule for extra-curricular activities he said;

...The school environmental cleaning facilities are not enough for every student to have his or her own equipment like those big scissors for gardens as you have been asking. On top of it the almanac for this academic year is very tight, we have a lot of things to be done and subject topics to be covered, actually time is very limited for environmental activities outside the class...

The above statement from one of the key informants in the interviews adds the insufficient equipments as a challenge in environmental management. Moreover time limit is associated with the presence of little number of equipments in extra-curricular activities. This has made some schools to employ the workers who deal with environmental cleanness.

Generally, the finding of this study reveals the persistence in deficiency of teaching and learning materials for Environmental management in secondary schools. The problem which has been reported since 1980s' in the studies conducted in by Ishumi and Maliyamkono (1995) yet there is a persistence of such problem up to date (Kimaryo, 2011; MoEVT, 2006; 2007). The problem seems to be contributed with the lack of experts in environmental issues. However challenge like time limit has double effects both in classroom sessions and during extra-curricular activities.

4.5.3 Absenteeism in extra curricula activities.

According to the table 4.2 about 15 (35.5%) of the teachers mentioned students' absenteeism in extra-curricular activities as the challenge in environmental management. In that context, it is very hard for the student who dodges in school outside class activities like slashing to master it after leaving the school. Therefore those who are missing the extra-curricular activities are the ones who devastate the school role in environmental management in Tanzania.

The statement from the head of the school in one of surveyed urban secondary schools of Morogoro Municipality says; "Many students tends to be absent in extra-curricular activities than in the classroom sessions. It seems that they are lazy and hates physical jobs which are common in extra-curricular activities"

According to this statement it seems that, students are missing in extra-curricular activities and that can be caused by the presence of hard works that students think they have no benefit on them.

4.6 Possible solutions to the challenges facing environmental management in urban secondary schools

The fourth objective of the study was to explore stakeholders' views in addressing the challenges facing urban secondary schools in enhancing environmental management. The contacts were asked the same question in both ways of collecting data interview and questionnaire. Table 4.3 is a summary of the possible solutions to the challenges facing environmental management in secondary schools as provided by teachers and students through questionnaire.

Table 4.3: Possible solutions to the challenges of environmental management in secondary schools (N = 60)

Solution	Frequency	Percentage
Increasing the necessary learning conveniences	59	40.2%
Establishing independent subject of Environmental Management	40	27.2%
Emphasis on extra curricula activities	26	17.7%
Provision of in-service training to the teachers	22	14.9%

Source: Field Data 2017

4.6.1 Increase of necessary teaching and learning conveniences.

From the table 4.3 about 59 (40.2%) of teachers and students in the study suggested an increase of teaching and learning materials as a solution to the challenges on school environmental management. This seems to be a most promising solution since it has been mentioned by 59 respondents many than any other suggestion. The presence of limited facilities can be solved by the government who is the key stakeholder of the education system.

The bellow statement was given in an interview done with one of the Ward Education Coordinator;

...Traditional teaching methods can help us to deal with the challenge of limited supply of the teaching and learning facilities. I think the use of learner centred approach demands adequate time and facilities to which we don't have... why to stick with the plan which doesn't accommodate our facilities, actually it is like a passenger to wait for a boat on the bus station it is a wastage of time because it won't come...

The statement is advising the teachers to be creative in dealing with the challenge of lack of teaching conveniences. There is no way the solutions can be provided by government that urgently either the teachers can find best ways to solve it. Classes are overcrowded, teacher student ration is big and there is no time for using modern teaching methods.

The findings are corresponding with that of Guthrie, (1990) who has suggested the use of traditional teaching methods to teaching of overcrowded and undersupplied classes. On top of that, Vavrus (2009) teaching environmental management in learner centred approach requires time and facilities, thus there is no way we can afford to use it.

