

**AN ASSESSMENT OF ENVIRONMENTAL AWARENESS
EDUCATION ON SOLID WASTE MANAGEMENT IN
GULLELE SUB CITY**

**BY
GANA GODEBO GOGILO**

**ADDIS ABABA UNIVERSITY SCHOOL OF GRADUATE STUDIES
DEPARTMENT OF CURRICULUM AND TEACHERS
PROFESSIONAL DEVELOPMENT**

**ADDISABABA, ETHIOPIA
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**A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF
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SCHOOL OF GRADUATE STUDIES

This is to certify that the thesis prepared by Gana Godebo, entitled: An Assessment of environmental Awareness Education on Solid Waste Management in Gullele Sub City.

Perception and practice and submitted in partial Fulfillment of the Requirements for the Degree of Master of Education in Adult and lifelong Learning Complies with the Regulations of the University and Meets the Accepted with Respect to Originality and Quality.

Signed by the Examining Committee:

Examiner External

Signature

Date

Examiner Internal

Signature

Date

Advisor

Signature

Date

Chair of Department or Graduate program coordinator

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ABBREVIATIONS AND ACRONYMS

UNESCO	Unite Nation Education Scientific, and Cultural Organization.
MoE	Ministry of Education
FAL	Functional Adult Literacy
EPA	Environmental Protection Authority
SBPDA	Sanitation, Beautification and Parks Development Agency
PASDEP	Poverty Alleviation and Sustainable Development Education Program
WASH	Water Supply, Sanitation and Hygiene
SWM	Solid Waste Management
WHO	World Health Organization
HSDP	Health Sector Development Program
UNDP	United nation Development Program
IUEI	Integrated Urban Environment Initiative
MSWM	Municipal Solid Waste Management
RWA	Residential Welfare Association
MOFED	Ministry of Finance and Economic development
SNN P	Southern Nations, Nationalities and Peoples
MoH	Ministry of Health
CBD	Cleaning and Beautification Department
FGD	Focus Group Discussion

Abstract

The objective of this study was to assess and analyze Environmental Awareness Education on Solid Waste Management in two selected woredas of Gullele Sub city. the specific objective of the study are to assess awareness level of people on solid waste management practice, to explore sources of environmental awareness education on waste management, to examine the problem encountered during environment awareness education on solid waste management and to identify appropriate method and strategies that should be employed to provide solid waste management awareness education for adults in community. The research method in this study implied was descriptive survey method. Both quantitative and qualitative data were collected through questionnaire, interview, focus group discussion and observation. Data obtained through quantitative were described and analyzed in percentage. The information obtained through interview and focus group discussion was qualitatively described by narration to supplement quantitative data. The subject in this studies were Health Officers, Sanitation and Beautification Officers and Micro and Small Enterprises Development Officers, community leader, and Association of solid waste Collecting and Disposal and their the sample total number 120. The sampling techniques were all the office head and micro and small enterprises development officers were selected purposive sampling due the representative nature whereas the officers were selected using simple random sampling methods to allow equal chance. The finding of the research indicates that ,the Sanitation and Beautification, Health office, and micro and small enterprises development office were provide environmental awareness education on solid waste management, communities understand their role on managing solid waste, but there is implementation gap and lower community participation on waste management, and lack of waste management facilities in the locality.

CHAPTER ONE

INTRODUCTION

This chapter addresses the introductory part of the research. It basically includes background of the study, statement of the problem, purpose and significance of the study, delimitation of the study, limitations of the study, organization of the study and definition of basic terms.

1. Background of the Study

Education is among one of basic human rights and essential tools for achieving the goal of equality, development and peace. Education is also a key human right without which other rights are difficult to attain. Education is an indispensable factor for development and poverty reduction. It gives people knowledge and information that empowers them to make decision, initiate change and enhance individual and national development. Non-formal education, which is a cost effective way to reach those who have not benefited from the formal education provisions, comprises any organized and semi organized educational activities for school dropout, for illiterate rural and urban adults (UNESCO, 2001).

Education is not only formal system of learning in schools but it includes non-formal adult education. Adult education is a planned and purposeful learning that addresses those matured individuals, as in environmental education which is among adult education provisions (Roger, 1992).

Functional adult literacy (FAL), an aspect of adult education, is also considered as tool of Ethiopian poverty alleviation and sustainable development education program (PASDEP), as it includes basic livelihood, health and family education and environmental education gender education ,civic and ethical education agricultural education (Tilahun,2011,100:116).

The national strategy of adult education of Ethiopia (2006) identified two meanings of FAL; as either ‘‘practice of reading and writing put to some use or ‘‘the acquisition and use of reading and writing to learn practical knowledge and skill useful for other aspects

of life. As indicated in national strategy, adult education in general and functional adult literacy (FAL) in particular can contribute to the overall development of the country by helping people to have modern attitudes and skills, which in turn results in improving one's family income(MOE,2006).

According to Keweloh (1974:11) functional adult literacy began in Ethiopia in the late 1965s few years after “ the formulation of the concept of functional adult literacy by the Teheran Conference in 1965”. Literacy means only when it leads to participation in economic, cultural, and social activities. It is empowerment which enhances ability to make decision on one's holistic personal development. It is also the first step in the long life learning process of men and women. Moreover, it is foundation of all skills and pre-requisite for economic development.

As indicated in MOE (2008) ‘‘FAL, is a program designed to help adults to solve basic life problems, and its integration of numeracy, literacy, and life skills enable adults to lead better life. Therefore it is important to include environmental education in it.

Environmental education as strategy to create conducive living habitat, and in some areas attached to livelihoods and as soil and water conservation education and as awareness education on solid waste management in urban areas.

Adults are socially responsible to teach their children and the coming generation. Including environmental education in adult learning programs creates sustainable environment which enables to fulfill the needs of the present and future generation. Adults are socially responsible persons who take care for their societies and perform crucial activities on the living environment and keep their environment, teaching about children and transforming health environment to their coming generation (Hoga, 1992:109- 123).

Environmental education as one of strategies and types of adult education refers to organized efforts to teach about how natural environments function and, particularly, how human beings can manage their behavior and ecosystems in order to live sustainably. The term is often used to imply education within the school system, from primary to post-

secondary. However, it is sometimes used more broadly to include all efforts to educate the public and other audiences, using print materials, websites, media campaigns, and etc. Related disciplines include outdoor education and experiential education (Boiwrt, 1991:16).

Environmental education is not limited to formal school. There is also indigenous or traditional environmental education which has been overlooked by modern education.

Environmental education is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action, (UNESCO, 1978, Tbilisi Declaration).

The concept environment, to (Bain, 1973:9), has diverse perspectives such as social, physical, moral, home, psychological, behavioral and all the external and non-personal condition, and geographical environment.

So environmental education is concerned with the aim of having unpolluted physical and bio-physical environment that will create positive social environment. Hence, environmental education is about quality of water, air, plants, animals, and the inter-relationships that exist among those elements to increase awareness level of people.

In support of this, (Frerire, 2000: 88) states that the environmental factor is now becoming increasingly important and can hardly be ignored in education efforts committed to social- economic and cultural goals.

Environment affects socio-economic and cultural aspects of people and life challenges that necessitate environmental education and it plays a role as social function. Education about environment develops individual's perception and understanding of the environment, education in environment is learning about the environment practically in the environment and education for the environment is the affective aspect of environmental education. Environmental awareness education helps adults to acquire

knowledge, skill, experiences and as so that they determine their environmental actions (UNESCO, 1992).

Since the half of the 20thc, the world population is increasing rapidly and it is expected to increase by 1.5billion people in 2025. The speed of urbanization and the enormous number of population become challenge, for development (World Bank, 2000). The rapid increase in urbanization and industrialization in cities have generated large amount of waste. To manage municipal wastes, municipalities all over the world, especially those from the developing countries have faced problems of effective solid waste management. Though there is effort, collection and management of garbage is not adequately executed, that is unplanned solid waste disposal and alienated problems become global agenda (Eshuan, 2002).

By proclamation No. 9/1995, the Ethiopian Environmental Protection Authority (EPA) has created an environmental policy, as well as legal and regulatory reforms to manage its environmental and natural resources. The overall aim of the Ethiopian Environmental Protection Authority (EPA) is to “improve and enhance the health and quality of life of all Ethiopians and to promote sustainable social and economic development through the sound management and use of natural, human-made and cultural resources and the environment as a whole so as to meet the needs of the present generation without compromising the ability of future generations to meet their own needs” (EPA, 2010). Article 44/92, all persons have the right to clean and healthy environment and government shall endeavor to ensure that all Ethiopians live in a clean and healthy environment.

The mission of the environmental policy is to raise the awareness and empowerment of the Ethiopian people to use environmentally sound technology and the best practices in order to achieve sustainable development. This would include using good practice of waste management, (EPA, 2006).

It is obvious that proper waste management saves resources by reducing waste generation or converting the accumulated waste through different mechanisms like recycling, composting or proper disposal. However, the communities lack awareness how to dispose

waste. Moreover absence of adequate waste collecting system aggravates the problem and results in accumulation of waste on open lands, in drains and in the living areas of many people, causing a nuisance and environment pollution(Beyene ,1999:17).

To curb this problem, although the Addis Ababa City Government issued regulation on waste management collection and disposal by regulation No, 13/2004 which prohibits people from disposing waste along roads, avenues, rivers, ponds and other sites, however the regulation is continuously violated by people due to lack of awareness and alternate means for disposal (Beyene,1999).

To improve the solid waste management, the city administration has transferred the service provision of solid waste management to the Addis Ababa City Sanitation, Beautification, and Parks Development Agency (SBPDA) since January 2003, with the objective to make the city naturally balanced, green and favorable. The agency is providing skill development trainings for adults on environment and collection of the solid waste based on the decentralized system in each of the ten (10) sub-cities through established waste management teams. Out of the ten sub-cities, this study focuses on Gullele sub-City to assess the awareness of the people on solid waste management.

Having environmental awareness, knowledge, skill, and attitude are means for improving the waste management and health condition of the environment of the people through empowering and equipping the community with necessary and relevant information that helps them to solve the problems and to live a better life and manage waste properly.

1.2. Statement of the Problems

Urban environment is characterized by such very high population, high density of housing, crowded market centers and contamination from industrial effluent. Solid waste management is always a critical urban issue in developing countries because as rapid urbanization continues, the management of solid waste is becoming a major public health and environmental concern in urban areas of many developing countries. The concern is very serious particularly in the capital cities, which are often the main gate ways to the countries for diplomatic, business and tourism activities. As a result, today urban waste management is one of the major challenges urban dwellers is facing.

Researches on issue related to environmental awareness education and solid waste management in Addis Ababa were conducted by different researchers. For instances Haliemariam (2008) has conducted a research on solid waste management problems and the role of stockholder in Addis Ababa Arda Sub-City with the objective of identifying the main cause of the problems of solid waste service .He has identified the following problems: there is less awareness education for the population on solid waste management; solid waste is not treated properly; there are different solid waste types dumped; lack of proper storing and handling. Swegagne (2007) has also found out that the majority of his respondents had no information on solid waste management practices and he recommended that government should give due attention to provide education on municipal solid waste.

Ketema(2007) studied challenges and opportunities of cooperatives in management of solid waste (MSW),in Addis Ketema Sub City and he identified the following factors. There is in adequate training for coordinators who are supervising Solid Waste. Popular attitude toward solid waste management is poor. Even most consider the implementers as dirty people (koshashoch) and popular participation toward the activity is very poor. Ketema stated that, awareness has been direct linked with the waste management practice. Therefore, government should be give attention to develop community awareness.

As the Woreda 3 of Gulele City 5-years accomplishment report of 2013also indicates, the existence of low popular awareness on solid waste management and low popular participation, and professionals have skill gaps.

The above mentioned factors initiated the researcher to study environmental awareness education on solid waste management.

1.3. Objectives of the Study

The general objective of the study is to assess and analyze environmental awareness education on solid waste management in the selected two waredas of Gulalle Sub City.

