

**MEDIA AND ENVIRONMENTAL AWARENESS: A
GEOGRAPHICAL STUDY IN KEMBATA TEMBARO
ZONE, SOUTHERN ETHIOPIA**

By

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DECLARATION OF OWN WORK

I declare that MEDIA AND ENVIRONMENTAL AWARENESS: A GEOGRAPHICAL STUDY IN KEMBATA TEMBARO ZONE, SOUTHERN ETHIOPIA is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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ABSTRACT

In Ethiopia people are highly dependent on natural resources which often lead to environmental degradation. The perception is that environmental degradation is partly due to lack of environmental awareness. The level of environmental awareness and the role of the media in creating awareness in Kembata Tembaro Administrative zone were investigated. Quantitative and qualitative methodologies were used to identify sources of environmental knowledge, content, spatial extent, volume and priority of media coverage, impact of media, and expectation of audiences and producers. Experience, rather than outside sources, such as provided by the media, is the main source of environmental information, but awareness is key to reduce further environmental degradation. Environmental media programs should be transmitted at suitable times and the experiences of successful farmers in natural resources conservation and development should be shared. Attention should also be given to identification of awareness obstacles and training and sensitizing of journalists on environment issues.

Key terms:

Environmental awareness, media, environmental coverage, content analysis, environmental degradation, journalist, Environmental media, forest, environmental protection, media programs.

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Acronyms

ABA:	African Broadcasting Association
ADLI:	Agricultural Development Led Industrialization
CIA:	Central Intelligence Agency
CSA:	Central statistics Authority
DPPA:	Disaster prevention and preparedness Agency
EPA:	Environmental protection Authority
EIS:	Environmental Information system
EFDRC:	Ethiopian Federal Democratic Republic Constitution
ERTA:	Ethiopian Radio and Television Agency
EBA:	Ethiopian Broadcast Authority
EE:	Environmental Education
FAO:	Food and Agriculture Organization
KGDARD:	Kided Gamela District Agricultural and Rural Development
KGD:	Kided Gamela District
LDC:	List Developed Countries
Mol:	Ministry of Information
MEA:	Millennium Ecosystem Assessment
MPSD:	Monitorial Protocol of sustainable Development
KTZ:	Kembata Tembaro Zone
GDP:	Gross Domestic product
IPCC:	Intergovernmental panel on climate change
MOFED:	Ministry of Finance and Economic Development
NMA:	National Meteorological Agency
MOE:	Ministry of Education
MDG:	Millennium Development Goals
PMC:	Population Media center
RGS:	Royal Geographic Society
NGO:	Non – Governmental Organization
UNCHE:	United Nations Conferences on the Human & Environment
UNEP:	United Nations Environment Protection
UNCED:	United Nations Conference on Environment and Development
UNFCCC:	United Nations Framework Convention on Climate Change
WEC:	World Environmental Conference
WSSD:	World Summit on Sustainable Development

CHAPTER 1: INTRODUCTION AND BACKGROUND

1.1. INTRODUCTION

Environment is fundamental for all living things. This is because of every resource necessary for them is interrelated to the environment. Unless the environment is protected, the existence of life on the planet Earth would eventually be impossible. That is why environmental issues have become so sensitive and globally important. According to Dalelo (2007:8) all people need to have a common understanding of the role played by human beings in reducing or worsens environmental deterioration.

In this regard the media has a big role to play in making people aware of environment issues and taking actions to protect the environment. According to Tengbers (1995:132-148), over 2600 global media channels operate with the support of about 3000 satellites, reaching nearly 1.5 billion people across the globe. It can be argued that the majority of global citizens learn about environmental issues, beyond their immediate surroundings, through the global media.

The theoretical foundation of this study, which comes from different schools of thought, informs about the role of media regarding awareness of environmental issues, the factors promoting rapid environmental change as well as the scale of human interference in changing the physical landscape of the earth. After a discussion of the theoretical aspects and the reasons why there is a need to promote environmental awareness, this study focused on people's awareness of environmental challenges and how they protect the environment.

In other words, the study is concerned with an examination of the actual and potential role of the media in environmental awareness creation and the

effectiveness of environmental protection in order to enhance the implementation process to improve the quality of the environment.

1.2. BACKGROUND

Since the world saw the picture of the earth, photographed from space during 1960's, awareness of the earth as a whole system, fragile and finite, became a paradigm of our era (Dryzek 1997:36). This consciousness was accompanied by an insight of environmental problems that the spaceship earth is facing.

Geographers argue that environmental issues today have drawn the attention of the common people as environmental degradation and pollution have assumed global dimensions and even threatening the very existence and survival of mankind (Singh 2000:3). Due to this, environmental problems and the consequences of human activities such as economic development, population growth, and land degradation, among others were given an increasingly political character.

At the United Nation's Conference on Human and Environment (UNCHE), in 1972 in Stockholm (Sweden), there was agreement that the majority of environmental problems were understood as local phenomena. At this conference, however, their global natures became evident (Corell 1999:33). After that, international and national agencies and the United Nations Environmental Program (UNEP) began holding international conferences and organizing activities aimed at promoting environmental protection to get effective response from the international community. It has also been recognized as a global challenge associated with environmental issues such as water and air pollution, energy efficiency, habitat loss and climate change.

Twenty years later, the United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro, Brazil in 1992, which

pushed for the adoption of the convention to combat environmental problems. The convention assisted to identify environmental education and awareness for promoting sustainable development and improving the knowledge and understanding of the people to address environment and development issues (UNCED 1992). This convention came into force by the end of 2010, and called for governments and public authorities to open up access to environmental information as a means of improving public participation in environmental decision making and awareness of environmental issues (UNEP 1998).

Environmental issues have global aspects which require action at global level. Serious environmental problems result from developments taking place in developed as well as developing countries. Most advanced countries attained their prosperity at the cost of the environment. These countries concerted efforts of pursuing sustainable socio-economic development through the protection of the environment are integrated at local, regional and international levels. According to Hewitt (1990:277), discussion about global warming, deforestation, and pollution of the oceans is affecting attitudes related to economic growth and development at local, national, and international levels. Though taking effective political action to deal with these problems is as such not simple.

Recently, different countries have started to strive for environmental development, protection and sustainable use of environmental resources by establishing environmental agencies, but actions are still not compatible with the magnitude of the environmental challenges. Ban Ki-Moon the U.N. Secretary General made a comment at the World Environmental Conference (WEC) at Bali, 2007, in Indonesia, with regard to environmental awareness. He said that business as usual cannot be tolerated, for it would be to condemn millions. The status quo will not do. This is a marathon race not a sprint. But if we work together, we can forge an effective long term response to climate change. Every country must be a part of the solution. Every country has a role to play.

Environmental awareness needs a political answer. This is an emergency and emergency situations need emergency actions (UNEP 2007).

According to EPA (1998) annual report, environmental protection requires equipping its beneficiaries and authorities with comprehensive information for decision making about recent problems, challenging the specific countries and the world at large. These challenges and opportunity vary considerably, from place to place, around the world, across countries and within communities. Challenges on the environment are accelerating because an exploding human population and competing interest of economic development places greater demands on natural resources. Thus, the increase of demand accelerates the rate of environmental deterioration through depletion of resources, disruption of natural environments, and pollution.

One of the most ominous problems facing countries is environmental crisis which threatens to precipitate and deepen the countries' precarious economic and social state. Everyone needs to understand that, among other things, this environmental crisis is a result of unwise use of natural resources and unplanned development projects, promoted by rapid population growth (EPA 1997). As a result, many countries have, over the last few decades, experienced a serious degradation of natural resources and damage to the environment and human health.

The growing awareness of the two-way relationship between environmental impact and socio-economic development, and the challenges posed by environmental problems has led to the insight that underlines the needs to strengthen the ways in which existing development programs address both the causes and effects of problems in each country. In recognition to this, the United Nations Framework Convention on Climate Change (UNFCCC) (2007) requires countries to minimize adverse effects, including those of environmental

problems, climate change and economic impacts on the other parties to take further actions into the national development processes.

The concept of environmental awareness is explained as familiarity with an environmental subject with real understanding of its deeper cause and implications (UNEP 1992). This demonstrates that environmental awareness has a great effect on environmental stewardship attitudes and it has an effect on environmentally friendly behaviours. The main advantage of widespread environmental awareness is its contributions to public support for government action in environmental policy and management. The main tool for creating such awareness at macro level is by far, the media.

The media used for the investigation of environmental awareness are news paper, radio and television programs which are widely and frequently used modern media. According to McQuail (1994: 79), there are a set of ideas about media tasks in society, like providing information about events and conditions in society and the world, facilitating innovation, adaptation and progress.

According to EPA (2003a:101), awareness creation activities carried out by the media and the various anti-environmental degradation clubs and organizations that deal with environmental protection have been unsuccessful. It is noted that both urban and rural people were not well informed about the mode of destruction and protection of the environment. One of the causes of the deep rooted environmental problems in a country is lack of awareness which is at the very heart of the inappropriate management and utilization of environmental resources.

Thus, raising the awareness of a society is one of the strategies required for the effective realization of environmental objectives and goals. The lack of environmental awareness has been common even among policy makers, until

recently. The problem is that media professionals assigned to do programs or reports on the environment have several other responsibilities which demand their attention and time. It is not common for journalists to specialize in more than one area or topic. The capacities of journalists are not strong enough to produce and present programs using creative techniques (MOI 2006).

The role of the media to raise the community concerns and commitment for social and environmental issue is a very critical one. Awareness creation for the protection of the environment and the sustainable use of finite resources are matters that directly concern each citizen. The media can be an instrument in breaking the silence that surrounds the environmental problems and in creating an environment that encourages discussions of how the community can participate and change their behaviour. It is truly crucial to raise public awareness of environmental issues.

Media's efforts to sensitize the public about environment issues and its continuing central role in the struggle against the cause of environmental problems are indispensable. However, the level of involvement of the media in the country to address environmental challenges is only event based. Environmental issues have not yet reached a stage where they are the media's prime agenda. The media fails to take a creative approach in producing stories about environmental protection and gives insufficient attention to environmental degradation and its consequences. The media does not seem to be in a position to create environmental awareness to the public in a given geographical area. The spatial patterns of media coverage in Ethiopia are uneven. One of the realities observed within the country is an urgent public demand for the right to equal access to information. There is a widening information gap in the regions in general and rural areas in particular (Federal Democratic Republic of Ethiopia 1992: article 4, sub article 1). The major media focus even now is on issues that take place around the big cities, particularly Addis Ababa.

According to the Ethiopian Broadcast Authority (EBA 2006) there is no diversified community media at grass root level. Furthermore, the media does not give fair and optimal space and time to environmental issues. No detailed studies to ascertain the role of the media in environmental awareness issues have been done unlike other development and political issues. Even though some activities undertaken so far are positive, the work done to date in the study area is very inadequate compared to the consequences of environmental challenges.

The discipline of geography provides the ideal basis for media and environmental awareness research due to the spatial attributes of various phenomena on the earth's surface through time. According to Singh (2000:12) the characteristics, composition and functions of different components of the natural environment system, mutual dependence of different components and the consequent responses in spatial and temporal context, and the resultant modification and changes in the natural ecosystems lead to environmental degradation and pollution.