4.6.2 Establishing Environmental Management subject

The findings as it is shown in Figure 4.3 show that 40 (27.2%) of the teachers and students have suggested the establishment of an independent for environmental management. The advantage of establishing an independent subject for environmental management was that the subject will be given more time and facilities. The treatment of environmental management as an independent subject will ensure the recruitment of teachers who are experts in environmental studies. Moreover the subject will have a session as other subjects such as geography and history hence more time can be used to facilitate learning theoretically and practically.

The implication of these results is that teaching of environmental management as an independent subject will add the number of subjects in the school schedule, and then there may be another challenge of congestion of periods in a day. The results are similar with that of Kimaryo (2011).

4.6.3 Emphasis on extra-curricular activities

From table 4.3 about 26 (17.7%) of the teachers and students were curious on the efficiency of extra-curricular activities on environmental management. Therefore it can be argued that, Involvement of learners in different environmental management tasks during extra-curricular activities is the best way of enhancing environmental management skills to the learners. In interview sessions, one of the respondents said;

...Before I had joined the school I could not even slash grasses, those works were done by the waged labourers paid by my father...here it is different, after every one to two weeks in this rain season we are slashing. These activities strengthened my ability to conserve the environment...

The statement shows that students were advocating for environmental activities taking place after classes. The method seems to be effective since the learners are involved directly by touching and doing the exercise. Jambiya (2003) argued that, the knowledge of people about their environment is very low despite the fact that many people have attended school.

Figure 4.8: Students during extra-curricular activities



Source: Field Data, 2017

4.6.4 Provision of in-service training

The findings shows as it is shown in table 4.3 about 22 (14.9%) of the teachers and students involved in the study suggested that, there should be in-service training to teachers for capacity building. This will make teacher competent and comfortable when teaching and doing environmental management in outside their schools in turn students and the nation will benefit.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary, conclusion and recommendation of the study on the role of school in environmental management.

5.2 Summary

This study intended to assess the role of the school in environmental management in Tanzania. The study sought to identify the level of awareness of the secondary school's management, teachers, and students over the term environmental management. It also focused on the ways which are used in environmental management as well as the challenges facing environmental management in secondary schools.

Different methods were employed in collecting data structured and semi structured questionnaire and key informant interviews. The collected data were analysed using Statistical packages for social sciences. Descriptive statistics such as frequencies, percentages and means was performed using the same software. Some figures and graphs were created using excel spread sheets.

It was found that, the teachers as the key implementers of the school curriculum have the diversified awareness on environmental management. There are those who perceived it as measure to conserve the surroundings to get rid of desertification bringing currently climatic condition. Other respondents have perceived environmental management as a process of collecting of the visible pollutants.

The findings of the ways which are used to enhance environmental management in schools, teaching in normal class periods were the most used method than the other. Therefore in connection to the shortage of teaching and learning facilities in which

study finds to be the great challenge in environmental management in schools it is reasonable to conclude the role of secondary schools in environmental management is insignificant.

Moreover the study shows the challenges of environmental management in urban secondary schools which includes Shortage of teaching and learning conveniences, lack of funds, teacher's incompetence and absenteeism in extra-curricular activities. The study has ended up providing some possible solutions of the identified challenges that more environmental education should be provided to all stakeholders particularly to teachers to make environmental education in schools effective.

5.3 Conclusion

Based on study findings the following is a conclusion: The role of schools in environmental management in Morogoro Municipality is low. High awareness of the secondary school management, teachers and students over the importance of environmental management education has little effect on their environmental management responsibility. Moreover the poor role urban schools play in environmental management is attributed by the unpromising methods of teaching used in the schools. However the study has found the challenges that delay the schools role in environmental management. There is a need to have an independent subject of environmental management in secondary school education. This will not only give enough time for environmental management to be learnt in schools but also in Teacher Training Colleges. Education system aims at transforming the learners; it is just a matter of what values are needed by the respective society. Schools are the places where people are transformed and become useful men in life from family, society, and at national level. Environmental management was required to start at school, since it is very complicated, interdisciplinary and broad program. It has been believed that school especially at the secondary education level, can help to transform the youth as the adults of tomorrow to have sense of possession and become great environmentalists. Then creating a generation which could even change mentality of their relatives and other members of the society that have never

attained formal education from depleting environment to biodiversity prolific behaviour.