To this end, the following specific objectives were formulated.

- To assess the awareness level of people on solid waste management practices.

- To assess the sources of environmental awareness education on solid waste management.
- To identify the problems encountered during environmental awareness education on waste management
- To identify appropriate methods that should be employed to provide solid waste management awareness education for adults in the community.

1.4. Basic Research Question

In order to achieve the above objective, the following basic research questions were raised the study to be answered the factors that affect the practice of solid waste management. Accordingly, it is intended to answer the following specific questions:

- What is the awareness level of community about solid waste management?
- Where do people get awareness about solid waste management?
- What problems are encountered on solid waste management awareness education?
- What methods are currently applied and should be employed in the future to provide awareness education on solid waste management?

1.5 Significance of the Study

The understanding that environmental awareness education on solid waste management has been important issued in the developing and developed countries to overcome environmental problem related with solid waste management practice. *From this* the researcher believes that this study has the following significance. It will enhance networking among concerned stockholder/ institutions for adults at community level on environment protection. Also it will help to forward efficient /appropriate/ methods to provide environmental education on solid waste management practice.

Another importance that it will provide information for academic institution like AAU, how to design adult education programs that fit to local situations and it helps policy makers; concerned institution to revise policies and pass sound convenient polices that with local states.

1.6 Delimitation of the Study

Environmental awareness education includes multiple activities by its nature. Hence, the study is delimited on solid waste management in Addis Ababa Gullele Sub city of selected waredas .This study also delimited itself to environmental awareness education at community level particularly on adults at their residence.

1.7 Limitation of the Study

The major limitation encountered the study during the time of data collection was frequent turnover of officer and management bodies at all sector offices such as health office, sanitation and beautification office, micro small enterprises office .Besides resource constraints have limited him to do so, lack of adequate research out puts related to environmental awareness education on solid waste management and officials manual refers to awareness education program.

1.8 Operational Definitions of Important Terms

Environment: -the sum total of all the sum total of all living things interaction with their physical forces and their interactions.

Education:- is general sense is a form of learning in which the knowledge ,skills and habits of a group of people are transferred from one generation to the next through teaching ,training, or research.

Awareness: is the condition of being aware; have knowledge; consciousness.

Solid waste:-is solid or semisolid, with no soluble materials (including gasses and liquid in container) such as agricultural refuse, demolition waste, industrial waste, mining residues, municipal garbage, and sewage sludge.

Solid waste management:-is systematic control of generation, collection, storage, transport, source separation, processing, treatment, recovery, and disposal of solid waste.

Adults: are human beings that are of relatively mature age, typically associated with sexual maturity and the attainment of reproductive age in human context. And other has subordinate meaning associated to social and legal concept for a person who has attained the age of maturity and is therefore regard as independent, self-sufficient, and responsible person, (UNESCO, 1997).

1.9 Organization of the Study

This study has five chapters. The first chapter covers background of the study, statement of the problem, significance of the study, scope of the study, limitation of the study, organization of the study, and definition of operational terms. The second chapter is about of review of related literature. The third chapter includes research design and method of the study. The fourth chapter encompasses data presentation, analysis and discussion. The fifth one is about research findings, summery, conclusions and recommendations.

CHAPETER TWO

RELATED LITERATURE REVIEW

2.1. Concepts of Environment

The concept of environment (Singh, 2003) has been viewed from diverse perspectives and defined in various ways. The variety of definitions and conceptions of environment is closely linked to the fact that the study of environment is multi-disciplinary, and thus each discipline tended to develop and adopt definitions in line with its interest. This multiplicity of definitions, concepts and usage of the term in various disciplines was clearly captured by Porteous (1977:139) when he stated that:“the multiplicity of the usage and concept of the term environment have resulted in a variety of forms which include social environment, moral environment, physical environment home environment, psychological environment, behavioral environment and geographical environment” (Porteous, 1977:139).

According to (Bain, 1973:9), there are geographic psychological and behavioral environments; He explained that geographic environment is the external and non-personal condition around people. According to middilton (2008).Physical environment comprises parts of the earth and atmosphere and it has different layers like lithosphere, which holds parts of crust ,section of mantle, rocks, soil and sediments; atmosphere, gaseous layer surrounded the planet; biosphere ,layer where organisms live ,hydrosphere, water cycle are all made up physical environment.

Environment concerned about biotic and a biotic as well as human environment that touches people and institutions (Middilton, 2008:1: 20).Environment holds all things. People get their basic products and services like food, fuel, water, and medicine from the environment .Urban environment is more complicated than natural setting or rural environment as people interferes in the cities activities that disturb resources and land features. Human activities, settlement, pattern and urban infrastructure facilities as well as waste disposal experiences aggravate the situation (ibid, 188).

2.2. Urban Environment

Urbanization is a social phenomenon and a physical transformation of land scopes is one of the most powerful, irreversible and visible anthropogenic forces on earth (Masakazu, 2003; UN Haptait, 2008). It has been the dominant demographic trend throughout the entire world during the last century .Uncontrolled /unplanned growth of city and town populations, lack of infrastructure, congested traffic, housing shortage and environmental degradation have become the major issues faced by Cities and towns (Mogues, 2007).

Currently urbanization has been expanding in Ethiopia; consequently the rate of urban population growth has been increasing in alarming rate due to mainly in-migration. Ethiopia's regional urban centers, secondary cities such as Adama, Bahair Dar, Mekele,Hawassa,DireDawa and particularly the capital City, Addis Ababa are growing at an unprecedented rate (Brook et al,2009, Aynalem,2007) .The environmental impact of urbanization in Ethiopia include the negative health consequences of crowding and increased exposure to concentrated waste, unsustainable resource consumption and settlement of environmentally fragile land(UNDP,2004; kohlin,2008).

Urbanization does not have only local environmental impacts but it also has a large 'ecological footprint' beyond its immediate vicinity. Intensive and extensive exploitation of natural resources to support the urban economy includes use of high amounts of energy resources (including fuel wood), quarrying and excavation of sand, gravel and other building materials on large scales, and over extraction and inefficient delivery and use of water. These all contribute to degradation of the natural support systems and irreversible damage and loss of critical ecosystem functions, such as the hydrological cycle, carbon cycle and biological diversity in areas both near and far from the urban centers using the resources. In addition, conflicts can arise with rural users over access to such limited resources. Other effects can be felt further field, such as pollution of waterways, long-range air pollution that have impacts on human health as well as on vegetation and soils at considerable distances (Brooke et al, 2009).

A according to, UNDP (2004) in five Ethiopian secondary cities (Adama,Hawassa, Bahir-Dar, Jimma and Mekele) due to urbanization, almost all the secondary cities and

the capital city, Addis Ababa, are increasingly plagued by various environmental problems. These include water and air pollution, settlement of low-income groups in highly polluted peripheries and pockets within settled urban areas without the fear of eviction, and widespread removal of vegetation to support urban ecosystems.

2.3. International Consensus on Environmental Issues

The conference on the human environment, which was the first world intergovernmental conference on the protection of environment, was held in Stockholm ,Sweden, in June 1972.It led to the declaration of UN planning for environment protection from external factors (UN,1973).

The first global ,intergovernmental population conference was held in Bucharest in 1974.The world population plan of action adopted at the united nations world population conference (UN,1975)put the environment questions in terms of per capita use of world resource. The plan for action argued that developed countries to adopt appropriate policies in population and environment that consume and invest the resources.

Environmental issues were not particularly prominent in the overall agenda of the second global conference on population, the international conference on population, held in Mexico City in 1984. The United Nation Conference on Environment and Development held in Rio de Janaro, Brizle, in 1992was a milestone in the evolution of an international consensus on the relationship among population, development and environment based on the concept of sustainable development articulated a-few years earlier by the world commission on environment and development (World commission and Development, 1987).

The United Nations Conference on Environment and Development, held at Rio de Janeiro from 3 to 14 June 1992 reaffirmed the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972 proposed the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors and people, to perform in accordance with international agreements which respect the interests of all and protect

the integrity of the global environmental and developmental system. The declaration reaffirmed and consolidated that the integral and interdependent nature of the earth as people's home. The convention develops 27 Principles, by inviting the emphases of the world nations concerns and it is summarized as follows **(1: 16)**:

Conference considers that human beings are at the centre of concerns for sustainable development that is deserved to meet needs and wants of present generation without compromising future generation's resources. The convention urges states that, they shall immediately notify of any natural disasters or other emergencies that are likely to produce sudden harmful effects on the environment of those States. Every effort shall be made by the international community to help States afflicted in order to reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies that do not harm environment. All these efforts enforce states and all people to cooperate in the essential task of eradicating poverty from least developed countries and those most environmentally vulnerable shall be given special priority.

International actions in the field of environment and development which should address the interests and needs of all countries, is also the concern of the convention. It invites state's facilitation and encourages public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings and cost-effective measures to prevent environmental degradation are also among principles that should kept by state leaders.

According to the convention, national authorities have to promote the internalization of environmental costs and the use of economic instruments, and should take into account the approach that the polluter should bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment. It further intensifies the state's cooperation to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or harmful practices to human health.

The principles specify about environmental impact assessment, and set it as a national instrument, shall be undertaken for proposed activities that are likely to States shall resolve all their environmental disputes peacefully and by appropriate means in accordance with the charter of the United Nations. Having a significant adverse impact on the environment and are subject to a decision of a competent national authority. States and people's cooperation is based in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this Declaration and in the further development of international law in the field of sustainable development.

2.4. The Rio Declaration Promotes Education, Public Awareness and Training

Education which empower individuals and societies to utilize their full potential. Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues.

While basic education provides the underpinning for any environmental and development education, the latter needs to be incorporated as an essential part of learning. Formal, non-formal and informal educations are indispensable to changing people's attitudes so that they have the capacity to assess and address their sustainable development concerns.

Is also intensifies for achieving environmental and ethical awareness, values and attitudes, skills and behavior consistent with sustainable development and for effective public participation in decision-making. To be effective, environment and development education should deal with the dynamics of both the physical/biological and socio-economic environment and human (which may include spiritual) development, and need to be integrated in all disciplines, and employ formal, informal and non-formal methods and effective means of communication.

2.5. Overview of Environmental Policies and Strategies in Ethiopia

The environmental policy of Ethiopia ,issue in 1997,is the output of the conservation strategy of Ethiopia ,a policy document initiated in 1989 and approved in 1997.The policy aim at improving the quality of life of the people through sustainable development of natural as well as cultural resources (Melaku,2008:72) .

In highlighting the achievements, the Plan for Accelerated and Sustainable Development to End Poverty (PASDEP) stated that:

.....all regional states have established environmental agencies or have assigned environmental responsibilities to existing agencies.

Amahar, Tigray, and SNNP Regional states as well as the Dire Dawa City administration have issued their respective environmental proclamations. The ministry of water resource, the Ethiopian Road Authority, and the Ethiopian Electric power corporation have established their respective environmental units and others also to follow suit as required by the environmental establishment proclamation (MOFED, 2006).

The government of Ethiopia gives much emphasis for environmental conservation and it has passed different proclamations and proceedings. As the constitution is supreme law of the country, its article 44(1) declares that “all persons” have the right to clean and healthy environment. Its main aim is to grant safe environment every person irrespective of status and other things has to be endowed. Also the same constitution proclaims the general environmental objectives as follow:

Article 92 (1): government shall endeavor to ensure that all Ethiopians have to live in a clean and healthy environment. The same article No. 2 explains that implementation of programs and projects shall not damage the environment and also the same article NO-3 acknowledges peoples consultation

Penal code Article 7(1) and penal table 2(1-10) of the country also claims that every person has to keep environment and if a person damages environment, she/ he shall be put to punishment up to birr 300.

The constitution’s article 92 (4) clearly defines that government and citizens have role to and duty to protect the environment.

A. Objectives of Environmental Policy of Ethiopia

- Preventing pollution of atmosphere, air, earth and water.
- Improving the environment of human settlement to satisfy their need and to maintain their inhabitants on sustainable basis.