Geographers such as Burton (2002) for instance argue that both natural and human activities over thousands of years have shaped and changed the landscape considerably. In addition, he argues that geographical knowledge and understanding is essential in helping people to comprehend and to respond appropriately to the news items from news papers, radio, television and internet around the world every day. It is often more pertinent for geographers to ask what has been reported, which place has been ignored and how would this news be represented differently by the media in a different locality. Geographers tend to examine the changes in physical features and the interaction of people with their environment in their respective locality and within the wider context.

1.2.1. NATIONAL SITUATION

Ethiopia has a large geographical diversity with altitudes ranging from 4,620 meters above sea level to 110 meters below sea level, with the Great Rift Valley separating the western and northern highlands from the south eastern and eastern highlands. The country is situated in the Horn of Africa and has a population of 73.9 million out of which more than 83.9% live in rural and the rest in urban areas (CSA 2008). Ethiopia is one of the most populated countries in Africa ranking third after Nigeria and Egypt with a relatively high birth and high mortality rates which indicate that it is still in the early stages of demographic transition. The environment has always supported a relatively high human population which is now rapidly increasing, and accompanied by high density, it is contributing to accelerated environmental degradation which would severely compromise the ability of present and future generations to meet their needs.

National concerns for addressing environmental issues call for giving specific attention to pertinent national issues such as population growth and its implications for natural resource requirements to meet the increasing demand for food and energy (Simon 1996). In addition, waste generation, associated with population growth and increasing urbanization, is posing grave challenges across the country

The economic situation of the country, directly or indirectly, is based on environmental resources. The sustainability of the economy, including that of the agricultural sector, which plays a dominant role in the economy as a whole, is possible only if the environmental resources are protected, conserved and utilized sustainably. Nowadays, environmentally unfriendly development initiatives have introduced stress on the natural resources which is manifested through the depletion and degradation of resources, land degradation, the expansion of deserts and the increasing frequency of drought occurrences

which have exposed the whole communities to great amounts of misery in the country.

As many scholars put it, the country's deepening environmental crisis is attached mainly to the degradation of three natural resources namely, forest, water and soil (Teferi 1999:356). In a country where subsistence agriculture is widely practiced, there is always an over use of natural resources for the production of basic needs such as food, fiber, energy, building materials and transport (Daniel 1998).

The major cause of Ethiopia's food insecurity is associated with severe environmental degradation manifested through recurrent drought and desertification. Researchers working on the environment highlighted that Ethiopia's environmental problems can be categorised in to two: problems related to resource management and conservation on the one hand and environmental pollution on the other (Demel et al. 2003:11). However, the pressing environmental problems of the country are caused by poor and unwise natural resource management and conservation. These factors have a tremendous impact on the cultivable land and forest resources of poor rural Ethiopia.

Climate change directly or indirectly affects agricultural activity due to the geographic location of the country. It is the major cause for the occurrence of a considerable number of environmental challenges of which drought; desertification, flood and the expansion of water borne diseases are in the forefront. In this regard, the country periodically suffers from the causes of environmental degradation. Over the past few decades, severe droughts have caused the deaths of millions. Even in seasons of adequate rainfall, close to 5 million people within the country received food aid for some months (BBC 2007).

Agriculture has flourished in Ethiopia for thousands of years, showing its imprint in the exceptionally large crop biodiversity that exists today. In spite of the long history of human habitation and agricultural practice in Ethiopia, land degradation started becoming a serious problem only at the beginning of the twentieth century. Today the highland ecosystem of the country is exposed to severe disruptions due to the heavy burden it has to carry in supporting an ever growing population (EPA 2003b:182). In Ethiopia, agriculture and animal husbandry are closely interlinked activities and the animal pressure on the natural environment is also steadily increasing. Due to the grazing practices in the country, continuous depletion of rangeland resources is now not commensurate with the high livestock population.

The free grazing of livestock, as practiced in the traditional breeding systems, has resulted in excessive depletion of the land. As a result, land degradation and economic system disruptions resulting from the reduced carrying capacity of rangeland resources, is observable in many parts of the country. Moreover, progressive reduction in the availability of grazing land and depletion of fodder grass resulting from the spread of alien invasive species is becoming a common problem. Continuous grazing is found to have been suppressing the regeneration of trees and reducing the productivity and the quality of the land (EPA 2003b: 58). Many areas are now rendered barren owing to a long process of degradation. Furthermore, lack of extension service focusing on the livestock sector has constrained the development of sustainable rangeland management system, leading to deforestation and soil erosion in many parts of the country.

The government of Ethiopia adopted and ratified several international conventions and agreements related to the environment. In addition, sectoral and cross-sectoral policies and strategies which incorporate environmental concerns directly or indirectly have been formulated and are being implemented. The measures to be taken were the following:

By providing a comprehensive set of principles and policies to guide the integration of environmental considerations in development activities and includes nine policy objectives, 19 guiding principles, ten sectoral policies and ten cross sectional policies. The overall policy goal is to improve and enhance the health and quality of life of all Ethiopians and to promote sustainable economic development through the sound management use of natural, manmade and cultural resources to meet the needs of the present generation without compromising the ability of future generations to meet their own needs (EPA 2003c: 129-130).

The initiative to regain Ethiopia's lost forest cover, taken by Ethiopian millennium celebration in 2008, started by expressing the vision inspired by the past, and built for the future. As part of the program, half a billion trees were planted in the country. The trees were planted in 2008 with the slogan "two trees for two thousand" and "three trees for three thousand". This initiative is to be applauded and measures must be taken to make sure that this will not be a standalone project but that it will become a sustainable effort to regenerate some of the forests, which help to remove carbon dioxide from atmosphere.

To sum up, pressure of intense human activity and improper farming and management practices pose serious threats to the sustainability of the natural resources and maintaining ecological balance in Ethiopia. Humans should take extra care of the environment just to ensure that the environmental conditions do not deteriorate further but work hand to restore.

1.2.2. LOCAL SITUATION

Ethiopia has nine regional states based roughly on linguistic and ethnic groups and two city administrative councils. The government operates in a decentralized structure through region, zone, *wereda* (district) and *Kebele* (community) administrative levels. One of the nine regional states of Ethiopia is

the South Nation, Nationalities and People's Region (SNNPR) named after its location. The region is divided into thirteen administrative zones (local areas) and eight special *weredas* (districts). *Kembata Tembaro* Administrative zone is one of the thirteen administrative zones in the SNNPR. The *Kembata Tembaro* Administrative Zone (KTZ) is divided into seven *weredas* (districts) and one of the *weredas* (districts) within this zone is *Kidida Gamela* which forms the focus of this study. *Kidida Gamela Wereda* or district is marked by high population pressure and much degraded environmental situation. This study area has 17 lower local administrations (*Keble's*) and the area is classified as arid and semi-arid environment. The population of this selected *wereda* is 90,197 (CSA 2008).

According to the Environmental Protection Authority (EPA 2003a) the environmental situation of *Kembata Tembaro* Zone is marked by problems soil erosion, deforestation, energy and water scarcity. The magnitude and degree of seriousness of these problems vary from *wereda* to *wereda* depending on a number of factors. The study area, along with many other Ethiopian local areas, is caught up by a vicious cycle of food insecurity, poverty, low agricultural productivity and land degradation.

According to the census data from the Central Statistics Authority (1994) the study area is densely populated (450-600 p/km²) compared to other Ethiopian *Wereda* (districts). This phenomenon forces poor people to overuse natural resources including forest in order to meet their basic survival needs. In addition, the centralization of state power undermined and killed local governance in the last century. The strengthened central government thus lost its local sensitivity for effective environmental management (UNEP 2008:44-45).

The present management practices in many local areas have failed to control or stop the deforestations. Yet the rate of planting is far below the rate at which the natural forests disappear. As a result, the wooded hillsides have become bare.

Terraces that have been maintained for thousands of years have been converted and broken down. Rain water could not fully percolate but turn to floods washing the soil away. Soil fertility and ground water are decreased. Therefore, a new management strategy that meets the basic needs and interest of the local communities living within and around the forests has to be put in place to protect the remaining forests and promote afforestation. The federal government is now trying to reverse the wrongs of the past century to make the environment as good as it had been. It has thus, effectively decentralized power back to the local level. Locally sensitive environmental care is budding again.

1.3. STATEMENT OF THE PROBLEM

Environmental problems are very broad and have an impact on every aspect of life. In other words, no one is unaffected by the impact of environmental problems. However, the level of vulnerability varies from place to place and sector to sector. In Ethiopia, the agricultural sector is central to the economy, and it is the means of livelihood for more than 83.9% of the population (CSA 2008). Needless to say that the impact of environmental problems on this sector is more severe.

The media is the main information source for the public. It has to set the agenda on environmental issues and give priority to the environment not only to create awareness but also to save the lives of the people. A review of documents related to environmental evaluation and annual environmental reports has revealed that awareness creation on these issues is not comprehensively recognized in all media institutions (mass media, institutional media and traditional media) and developmental activities within the different economic sectors and the society at large. The growing trend of fighting environmental degradation is thus not properly supported by sufficient information dissemination.

In addition, it is the researcher's strong belief that policy makers and implementers should get of how environmental awareness activities have been performed, since they were launched, and what their successes and failures are. Otherwise, it is impossible to ensure progress towards mitigating the causes and consequences of environmental problems on development activities. Given the contextual background elaborated above the problem that needs to be investigated is the actual and potential role of the media in terms of the extent to which it is committed to raising awareness on environmental issues. There is a need to assess the role of the media to bring about positive change in the attitude of the public and the problem encountered in relation to spatial coverage, accessibility to the communities' and the communities' behaviour toward media messages.

1.4. MOTIVATION FOR THE RESEARCH

According to EPA (2003:101), there is an urgent need to continuously review and refocus the development strategy to maintain the quality of the environment and sustained availability of up-to-date and timely information on the state of the environment which is crucial in raising public awareness and increasing their participation on environmental issues. However, no empirical studies have been conducted in relation to public environmental awareness and participation in the environmental management process in Ethiopia in general and in *Kembata Tembaro Zone (KTZ)* in particular.

According to the deputy director of the Environmental Protection Authority, an effective study of environmental awareness in media programs has not yet been seriously conducted. Hence, he believes that the significant research gap in the area of media and environmental awareness be studied in a systematic manner (Green Forum 1997). The finding of the study will thus help the country in general and the specific study area (*Kidida Gamela wereda*) in particular to

combat environmental problems. There is a lack of researched evidence in the country as well as study area in relation to the proposed topic.

The study examines the actual and potential role of the media in raising awareness regarding environmental issues to bring about a positive change in the attitude of the public and the effectiveness of environmental protection strategies in the selected geographical area in Ethiopia, the Kembata Tembaro Zone (KTZ) and in particular the *Kidida Gamela wereda* (district). There is a need to find out what the ordinary residents' understanding about the environmental problems or issues in the study area are, and what government officials' attitudes regarding environmental protection in relation to media content and its coverage are.

The study investigates the role of the media in terms of the successes or failures of the environmental protection in the study area. In order to implement better environment protection measures and to get the local community to participate in these measures, it is necessary to first establish what role the media can play to make the local people aware of the environmental problems in their area and then to make the media convey the message of environmental protection.