5.3 Recommendations

The study recommends that Environmental education should be given a priority in to have a sustainable environmental management. Recalling from the quote of the former and first president of independent South Africa, the late Nelson Mandela; “education is a powerful weapon which can be used to change the world” education can help to activate pollution control and other environmental management activities. The policy makers are advised to develop guidelines for in-service training which will give teachers in secondary schools a room for in-service training especially in the field of environmental management. The Ministry of Education and Vocational Training (MoEVT) in cooperation with its organ Tanzania Institute of Education (TIE) have to prepare the promising curriculum which will ensure that the pedagogical requirements are reflecting the physical environment of our country. Curriculum materials are also at a great stake, the supply of books and teaching aids is very important.

Teachers as a stakeholder at the micro level, has to ensure the environmental management practice are carried out in the schools through extra-curricular activities. The problem of student’s absenteeism in extra-curricular activities should be addressed by reducing time they use for working outside a class so that they won’t get exhausted.

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APPENDICES

Appendix I

Informed Consent

I am Mackdonald Mwagu, a Master's degree candidate in the Department of Education Foundation and Teaching Management in Mzumbe University. This study needs your participation to find the role of the school in Environmental Management in Tanzania. The interest herein is to find the gap existing between expected contributions of school in production of citizens who care the environment and the current situation. I am interested with your feeling/attitude/perception about the study as well as any suggestion you may have.

Participation in this study is voluntarily. The information you provide will remain strictly confidential without any identifier or your name. Although this study's findings may be published at no time your name will be used. You are free to withdraw your consent to the interview or questionnaire at any time you wish without prejudice.

Mackdonald Mwagu (Investigator)

I ----- affirm that I have read and understood the above statement and have had all of my questions answered.

Date -----

Signature -----

Witness -----

Appendices II

QUESTIONNAIRE (for teachers)

Instructions: Please put a tick ☐ in the box next to the answer of your choice or write in the space provided as the case may be.

Sex

Male ☐

Female ☐

Education Level

☐ Diploma

Degree

☐ Masters

☐

Work Experience

☐ 2 – 5 years

☐ 6 – 10 years

☐ 11 years and above

Subject Disciplines

Natural Sciences ☐

Commercial ☐

Social Sciences ☐

Languages ☐

1. Is it necessary for the secondary schools to teach Environmental Management? Yes ☐ No ☐

Justify why yes or no.

2. How do you see the Environmental Management in your school?

a. Extremely good ☐

b. Good ☐

c. Poor ☐

d. Very poor ☐

3. Please specify reasons for your answer in question 2 (two) _____

4. In your subjects do you teach students how to manage the environment?

Yes ☐ No ☐

5. If your answer in question 4 (Four) is yes, how often do you teach Environmental Management?

In every new topic. ☐ Once in a topic per year. ☐

If other please specify

6. Is the number of topics and periods allocated to teach Environmental Management satisfying? Yes ☐ No ☐

7. Do the curriculum, syllabus and other materials provide relevant content of Environmental Management to be taught in secondary schools?

i. Very relevant ☐

ii. Relevant ☐

iii. Partly relevant ☐

iv. Not relevant ☐

8. How do you ensure students are equipped with the Environmental Management knowledge and skills?

(a) Teaching them in the classes (c) Through debates ☐ ☐

(b) In Extra-curricular activities (d) through Environmental Clubs ☐

If there is any other please specify ☐

9. Are you competent enough to teach your students about environmental management? Yes ☐ No ☐ Clarify why

10. Are the ways used to enhance environmental management in your school effective? Yes ☐ No ☐

11. In the question 9(nine) if the answer is No, why? Please elaborate _____

12. Do the challenges hold back your efforts in teaching Environmental Management exists? Yes ☐ No ☐

13. If the answer in question 11(eleven) is Yes, Please specify the challenges

i) _____
ii) _____
iii) _____
iv) _____

14. If the answer in question 4 (four) is Yes, is the time allocated for Environmental Education periods sufficient to cover topic effectively?