- Ensuring the participation of the people at all developments for environment management activities.
- Ensuring the essential environmental process and life support system.
The global and national documents indicate and enforce the following guiding principles:
 - Every person has the right to live in clean and healthy environment.
 - Keeping sustainable ensures economic welfare that can be assured through peace and personal security.

The national environmental policies of Ethiopia (proclamation NO- 513/ 2007) pass issues on urban environment and environmental health with the following objectives:

- To ensure improved environmental sanitation be placed highest on the federal and regional agendas for achieving sustainable urban environment.
- To promote individuals for improvement for immediate habitats.
- To recognize the important of and help bring about behavioral change through education and public awareness of environmental sanitation problems in trying to achieve demand-derive communities led program.
- To bring sound partnership between governments communities in the development of integrated delivery system.

B. Solid Waste Management Proclamation NO-513/2007

With objective to promote community participation in order to prevent the adverse effect and to enhance the benefits result from solid waste. The solid waste management action plans designed and implemented at the lowest administration unit of administration to ensure community participation .Accordingly, the objective of the proclamation is to enhance at all level capacities to prevent the possible adverse impacts while creating economically and socially beneficial assets out of solid waste management.

2.6. Categories of Environmental Education

- Awareness – provide individuals and groups proper knowledge
- Knowledge-help individuals and groups for varieties of experiences and basic understanding.
- Skill- to provide set of values.
- Participation – helps participant's active involvement.

2.7. Adult Education and Environment

2.7.1, Environmental Education

The modern concept of environmental education is about the effective and sustainable utilization, conservation of existing resources and management of natural eco-system. Environmental education in its broadest sense encompasses raising awareness about the environment, acquiring new perspectives, values, knowledge and skills for conserving the environment, through formal, informal, and non-formal process of leading to change behavior in support of a sustainable environment. As mentioned before, all types of education are indispensable to change people's attitudes so that they have the capacity to assess and address their sustainable development concerns. In order to achieve the goals, environmental education must go beyond awareness, knowledge and understanding .It must lead to action and stimulate responsible decision making at all levels and help individuals and social groups to acquire awareness and sensitivity (UNEP, 2009).

UNESCO, (1986:75) conceptualized environmental education in terms of education from, about and for the environment. Education from the environment refers to the experiences we gain or acquire from our surroundings or physical environment; education about the environment involves the study of our environment. What it is made of, its resources and what use we can make of it; education for the environment has to do with our commitment to environmental protection, conservation and sustainable development.

According to the United States Federal Register (1996) Environmental education is “a learning process that increases people’s knowledge and awareness about the environment and its associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations and commitments to make informed decisions and take responsible actions ”.Anijah (2001:34)on his side defines environmental education as “a field of study which seeks to promote quality environment among citizens, to bring understanding about the environment, enhance relationship between man and nature as well as help people to make responsible actions necessary to ensure their survival while improving the quality of life.

Environmental education enhances critical thinking; problem solving and effective decision-making skills and enables individuals to weigh various sides of environmental issues make informed and responsible decision. It enables individuals to acquire some experiences about the physical environment as well as study the natural resources that abound in it for optimal use and consequently get committed to environmental protection and conservation of natural resources for the present and future generations.

It concerned with the aim of having unpolluted physical and bio-physical environment that will create positive social environment. Hence, environmental education intensifies about quality of water, air, plants, animals, and the inter-relationships that exist among those elements increase awareness level of people.

Environmental education is not confined to the classroom and not aimed only at children; despite the formal ring to the term ‘education’, it has life-long relevance to people from all walks of life. It is also increasingly recognized that environmental education is not a ‘nice-to-have’ peripheral activity, but an integral part of the sustainable socio-economic development that is required to achieve equality and a better quality of life for all. Environmental education ideally does not deal with bio-physical environments and heritage resources in isolation from their social, cultural, economic and political aspects. There is also a strong emphasis on methods that:-

- Go beyond awareness rising through messages, to developing the learners' ability to move from current action to better action (environmentally sustainable practices)
- Interactive and encouraging learners (youth and adults) to participate actively in the learning process by asking questions, making contributions, investigating issues and developing solutions with others.
- Encourage critical thinking and a disposition to not take information at face value.
- Address social and cultural values and commitments.
- Help learners solve problems and make informed decisions.
- Develop the ability to act with understanding or capacity building, (Environmental Awareness education, Training Strategies manual, 2011:9).

2.7.2. Adult Education and Environment

Education not only can inform people, but also can change them. Education makes people wiser, more knowledgeable, better informed, ethical, responsible, critical and capable of continuing to learn. It is an education for adults that learning process should increase people's knowledge and awareness about the environment and associated challenges that enhance and commitments to make informed decisions and take responsible action ((UNESCO, 2005).

Environmental education included in adult education after *pair's* environmental conference in 1992. Adult learning is an integral tool in the process of raising environmental awareness and promoting environmentally supportive action (UNESCO, 1997:9).

Adults are socially responsible to teach their children and the coming generation. Environmental education in adult learning programs creates sustainable environment which enables to fulfill the needs of present and future generation. The term is not limited to school system in formal education but includes informal education and non-formal

education and broadly include all efforts to educate the public and other audiences disciplines including outdoor education and experiential education (Boiwrt, 1991:1)

2.8. Adult Learning Principles

Part of effective education involves understanding how adults learn best. Compared to children, adults have special needs and requirements as Learners. Adults learning occurs best when it is participative, experiential, self-directed, practical, reflective, fills an immediate need, provides feedback, provides a safe atmosphere, respects the learner, and occurs in a comfortable environment (Environmentally Education Training manual, 2003).

Based on the principle that learning is most effective when learners participate actively, educators should try to use techniques that encourage their high participation such as guided discussion, group discussion, role-play, game. Adults have life experience and knowledge. This knowledge or experience based needs to be connected to adults learning.

Educators should fit environmental education programs to the experience level of participants, creating activities that use their experiences and knowledge, encourage them to share knowledge and experience with others, helps them recall what they already know from prior experience that relates to the topic of learning, and draw from the experience of participants to share causes they have encountered (Environmentally Education Training manual, 2003).

2.9. Environmental Awareness Education on Solid Waste Management

There are different approaches to educate and raise awareness of citizens on the negative impacts of improper solid waste management. Establishment of environmental clubs and programmers on solid waste management is among one of the strategies developed to tackle the problem on solid waste. (Oreyomi, 1998:199) suggested that the use of cinemas, educational forums, street plays, street dances and animations like puppet shows and cartoons are among mentioned methods on informal education.

Educating the people through these media will enhance better practices of solid wastes segregation, reduction, composting and recycling of solid wastes .Informal and non-formal education programs through print and audiovisual materials are also other strategies those raise awareness for citizens on solid waste.

2.9.1. Public Awareness on Solid Waste Management

The creation of awareness on the negative impact of improper management of solid wastes is of great importance in motivating individuals to participate in waste management. In order to increase household participation in recycling, Omran et al (2008:283) state that the message of recycling as an appropriate waste management technique needs to be adequately communicated to the public. This will enable residents to change their habits, behavior and traditions towards recycling for the better. The message can be created through various strategies. This could be carried out through advertisements in the community conversation, meeting home to home visiting, newspapers, television, radio, billboards and the use of leaflet, posters, and group discussions.

Environmental awareness involves communication campaigns for reaching various audiences, developing messages and selecting and/or producing the appropriate resources and media to reach these audiences.

The aims of awareness-raising activities are more limited in scope than environmental education and the processes should not be confused. While they cannot, on their own, achieve the required educational outcomes outlined above, awareness-raising can be a component of broader and more in-depth education processes (Environmental Awareness education, Training Strategies manual, 2011:9).

Public awareness of and attitudes to management waste can affect the whole municipal solid waste management system. All steps in municipal solid waste management starting from household waste storage, to waste segregation, recycling, collection frequency, willingness to pay for waste management services, and opposition to sit of waste treatment and disposal facilities depend on public awareness and participation. Thus, lack of public awareness and school education about the importance of proper solid waste

management for health and well-being of people severely restricts use of community based approaches in developing countries and also crucial factor for failure of a municipal solid waste management (MSWM) service in developing countries (Solomon 2011).

2.9.2. Community Participation on Solid Waste Management

Community education plays the role in developing the country's interest and participation in solid waste management (SWM). According (Mull 2005), community order to develop the integrated urban environment initiative(IUEI), first the community's interest in solid waste management must be addressed by providing opportunities for the community to learn about and become involved in SWM within their community (Mull,2005:9).

2.9.3. Strategies and Methods for Educating and Raising Awareness on Solid Waste Management

In order to control improper solid waste disposal, there is the need to educate the citizens and raise awareness on the negative impacts of improper solid waste management. Borough (2009) asserts that adopting a waste disposal management awareness and education strategy would clearly indicate commitment to raising public awareness on waste. It also considered that such a strategy would provide an ideal educational framework that will lead to consistency of information and identify more practical activities that can be undertaken by individuals and authorities concerned with wastes management.

There are different Methods of Communicating Environmental Awareness Education on Solid waste Management, of which the following are the most important: Like other awareness education, a variety of methods, both formal, informal are used in environmental education on solid waste management. Some are personal, that is, involving health extension workers and beautification office awareness creation officer in direct contact with an individual or a group. Others are impersonal, in which the

communication does not involves such contact, for example the use of poster, leaflets, and the mass media (news papers, radio, television, and internet).

According to MOH (2004), methods of communicating short messages are listed below.

Where the message should convey

- Home to home visiting
- Village level
- School compound
- Health institutions
- Religion institutions
- Markets
- Development office

The mode of communication in this includes

- Person to person/ community conversation /discussion
- Conducting meeting(big meeting)
- Conducting team meeting
- Presentations to the public different programs and on public holidays
- By posters, leaflets and bulletins
- Using newspapers, radio, television and similar communication materials and equipments, local mass media.

According to Ministry of Health (MOH, 2006), Health Sector Development program (HSDPIII) focus on Environmental Health and Hygiene by giving special emphasis to sixteen packages. Seven of the packages are about environmental sanitation namely: proper and safety excreta disposal system, proper and safety solid and liquid waste management, water supply, food hygiene and safety measures, healthy home environment, arthropod and rodent pest control, and personal hygiene, aim to improve the conditions for effective WASH for urban inhabitants.

2.10. Challenges to Solid Waste Management

There are different challenges to solid waste management like lack of budget, shortage of experience and lack of qualified man power and geographical layout, lack of proper access road and terrain in waste disposal (Cleaning and Beautification Office, 2010).

Management problem and weak institutional capacity, low level of community awareness are also among the mentioned problems on the sector of cleaning and beautification department (World Bank, 2009).

Qualified man power determines the preparation and delivery convenient message that will act upon attitude of community which will create positive impact to bring about solution for the environment that will be hampered by basic adult education approaches. The Addis Ababa city administrated solid waste management has unsolved problems. The new established authorized organization on the sector's, cleaning and beautification department/CBD/at kebelelevel, whose responsibility is to address managed solid waste a properly.

According to the city administration (2010) challenges of solid waste management are collection, recycling/reuse, and lack of efficient system of management, the awareness and the accountability of the community. Therefore, as the way forward greater attention is needed to address the staff skills development, training programs, experiences sharing ,and equipment supply (Tessama2010:5-37).

As World Bank (2009) prepared Conference for stockholder consultation to develop strategy on Environmental issue. The Conference pointed out the following factors as, lower attitude of local people, weak institutional capacity, gap of policy and legislations.