In addition, the researcher's work experience in coordinating the activities of the media to cover different issues is a distinctive advantage for doing this research. This work experience has provided the researcher with a broad understanding of the pragmatic approaches that are needed to investigate the role of media in covering environmental issues of the study area.

1.5. THE OBJECTIVE OF THE STUDY

The aim of this study is to determine the role of the media in the creation of environmental awareness and in providing information on environmental protection in the specific local area in Ethiopia. This is because the dimensions

and rate of environmental degradation vary with time and space, and hence an empirical and local scale study, in the context of awareness creation is more revealing. The study also intends to provide preliminary information about the status of the media in relation to environmental protection in the study area. In this regard, it may serve as a springboard to other researchers. To this effect, the study focuses on the topics covered and how they are covered by the media of the specific area. Specifically, the following points highlight the objective of the study.

- To identify the level of environmental awareness in the study area and the role played by the media in creating environmental awareness.
- To identify the source of environment knowledge of the people in the study area
- To investigate the current status of the media content and spatial coverage of the study area.
- To explore how much time the media have allocate to environmental issues.
- To explore how the information provided by the media is understood and how interesting and relevant to the community it is.
- To identify the expectation of the audience and producers of what the media programs need to deliver.
- To evaluate the role of the media (mass media, Institutional media and traditional media) and the relationship between media sources, media actors and audiences in environmental awareness creation.

1.6. RESEARCH QUESTIONS

With the aim of addressing the objectives of the study, the research activities are guided by the following research questions.

1. What is the overall level of awareness of environmental problems in the study area? What role do the media play in creating environmental awareness?
2. Which media source becomes effective on environmental reporting? What relationship exists between media source, media actors and media audiences?
3. Is the environmental coverage of media programs (*Akababi – ena – Lemat, Awedegeter and Addis Zemen daily newspaper*) easily understood? Is it interesting and relevant to the community it serves? How much time (air time) have the media allocated to provide the detailed information of environmental issues?
4. How do residents of the study area obtain environment knowledge versus other local and national concerns (for priority setting)? To what extent do the audiences perceive environmental information provided by the media?
5. What kind of relationship exists between media source, actors and audiences in relation to environmental awareness creation?

1.7. RESEARCH DESIGN AND METHODOLOGY

In order to achieve the objectives and answer the specific research questions, a very specific methodological approach was adopted for the research. The methodologies explained in this section focus on the most important strategies applicable to media and environmental awareness research as evident from the literature. The development and perceived legitimacy of using both qualitative and quantitative research methods in the social science has given rise to mixed method research, which employ data collection and analysis methods associated with both forms of research. Mixed method research is seen as the applicable kind of research method to use for media and environmental awareness research.

1.7.1. THE SELECTION OF STUDY AREA

The study focused on one of the seven *weredas* (districts) in southern Ethiopia as indicated in Section 1.2.2 above. The selection of one *wereda* as study area from the given *weredas* was based on the preliminary assessment of the magnitude of environmental problems and media accesses, population density, geographical location, time and financial constraints in the *weredas* in the *Kembata Tembaro Zone* (KTZ).

In addition the study focuses on the media and environmental awareness, based on content and coverage of media, and respondents' responses on the perception of environmental issues. The analysis of content and coverage were limited to a review of transmitted media programs over a period of one year (2009). Thus, this research by no means represents the whole range of broadcast and print media coverage. On the basis of these criteria the *Kidida Gamela Wereda* was selected for study. The study area is indicated in figure 3.1 in chapter 3.

1.7.2. METHOD OF RESEARCH

According to Creswell (2003: 217), mixed method of research involves use of concurrent triangulation. He states that the concurrent triangulation approach is probably the most familiar of the mixed methods available. It is selected as a model when a researcher uses two different methods in an attempt to confirm cross-validated findings within a single study. This model generally uses separate quantitative and qualitative methods as a means to offset the weakness inherent within one method with the strength of the other method. In this research, the researcher triangulated different data sources by examining the evidence from the source and using them to build a coherent justification for themes. That means this research seeks convergence across qualitative and

quantitative method and data collection in order to provide a comprehensive analysis of the research problem (Creswell 2003).

The study employed mixed methods and utilized data that were collected through respondents' interviews using standard questionnaire designed for the purpose of the study. The reason why the researchers employed a mixed method design is to expand an understanding from one method to another and to confirm findings from different data sources. In addition, it is complementary with respect to addressing various short comings inherent to quantitative and qualitative research methodologies.

A review was undertaken to gather information from different international and national literature and country experience (media archives) pertaining to the role of the media in increasing and raising awareness on environmental issues in a community. This information was used to clarify the concept of environmental awareness in an effort to expose essential measures and the contextual nature of environmental management in the study area.

The empirical work for this study consists of a survey of structured questions which were used in face to face interviews with 90 household respondents to find out the source of information on environmental issues. Unstructured qualitative interviews were also conducted with 17 respondents for gathering information on norms and status of environmental concerns. Besides unstructured interviews to collect data by using key informant interviews and focus group meetings were used to complement the survey. The study is further based on content analysis to evaluate environmental coverage of news in the media and in field work (community respondents, survey as well as interviews with media managers, chief editors, government officials and experts). Details of the methods of data collection and analysis are provided in (chapter three.)

1.7.3. DATA GATHERING

The survey was conducted in one of the seven *weredas* or districts of the *Kembata Tembaro Zone* (KTZ). The case study consists of a sample of 90 household respondents for the questionnaire survey, 12 for focused group discussion and 5 for the in-depth interviews (details of how data were gathered are explained in chapter 3). It is estimated that 90 respondents from a total of 450 households of the five villages represent as a significant proportion of the households in the study area.

For the content analysis, an attempt was made to find out how much time and space the different types of media like television, radio and daily news papers (*Addis Zemen*) have devoted to information on environmental issues and what kind of issues are tackled. The sampling unit of the study for content and coverage analysis included one year of the focused media news (broadcast and print) which was taken as the whole year data of 2009. The year 2009 has been chosen from five consecutive years (2006-2009) by the lottery method.

In general, the study covers 120 purposefully sampled *Addis Zemen* daily newspaper reports from a total of 1,800 sample newspaper reports. In addition to this, the television and radio programs (*Akababi-ena-lemat and Awedegeter*) as well as distribution of print media (*Addis Zemen*) per day were evaluated in the respondent survey.

1.7.4. DATA ANALYSIS

Research on the role of media using focus groups and in-depth interviews are very difficult without prior knowledge of the media output under investigation. There was a need for an initial acquaintance with the media product which helped the researcher to have valuable and 'focused' dialogue with the research groups during data collection (Schrader et al. 2003:154-155).

The data generated from group discussions and in-depth interviews were analyzed manually. Preliminary qualitative content analysis was conducted of the broadcast (radio and television) and print (*Addis Zemen*) media through reviews of their programs aired in 2009. The quantitative and qualitative survey was analyzed using descriptive tools (frequency and cross-tabular analysis). Details of the analyses of the data are presented in Chapter three.

1.8. LIMITATIONS OR PROBLEMS IN THE STUDY

The study was carried out using mainly primary and secondary data, as indicated earlier. There is a general lack of research done on media and environmental awareness elsewhere in the world and in Ethiopia in particular. The research done here is further limited by available time, financial support, and difficulty of accessibility of the household members. In addition, travel to the research location has been a daunting task.

1.9. ORGANIZATION OF THE THESIS

The research report consists of five chapters. Chapter one gives a brief discussion of the media and environmental situation, the aim, objectives, general methods and limitations of the study. Chapter two provides a review of literature on environmental awareness and on the role of media. It gives attention to issues related to various theories on the role of media in creating environmental awareness. It provides an overview of both contemporary and historical academic literature on media and environment. Attention is given to how the audience respond to media's environmental message and how this is manifested in their attitude and behaviours. Chapter three is dedicated to a discussion of the research methodology and analytical approaches. The study utilised both quantitative and qualitative data collection and analysis technique. The strengths and drawbacks of each method are discussed, along with the advantages of using the two in combination. The result and implications are

discussed in Chapter four. In Chapter five, the research findings, conclusion, recommendation and the strengths and weaknesses of this study are briefly presented.

1.10. CONCLUSION

The discussion in this chapter serves as an introduction to media and environmental awareness. Following the introduction, the theoretical foundation of the study will be investigated in Chapter 2 so as to provide a review of the literature on environmental awareness and on the role of the media.

CHAPTER 2: LITERATURE REVIEW

2.1. INTRODUCTION

This chapter provides a review of the literature related to media and environmental awareness. The chapter includes a review of the global environmental situations, the state of the Ethiopia environment with the causes of environmental degradation in the country as well as a review of the literature on the role of the media in creating environmental awareness. A review of documents, different short discussion and proceedings are provided to highlight the level of knowledge. With this in mind, the literature review should be read as the beginning of a journey of research on the topic of the media and environmental awareness.

2.2. GLOBAL ENVIRONMENTAL SITUATION

Environmental problems are global in origin and therefore require collective local actions to solve them (Gore 2006). People have an impact on the earth that cannot be sustained. By some estimates, humankind uses more than 67% of the planet for primary productivity (Wellford 1998) and according to Sammalisto (2007) people are using the earth resources faster than they can be renewed. In addition to these problems and their adverse effects, there is the green house effect and global warming and global climate change which has captured the attention of the whole world at the moment (Sammalisto 2007).

Environmental problems, such as the worsening of the greenhouse effects, the diminishing of the ozone layer and to lesser extent the problem of acid rain are global in nature and they concern the entire planet due to their amplitude as well as their consequences like environmental changes, desertification, and the death of the forests. Burgess (1990) specifies that the accumulation of green house gases, mainly carbon dioxide, is irreversible for periods covering hundreds of years. These global environmental problems like deforestation, global warming and pollution of water bodies or industrial pollutions are public evil, that is, a globally negative effect on the economy causing multiple costs (Burgess 1990).

According to Allen (1999) about 153 environmental treaties in the context of the United Nations environmental program have been put in place not forgetting that alongside these multilateral agreements there exist bilateral agreements, independent of the United Nations to solve these global environmental problems. The industrial nations had given priority to environmental protection, this started in 1972, the first United Nation (UN) conference on the human and environment was held in Stockholm, Sweden. This was the first initiative towards global environmental management and resulted in another United Nation conference on environmental development.

In the less developed countries (LDCs) natural resources are the backbone of the economy, and provide the life support system for most of its people. Most people in these countries directly depend on the environment for their livelihoods, and they are particularly vulnerable to the effects of environmental change. Over the past three decades, in many countries of the world the environment has continued to deteriorate and poverty has increased despite attempts by governments to try to halt and reverse degradation (Ajeyalemi 1998).

According to Ekaete (2001) desertification affects 46% of African countries and about 485 million of its people. For example more than 2 million hectares of Ethiopian land had been degraded beyond rehabilitation. Soil erosion and desertification are increasing and the problem is likely to intensify over the next three decades as population continues to grow and the climate becomes more variable (Ekaete 2001).