Yes ☐ ☐

15. Regarding there are day to day changes in environmental problems patterns, are you attending the in-service training to get updated?

Yes ☐ ☐

16. What are the possible solutions to the challenges mentioned in the question 8(eight) above?

i) _____
ii) _____
iii) _____
iv) _____
v) _____

Appendices III

Interview Guide for the Students

Instructions: Please put a tick ☐ in the box next to the answer of your choice or write in the space provided as the case may be.

Sex

Male ☐ Female ☐

Education Level

Form Two ☐ Form Three ☐ Form Four ☐ Form Five/Six ☐

Subject Disciplines

Social Sciences ☐ Natural Sciences ☐ Commerce ☐

1. Do you learn Environmental Management? Yes ☐ No ☐

2. If the answer in question 1 (one) is Yes, in which ways you learn environmental Education?

- i. In normal classes
- ii. Activities Outside the class (extra-curricular activities)
- iii. Environmental Clubs

If there are other ways you use to learn environmental management when you are at school specify please

3. Which subjects have the topics relating with the Environmental Management issues?

- i. _____ iii. _____
- ii. _____ iv. _____

4. Regarding the subject(s) you mentioned in question 4 (four), in which topic(s) have you learnt Environmental Management?

5. Are you practically exercising Environmental Management in your school?

Yes

☐☐

6. What are the environmental pollution control skills and methods you learn in the school?

7. Does the skills mentioned in question 6 (six) help you in managing environment in your home society?

Yes ☐

No

☐

8. Is there any difference in the level of understanding of Environmental Management before and after joining secondary school? Yes ☐ No ☐

9. What are the new skills in managing the environment that you have been learning in secondary school apart from those you had before?

i.

ii.

iii.

iv.

10. Is there any hardship that you have come across while learning and or applying Environmental Management?

Yes ☐ No

☐

If the answer is yes please Specify

11. What are possible solutions to the challenges mentioned in question 10 (ten)

Appendices IV
Interview Guide for Ward Education Officers

Preliminary Information

Name of the officer:

Place of work (Ward):

Education: What qualification level?

Interview questions

1. What is the role of the secondary school students in environmental management in your ward?
2. Do the schools in your ward participate in environmental management?
3. If the answer in question 2 (two) is yes, what are they doing in conserving environment?
4. Are the secondary schools in your ward clean? What challenges do the schools face in making sure they play a pivotal role in Environmental Management?
5. Do you have any programme to improve Environmental Management skills for the students and school at large?

Appendices V

Interview Guide for the Head of the School

Preliminary Information of Teachers

1. Name
2. Education: What qualification level?
3. Teaching subjects
4. Experience in the Post: Numbers of years in teaching

Research Question 1: Does Environmental management have any importance in Secondary Schools?

1. What do you understand about EE?
2. With your own words can you clarify whether there is any importance of EE to be taught in urban secondary school?

Research Question 2: What ways does your school use to enhance Environmental Management skills to the students?

1. What are the environmental activities do you carry in and out your classrooms?
2. What are the ways teachers use to enhance the Environmental Management?

Research Question 3: What challenges do the school face in enhancing Environmental Management?

1. Is there any challenge you have come across when implementing the EE in your school?
2. What are the challenges/difficulties you find in implementing EE in your school?

Research Question 4: What are the possible solutions to the challenges that your school faces in enhancing the Environmental Management?

Appendices VI

Interview Guide for Parents

Preliminary Information of the Parent

Name

Sex;

Education: Qualification.....

Class level of his/her Children.....

Interview guide

1. What environmental management activities does your child do at home?
2. Does the school produce the expected outcomes on environmental management?
3. After attending the secondary school education, what level of environmental stewardship does your child show at home? Has it increased or just the same as he/she was before going to school?