According to (Kassahun, 2009:2) greater attention is needed to address urban environment, including solid waste management, pollutions, and clean /renewable technology. The low level of public awareness and lack of consistent separation at the source, particularly from households, results in 70-75 percent of the organic decomposable waste, which can be used for making compost or producing methane to generate energy, being taken to the landfill/dumpsite. The challenges for operators in solid waste management include:

- Lack of proper truck maintenance
- Absence of incentive systems
- Low private sector involvement; and lack of properly planned landfill (Mekelle and Dire Dawa are the only cities with pre-planned landfills).
- Lack of promotion and education on waste reduction, recycling, recovery, composting and energy generation;
- Rapid, basically unplanned, increase in the populations of cities through both births and rural-urban migration increasing the volume of the waste generated; and
- Communal containers are not properly collected and emptied when full, causing the areas around skips to become littered and foul smelling, thus encouraging illegal dumping.

Furthermore, complications in effective solid waste management result from the geographical layout, lack of proper access roads and the terrain of many urban areas that make some neighborhoods, particularly the most densely populated areas, inaccessible for waste collection(Review of the Urban Environment in Ethiopia , 2008:62).

CHAPETER THREE

RESEARCH DASIGN AND METHODS

3.1. Research Design

The study follows descriptive survey design. Descriptive Survey is a type of design which is concerned with describing condition or relationship that exist the event of particular individual, group and it helps to gather information from wide variety of sources and respondents(Kothari,2010;37).In addition mixed method including; both Quantitative and qualitative research methods were employed to collect information for the study.

3.2. Source of Data

In this study, data from both the primarily and secondary sources were collected to get adequate information about the current status of environmental awareness education.

The primary sources of data were collected from individual or organization from which information has originated directly as a result of the particular problems under the study.

The primary sources in this study included Health office Head, Health Extension Workers, Health Extension Supervisor, Beautification Office Head, and Beautification Office, Environmental awareness creation officer, Micro and Small Enterprise Development Office Head, and Officers, community leaders and solid waste collecting and disposal association leaders. Secondary data sources included books, journals, articles, proclamations, policies, guidelines, internet source and reports of the organizations.

3.3.Sample Size and Sampling Techniques

The samples of the study was obtained from ten woredas of two woredas were selected from Gullele Sub City: from twoworedas of health office,(28 health extension workers,2 health extension supervisors and 2 office heads were selected),Beautification office head 1 from each woreda, and from each 21 Beautification office environmental awareness creation officers), from Micro and small enterprise office,2 heads one from each woreda, and 2 officers 2 from each woredas andfrom two woredas of 14 community leaders were

selected ,and 24solid waste collecting and disposing Association Leaders from two woredas for focus group discussion.

Table 3.1 population and sample picked

No	Item	Population	Sample
1	Health office Head	2	2
2	Health Extension Workers	36	28
3	Health Extension Workers Supervisors	4	4
4	Beautification office head	2	2
5	Beautification office Environmental Awareness creation officer	54	46
6	Micro Small Enterprise Development office head	2	2
7	Micro Small Enterprise officers	6	4
8	Solid Waste Collecting and Disposing Association Leaders	39	24
9	Community Leaders	21	14
	Total	166	124

Concerning the sampling techniques, the woreda and environmental awareness education on solid waste management sectors were selected using purposive sampling techniques based on the limited resource of the researcher and issue concern. Similarly woreda health extension workers were selected in simple random sampling; office head and extension workers supervisor were selected in using purposive sampling. Woreda Sanitation and Beautification office head were selected in using purposive sampling.

Sanitation and Beautification office environmental awareness creation officer were selected in using simple random sampling. Micro and small enterprise Development office head and officers were selected based on purposive sampling techniques.

Community leaders and Solid Waste Collecting and Disposing Association Leaders were selected in simple random sampling from each village.

3.4. Instruments and Procedures of Data Collection

Data collection tools such as open and closed ended questionnaires and unstructured interviews were prepared for key informants. Besides, semi-structured interviews were organized for simple randomly selected community's leaders. Focus group discussion was also made at each woreda. In addition, observations were made and checking of training planning and non- formal education materials visit was conducted at each woreda by the researcher.

3.4.1 .Questionnaire

Questionnaire widely used in education to obtain information about certain condition and practices, inquire into opening and attitudes of individuals or group (Best, 2004).*For* this study Open and close ended questions were set for key informants (Environmental Sanitation and Beatification office experts, health extension workers, and solid waste management small and micro enterprise officials). The closed ended questionnaire contains some open ended items Depending on the types of question items; choice and rating scale were used in questionnaire.

3.4.2 .Interview

Interview is one of the most commonly used instruments for collecting data. (Kothari, 2004) explained it as method of collecting data through oral communication (verbally). Interview was one of the employed in this study. This method was employed in the study to aquire qualitative data about various components of the program and to complement and obtain relevant data that cannot be handled by questionnaire. Semi-structured interview questions were prepared to obtain information from the community leaders.

3.4.3. Document Analysis

National magazines on environmental sanitation policies, training manuals, different concerned sector offices reports, Plan documents, policies, guidelines were analyzed.

3.4.4 .Observation Check List

Observation entails gathering data through vision its main source. It is a method by which information is sought by way of investigator on observation without asking from

respondents(Kothari,2004).Observation checklist focus on training manuals, solid waste management materials availability, utilization and waste disposal and management trends of selected villages.

3.4.5 Focus Group Discussion

Focus group discussion is an interview in which several respondents are interviewed at one time to generate information focused group discussion helps to collect qualitative information and it is important because it opens dialogue among participants and stimulates them to openly express their views on the issues raised by the researcher. In this study, focus group discussion was used to acquire the necessary data from solid waste collecting and disposal association.

3.5. Procedures of Data Collection

Review of related literature was made in advance to get information on what has been done in relation to the problems .Documentary source were consulted in order to have background information for the researcher .Moreover ,basic question were formulated and data gathering instruments were prepared. Questionnaires were prepared in English and translated into Amharic as official language is Amharic in the city. Furthermore, the researcher used a letter of cooperation from AAU department of Curriculum Teachers Professional Development Study to get help from the woredas. Additional, official contact was made with the woreda health office, sanitation and beautification office and micro small enterprises offices to get permission and support for the research works, so that a pilot test was conducted in the same office out of research site to check the appropriateness of the item of the instruments.

Regarding the procedure of data collection, the researcher hired three assistant data collectors. Hence, the three assistance data collectors were oriented on how to administer and collected date through questionnaire. Then, the respondents were identified and the questionnaires were distributed in face to face to the respondents to be filled by in. Finally, the filled questionnaires were collected by the assistant data collectors and the researcher. Generally 86 copies of questionnaires were distributed to be filled and almost all (with respondent rate of Sanitation and Beautification from 46 questions 44 are

returned 96%, Health offices from 34 question 32 are returned 94% and Micro and Small Enterprises Development office from 6 question 6 are returned 100%) returned rate 82 with 95%. However, unreturned rate 5%. Whereas focus group discussion, interview and observation were carried out by the researcher himself.

3.6 Data Analysis

Data analysis in a mixed method according to Creswell (2014), occurs both within quantitative (descriptive and inferential numeric analysis) and the qualitative (descriptive and thematic text analysis) approach and often between the two approaches. On the basis of instrument employed and the nature of questions, therefore, both quantitative and qualitative method of data analysis were employed in the study.

After the necessary quantitative information was gathered, the data were analyzed and presented using different statistical tools such as tables, frequency count and percentages that could reflect the nature of information collected from respondents.

The qualitative data was gathered, transcribed, triangulated and analyzed through narration.

CHAPETER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Characteristic of the Respondents

The sources of information are, the community leaders, and solid waste collecting and disposal association leader and government sector office workers such as health extension workers, environmental sanitation and beautification officers and micro small enterprise officers who work on solid waste management and disposing associations in the target area who have direct responsibility for environmental awareness education on solid waste management.

Based on the basic research questions, data gathering tools questionnaire, interview, focus group discussion and observation checklist were developed. After the data has been collected, it was analyzed using simple statistical techniques when collected by questionnaire whereas interview were analyzed by narrative form and focus group discussion were analyzed by coding system.

Therefore, Focus Group Discussion selected from woreda one represents or coding (FGD–A) and Focus group Discussion selected from woreda three represents or coding (FGD–B).

Table 4:1 Major Characteristic of Respondents

Common Attributes		Woreda health office head	Woreda health extension workers supervisor	Woreda health extension workers	Woreda sanitation and Beautification office	Woreda sanitation and environmental awareness education	Woreda micro small enterprise office head	Woreda micro small enterprise officers	Solid Waste Collection and	Community leader
Sex	M	2	4		2	16	2	3	3	8
	F			26		26		1	21	6
	Total	2	4	26	2	42	2	4	24	14
Age	18-28		4	26		6		2	6	3
	29-39	2			2	26	2	2	18	11
	40-49 and above					10				
	Total	2	4	26	2	42	2	4	24	14
Level of education	Grade 10/12					10			16	
	Certificate					10			8	4
	Diploma			26		14		1		10
	Degree	2	4		2	8	2	3		
	Total	2	4	26	2	42	2	4	24	14

Mean is not included

As can be seen from the above table, concerning their sex out of 32 Health offices, Health Extension Workers 26 (81.25%) were females, while 6 (18.75%) were males. Again the same table, the Sanitation and Beautification Office, out of 44 sample officer 26 (59.1%) were female, while 18 (40.9%) were male and also the table Micro and Small Enterprises Development office out of 6 sample officer 5 (83.3%) were males and while 1 (16.67%) were females. This indicates that most sample of Health office and Sanitation and Beautification Office were females.

Concerning their age, Health Offices out of 32 sample 26 (81.25%) of range between 18-28 years, 6 (18.75%) of range between 29-39 years. whereas the Sanitation and Beautification Office, out of 44 28 (63.64%) range from 29-39 age, 10 (22.73%) ranges from 40-49 ages and 6 (13.64%), ranges from 18-28. Similarly the same table, Micro and Small Enterprise Development Office, out of 6 sample officer 4 (66.67%), ranges from

29-39 ages and 2(33.33%), ranges from 18-28 ages. This indicates that most office workers are the youngsters.

With regard to their level of education, as can be observed from the same table, health Office, out of 32 sample officer 26(81.25%) Diploma while 6 (18.75%) were Degree. Whereas Sanitation and Beautification office out of 44 officers 10(22.73%) certificate 10(22.73%) grade 12/ 10, 14 (31.82%), of awareness creation officer were level of Diploma and 10(22.73%), of the office head and coordinators in the level of Degree. Micro and Small Enterprises Development, office out of 6 officer 5(84%), of officer were level of Degree while 1(16%) were Diploma. This indicates that, human resource developments of sample office are well.

Concerned with their Sex 24 solid waste collecting and disposal association leader 21(87%) female .While, 3(13%) male where as community leaders from 14, 8(57%) female while 4(43%) male. This data indicates that, most FGD and interview participants are female

With regard to FGD and interview participants age, 24 solid waste collecting and disposal association leader 18(75%) age range from 29 to 39 and 6(25%) .Age 18-28 .Where as community leaders from 14, 11(78%) 29-39, while 3(22%) 18-28 age. This data shows that the participants are the youngster.

with Regarding the level of education from 24 solid waste collecting and disposal association leader 16(66%)grad 12/10while 8(34%) certificate where as community leaders from 14,10(71%) certificate while 4(29%) are diploma. This indicates that human resources developments are limitation because of most participants are blow diploma.

In general, the sample population of the study comprised various groups that include Health extension workers, sanitation and beautification office workers, micro small enterprise officers, health extension workers supervision, community leaders, and solid waste collecting and disposal association leaders. This diverse nature of respondents may contributes for the study in the two aspects .On the one hand, it helped to collect more relevant data from respondents that have different background and on the other hand, it helped to countercheck reliability- the data gathered.

4.2 Response of Sanitation and Beautification Officers on Awareness Education on Solid Waste Management.

Under this part, the data obtained through questionnaire, interview, focused group discussion, and document analysis were analyzed to find answers for the basic research questions set for the study. In addition, the researcher employed likert scale to know respondents agreement or disagreement on certain view. Likert scale is appropriate for measuring the degree to which people agree or disagree with a statement, usually on a point scale.