Due to these environmental problems global level conferences stressed the importance of awareness creation through education and media as means to reach sustainable development in the long run. Recent concerns about environmental degradation in western societies and modern lifestyles have been preceded for centuries by global distraction of warning from other cultures, in particular indigenous peoples (Ekaete 2001). These warnings have led to the current mandate for global organizations to promote sustainability as pivotal to social and cultural change at national, regional and local levels (UNESCO 1993). In more recent times both Western and indigenous scientists and authors alike, have identified two main areas as crucial to an increase in pro- environmental values, ethics, attitudes and behaviors in societies. These areas are lifestyle and education changes (Ekaete 2001).

The present rhetoric of environmental sustainability, however, tends to focus on industry reforms, international environmental agreements and a growing emphasis on formal education, with limited attention to media learning or education. It has been identified that this rhetoric continued even with the recognition of the need to include local based community groups and individuals in the global movement towards ecological sustainability and the need to restructure formal education practices in many westernized countries (UNESCO 1993). For example, UNESCO provided a framework for global environmental education that is "lifelong and denotes an overall scheme aimed both at restructuring the existing education system and at developing the entire educational potential outside the formal education system (Adger et al. 1998:125).

The concerns about the environmental degradation of the planet have increased steadily. These days it is common to talk about the earth, the globe, and the global environment and a lot of news and debates which can be labeled under the umbrella concept of global environmental change are found in the media (Ingold 2000). The concern has been radical changes in the messages of environmental groups in the late 1960's and early 1970's and to the present day there is global destruction warnings from prominent western scientists (Ekaete 2001).

Today news editors give a more sophisticated definition of global environmental change which is best understood as process that are manifested in localities with causes and consequences of multiple spatial, temporal and socio-political scale (Adger et al. 1998). While it is obvious that the world is becoming compressed in cultural and economic terms, this is not to say that people's experiences are inevitable becoming more similar. According to Ekaete (2001) the global turn to environmental politics brings a reduction to the complexity of the problems. Global environmental discourse has suggested much more unity and shared understanding than legitimately assumed (Ekaete 2001). However, global environmentalism is mainly a product of western countries, and western scientists warnings of the global environmental distraction, similar warnings from scientists of other cultures have gone unheeded (ignored). Furthermore, global discourses on the environment take shape in each country and in different locations within a local and socio-political context (Adger et al. 1998). Therefore the dichotomy

between global and local understanding and awareness of environmental change has been challenged.

2.3. GLOBAL ENVIRONMENTAL COMMUNICATION

The evaluation of different environmental problems indicated that environmental communication is the basis for environmental awareness creation through a complex interactive and iterative information system. According to Habermas (1994) communication strategy should be designed for populations that are exposed to different environmental problems and who may not hear and understand environmental information.

Stables (1998) defined environmental communication as pragmatic and it constitutes symbolic action in the public sphere mediating beliefs, attitudes and behavior relating to nature and environmental problems. Environmental communications is one of many forms of communication that are engaged in social debate about environmental issues or problems. The dominant structure of the prevalent environmental communication framework hinges not only on the separation between environment and communication, but also between the communicator and the audience.

One of the most pressing and contentious counterpart points in the realm of environmental policy is the potential choice between environmental preservation and economic growth. To be sure, the environment-economy trade off plays out in global environmental debate, as first world economic growth is often criticized as driving worldwide resource depletion. This influences the environmental views of community and their overall awareness of how the various assets are affected. It is assumed that people who are more environmentally aware are more likely to participate and tolerate measures that lessen the burden on the environment (Ingold 2000:110).

2.3.1. HISTORICAL PERSPECTIVE OF THE MEDIA AND THE ENVIRONMENT

In the area of environment, the earlier premise of an open and unlimited global space for individual nations or states to explore and exploit for maximum economic growth was

turning out to be unattainable. The finite nature of the global space and its limited caring capacity received increased attention both in academic literature and the media industry. Environment was now part of a complex ecosystem, which is fragile and threatened by severe disruption from the competing forces of over population, resource exploitation, over consumption, and industrial pollution.

According to Speth (2004) a global ecosystem approach was not without competitors, but both the biocentrism and the humanist perspectives were foreign to the perceptions of the international development elite and recognizing the offences against nature as just another sign of the supremacy of technological expansion over people and their lives would go against the grain of development aspirations. The discourse, then, moved to efficient management of the environment to serve the needs of development.

Environmental issues are firmly entrenched at the centre of the world in all spheres of development activity, especially after the Second World War. This is exemplified by the number of international conferences and workshops which were held on the environment. One of these, the Rio de Janeiro Earth summit in 1992, marked the beginning of relentless environmental campaigns across the world from developed to developing nations (UNCED 1992: 327-366). This was followed by the world summit on sustainable development (WSSD) which was held in Johannesburg, South Africa in 2002 where critical targets for sustainable development, including the Millennium Development Goals (MDG's), were defined (UNCED 1992). These campaigns were largely in response to the alarming rate at which human activities are affecting the environment.

Human beings are an incredible species. Compared to other species, people inhabited the earth relatively recent, but they are rapidly dominating and changing the face of the earth. Human activities generate many byproducts which are generally seen as discarded waste (Day 1993). These massive amounts of waste subsequently find its way into the ground, water and air every year (Day 1993:17). High consumption lifestyles of the Earth's resource and the waste created resulted in global environmental degradation. Millions of tons of carbon dioxide and other gases are released in to the atmosphere each year, creating the green house effect. There is a significant

biodiversity loss, with the general extinction rate of species. Almost half of the forest that originally covered the earth has been lost (FAO 1997).

Furthermore current global trends such as economic globalization and liberalization of trade are having a strong impact on the environment at local, regional and global levels. Because of globalization many productive activities traditionally associated with developed economies are gradually being transferred to developing countries (UNEP 1998). Most industries or activities that move to developing countries have some potential for environmental degradation. The result is negative, less care is exercised or responsibility taken, fewer resources are applied to environmental protection, soil is eroded, forests are disappearing, and the atmosphere is polluted. Overall, the human ecological footprint has exceeded the caring capacity of the earth (UNEP 1998).

In recent years the need to understand the relationship between the media and environment has become more pressing. Many commentators attribute enormous power to news media, claiming they have the ability to move and shape governments (Cohen 1994:9). In this turbulent era, the media has played a significant role in shaping popular views on environment. If an environmental crisis occurs, the public will immediately look to the media for information. Despite the public dependence on the media for information, there are salient aspects of press behavior that the public views negatively (PMC 2006). The environmentalist movement, recently the largest most credentialed and well resourced social organization prior to the 1989's has historically, been consistently treated with hostility by the media (PMC 2006). Media organizations are ideologically biased like, for example, the cherry-pick environmental movements, that best capitulate to their corporate driven demands for news worthiness (Baker 2007). This encourage the environmentalist movements to make concession to their causes by becoming more media savvy (Davis 2002:81) and by internalizing media valves to maximize to gain of favorable media coverage (Hansen 2007). Environmental movements may improve their media visibility, but paradoxically by making tactical concessions to obtain media coverage, they may render their longer term objectives invisible to their audience (Cohen 1994).

Over the last 25 to 30 years, the environment seen as a problem for public and political concern, manifested in considerable 'ups' and 'downs' which experienced in the media

and wider public agendas. Despite the raising power of the environmental movement and increasing public awareness on environmental issues, were not necessarily equated with improved media coverage. In fact a comparison of environmental pollution media coverage between 1972 and 2000 found that the nature of the coverage was unchanging (Wezel and Haigs 2000). Thus, campaigns around the issue of environmental pollution have had almost no effect on the media's discourse and if anything, the media framed the issue to oppose the environmental movement's objectives.

Environmental reporting or voices have become increasingly marginalized in the news Banterer (2002) study of the Globe concluded that lip-service was paid to environmental concerns and those environmental issues were never addressed in their full range and seriousness. The lip-service we might have served to divert attention from the overall thrust of the reporting, which was one-sided and hardly environmental. At the beginning of 2005 the international taskforce on environmental change concluded that a strong consensus has been reached in the scientific community that environmental change is a real and dangerous issue (Lindolf 1995).

According to Cleaver (1994:20) western media were not reflecting the dangerous environmental change which is politically defined and ideologically constrained. Speth (2004:3) also observes how the public's understanding of global environmental change and sustainability issues has been badly served by the media. As the science of environmental change and biodiversity has matured, media coverage of these issues became less.

Despite conservation organizations acting as the dominant news source in the beginning with industry occupying a reactive role, their positions had reversed by the mid 1990's. The change in coverage was due to the government's framing of the stories and the media institutions' only framing and logging issues that could be set by elite interest (Bennett 1999). To understand the media and environmental issues can help by explaining particular aspects of the communication process.

The communication history indicates that until the recent past the ancient societies mainly depended on oral transmission of information. In the absence of modern media

facilities, word travelled mainly by word of mouth. The emergence of modern media during the beginning of the second half of the 20th century shows significant improvement in essential human communication and interactions (Dobson 1997).

Environmental communication has now emerged as a strong complementary practice to environmental education. A broad definition of environmental communication would be, "the sharing of information, insights and opinions on environment issues, trends, conditions and solutions using any means of communication, raising from interpersonal methods to means of mass communication, using the modern as well as traditional media" (Dobson 1997). In this sense, environmental educators constantly engaged in environmental communication. However, an important distinction is that while all environmental educators are communicators, not all environmental communicators are necessarily educators (Rockeach 1995). Across the globe, individuals and institutions are engaged in a very wide range of environmental communication activities with varying degrees of sophistication, outreach and its impact.

A key issue for many countries in the world is to integrate environment into development policy, and to use communication and education in an integrated way as an instrument of policy (UNESCO 1993). One of the major channels through which environmental communication is practiced is the media, which include both print and electronic. The communication media in the world underwent rapid change during the 1990's with liberalization of media policies allowing private sector involvement and the spread of global media networks owned by trans-national companies (UNESCO 1993).

The broadcast media, (radio and television), in all their variations, have established themselves as the most pervasive and powerful forms of media or potential source of environmental information in world today (Dobson 1997). They represent a major channel through which information on environment can be conveyed to the people (UNEP 1997). Today, more environmental activities and organizations are moving to take advantage of these powerful media for environmental action and awareness. Many use media to raise public awareness and understanding of environmental issues, some are using it to document instances of the environmental crimes and degradation; to lobby for specific policy reforms or raise funds for specific campaigns (UNEP 1997).

A major difficulty faced by journalists and producers covering the environment is access to reliable source of information and having the technical information interpreted by experts. Although identified some times ago, the response to this constraint has been slow. The restriction of access to information by the public and media still prevails in some countries and inhibit open coverage, discussion and debates of issues that are of public interest. In other cases, where information is available, journalists lack credible means of interpreting technical issues and explaining them in layman terms (MOI 2006)

Environmental journalism encounters other problems that are not easily overcome. For example, bottlenecks sometimes exist, where editors and program managers may not appreciate, and thus, pay limited attention to environmental news. Another limiting factor is legitimacy of environmental issues and where such legitimacy is derived from. For instance, sometimes major environmental stories are under reported in the country of origin until the foreign media picks it up and gives international coverage. However, in many countries, environmental activists and government agencies handling the subject of environment have not developed fruitful media relations and use the media only to generate publicity for events and individual actions (Dobson 1997).

According to Dobson (1997) environmental communicators have recognized the value and power of using folklore and traditional media, such as songs, dance, drama, puppetry and mining, to take environment and development messages to the public. Historically, traditional media have often played a role in the communication and promotion of new ideas, apart from its traditional role of preserving and teaching established values.

Today, in spite of advances in the modern forms of media, many people still relate more readily and easily to traditional media, which are closer to their local cultures, and are often more interactive and participatory than the regular forms of media. Various forms of traditional media are being used or adapted to convey environmental messages to children, communities and specific large target groups in different countries (MEA 1994).A considerable amount of work has been done and achievements made since the 1990s,but as many challenges remain.

2.3.2. THE CONCEPTS AND DEFINITIONS OF MEDIA AND ENVIRONMENT

In this section, an attempt is made to briefly define the scope of contemporary writings of environment and media, particularly on issues related to awareness creation and concepts. The concept of 'environment' has evolved significantly over the last 30 to 40 years (UNEP 2003). The term still retains its old stigma of representing non-human 'green' issues and being anti-development, in most serious decision making bodies (Hinsen 1991).

The word "human" brought environmental issues into the domain of human development from their former 'home' among ecologists and activists (Burgess 1990). During the 1970's, much of the debate about environment was centered on the idea of 'limits to growth'. Economists proposed that as the world was using resources at a greater rate than they were being renewed, economic growth would soon be restricted. These ideas led to the formulation of the concept of sustainable development, bridging the human, social, environmental and economic dimensions of development. The concept recognizes that the downward spiral towards exhaustion of resources is not inevitable and rational environmental management. UNCED (1992) formed the basis of Agenda 21, which finally moved the debate from being about how to stop "mining" resources, to recognition of long-term sustainability and achieving sustainability needs, to the social, economic and environmental aspects of development. This placed environmental matters squarely within the domain of human development, and led to an understanding of the underlying importance of the environment as it relates to people.

Sustainable development is now widely used across a range of different contexts. Burgess (1990) states that the environment has evolved from a concept limited to green and brown issues, (green issues being related to natural resources management and brown issues relating more to pollution), to a more encompassing concept that includes human and social dimensions. According to Burgess (1990) the term sustainable development is defined in a very broad manner to include human dimensions of the environment as well as components of the biophysical environment. According to Scheese (2003) environment refers to the elements that compose the physical or conceived aspects of nature, along with their groupings in landscapes and ecosystems,

with special reference to that which is considered the non-human. The environment is often casually conflated with nature which comprises the entire material world, or in earlier and recent languages, everything under God (Scheese 2003).

In addition, for the sake of clarity and to identify a definition that is best suited to this study, it is logical to review some different definitions and ideas surrounding environment and media, as it is defined by different scholars and publication as:

Environment means the totality of all materials whether in their natural state or modified or changed by humans their external spaces and the interaction which affect their quality or quantity and the welfare of human or other living things including but not restricted to land, atmosphere, whether and climate, water, living things, sound, odor, taste, social factors and Aesthetics (Proclamation No 295: Article 2, in Federal Democratic Republic of Ethiopia 2002).

Santra (2006:3) defined the environment as that whole outer physical and biological system in which man and other organisms live. It is seen as a whole, albeit a complicated one, with many interacting components. According to Dalelo (2007:52) environment is commonly defined as surroundings. In its ecological sense, the environment includes the biotic and a biotic factor and the interactions between them. As can be conceptualized from the above definition, it aims to go beyond definition to look at the processes involved and concludes that without the environment it is impossible to survive. Environment and people are interrelated ecologically, people are part and parcel of the environment, and they actively interact with its components (Otiend 1991:77). The environment is used by people for different purposes. People are a part of the environment and they must use it to survive. The environment is a source of food, as a source of air to breathe, as a source of water to drink, as a source of resources like oil and minerals, as means of travel and communication and it provides space for shelter and other socio-economic and physical activities (Otiend 1991:78).

The creation of environmental awareness through media education, attempted to expand and explore the scope of environment by making use of processes and knowledge bases associated with environmental ethics and aesthetics (Stables 1998). Media is a means of public communication and it is defined by Jensen (2004:108) as a

network to serve as a kind of cultural forum that organized and shapes our understanding of our social values. It can influence people's attitude, and it has the power of convincing people and shape up opinions.

According to the Oxford dictionary (2000) the media is the main way in which large numbers of people receive information and entertainment through channels such as television, radio and the newspapers. Random House Unabridged dictionary (2006) defines the media as the communication channels through which news, entertainment, education, data or promotional messages are disseminated. Media includes every broadcasting and narrow casting medium such as newspapers, magazines, television, radio, billboards, telephone, fax and the Internet.

Hansen (2007:183) defines awareness in relation to media and environment as knowledge about the physical and socio-cultural environment and He describes it as explicit knowledge of environmental issues. According to Jensen (2004) it is individual's implicit sense of knowing, and it is mostly out of sociological interest.

The definitions given above are not mutually exclusive, rather they reinforce each other. Indeed, the definitions suggested by different authors have nearly similar ideas on the environment, media and awareness. For the purpose of this research, the working definition suggested by above will be used. That is because these definitions vividly show areas of media and environmental activities to be carried out by different bodies. By so doing, the definitions can facilitate the research process by informing the main activities of environmental awareness creation in concerned (responsibly) bodies.

2.3.3. THE ENVIRONMENTAL MEDIA AUDIENCE

Early audience studies come into the media research scene in response to the needs of the media industries that were eager to know the 'reach' and 'size' of their audiences. These early approaches in audience research have also helped to identify the social composition and geographical distribution of the audiences. The interests and findings of the researchers, however, were influenced by the broadcasters and advertisers (McQuail 1994, Mytton 1999:16-17).

The focus of the researchers was the 'media messages' and the specific behaviors they might create, such as the direct effect the media have on people. This trend has regarded audiences as 'passive recipients' without of the ability to construct their own meanings, rather than 'active readers' (Croteau and Hoynes 2003:240).

It was only after the 1970's that more and more researchers tried to assert their findings that claim audiences to be interactive and autonomous with the capacity to select and use useful and meaningful media products. Audience filter media content in a variety of specialized environments. And when the medium is introduced in to an environment it modifies the environment. When environmental conditions are altered, the audience member may be come upset. However, media plays a crucial role in connecting the world to an individual and provides opportunity for the individuals to communicate with a wider audience. And, the down side of media communication, as national and international media ownership is more likely to be influenced by a few, is in its difficulty to maintain neutrality (McQuail 1994).

According to McQuail (1994) historically media audience research has witnessed different phases which he argued have happened as a result of reactions to the cultural and social changes over time. It seems important to point out that the crucial issued which is hidden in current approaches to audience research is the relation of audience to power and control within the system (Morgan 1997:9). He also states that information overload leads audience to filtering out some of uninteresting media messages, or at a time just shut the channel.

The prevailing assumption among media researchers in the early 20th century about media effects was that the media was so powerful that if it can serve as tools of persuasion (Ross and Nightingale 2003:74-75). This premise considers audiences as only receivers of media message as presented by the media outlet. This group however criticizes the early researchers for undermining the audience's ability to select, interpret and use media content (Davis 2006:261). Others acknowledge that audience as active with the capacity of picking preferred content and message from the media (Rockeach 1995:187).

From the given approaches it can be concluded that individuals consume media with purpose, critics however argue that attending media products is something that happens more casually and without planning. According to these critics, people might attend a certain media because of its prominence or lack of access to or absence of alternative media outlets (Williams 2003:178-179).

The above discussions tried to show how audience progressed from the powerful media approach to the active audience premise. In the latter approach audiences is autonomous concerning the selection of media content or programs. For instance, when some audience faces environmental shocks they may be interested to get information from the media. Exposure of individuals to environmental pollution in everyday life could lead them to consider media information.

2.3.4. GLOBAL ENVIRONMENTAL COMMITMENT

The driving force behind environmental policy in the world is a set of powerful, widely perceived images of environmental change includes overgrazing and desertification, the wide spread existence of a wood fuel crisis, the rapid and recent removal of once pristine forest, soil erosion, and the mining of natural resources caused by rapidly growing populations. Scientific evidence shows that ecosystems are under unprecedented pressure; threatening prospects for sustainable development. While the challenges are daunting, they also provide opportunities for local communities, businesses and government to innovate for the benefit of communities, economies and the global environment (UNEP 2007). However, in order to secure the environmental conditions for prosperity, stability and equity, timely responses that are proportionate to the scale of the environmental challenges would be required.

With the effects of man on the environment becoming more and more evident concern for the environment has been on the rise among the different nations in the world. Environmental issues began to crop-up starting in the 1960's and 1970's; among the most notable being the United Nations Conference on the Human Environment (UNCHE) in 1972 in Stockholm, which brought the creation of the United Nations Environment Program (UNEP). The conference also designated June 5th as world environment day and encouraged governments to celebrate that day each year by organizing activities aimed at promoting environmental protection. The conference also

called for the establishment of an international education program (Scheese 2003:41). The later gave rise to several international conferences dedicated to environmental awareness.

With the continuing realization of finiteness of resources available on this planet, UNCED was held in Rio de Janeiro, Brazil on 3 June 1992. It was on this conference that "sustainable development" (SD) was defined. The "Earth Summit" as this conference is known, was attended by delegates from 178 countries and more than 1100 nongovernmental organizations (NGOs). The outcome was a 900 page document called Agenda 21 (UNEP 1992:36). It was the most important milestone in the struggle to globally tackle the environmental problems. This summit committed to reaffirming the Declaration of the UNCHE, adopted at Stockholm 1972, seeking to build up on it, and a set of 27 principles covering environmental protection and responsible development was formulated. At the conference, the world leaders pledged to work together and adopt Agenda 21 and action plan for sustainable development in to the 21st century (UNCED 1992).

Sustainable development was welcomed and remains a concept to which politicians and economists in developed and developing countries alike lend unanimous support (Peterson 2003:147). Following the conferences the international community, in their quest to protect and conserve the environment and its immense species, entered into numerous multilateral environmental agreements. All countries, in their efforts to promote environmental quality, adopted many multilateral environmental agreements (UNCHE1972). After the Stockholm conference many countries were committed to create an environmental policy and institution like the environmental protection council and environment protection authorities (UNCED 1992). Subsequent to the Rio conference countries redefined their environmental policy to achieve sustainable development. The years after the summit in Rio saw some improvements in the quality of life for people in many parts of the world. At the Johannesburg World Summit (2002), the goal of sustainable development remained elusive as indicated in the latest Living Planet Report of 9th July 2002 (Martin 2002:2).

According to Banki-Moon, secretary General of the United Nations, few global issues are more important than the environment and climate change. He consistently

emphasizes the dangers of global warming, environmental degradation, the loss of biodiversity and the potential for conflicts growing out of competition over dwindling natural resources (UNEP 2007).