Environmental awareness education on solid waste management program is used to enable the society to increase its level of awareness on solid waste management issue, improve its habits of living with the environment, and create health and enjoyable environment. This can be achieved through community involvement or full participation ,collaboration of wide range of stockholders mobilizing and awareness creating of community at large on solid waste management .In relation to this ,some question were raised, and their responses are summarized in the following table.

Table 4:2- Responses regarding Sanitation and beautification officers on community awareness education

Items		Rating scales N=44									
		SA		A		UD		DA		SD	
		f	%	F	%	f	%	f	%	f	%
1	Waste management is only the responsibility of government	0	0	3	6.81	5	11.36	25	56.81	11	25
2	The communities have awareness on the consequences following improper solid waste disposal	5	11.36	29	65.91	3	6.81	7	15.91	0	0
3	The communities have partially managed solid waste based on the education provided	3	6.81	32	72.73	3	6.81	4	9.09	2	4.55
4	The approaches employed by our office are very effective to educate the community	4	9.09	26	59.09	1 4	31.82	0	0	0	0
5	The change observed seen on the community regarding solid waste management is very satisfactory	4	9.09	24	54.55	8	18.18	8	18.18	0	0
6	There is sufficient solid waste management disposal facilities in the woreda	8	18.18	20	45.45	6	13.64	7	15.91	3	6.81

Source of field survey, 2014

F=frequency

Mean not included

As can be seen above table item "1" presented as ,solid management is only the responsibility of government and they responded as follows: 25(56.81%) disagree, and 11(25%) responded strongly disagree. While 5 (11.36%) responded undecided and 3(6.81%) agree. From the response obtained from the above data it can be conclude that solid waste management is not the only the responsibility of the government.

On the other hand, participants of FGD-A expressed their views on the item:

As follows responsibility of waste management is not only limited to government but also the larger community, individuals, non-governmental organization and any other concerned bodies should support the initiative and all are responsible to the waste management issues from planning up to cleaning their living area (FGD-A, 14 April 2014).

In addition to this interview respondents expressed their views as “solid waste management responsibility is not only the concern of the government but also of the community who have a huge responsibility and accountability to the environment,” (interviewee participants, 12 April 2014).

From above one can understand that most FGD-A and interview participants have expressed their idea about community participation on solid waste management.

As can be observed from the item “2”, communities attitude on the consequences on improper solid waste management disposal, 29(65.91%) responded agree, 5(11.36%) strongly agree, 7(15.91%) disagree and 3(6.82%) answered undecided. As the above data indicates that according to 81% of the respondents’ view, communities have awareness on the consequences improper solid waste management.

The FGD-A and FGD- B participants expressed that the communities have awareness on the consequences improper solid waste disposal and they forward their comments those concerned offices should exert their maximum effort to solve the problem.

As item “3”, community have partially managed solid waste based on education provided was presented for respondents, 32(72.73%) of the respondents agree, 3(6.81%) strongly agree. While 2(4.45%), disagree and 3(6.81%), undecided and 3(6.81s %), strongly disagree.

Interview participants from the solid waste collecting and disposal association leaders pointed out that:

“As the above data indicates, that communities have semi managed solid waste based on the education provided from respective bodies but it is not sufficient as expected.

Education provided from Sanitation and Beautification Office and Health Office is satisfactory. But practical application is limited according to interview conducted (14, April 2014).’’

With regard to item “4”, of the respondents responded that, approach employed by the office are very effective to educate the communities was asked, 26(59.09%), agree 4 (9.09%) strongly agree 14(31.82%) undecided. this implies that the education approach used by the offices is appropriate.

The researcher find out the major approaches the offers apply by interview responses from the solid waste collecting and disposal association leaders are as follows:

Home to home visiting, group meeting training, coffee ceremony programs are mentioned (interviewee participants, 12 April 2014)

When item,"5", the change observed seen on the community regarding solid waste management is satisfactory as the respondents answer indicates, was asked, 24 (54.55%) of the respondents agree, 4 (9.09%) strongly agree, 8(18.18%) and were undecided. This implies that the observed change is satisfactory.

When item" 6",there is sufficient solid waste management disposal facilities in the woreda, presented for respondents, 20 (45.45%)responded, agree and 8(18.18%),strongly ,agree 7(15.91%), disagree , On the contrary 6(13.64%), of the respondents reacted undecided and few respondents , 3(6.81%), strongly disagree agree. This indicated that there are sufficient solid waste management facilities in the woreda, when the student researcher visits community, he observed disposal facilities are put in each corner and communities central places.

Interview response from the community leaders replied that:

``The approach designed are appropriate because of no other method rather than touch mass communities without mass meeting, group meeting and home to home visiting methods to get mass number of communities. From the above data the program of sufficient solid waste management disposal facilities in the study area indicated that there

could be need of great commitment of the concerned bodies to adjust and facilities relevant materials to do on sufficient solid waste management disposal.’’

Table 4:3 - Responses regarding Sanitation and beautification office related with waste management practices.

S .n	Item	Alternatives	F	%
1	Do you feel comfortable on solid Waste management practice in the woreda?	Yes	18	40.91
		No	21	47.73
		Partially	5	11.36
		Total	44	100
2	Which method your office treat solid waste?	Composting	4	9.09
		Reducing	6	13.63
		Disposing	24	54.55
		All	10	22.73
		Total	44	100

Source field survey, 2014

mean not included

As can be seen item" 1", 18 (40.91%) of the respondents responded that, the communities fell to comfortable on solid waste management practice in the woreda was yes and 5(11.36), of the respondents responded that the communities fell to comfortable on solid waste management practices in the woreda was partially .while, 21(47.73%) of the respondents responded that, the communities fell to comfortable on solid waste management practice in the woreda was No.

The above data indicates that, there is no comfortable solid waste management practice in the woreda, so that Sanitation and Beatification Offices should give commitment to improve waste management practices.

“Both of interviews with community’s leaders and direct observation in the study indicate that some parts of the study area waste management practice are limited because of waste are through road side, river and other open areas of the woredas. In addition,

community leaders from two interview woreda respondents answered that there is no sufficient solid waste management practice in the area.”

When item "2", 24(54.55%) of the respondents responded that office treat solid waste was disposing, 10(23.73%) of the respondents responded that office treat solid waste was composting, reducing, recycling, and disposing, and 4(9.09%), of the respondents responded that, office treat solid waste was composting. This indicates that, Sanitation and Beatification Offices treat solid waste through disposal so that it creates job opportunities the women.

Interview response from the community leaders answered that, managing solid waste means treating of waste from the source to final disposal place by its types on the right way (community leaders, 14 April 2014).

According to open ended question item "10", the common challenges faced by the office while facilitating solid waste management as following:-

- Lack of waste disposal equipment at the village level.
- Lack of awareness on solid waste especially by street dwellers who dispose any waste on the road.
- Shortage of transportations problems
- Lack of sufficient and appropriate disposal place
- Waste sorting problems.

“Interview response from the community is discussed as follows to teach more and to produce responsible citizen of concerned bodies should do continuous and problem solving methods. Awareness education programs have to use community potentials as well as coordinate all stockholders in collaborated manner”.

FGD-A and FGD-B participant’s pose their views on the challenges of solid waste management are as follows:

- Lack of full communities’ participation.
- Lack of proper disposal sites for solid wastes.
- Shortage of transport access is the most common.

They expressed seriously the problem on the plastic products handling:

Everybody after using plastic bottles throw them in to water ditches, along the road, in rivers, in waste collection gage. This created erosion, closing of water channels and results in increase in waste management problems.

Whereas the methods of overcoming the existing challenges are improving waste management follow up, continuous monitoring and feedback methods, using qualified and educated human power in the area of environmental sanitation ,on time uptake of waste from the collection place and sorting ,reusing technology should be applied concerned bodies (FGD-B,24 March 2014).

From the above, data the responses one can understand that the common challenges faced by the office while facilitating solid waste management various in nature and some are problems are simply solved so the responsible bodies can give attention to the improvement of solid waste management by solving the common challenges which affect the practices.

Concerning, open ended question item "11", the participants responded the environmental awareness education methods commonly applied in the office as follow:-

The most respondent's are answered that, common methods which are applied in the office home to home visiting, village meeting, leaflet, training, group discussion, communities' conversation and coffee and tea ceremony programs are the most common one.

Table 4:4 Responses of Health office and Health Extension Workers on Community Awareness Education on Solid Waste Management Education

s.n	Item	Responding scale N=32		
		Alternative	F	%
1	What is the status of community solid waste management education in your locality?	Excellent	14	43.75
		very good	8	25
		Good	9	28.13
		Poor	1	3.12
		Total	32	100
2	Where do you offer the education?	At the woreda meeting hall	0	0
		At the village meeting	2	6.25
		In the work place	0	0
		At home to home visiting	5	15.63
		All	25	78.13
		Total	32	100
3	What challenges have you faced while you were providing solid waste management education?	Lack of interest to attend the education	2	6.25
		Shortage of budget	0	0
		Lack of community participation	5	15.63
		All	25	78.13
		Not at all	32	100
4	In your opinion, are there sufficient and appropriate solid waste managing facilities in your locality?	Yes	5	15.62
		No	27	84.62
		Total	32	100
5	Do the community members properly put the awareness education into practice?	Yes	24	75
		No	6	18.75
		Partially	3	6.15
6	Do you provide environmental awareness education on solid waste management?	Yes	27	84.38
		No	5	15.62
		Total	32	100
7	Which contents are included environmental awareness educations on solid waste management?	proper and safety excreta disposal system	2	6.25
		proper and safety solid and liquid waste management	3	9.38
		healthy home environment	1	3.12
		water supply food hygiene and safety measures	0	0
		All	26	81.25
		Total	32	

Source field survey, 2014

F=frequency mean not included

As indicated table 4, item "1", 14(43.75%), Health Extension workers responded that, the status of community solid waste management education in their locality was Excellent and 8(25%), of the respondents responded that; the status of community solid waste management education in your locality was very good. On the contrary, 9(28.13%), the respondents responded that, the status of community solid waste management education their locality was good and 1(3.12%), the respondents responded that, the status of community solid waste management education in your locality was poor. This indicated that the statuses of community solid waste management education in the woreda are better.

Interview response from the communities' leaders, woreda office head forward their ideas, the statuses of solid waste management education are good but not sufficient so that the concerned bodies should integrate and be done more in the future to make environmental healthy (Interview participants, 12Aparil2014)

On the item"2", 25(75.13%), of the respondents responded that, they offer the education was at the woreda meeting hall, at the village meeting ,in the work place and home to home visiting and 5(15.63%), of the respondents responded they offer the education was at home to home visiting. While, 2(6.25%), of the respondents responded they offer the education was at the village meeting.

This indicated that, the solid waste management education they offer at the woreda meeting hall, at the village meeting, in the work place and home to home visiting.

In line with this, MOH (2004) methods of communicating short messages are listed below.

Place for communication

- Home to home visiting
- Village level
- School compound
- Health institutions
- Religion institutions
- Markets areas

- Development office
- Work place

With regard to item" 3", 25(78.13%), the respondents responded that the major challenge faced were providing solid waste management education was lack of interest to attend the education, shortage of budget, and lack of active participation and 5(15.63%), the respondents responded that the major challenge they faced while providing solid waste management education was lack of active participation in the learning place. On the contrary, 2(6.25%), of the respondents responded that the major challenge faced were providing solid waste management education are lack of interest to attend the education. This indicated that, the major challenge faced in providing solid waste management education are lack of interest to attend the education, shortage of budget, and lack of active participations are the most common problems. A participant of solid waste collecting and disposal association leader's focus group discussion conducted at the date on 24/04/2014 pointed that:

We have been still living with the problems of waste management. But the range of the problems decreasing from time to time but not sufficient changes. The problems are lack of infrastructures to dispose waste properly, lack of community's participation at large, and limited follow up from concerned bodies (FGD-B, 24 March2014).