To move from a "situation of wasteful consumption and pollution to one of conservation and from one of privilege and protectionism to another fair and equitable chances to all" (Fien 1993:7) awareness creation is crucial so as to ensure that non-renewable and renewable resources will be sustained and ecological deficits eliminated (Johannesburg World Summit 2002). The ultimate aim of multilateral environmental agreements is to cause a change in or influence the behavior of those who cause or can ameliorate the environmental problem at hand. This is the point at which one can say that implementation has been effective (Fien 1993). Even though implementation may be effective, it does not totally eliminate the environmental problems at hand. According to Fien (1993) compliance with an international agreement may result in the cessation of an activity that contributed to the pollution, but it might lead to an overall increase of pollution by encouraging other activities and the consequences of which were equally bad or even worse.

Implementing obligations is one thing and achieving effectiveness is another. Many factors contribute to effective implementation of obligations and effectiveness of international environmental agreements. Countries are subject to Multilateral Environmental Agreements (MEA); they are at the centre of implementation and compliance process and must take steps to fulfill their obligations. It is argued that the varying circumstances of a particular country will determine how effectively it fulfills its obligations (UNCED 1992). Thus, how well a country does in implementing its obligations will depend on "what it traditionally did with respect to the issue being dealt with and the legislations and regulations that it already had in place at the time it became a party to the accord" (Fien 1993:31). More democratic countries would generally do better in implementing their obligations than poorer and less developed countries. This variance may be looked interms of administrative capacity.

Developed countries have effective administrative capacity due to the availability of knowledge evidenced in having highly educated and trained personnel in that field (MPSD 1987). They also have strong financial backbones and relevant access to

information, backed by the legal mandate to be effective. Economic factors indirectly play a very important role in effective implementation. The rate of growth of a country's GNP has very little effect on implementation however economic chaos or collapse can have serious implications. This is because limited government resources high inflationary rate will have a profound effect on the incentives of administrative agencies to enforce their obligations. The political system and institutions in place in a country will also make a difference in implementation. Bigger countries have a much more complicated duty of complying with commitments than smaller countries.

According to Williams (2003) political instability can also lead to decline in compliance with environmental agreements. This has affected many countries in Africa over a long period. Democratic governments are more transparent in their dealing and are very responsive to public opinion, than military dictatorship. Pressure from domestic groups and public opinion are important mechanisms for promoting, implementing and complying with treaty obligations. Individual leaders also play major roles in implementation. The role played by various world leaders has helped to shape implementation and compliance in many countries such as. Brazilian President Fernando Collor who took special interest in the environment and played a major role in having Rio de Janeiro selected as the venue for UNCED and former President Clinton's administration who appears to have been more committed to environmental issues (Williams 2003).

2.4. OVERVIEW OF THE STATE OF THE ETHIOPIAN ENVIRONMENT

While Ethiopia is a country of great geographical diversity endowed with rich natural and human resources, these conditions also create huge environmental problems. Due to these environmental problems, Ethiopia is one of the most vulnerable countries in terms of the environment in Africa as well as in the world (EPA 1998). This vulnerability of the country is derived from multiple stresses coupled with low adaptive capacity.

The economy of the country relies heavily on climate sensitive sector such as rain fed agriculture, fishing and the harvesting of natural resources. The country is also plagued by an inadequate ability to respond to the direct and indirect effects of environmental challenges because of widespread poverty, poor socio-economic, infrastructure and limited institutional and financial capacities. According to Yonas (2002:1) one of the

most ominous of all problems facing Ethiopia is environmental crisis, which threatens to precipitate and deepen the country's precarious economic and social conditions.

Among other things, the environmental crisis is happening due to unwise use of natural resources and unplanned development project as well as exasperated by recent rapid population growth. Ethiopia has a high population growth rate and densities which is faster than the ability of the land to support them (Teshome 1990). Population growth and density is one of the most important drivers of environmental changes in Ethiopia, particularly leading to the exploitation of existing resources and increase demand for those resources, and placing pressure on natural resources (UNEP 2008:9). The country has been experiencing unprecedented population growth in its recent history. The country's population increased from an estimated 19.6 million in 1950 to 70.09 million in 2003. If the current growth rate of 2.7% continuous, the population will reach 117.6 million by 2025, a mere 21 years away, and 173.3 million by 2050 (UNEP 2003). In other words, Ethiopia will join the top ten most populous countries of the world by the middle of the current century. Today there are 73.9 million Ethiopians, 46% whom are under 14 years of age (CSA 2008). The UN population division (2006) predicts the population of Ethiopia will reach 100 Million by 2015, and doubled by 2049. Thus, population pressure leads to various land use dynamic. Exploitation of arable land is one of the responses to increase in population. This is made possible through deforestation which exacerbates the land degradation at an alarming rate and food insecurity problems (Abbi 1995).

The pressure of the population on both renewable and non-renewable resources has brought irreversible damage to the environment (Molla 1994). According to Molla (1994) Ethiopia's potent combination of high population growth, unsustainable land use and ambiguous land ownership policy has lead to the rapid loss of the biomass cover, increased soil erosion, and creeping desertification over the past several decades. More than 80% of Ethiopia population is rural and depend on subsistence agriculture (CSA 2008:65). It is estimated that around 50% of the population live in absolute poverty and the GDP per capita was put at \$900 in 2005 (CSA 2008). Land is the paramount importance: A saying among southern Ethiopian farmers "There is no joke relating to wife and land" reveals how seriously they regard issues of family and livelihood. Increasing family size especially in rural areas and the unsustainable use of key

resources are causing the land holding of each house hold to decrease, and reduced productivity (CSA 2008). Average holding of land is diminishing as plots are subdivided to accommodate newly married sons while the number of land-less household is also rising.

The rural farming experience indicates that subsistence agriculture is relatively inefficient, and therefore large areas of land are needed to meet each household needs. As the numbers of large extended families and new households rise, and decreasing soil fertility reduces the amount of arable land available for farming, households are often forced to share a single piece of land which increased the pressure on the land and other natural resources. The increase family size and the lack of arable land are affecting family relationship in rural areas. The young live at home without jobs and they would be happy if their fathers died soon so that they could inherent the land. Without land of their own, it is difficult for young men to marry, or they must share their relatives existing land in order to start their own families (CSA 2007).

Table 2.1: Household in relation to plot size (Source: CSA 2007)

No.	Household	2003-2004	2004-2005	2005-2006
1	Number of non-pastoral agricultural households of 0-1ha.	10.4 million	10.9 million	11.5 million
2	Percent with 4-9 family member and land holding of 0-1 ha	70.09%	70.13%	72.18%

Table 2.1 shows that, while the number of agricultural families is increasing, plots size remains the same. Seeking new farmland, some families may deforest reserves, farm on mountain or hill sides or move to lowlands and other new settlement areas. These methods create new problems. Clearing forests and farming steep slopes encourage erosion, which quickly deplete the soil of its nutrients, reduce productivity and ultimately increases food insecurities (CSA 2007).

In Ethiopia deforestation is an important problem (EFAP 1994). It became a folktale to talk about the Ethiopia forest coverage of 40% at the beginning of the 20th century. Now the forest coverage in the country is only 9% (EFAP 1994). However, relevant data are scarce, the existing knowledge is incomplete and interpretation is largely influenced by

the prevailing environmental crisis in the country (Molla 1994). Due to this the objective information in Ethiopia reveals that large areas of forest were cut down during the political transition periods. The human impact of forest decline varies in space and time due to socio-political development resulting in rapid transformation of the landscape (CSA 2007).

At the local level deforestation may not be seen as an environmental problem, but rather as a necessary part of the development process to convert lands to more intensive and profitable use. On the local level the problem of deforestation is overstated in many cases (CSA 2007). Ethiopia has entered its new millennium with high hope of renaissance and a better life for all in the new century. One of the challenges it will face to make this dream come true is the degraded environment and the consequences of these problems on the country's natural resource base. A degraded environment affects not only the well-being of the present population but also affects the livelihood possibilities of future generations (Moseley 2005). Land degradation is one of the major causes of the decline in agricultural productivity, continuing food insecurity and rural poverty in Ethiopia.

The environment did not feature on the development agenda in the past since evaluation and decision making mechanisms focused on short-term technical feasibility and economic benefits. The Environmental Protection Authority (1998:59) explains that past development practices did not anticipate and mitigate potential environmental problems early in the planning process. This resulted in a situation where the country experiences a serious degraded natural environment. Further development activities have the potential to damage fragile environment systems (EPA 1998:59)

The consequence of unplanned and un-sustainable use of natural resources, resulting change of the environment and natural ecologic process, in a loss of habitat and valuable genetic reserves. The degradation processes should be halted, and even reversed, to ensure the sustainable utilization of the ecosystems for Ethiopian people (Ashine 1990:20-21). Long-term development and alleviation of poverty could not be achieved without conservation of natural resources in Ethiopia. Development and environment protection are two sides of the same coin.

According to the strategy of Agricultural Development Led Industrialization (2002) Ethiopia is currently launching a major program for the intensification of agriculture, including large scale development of irrigation schemes and industrialization. If appropriate environmental monitoring and protection is not carried out, the development efforts of these projects could damage the environment and make development unsustainable.

In recognition of this and the urgency of the matter, the government is planning to arrest and reverse the severe environmental degradation of the highland areas. The government strives to implement programs to combat degradation including the building of terraces, the planting of trees and the relocation of people on local, regional and national level (Michael 1994:46)

According to the presidential keynote address, at the second green forum conference held in Addis Ababa, environmental problems should be taken as the biggest challenge for this millennium (Girma 2007:3). On the launching of the 2008 annual government plan the President said the environmental protection plan should be energy efficient and should aim for sustainable agriculture and sustainable habitat to create a green Ethiopia. Despite some successes, the program failed to make a significant dent in the vast environmental problems which are often overlooked (EPA 2007).

It is necessary to stress the relationship between the destruction of the environment on the one hand and social and health problems on the other. It is the poor and the illiterate who are most exposed to such environmental problems. This realization can propel environmentalism to the top of the national agenda. In Ethiopia the understanding of the link between climate change and its environmental repercussion, its impact on the economy and on particularly on the livelihoods of the majority of the people, is still low. The political strategies required to adapt to the impact of environmental problems are not publicly discussed. The vast majority of the people are not even aware that fundamental changes to their lives are imminent. In order to be able to adapt and cope they have to be informed (EPA 2007).

Raising the awareness of the entire society towards combating deforestation would also play an indispensable role in promoting environmental protection and developing sense

of belongings toward their environment. But in Ethiopia there is a shortage of accurate information regarding the rate of deforestation and the extent of earlier forest cover age (Belay 2000). Creating and developing awareness on environmental degradation in rural areas of the country requires informal communication and traditional communication mechanisms. However, farmers receive knowledge and information through their traditional experience and its incorporation in to the modern knowledge system, so as to work out on integrated approach to environmental protection (Molla 1994:115).

Rural communities have centuries old indigenous (traditional) resource management and conservation practice. Though they are not well documented, the traditional agro-forestry practices in the south west, the soil and water management practice in Konso, and resource management in Borena, are good examples (Teketay 1999: 49-72). The traditional knowledge of the farmers is a local knowledge which is unknown to or overlooked by development workers seeking solution of environment and rural problems. In local areas people receive knowledge and information of environmental protection from agricultural extension staff, media and other development workers (change agents).

In some areas, the authorities choose some key influential people from every village to observe degraded areas that are being rehabilitated to show the effect and the consequence of environment degradation, which they pass to the rest of the community members. Familiarity with integration of traditional and modern communication system can help change agents understand and effectively communicate with local people, which represents successful way people deal with their environment (Mokonnen 1990: 11-12).

2.4.1. SPATIAL PERSPECTIVE OF ENVIRONMENTAL DEGRADATION

Environmental issues are today no longer confined to geography and allied disciplines but have also drawn the attention of common people as environmental degradation and pollution have assumed global dimension and even threatening the very existence and survival of mankind (Singh 2000:8). Both the awareness creation and the recognition of environmental problems depend closely on the way that society is organized and on

its values, Changes in the relationship between man and physical environment depend to a large degree on changes in the organization and aims of society.

The notation of cultural landscape change in many parts of the country has developed as a result of human environmental interactions. Perception of cultural landscape change depends on landscape classification through the use of socio-ecological indicators. The main variants of landscape change are vegetation, while the potential is measured in terms of the soils (Boku 2000).

In a landscape individual element can change, even disappear, but the landscape as a whole does not necessarily change in the same way or rate. Two major cause of food insecurity is associated with severe environmental degradation manifested through recurrent drought and desertification. Researchers working on the environment highlighted that the factors affecting Ethiopia's environmental problems can be categorized into natural processes and the human activities. However, the dynamics and ecological systems working in the landscapes are not uniform but rather characterized by variability both in magnitude and duration (Burgess 1990). As indicated geographers solve problems by looking at the pattern in the landscape, and exploring the process that created them and how they change over time (Singh 2000:4).

Thus, landscape disturbances may be endogenous or exogenous, and can affect the direction and speed of landscape change, which can lead to an entirely new landscape. Human disturbances may cause total landscape change in the space of years, and remain unpredictable with respect to long-term out comes or reversibility. For example the rapid disappearance of highland forests and the inherent loss of biodiversity could be a non-reversible impact, changing the landscape completely (Singh 2000:4).

Zebisch (2004) argue that for sustainable future planning it is essential to investigate possible land use changes and the impact on ecological function and processes at the local level. It is believed that changing land use affects on-site landscape properties, for example soil degradation and increased erosion after deforestation.

In debates about environment and development, people are often seen as exploiters and destroyers of natural resources. Changes in land use and land cover are often associated with bad management practices by rural people. Under-lying drivers of

change however are usually more complex. They involve various processes in the landscape with different scales in time and space. Interdisciplinary studies of environmental change and diversity describe complex and uncertain, but often very resilient, physical and social landscape. Thus, the environment and landscape change in Ethiopia need to be analyzed from a geographical and a social position.

2.4.2. HUMAN-ENVIRONMENT PERSPECTIVE

The conceptual division between people and the environment has also been closely intertwined with changing assertions to determine the human environment conditions. Singh (2000:27) argues that human environment interaction focuses on the differences between people's attitude and if they are ready to take action or not. In his opinion people are general divided into two groups, those who believe that action should take to preserve the environment, which argue that environmental protection, should take priority over economic growth, and those who believe that economic gains should take precedence over environmental protection.

The effect of human population on the natural environment has been considered by different scholars. Geographers historically focused on factors related to how people construct their relationship with the non-human world and how that non-human world in turn affects people (Corell 1999). The impact of people on the environment is a central concern for policy makers which have begun to recognize the need to address environmental problems and the crisis through a consideration of humans together with their environment (Dobson 1997). Ecological and agricultural specialists have on their part focused in the restoration of land altered by human activity.

For instance, the protection of existing ecosystem through national parks and wildlife programs (Dobson 1997:515-522). Debates about population-environment connections originated in 18th century Malthusian ideas of a vicious poverty-environmental spiral where the poor people seldom think of the future and continually degrade their natural resource base (Malthus 1798). The debate has moved on since then, particularly the fact that the poor are acutely aware of any negative environmental impacts. Despite the time dedicated to the debate though, the people environment connection is still described as a big question, with which the scholarly community must engage (Hansen 2003, cited in Gray and Moseley 2005). Prakash (1999) argues that the population

environment debate can be addressed from the point of a connection between population and environment vulnerability. Environmental problems and uncertainty represent the real underlying causes of degradation, forcing the poor to adopt coping mechanisms which may undermine their natural resource base.

2.4.3. EVIDENCE OF ENVIRONMENTAL PROBLEMS

The driving force behind environmental policy in Ethiopia is a set of powerful, widely perceived images of environmental changes. This include overgrazing and the desertification of dry lands, the widespread existence of a wood fuel crisis, the rapid and recent removal of once-pristine forests, soil erosion and the mining of natural resources caused by rapidly growing population.

Mean annual rainfall distribution over the country is characterized by large spatial variations that range from 2 000 mm over some areas in the south west to less than 250 mm in eastern lowlands of the country (NMA 2007). The year to year variation in rainfall over the country is also influence by the variation due to the rapid change of the climatic situation (NMA 2007). Year to year variation of annual minimum temperatures can be expressed in terms of temperature difference from the mean and average over 40 stations of the country. As can be seen, some part of the country has experienced both warm and cool years over the last 55 years. However, the recent years are the warmest compared to early years (NMA 2007).

Spatial variation of rainfall and temperature resulted in environment related hazards in the country such as droughts, floods, heavy rains, strong winds, and high temperature. However, the historical, social and economic impacts of all these hazards are not well documented. Some major adverse impacts of environmental change or variability in the country include: food insecurity arising from occurrences of drought and flood (DPPA 2006), outbreak of diseases such as malaria, dengue fever, water-borne diseases associated with floods and respiratory diseases with drought (WHO 2000). Ethiopia is highly vulnerable to drought. Drought is the single most important climate-related natural hazard impacting the country from time to time. Drought occurs everywhere in the world but its damage is not as severe as in Africa in general and in Ethiopia in particular (NMA 1991). Drought and desertification have impacted Ethiopia economically, socially, politically and environmentally.

The drought effects of 1983/84 and 1993/94 are situations of bitter memory. The effect of the 1983/84 drought is unprecedented in history and over one million people died and many livestock was lost. Around 8 million suffered from food shortage. There was high a mortality of livestock and vast area of green vegetation disappeared. A considerable area of natural forests was burned down as a result of high temperature and spontaneous combustion of wildlife in large number lost their forest homes, and migrated in search of forest cover elsewhere (Abate 1997:89). Warmer environment as well as altered temperature and rainfall patterns shift made larger parts of the country drier. This reduced the arable land and diminished biodiversity. It exposed people and animals to increased outbreaks and severity of vector borne diseases and resulted in population migration. The situation summarized in table 2.2.

Table 2.2: Chronology of drought (famine) in Ethiopia (adapted from DPPA 1987)

Year	Regions affected	Impact on human life and property
1964-1966	Tigray and Wollo	About 1.5 million people affected
1978-1979	Southern Ethiopia	1.4 million people affected
1981	Northern Ethiopia	2 million people affected
1983-1984	Most part of Ethiopia	8 million affected, one million dead and many livestock lost.
1987-1988	Most part of Ethiopia	7 million people affected
1990-1992	North, Eastern , South-Eastern Ethiopia	About 0.5 million people affected
1993-1994	Tigray and Wollo	7.6 million people affected
2000	most part of Ethiopia	About 10.5 million people affected
2002-2003	Most part of Ethiopia	About 14 million people were in need of food assistance

In most part of Ethiopia, agricultural land suffers due to severe erosion, leading to the destruction and abandonment of arable land which attributed directly to non sustainable farming practices. More than half of the country's pasture lands are overgrazed and subject to erosive degradation. Research carried out by the World Bank (1992) in Ethiopia found that under conditions of rapid population growth, traditional farming and livestock husbandry practices, traditional dependency on wood for energy and for building materials, traditional land tenure arrangements, and traditional burdens on women become the major source of forest destruction and degradation of the rural environment (Cleaver 1994: 67). Such views of environmental change in Ethiopia are

not restricted to professional and politician's circles; they are also popularized in the news and current affairs of media. This helped to build support among the general public and charitable organizations which designed to halt the forces of environmental destruction. While there are obviously many popular, political and scientific agreements on the extent of the various environmental problems facing humankind at the dawn of a new millennium, there is also a growing consensus that many of these problems have reached a stage of crisis.

Environmental change related hazard effects Ethiopia from time to time. Major floods occurred in different parts of the country in 1988, 1993, 1994, 1995, and 1996 and in 2006 causing loss of life and property. The situation is worse in some parts of the country. In 2006, in Dire-Dawa, hundreds of families lost their property, 250 residents died and about 10 000 people become homeless. In southern Omo 364 people died and 8 350 people were displaced when 14 villages were flooded. Afar, in *Western Tigray, Gambella (zuria)* and the low lying areas of Lake Tana (*Fogera and Dembia*) were seriously affected. Flood can damage the environment and the topographic structure of the country DPPA (2006). According to DPPA (2006) the problem is mainly aggravated by severe degradation of highlands around the settlement. The runoff, which comes from the highlands, has immense power as there are no natural barricades that reduce the flood's intense power.

Research on the role of the media in shaping environmental understanding has addressed both the volume of environmental coverage in the media, and the character of that coverage (Lacey and Longman 1993). However, DFID (2000) notes that the environmental aspect is often totally neglected or given inadequate attention. As a result many environmental trends are negative in relation to poverty eradication program of the country. So, overpopulation and poverty is viewed as both a cause of environmental degradation and also a result of people living in fragile and ecologically vulnerable environments.

2.4.4. FACTORS EXACERBATING ENVIRONMENTAL PROBLEMS

The term global environmental change is contested and problematic. First, all forms of environmental change are in some sense global or more accurately universal (Adger et

al. 2003). In the 1990's the discourses of global environmental change moved to the centre of environmental debates, leading to global scale solution for what is perceived to be significant environmental problems. At the heart of this realization of the global significance of environmental change are two major environmental problems: the depletion of the stratospheric ozone layer and the issue of global climate change (Adger et al. 2003). Thus, environmental change threatens all of humanity. People living in the developing world are often the most vulnerable to its effects, as large portion of those populations are directly dependent on agriculture, forestry, and the likes for their well being and survival. These activities depend on healthy ecological systems, and there are few buffers to protect the poor from the repercussions of environmental decline (DPPA 2006).

The impact of environmental change could either be reduced or enhanced by the interplay of several factors in a given country. Factors that exacerbate environmental problems like rapid population growth, massive land degradation, wide spread poverty, rainfall dependent economy, lack of adequate policy measure and lack of awareness are believed to complicate the problem of mitigating the impact of environmental change in Ethiopia (Daniel 1998).

Daniel (1998) states that the Ethiopian population grew extremely fast over the past few decades. This huge population base which is growing at rapid rate, poses a dreadful challenge to any effort under taken to attain food self-sufficiency and coping mechanisms against the impacts of environmental change, The archaic agricultural practices accompanied by an unsustainable consumption of natural resources are responsible for massive land degradation (EPA 2003b). Deforestation and soil degradation are major causes of food insecurity and poverty in Ethiopia. Most of these arise from human and livestock pressure on land. About 70% of the total area of Ethiopia is dry, sub-humid or semi-arid and thus vulnerable to desertification (MOFED 2006). The mountainous parts of the country are prone to land degradation through forest and soil loss. This not only reduces the resilience of people to cope with environmental change induced shocks but also exacerbates the frequency and magnitude of dry spells and floods in times of extreme weather events.