In line with this, city administration 2010, the challenges of solid waste management is collection, recycling/reuse, lack of environmental sound, effective and efficient system of management, the awareness and the accountability of the community. Therefore, as the way forward greater attention is needed to address the staff skills development, training programs, experiences sharing, and equipment supply should be done (Tessama, 2010:36-37).

With regard to item"4", 27(84.34%), of the respondents responded that, there are sufficient and appropriate solid waste managing facilities in the locality was no and 5(15.62%), of the respondents responded that, there are sufficient and appropriate solid waste managing facilities in the locality was yes. This indicates that, there is no sufficient and appropriate solid waste managing facilities in the locality.

Participant of the focus group discussion-A answered that:

we have started managing waste we generate from our home and the waste management practice in our area was poor but we should do more in future and we have responsibility to teach our family to dispose waste properly .Therefore, all community members, government, and non-governmental organization, school communities have equal responsibility and accountability to manage solid waste and to keep clean our environment (FGD-A, 14 March2014).

To rate, item "5", 24(75%) the community members properly put the awareness education in to practice was yes and 6 (18.75%) the community members properly put the awareness education in to practice was No. On other hand, 3(6.15%) the community members properly put the awareness education in to practice was no partially. This show that, community put environmental awareness education which provide from Health Offices.

``Interview respondents from community leaders stated that, the community members properly put the awareness education in to practice, yes off course communities have not only responsible for the environmental sanitation but also have an accountable to improve environmental sanitation practices. In addition to this practical application of the education provided from concerned bodies was good but not sufficient. Due to our communities lack of awareness on waste management practice wastes were disposed informally anywhere.`` In line with this, Haliemariam (2008) found out less awareness people on solid waste management; solid waste is not treated properly; there are different solid waste types dumped; lack of proper storing and handing and Solid waste is not frequently collected.

When item" 6", 27(84.34%) the respondents responded that, do provide environmental awareness education on solid waste management was yes and 5(15.62%), do provide environmental awareness education on solid waste management was no. This indicates that Health Offices provide environmental awareness education to the community.

Interview response from the community leaders replied that and focused group discussion conducted on the date of 30/04/2014 answered that: - environmental awareness education on solid waste management was provided by Health extension workers, sanitation and environmental beautification office awareness creation officers, and other non-governmental organization who work on the environment. The content covers were environmental sanitation, home environment and individual sanitations, air pollution, proper solid and liquid waste management and environmental sanitation (Interview participants,30 March2014 and FGD-B 24 ,March2014).

When item''7'' is to be rated, 26(81.25%), of the respondents responded that, the contents of environmental awareness education on solid waste management's are proper excreta disposal system, proper solid and liquid waste management, water supply, food hygiene and safety measures, healthy home environment and 3(9.38%),of the respondents responded that, the contents of environmental awareness education on solid waste management's are proper solid and liquid waste management. 2(6.25%) the respondents responded that, proper excreta disposal system and 1(3.12%) the respondents responded that, health home environment. This shows that, Health Extension Workers provided environmental awareness education on environmental based contents.

In line with this, Ministry of Health (MOH, 2006), Health Sector Development program (HSDPIII) focus on Environmental Health and Hygiene by giving special emphasis to sixteen packages. Seven of the packages are about environmental sanitation namely: proper and safety excreta disposal system, proper and safety solid and liquid waste management, water supply, food hygiene and safety measures, healthy home environment, arthropod and rodent pest control, and personal hygiene, aim to improve the conditions for effective WASH for urban inhabitants.

Table 4:5– Micro and Small Enterprises Development officers Responses regarding solid waste management education

s.n	Item	Responding scale N=6		
		Alternative	F	%
1	What approach do you suggest for educating the community on proper solid waste management?	community conversation (CC)	2	33.33
		through distributing leaflets, poster (ICC)	-	-
		mass education	-	-
		home to home visiting	-	-
		All	4	66.67
		Total	6	100
2	Does your office provide awareness education on solid waste management for the communities?	Yes	5	83.33
		No	1	16.67
		Total	6	100
3	On what specific issues do you give awareness education on solid waste management?	Environmental sanitation	1	16.67
		Waste management	1	16.67
		Environmental conservation	1	16.66
		All	3	50
		Total	6	100
4	What challenges have you faced when you educate the community on solid waste management?	Lack of awareness	-	-
		Poor community participation	2	33.33
		Lack sufficient infrastructure on waste management	-	-
		Lack of transport access	-	-
		Staff turn over	4	66.67
		Total	6	100
5	What are the impacts of those challenges?	Diseases	-	-
		Air pollution	-	-
		Environmental degradation	1	16.67
		Change of environmental image	1	16.67
		All	4	66.67
		Total	6	100

Source of data field survey, 2014

F=frequency mean not included

As indicated from Table5, to item “1”, 4(66.67. %) the participants responded that, approaches that, they suggest to educate the community on proper solid waste management was community conversation (CC), through distributing leaflet (ICC), mass education, and home to home visiting .While 2(33.33%) of the respondents responded that, they suggest to educate the community on proper solid waste management was community conversation (CC). This indicated that Micro and Small Enterprise Development Office suggest to educate the community on proper solid waste management was community conversation (CC), through distributing leaflet (ICC), mass education, and home to home visiting. The researcher observed these teaching aids like leaflets, posters, photographs. He couldn't get manual and guide line from both sanitation and beatification offices but health office has manual and this is not amended to other offices.



Figure: village leader communicating message, photo captured by student researcher

In line with this, MOH (2004) Mode of communication was listed below:-

- Person to person/ community conversation /discussion
- Conducting meeting(big meeting)
- Home to home visiting
- Mass education
- Conducting team meeting
- Presentations to the public different programs and on public holidays
- By posters leaflets and bulletins
- Using newspapers, radio, television and similar communication materials and equipments, local mass media.

With regard to item''2'', 5(83.33%), of the respondents responded that, office provide environmental awareness education on solid waste management for the community was Yes While 1(16.67%), of the respondents responded that, office provide environmental awareness education on solid waste management for the community was No. This indicated that Micro and Small Enterprise Development Office provide environmental awareness education on solid waste management for the community.

With regard to item''3'', 3(50%), the respondents responded that, specific issue of education given on solid waste management was environmental sanitation, waste management and environmental conservation. While 1(16.67%) of the respondents responded that, environmental sanitation, 1(16.67%) of the respondents answered that, waste management and 1(16.67%) the respondents answered that, environmental conservation. This indicated that, Micro and Small Enterprise Development Office provided environmental awareness education given on solid waste management on the specific issue of those has been mentioned above.

With regard to item''4'', 4(66.67%), of the respondents responded that, the challenges they have faced when they educate the community on solid waste management was Staff turnover, while 2(33.33%), of the respondents replied that, the challenges they have faced when they educate the community on solid waste management was poor community participation. This indicated that, the most common challenges that they have faced when they educate the community on solid waste management are Staff

turnover. So Micro and Small Enterprises Development Office should be emphasized to commitment overcome the challenges.

With regard to item '5', 4(66.67%), the respondents responded that, impacts of those challenges observed on the environments were diseases, air pollution, environmental degradation and change of environmental image and 1(16.67%), of the respondents responded that, impacts of those challenges observed on the environments were environmental degradation, 1(16.67%), the respondents answered that, change of environmental image respectively.

This implies that, challenges observed on the environments were environmental degradation and change of environmental image caused by plastic product waste special pastel, highland wastes. So that concerned bodies should show commitment to develop reuse practice of the waste.

CHAPTER FIVE

SUMMARY, RECOMMENDATIONS AND CONCLUSIONS

5.1 Summary

This research was undertaken to assess environmental awareness education on solid waste management in two woredas, Gullele Sub City. Thus, the following four basic research questions were formulated, in order to come up with certain understanding about environmental awareness education on solid waste management practices. Accordingly the following specific objectives were developed by researcher.

- To assess the awareness level of people on solid waste management practices.
- To identify the sources of environmental awareness education on solid waste management.
- To assess the problems encountered during environmental awareness education on waste management
- To identify appropriate methods that should be employed to provide solid waste management awareness education for adults in the community.

Based on analysis of data, the following findings were pointed out.

- The communities understand their responsibility, that they have part to manage solid waste in the woredas.
- The dominant treatment for solid waste management is disposing.
- Environmental awareness education provides job opportunities for the communities' especially for the women.
- Environmental awareness education has been provided by different bodies, such as Health office, Sanitation and Beautification office and Micro and Small Enterprise Development office to the communities in different way.
- There is lack of waste management facilities in the community.
- Plastic products are serious problem in the solid waste management practices.
- Officers are not happy on solid waste management practice in the woreda.
- Proper safe disposal and integration of solid and liquid waste are the major contents of environmental awareness educational the woredas.

- Hygiene and sanitation, environmental awareness education is the main specific issues on solid waste management in the woredas.
- The environmental awareness education on solid waste management was offered both informal, and non-formal forms
- The approach to educate community members on solid waste management is effective and it influences positive community awareness.
- Coffee ceremony, home to home visit, mass meeting, training, leaflet and posters are the designed strategies and methods in the Woredas.
- Education provision places and time are convenient for communities as it is given in small village centers, home to home visit and woredas meeting hall.

5.2 Conclusions

Environment education is given by different bodies both informal and non-formal methods on topics of proper disposal procedures and on integrated approaches of solid and liquid wastes. The, strategies, efforts and methods in two Woredas of Gulele Sub City is promising that influenced communities' awareness not to delineate the issue for government alone. They understand the need to manage solid waste management .However, the practices and implementation appear at low level .some of the factors that hindered the proper practices of solid waste management are, lack of waste management facilities in the locality, lack of stake holders participation and commitment, and lack of adequate community participation.

5.3 Recommendations

Based on the findings the following points were recommended

- The governments in collaboration with concerned stakeholders need to deal with the community on how to enhance their commitment on solid waste management practices.
- Sanitation and beatification office need to supply all the necessary and sufficient solid waste facilities and placed at appropriate site.
- Sanitation and Beatification office, Health office and Micro and Small Enterprise Development office need to work collaboratively and encourage the community to attend practical solid waste awareness education.
- Woreda land administration bodies have to revise their plan to have places for solid wastes.
- Sanitation and Beatification office, Health office and Micro and Small Enterprise Development office has to manage staff turnover by proper incentives to the officers.

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APPEDNIX-A

Addis Ababa University

School of Graduate study

Faculty of Education

**Department: curriculum and Teachers Professional
Development studies**

Program: Adult Education and Life Long Learning

**Questionnaire to be filled by Micro small Enterprise officers working on
solid waste management**

The purpose of this questionnaire is to collect data to assess environmental awareness education on solid waste management in Addis Ababa, Gullele Sub city selected woredas(! And 3) . The information you provide in this questionnaire will be kept confidential and will be utilized for academic/ research/ purpose only. Therefore your genuine and frank response to the questionnaire is highly valuable for the success of this study. Please provide your response per the instruction of each section.

General direction

- No need to write your name.
- Please, give a brief comment for the question when your written suggestion is required (you can use Amharic if you want)
- Please respond to all questions.

General information

1/ Name of the Worda ----- 2 /Name of the Village -----

3/ Sex ---- Male----- Female-----

4/ Level of education

Masters Degree Diploma Certificate

1/Does your offices provide awareness education on solid waste management for the communities?

A/yes B/ No

2/ If you say yes, how does it provide? _____

3/ On what specific issues do you give awareness education on solid waste management?_

4/ what challenges you have faced when you educate the community on solid waste management? _____

5/ what are the impacts of those challenges? _____

6/what approaches do you suggest for educating the community on proper solid waste management? _____

A/ community conversation (CC) B/ through distributing leaflets, poster (ICC)

C/ mass education D/ home to home visiting E/ all

F any other-----

APPENDIX-B

**Addis Ababa University
School of Graduate Study
Faculty of Education**

**Department: Curriculum and Teachers Professional Development
Studies**

Program: Adult Education and Life Long Learning

Questionnaire to be filled by Health Extension workers

The purpose of this questionnaire is to collect data to assess environmental awareness education on solid waste management in Addis Ababa, Gullele Sub city selected woredas (1 &3). The information you provide in this questionnaire will be kept confidential and will be utilized for academic/ research purpose only. Therefore, your genuine and frank response to the questionnaire is highly valuable for the success of this study. Please provide your response per the instruction of each section.

General direction

- No need to write your name.
- Please, give a brief comment for the question when your written suggestion is required (you can use Amharic if you want)
- Please respond to all questions.

General information

1/ Name of the Woreda ----- 2 /Name of the Village -----

3/ Sex ----- Male----- Female-----

4/ Level of education

Masters Degree Diploma Certificate

1/ what is the status of community solid waste management education in your locality?

Excellent very good Good poor

Any other _____

APPEDNIX-C

Addis Ababa University

School of Graduate Study

Faculty of Education

Department: Curriculum and Teachers Professional Development studies

Program: Adult Education and Life Long Learning

Questionnaire to be filled by Sanitation and Beautification office

The purpose of this questionnaire is to collect data to assess environmental awareness education on solid waste management in Addis Ababa, Gullele Sub city selected woredas(1and 3) . The information you provide in this questionnaire will be kept confidential and will be utilized for academic/ research purpose only. Therefore your genuine and frank response to the questionnaire is highly valuable for the success of this study. Please provide your response per the instruction of each section.

General direction

- No need to write your name.
- Please, give a brief comment for the question when your written suggestion is required (you can use Amharic if you want)
- Please respond to all questions.

General information

1/ Name of the Woreda ----- 2 /Name of the Village -----

3/ Sex -----Male----- Female-----

4/ Level of education

Masters Degree Diploma Certificate

APPENDIX-D

Addis Ababa University

School of Graduate Study

Faculty of Education

Department: Curriculum and Teachers Professional Development studies

Program: Adult education and Life Long Learning

The following are Interview Questions for solid waste collecting and disposal association Leaders

The purpose of this questionnaire is to collect data to assess environmental awareness education on solid waste management in Addis Ababa, Gullele Sub city selected woredas (1 and 3) . The information you provide in this questionnaire will be kept confidential and will be utilized for academic/ research purpose only. Therefore your genuine and frank response to the questionnaire is highly valuable for the success of this study. Please provide your response per the instruction of each section.

General information

1, Name of the Woreda ----- 2 /Name of Village -----

3/ Sex----- Male----- Female-----

4/ Level of education

A/ couldn't read and write

B/ 1-4

C/ 5-8

D/ 9- 12

E/ Certificate

F/ Diploma and above

1/ what is the status of solid waste management in your area?

Excellent very good Good fair unsatisfactory

2/What does solid waste management mean? -----

What does it include?-----

3/Has the community got education on solid waste management? -----

4/ Who are providing education to the community about solid waste management? -----

5/ What are the approaches employed to teach the community?-----

6/ Do you think that the approaches are appropriate?-----

7/ Is the community responsible for environmental sanitation? -----

8/ Does the community practically apply the education provided by concerned bodies?-----

9/ what challenges are observed regarding community awareness education about solid waste management? -----

10/ What should be done to teach more and to produce responsible citizens? -----

APPENDIX-E

**Addis Ababa University
School of Graduate Study
Faculty of Education**

**Department: Curriculum and Teachers Professional
Development studies**

Program: Adult Education and Life Long Learning

The following are FGD guide woreda residents

The purpose of this questionnaire is to collect data to assess environmental awareness education on solid waste management in Addis Ababa, Gullele Sub city selected woredas . The information you provide in this questionnaire will be kept confidential and will be utilized for academic/ research purpose only.

Therefore, your genuine and frank response to the questionnaire is highly valuable for the success of this study. Please provide your response per the instruction of each section.

1. Is there solid waste disposal problems in your area? What are the problems?
2. What does solid waste disposal mean?
3. Could you state the challenges following improper solid waste disposal?
4. Who is accountable for the problems
5. Who is the responsible to solve this problem?
6. Have you ever got solid waste disposal education?
7. Who provided it for you?
8. What approaches were used to raise your awareness about solid waste management?
9. Did the approaches used go with your needs?
10. Has the education you got helped you solve the problems?
11. Do you observe any progressive change following the education?
12. What challenges have you faced in solid waste management education and its practical application?
13. What should be done by all concerned bodies to make the awareness education more effective for the residents?

APPENDIX-F

**Addis Ababa University
School of Graduate Study
Faculty of Education**

Department: curriculum and Teachers Professional Development study

Program: Adult education and Life Long Learning

Observation checklist

Woreda-----center-----

Date-----

Beginning Time-----Ending time-----

s/no	item	Yes	No
1	Are waste disposal facilities available at the community level?		
2	Are the materials put in right place and distance?		
3	Did communities use those materials?		
4	Are there well solid waste management practice?		
5	Does community follow solid waste disposal procedure properly?		
6	Training manual for waste management		
7	Is there a plan of waste management awareness education		
8	Is there frequent training program		

APPENDIX-G

Addis Ababa University
School of Graduate Study
Faculty of Education

Department: curriculum and Teachers Professional
Development study

Program: Adult education and Life Long Learning

የመጠየቁ አጠቃላይ አላማ:- ይህ መጠየቅ የተዘጋጀው ለአካባቢ ውቤትና ጽዳት አስተዳደር/ቤት የደርቅ ቆሻሻ አስተዳደርና አወጋገድ ሂደት ለህብረተሰቡ የሚሰጠው የግንዛቤ ማስጨበጫ ትምህርት ለማጥናት ነው። የሚሰጡት መልስ በሚስጥር በሚያዝ መሆኑን ተገንዝቦው ለጥናቱ አስፈላጊ የሆነውን ትክክለኛ መልስ እንዲሰጡ በአክብሮት እንጠይቃለን ።

ስም መጻፍ አያስፈልግም ።። እና መስግናለን

መመሪያ 1 : -ከዚህ በታች የተዘርዘሩት የጽ/ቤት ሠራተኞች የግልሁኔታ የሚጠይቁ ናቸው

ስለዝህ በተሰጠው ክፍተት ቦታ ላይ መልሶዎን በመጻፍ ይመለስ

1/ የወረዳ ስም-----2/-መንደር ስም-----

3/ ግታ----- 4/ዕድሜ-----

5/ የትምህርት ደረጃ:-

ሀ/ ሁለተኛ ድግሪ ለ/ መጀመሪያ ድግሪ ሐ/ ዲፕሎማ መ/ ሴርተፊኬት ሠ/12ኛ ክፍል

መመሪያ 2 :- የሚከተሉትን አረፍተ ነገሮችን ካነበብክ/ሽ በኋላ ትክክለኛውን መልስ የ(X) ምልክት በማድረግ መልስ/መልሽ

ተ/ቁ	ተግባራት					
		በጣም እስማማለሁ	እስማማለሁ	አልወስንም	አልስማማም	በጣም አልስማማም
1	ደረቅቆሻሻን የማስወገድ ስራ የመንግስት ኃላፊነት ብቻ ነው					
2	ሀብረተሰቡ በደረቅቆሻሻ አወጋገድ ላይ በቂ ግንዛቤ አለው					
3	ሀብረተሰቡ በተሰጠው ትምህርት/ስልጠና /መሠረተ-ቆሻሻውን ያስወግዳል					
4	በተቋማት ሁሉ የሚሰጠው የደረቅቆሻሻ አወጋገድ ትምህርት በጣም ውጤታማ ነበረ					
5	በሀብረተሰቡ ዘንድ አመርቂ የደረቅቆሻሻ አወጋገድ ስራ ተሰርቷል					
6	በወረዳው ላይ በቂ የደረቅቆሻሻ አወጋገድ ና አደረጃጀት ና አሰራር አለ					

7/ በወረዳው ላይ ያለው የደረቅቆሻሻ አወጋገድ ሁኔታ ምን ያህል ይላሉ?

ሀ/ አዎ/አይ/አይደለም

8/ በጥያቄ ቁጥር 7 መልሱ አይደለም ከሆነ ምን ያህል ነው? _____

9/ ተቋም የትኛውን የደረቅቆሻሻ አወጋገድ ዘዴ ይጠቀማል?

ሀ/ ኮሚፖስት/ሰ/ መቀነስ/ሰ/ መልሶ መጠቀም/ ማስወገድ/ሀ/ ሁሉም

ረ/ ሌላ ምን ያህል ይጠቀስ? _____

10/ በደረቅቆሻሻ አወጋገድ ዙሪያ ተቋሙ ሲሰራ በተደጋጋሚ ያጠሙት ችግሮች ምን ምን ነው? _____

11/

ለደረቅቆሻሻ አወጋገድ ዘዴ ግንዛቤ ማስጨበጫ ትምህርት ተቋሙ የትኛውን ግንዛቤ ማስጨበጫ ዘዴ በተደጋጋሚ ይጠቀማል? _____

APPENDIX-H

Addis Ababa University
School of Graduate Study
Faculty of Education

Department: curriculum and Teachers Professional
Development study

Program: Adult education and Life Long Learning

የመጠየቁ አጠቃላይ አላማ:- ይህ መጠየቅ የተዘጋጀው ለጥቃቅንና አነስተኛ ኢንተራፕራዝ ጽ/ቤት የደርቅ ቆሻሻ አስተዳደርና አወጋገድ ሂደት ለህብረተሰቡ የሚሰጠው ግንዛቤ ማስጨበጫ ትምህርት ለማጥናት ነው። የሚሰጡት መልስ በሚስጥር በሚያዝ መሆኑን ተገንዝቦ ለጥናቱ አስፈላጊ የሆነውን ትክክለኛ መልስ እንዲሰጡ በአክብሮት እንጠይቃለን ::

ስም መጻፍ አያስፈልግም :: እና መስግናለን

መመሪያ 1 : -ከዚህ በታች የተዘርዘሩት የጽ/ቤት ሠራተኞች የግልሁኔታ የሚጠይቁ ናቸው

ስለዝህ በተሰጠው ክፍተት ቦታ ላይ መልሶዎን በመጻፍ ይመለስ

- 1/ የወረዳ ስም----- 2/ መንደር ስም-----
- 3/ ግታ----- 4/ ዕድሜ-----
- 5/ የትምህርት ደረጃ

ሀ/ ሁለተኛ ድግሪ ለ/ መጀመሪያ ድግሪ ሐ/ ዲፕሎማ መ/ ሴርተፊኬት
ሠ/12ኛ ክፍል

መመሪያ 2:- የሚከተሉትን አረፍተነገሮችን ካነበብክ/ሽ በኋላ ትክክለኛውን መልስ በተቀመጠው ቦታ ላይ በማመልከት መልስ/መልሻ ማብሪሪያ ለሚያስፈልጉት መልሶች ማብራሪያ እንዲሰጡ እጠይቃለሁኝ

1/
ጽ/ቤቱ በደረቅ ቆሻሻ አወጋገድ ላይ ለህብረተሰቡ የግንዛቤ ማስጨበጫ ትምህርት ተሰጥቶ ያውቃል?

ሀ/ አዎስ/ አይደለም

2/ በጥያቄቁጥር 1 መልሶአዎከሆነበምንመልከታይሰጣል?-----

3/ የደረቅቆሻሻአወጋገድትምህረትየሚያተኩረውርዕስበየትኛውነው?-----

4/በምንያህልጊዜነውተቋሙለህብረተሰቡየደረቅቆሻሻአወጋገድግንዛቤትምህረቱ
ንየሚሰጠው?

ሀ/አልፎአልፎለ/ ሁልጊዜሐ/ በተከታታይመ/ ተሰቶአይታወቅም

5/
በደረቅቆሻሻአወጋገድዙሪያለህብረተሰቡግንዛቤማስጨቤጫትምህረትበሚሰ
ጥበትወቅትያጋጠማችሁችግሮችምንምንናቸው?-----

6/ ከላይየተጠቀሱትችግሮችየሚያመጡትተጽዕኖምንድነው?-----

7/
የትኛውንየትምህረትአቀረረብዘዴለህብረተሰቡተመራጭነውብለውይመክራሉ?

ሀ/ የማህበረሰብንቅናቄ

ለ/ በተለያዩበሪሪወረቀቶች

ሐ/ ህብረተሰብበአሳተፈበስብሰባመልኩማስተማሪ

መ/ በቤትለቤትጉብኝት

ሠ/ ሁሉምመልስናቸው

ረ/ ሌላካለይገለጽ-----

APPENDIX-I

Addis Ababa University
School of Graduate Study
Faculty of Education

Department: curriculum and Teachers Professional
Development study

Program: Adult education and Life Long Learning

የመጠየቁ አጠቃላይ አላማ:- ይህ መጠየቅ የተዘጋጀው ለጤና ጽ/ቤት በአካባቢ ጽዳት እና በደርቅ ቆሻሻ አስተዳደርና አወጋገድ ሂደት ለህብረተሰቡ የሚሰጠው ግንዛቤ ማስጨበጫ ትምህርት ለማጥናት ነው። የሚሰጡት መልስ በሚስጥር በሚያዝ መሆኑን ተገንዝቦው ለጥናቱ አስፈላጊ የሆነውን ትክክለኛ መልስ እንዲሰጡ በአክብሮት እንጠይቃለን ።

ስም መጻፍ አያስፈልግም ።። እና መስግናለን

መመሪያ 1 : -ከዚህ በታች የተዘርዘሩት የጽ/ቤት ሠራተኞች የግልሀኔታ የሚጠይቁ ናቸው

ስለዝህ በተሰጠው ክፍተት ቦታ ላይ መልሶዎን በመጻፍ ይመልስ

1/ የወረዳ ስም----- 2/ መንደር ስም-----

3/ ግታ----- 4/ ዕድሜ-----

4/ የትምህርት ደረጃ:-

ሀ/ ሁለተኛ ድግሪ ለ/ መጀመሪያ ድግሪ ሐ/ ዲፕሎማ መ/ ሴርተፊኬት ሠ/12ኛ ክፍል

መመሪያ 2:- የሚከተሉትን አረፍተነገሮችን ካነበብክ/ሽ በኋላ ትክክለኛውን መልስ በተቀመጠው ቦታ ላይ በማመልከት መልስ/መልሻማብራሪያ ለሚያስፈልጉት መልሶች ማብራሪያ እንዲሰጡ እንጠይቃለን ::

1/

በአካባቢያችሁ ያለው የደረቅቆሻሻ አወጋገድ ግንዛቤ ትምህርት በምንደረጃ ላይ ይገኛል?

ሀ/ እጅግ በጣም ጥሩ / በጣም ጥሩ ሐ / ጥሩ

መ / አጥጋብሠ / አጥጋብ - አይደለም

2/ ትምህርት አሰጣጡ አጥጋብ ከልሆነ ለማሻሻል ምን መደረግ አለበት ይላሉ?

3/ በደረቅቆሻሻ አወጋገድ ና አካባቢን ጽህና ላይ ለህብረሰቡ ትምህርት ሰቶት ያውቃሉ?

ሀ/ አዎ / አይደለም

4/ ለጥያቄ ጥር 3 መልሶ አዎ ከሆነ ዋና ዋና የትምህርት ቤቱ ዘመን ድንኳን ነው?-----

5/ ግንዛቤ የማስጨበጫ ትምህርት ቤቱ የሚሰጠው የትቦታ ነው?

ሀ/ በወረዳ ስብሰባ አደራሽ / በመንደር ስብሰባ ቦታ ሐ/ በስራ ቦታ

መ/ ቤት ለቤት ጉብኝት ሠ/ ሁሉም

ረ/ ሌላ ምክላይ ጠቀስ-----

6/

በደረቅቆሻሻ አወጋገድ ግንዛቤ ትምህርት ወቅት ያጋጠማቸው ዋና ዋና ችግሮች ምን ናቸው?

ሀ/ ትምህርት ላይ ለመሳተፍ የፍላጎት ውስንነት ለ/ የበጀት እጥረት

ሐ/ የህብረተሰቡ የነቃተሳትፎ ያለ መኖር መ/ ሁሉም

ሠ/ ሌላ ምክላይ ገለጽ-----

7/

በእርስዎ አመለካከት በአካባቢዎ በደረቅቆሻሻ አወጋገድና አሰራር ውጤታማናም ቸነውብለው ያምናሉ?

ሀ/አዎ/ አይደለም

8/ ለማህበረሰቡ የተሰጠውን የቆሻሻ አወጋገድ ትምህርት በስራ ላይ በአገባቡ ያውላል?

ሀ/ያውላል/ አያውልም

9/ በጥያቄ ጥር 8 መልሱ አያውልም ከሆነ ምክንያቱም ጎድነው?-----

10/

ከልምድ ዎ በመነሳት ለደረቅቆሻሻ አወጋገድ ዘዴ ግንዛቤ ማስጨበጫ ትምህርት የትኞቹ የማስተማሪያ ዘዴዎች ውጤታማና ቸነውብለው ይመክረሉ?-----

APPEDNIX-J
Addis Ababa University
School of Graduate Study
Faculty of Education

Department: curriculum and Teachers Professional
Development study

Program: Adult education and Life Long Learning

የቃለመጠይቅጥያቄዎች

የመጠየቁ አጠቃላይ አላማ:- ይህ መጠየቅ የተዘጋጀው በአከባቢ ጽዳት እና በደርቅ ቆሻሻ አስተዳደርና አወጋገድ ሂደት ለህብረተሰቡ የሚሰጠው ግንዛቤ ማስጨበጫ ትምህርት ለማጥናት ነው። የሚሰጡት መልስ በሚሰጥር በሚያዝ መሆኑን ተገንዝቦው ለጥናቱ አስፈላጊ የሆነውን ትክክለኛ መልስ እና ያለውን መረጃ እንዲሰጡ በአክብሮት እንጠይቃለን ።

ስም መናገር አያስፈልግም ።።

እና መስግናለን

መመሪያ 1 : -ከዚህ በታች የተዘርዘሩት የተጠያቂው የግልሁኔታ የሚጠይቁ ናቸው

1/ የወረዳ ስም-----

2/ መንደር ስም-----

3/ ግታ-----

4/ ዕድሜ-----

4/ የትምህርት ደረጃ:-

ሀ/ ሁለተኛ ድግሪ ለ/ መጀመሪያ ድግሪ ሐ/ ዲፕሎማ መ/ ሴርተፊኬት ሠ/12ኛ ክፍል

መመሪያ 2:- የሚከተሉትን አረፍተነገሮችን ካነበብክ/ሽ በኋላ ትክክለኛውን መልስ በተቀመጠው ቦታ ላይ በማመልከት መልስ/መልሻ ማብራሪያ ለሚያስፈልጉት መልሶች ማብራሪያ እንዲሰጡ እንጠይቃለን ።

1/ በአከባቢያቸው ያለው የደርቅ ቆይታ ለአድባባ አድባባ ለምን ይመስላል?

ሀ/ እጅግ በጣም ጥሩ ለ/ በጣም ጥሩ ሐ/ ጥሩ ለ/ ጥሩ ለይደለም

2/ የደርቅ ቆይታ ለምን ይከሰት ይችላል?-----

3/ ህብረተሰቡ የደርቅ ቆይታ ለምን ይከሰት ይችላል?-----

4/ የደርቅ ቆይታ ለምን ይከሰት ለህብረተሰቡ የሚሰጡ አካላት እነማን ናቸው?---

5/ የደርቅ ቆይታ ለምን ይከሰት ለምን ይመዘኑ/ ዘዴ ለህብረተሰቡ ይሰጣል?
?

6/ ትምህርቱ የሚሰጠው ዘዴ ትክክለኛ መንገድ ነው ብሎ ያስባሉ?-----

7/ ህብረተሰቡ ለአከባቢው ንጽህና ኃላፊነት አለው?-----

8/
ህብረተሰቡ ከሚመለከታቸው አካላት የሚሰጠው ንጽህና ለምን ይከሰት ይችላል?
ትብብር ለምን ይከሰት ይችላል?-----

9/ የደርቅ ቆይታ ለምን ይከሰት ለምን ይመዘኑ/ ዘዴ ለህብረተሰቡ ይሰጣል?
ትብብር ለምን ይከሰት ይችላል?-----

10/ የደርቅ ቆይታ ለምን ይከሰት ለምን ይመዘኑ/ ዘዴ ለህብረተሰቡ ይሰጣል?
ለመፈጠር ለምን ይከሰት ይችላል?-----

APPENDIX-K
Addis Ababa University
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Development study

Program: Adult education and Life Long Learning

የቡድንውይይት-ጥያቄዎች

የመጠየቁ ውይይት አላማ:- ይህ መጠየቅ የተዘጋጀው በአከባቢ ጽዳት እና በደርቅ ቆሻሻ አስተዳደርና አወጋገድ ሂደት ለህብረተሰቡ የሚሰጠው ግንዛቤ ማስጨበጫ ትምህርት ለማጥናት ነው። የውይይቱ መልስ በሚስጥር በሚያዝ መሆኑን ተገንዝበው ለጥናቱ አስፈላጊ የሆነውን ትክክለኛ መልስ እና ያለውን መረጃ እንዲሰጡ በአክብሮት እንጠይቃለን ።

ስም መናገር አያስፈልግም ። እና መስግናለን

መመሪያ 1 : -ከዚህ በታች የተዘርዘሩት የተጠያቂው የግል ሁኔታ የሚጠይቁ ናቸው

- 1/ የወረዳ ስም----- 2/ መንደር ስም-----
- 3/ ግታ----- 4/ ዕድሜ-----
- 4/ የትምህረት ደረጃ:-

ሀ/ ሁለተኛ ድግሪ ለ/ መጀመሪያ ድግሪ ሐ/ ዲፕሎማ መ/ ሴርተፊኬት ሠ/12ኛ ክፍል

- 1/ የደርቅ ቆሻሻ አወጋገድ እና አስተዳደር ችግር በአከባቢያቸው ሁኔታ ምን ድካሞች ግሩ?
- 2/ የደርቅ ቆሻሻ ማስወገድ ማለት ምን ማለት ነው?
- 3/ ቆሻሻ በተገቢው መንገዳለማስወገድ የሚመጡ ችግሮችን መግለጽ ይችላሉ?
- 4/ ቆሻሻ በተገቢ መንገድ ባለማስወገድ ለምመጣው ችግር ማነው ተጠያቂ?
- 5/ ማነው ይህን ችግር ለመቅርፍ ኃላፊነት የሚወስደው?
- 6/ በማንኛውም ጊዜ የደርቅ ቆሻሻ አወጋገድ ግንዛቤ ትምህርት አግንተው ያውቃል?

7/ማነውለናንተትምህርትየሚሰጠውአካል?

8/በደርቅቆሻሻየማስወገድግንዛቤትምህርትለመስጠትስጠቀሙየነበሩትየትኛውዘዴነበረ?

9/ የተሰጠውትምህርትየደርቅቆሻሻከፍላጎቱጋርየተመጣጣንነበረ?

10/

ያገኛቸውሁትትምህርትየደርቅቆሻሻአወጋገድላይየነበረውችግርለመቅርፍአግዛቸዋል?

11/ከሚሰጠውትምህርትበመነሳትለውጦችበቆሻሻአወጋገድላይእየታየነው?

12/

በቆሻሻአወጋገድላይየሚሰጠውየግንዛቤትምህርትእናበተግባራዊአፈጻጸምላይያጋጠማቸውችግርችምንምንናቸው?

13/

ከሚመለከታቸውአካላትለህብረተሰቡየሚሰጠውግንዛቤትምህርትበጣምውጤታማእንዲሆንምንመደረግአለበትይላሉ?

DECLARATION

I confirm that this is my original thesis
work

Name_____

Signature_____

Data of submission_____

This thesis has been submitted for
examination by approval as a University
advisor.

Name_____

Signature_____

Data of submission_____