One of the complicating factors of the environmental problem is poverty that turn environmental change induced hazards into disasters at national, regional, local and household level. For instance, the poor are more likely to occupy dangerous locations such as flood plains, river banks, steep slopes, reclaimed land and highly populated shanty settlements. The poor mainly depend on agriculture which, in turn, is dependent on the amount and distribution of rainfall. Even small changes in the rainfall amount and distribution could slash the agricultural productivity (EEA 2005).

In general, lack of awareness among the general public and decision makers in the country could negatively impact adaptation and mitigation efforts related to environmental change. Little information is available for the general public due to limited research undertaken on environmental change. A good example is the Plan for Accelerated and Sustainable Development to End Poverty (PASDEP I) and Plan for Accelerated and Sustainable Development to End Poverty (PASDEPII) (MOFED I PASDEP 2002 and PASDEP II 2006). These strategy papers promises to realize food self-sufficiency in the country. In addition, the strategy recognizes environmental change as one of the threats to the nation.

2.4.5. NATIONAL COMMITMENT FOR ENVIRONMENTAL ISSUES

Past experience has shown that programs and projects undertaken in different parts of the country have caused damage to the environment and to public health. This is because traditional project preparations and decisions were mainly based on short term economic and technical feasibilities and neglected the environmental and social as well as long term economic dimensions (EPA 2003c). Concern for environmental degradation in Ethiopia has been growing in recent years. The downfall of the past (Dirge) regime allowed a new system to take appropriate actions in order to turn back to learning and quickly accepting modern principle and rules of behavior governing international as well as bilateral environmental laws (EPA 2003b). According to Article 44 of the constitution (FDRE 1995) everyone has the right to live in a clean and healthy environment and the government will make every effort to provide such an environment. The constitution also holds the government and the people of Ethiopia responsible for the preservation of natural resources and maintenance of ecological balances. A number of proclamations and supporting regulations were made that contain provisions

for the protection and management of the environment which reflects the principles of the constitution (EPA 2007).

One of the main priorities of Ethiopia authorities was setting up the legal framework for the environment and establishment of the environmental protection Authority (EPA) by proclamation No 9/1995. According to this proclamation the environmental protection Authority (EPA) has the powers and duties to prepare environmental protection policy and laws, directives and systems necessary for executing and evaluating the impact of social and economic development projects on the environment follow up and supervise their implementation (EPA 1997).

EPA has taken the necessary steps and embarked on the establishment of an environmental impact assessment system for the country including the preparation of procedural and sectoral guidelines as a prerequisite for the approval of new development activities and projects. The major endeavors undertaken by the authority is preparing the first comprehensive statement of environmental policy for Ethiopia which was approved by the council of ministers (EPA 1997).

The environment policy is based on a growing concern for the degradation of the natural resource base, and takes into account how the base is effected by, and affects the overall productivity of the agriculture sector in the country. The policy listed priority of environmental problems, set the major mid and long term goals as well as envisaged the ways to achieve those targets. Based on the policy various rules and regulations have also been framed. Ten sectoral and cross-sect-oral directives enacted to tackle the problem of environmental protection (EPA 1997).

Ethiopia's environmental policy is largely grounded in international cooperation. It is based on internationally accepted legal norms and principles of environmental protection and built upon explicit policy planning, and envisages the ways and means of their achievement. In addition, Ethiopia has ratified many international environmental conventions and general principles of environmental regimes (EPA 1997). The Ethiopian and international environmental regimes indicate the relevance of accession to the main international environmental legal instruments from the point of view of Ethiopia's major environmental problems and priority. Despite provisions in the

Ethiopian constitution, providing for environmental protection and many statutory provisions, the environment degradation continues (EPA 1997).

The main cause for environment degradation is lack of effective enforcement of various laws and orders passed by the courts. It is evident that the policies alone are not sufficient to ensure environmental quality (World Bank 1992). Policies which deal with these problems need serious enforcement to be adapted to local circumstances. At the local level it is crucial to identify what local communities can do themselves, what they can do with assistance from outside, and what the government has to do. The country has a long way to go in identifying and implementing the appropriate policy measures (Daniel 1998).

Today, the necessity of environmental awareness and enforcement is more demanding and urgent than ever before. The first question we have to ask ourselves is why?

2.4.6. OVERVIEW OF ENVIRONMENTAL AWARENESS

In the media history of the country the media stayed under the scrutiny and control of the dictatorship governments that ruled the country for many years and there was low experience of media usage to the benefit of communities. The policies and legislations enabling the existence of diversified print and electronic media access were denied by the feudal system and the replaced junta for a long period (MOI 2006). Under these regimes, the media was entirely state controlled, with no private and public media service. Apart from these important aspects, there was also the lack of awareness and understanding about the liberalization of the media sector to be effectively used for different purposes (MOI 2006).

In response to this, the current ruling government tries to use a free and diversified media through press and broadcasting laws (MOI 2006 and EBA 2007). Following this and cognizant of the need to improved environmental information management and sharing the information to support environmentally sustainable development plans and programs in the country; the government of Ethiopia has recognized the need to establish an "environmental information system".

The need is pointed out in the environmental policy of Ethiopia (EPA 1997:22) and it has also been articulated in section 16.3 of the establishment proclamation of the EPA (2003). The proclamation has mandated the EPA to coordinate the establishment of information systems (EIS) for the purpose of networking, collaborations and building partnership between and among different environmental data custodians with in the country (EPA 2003:2). Given the fragile environmental situation of Ethiopia and the challenges facing to most environment and sustainable development planners and decision makers, the need to have environmental indicators is very urgent (Daniel 1998).

The need for environmental information is linked to the constitutional rights of Ethiopian citizens to be informed and to participate in decision making regarding to the well-being of the environment (EFDR 2005: Ar. 29), and the equitable utilizations of the goods and services generated from their environment. Knowledge and access to information are essential for effective environmental management and have significant impacts on the economy and the livelihood choices people make.

Developing countries need to be given time and space to develop. Even the poorest slum in many city of the developing world has a television set that shows life as it exists in the developed world, and that fuels aspirations and desires. As long as you have this major divide you are not going to be able to influence people in developing countries to move away from what they have seen as the good life (Corell 1999).

On the other hand, reports from developing countries on the state of student's (people's) knowledge and attitude about the environment and environmental problems seem to be meager (Dalelo 2007:189). According to Bekalu (1995) an enhanced perception of environments and environmental change should lead to the development of a sense of personal and community responsibility for environments and should foster the notion of people as custodians of the earth for future generations mostly in developing countries.

Environmental awareness envisions the increasing of awareness and understanding of the environment through formal and informal education. Environmental awareness capacity building indicated that most of Ethiopian local population and government officials may be aware of the degradation problems but not the root cause of the

problems (Bekalu 1995). Knowledge of the root causes of environmental degradation was not given much attention in the past since the emphasis was on raising public awareness about the environmental problems. Understanding the current status and root causes of land degradation are critically important and the government has to educate, spread awareness, involve and motivate everybody in the country to conserve the local flora and fauna, soil and water resource, and all other gifts of God which are national properties and belong to all and to any non-individual (Bekalu 1995).

The environment does not constitute one single issue, but many diverse ones which are not ordinarily articulated by the media (Hansen 2007:449). The media do not simply transmit messages to their audiences about the real world. Rather, they participate in the social construction of environmental problems by articulating culturally specific and encoded messages which are subsequently decoded and given meaning by their audiences within existing frames of reference (Burgess 1990). Environmental understanding is continually being transformed by the interactions of all the participants in this process.

There is the need for the community to intensify efforts to overcome environmental problems. This could be materialized through media works by creating effective influence on the community to bring about behavioral change. According to Burgess (1990) the media's ability to change the course of the environmental crisis is immense. The media has a critical role to play in helping to halt and reverse the future expansion of environmental problems and to maintain existing efforts in the community. By contrast, particular political views that are regularly marginalized from the media (like environmental issues) weaken the credibility of the parts championing them like the greens (Hiebert 2006). In addition, the challenges that the media faces, political or other development agenda is usually a priority and environmental protection is rarely high in the news agenda (Deacon 1999: 103). Most of the Ethiopian people are not aware of the greatest challenges facing humanity, such as environmental change and biodiversity loss, which have enormous implications for economic, social and environmental security. The significance of these issues is not reflected in media reporting (McQuail 1994).

The protection of the environment and the sustainable use of the earth's finite resource is a matter of direct concerns to every citizen. The media greatly shapes what the general population thinks about the environment. The media plays a great role in creating awareness (McQuail 1994). In contested environment, environmental news can be as much of an obstacle as a promoter of the environment. Often, the news does not go in to detail about the causes of an event, such as a flood disaster and spends much more time on celebrity of couple or terrorist event (Speth 2004). The media wants stories with conflict, personality and an event, and a flood crisis often do not provide such a story.

For instance, after a key environmental speech made by Prime Minister Meles Zenawi in New York in 2007, on Clinton's global initiative, the conservatives attempted to reclaim green issues from an increasingly influential green party and there was subsequently a dramatic increase in environmental coverage by the local media. After a time, when Prime Minister stopped talking about environment local, media coverage dropped. Therefore, many environmental events in the country do not make the news. The details of the story are at the editor's discretion and they can select and deploy facts about environmental debates and conflicts that do not necessarily reflect the environment events or awareness that should be the focus (BBC 2007).

The Ethiopian public media (print and broadcast) has a long history. However, there are currently less than a dozen radio stations and print media, nearly all of them in and around Addis Ababa. These media's air time on environmental protection should be considered differently when calculating air time cost (as opposed to sport or music) and initiate fund-raising to secure more money for environmental protection programs (EPA 1997).

2.5. SIGNIFICANT ROLE OF MEDIA ON ENVIRONMENTAL AWARENESS

Critical to the realization of any novel idea of relevance and practical translation is the matter of creating and raising its awareness. In the domain of environmental issues, environmental education plays a key role in sensitizing people on the need and significance of programs carried out to address environmental problems confronting them.

Morgan (1997) states that environmental education increase public consciousness and knowledge of environmental issues and challenges. Dalelo (2007) is also of the opinion that environmental education is necessary to increase public awareness about effects of human activities on the environment. It is necessary to increase the public's sensitivity to environmental and development problems. People profit through environment education, by gaining an understanding of how their individual actions affect the environment, acquiring skills are useful to evaluate various sides of issues, and becoming better equipped to make informed decisions.

Studies indicate that there is very limited environmental education in Ethiopia (Shibru and Kifle 1998). Daniel (1998) revealed that environmental education has become non-existent in the curriculum of colleges and schools. According to Dalelo (2007:84) the inception of environmental education in Ethiopian schools and teachers training institutes is inextricable related to the efforts made by the government and non-governmental organizations to control the rate of environmental degradation. This situation thus makes the media a significant tool in raising the awareness of people on environmental matters.

According to Morgan (1997) the media is a significant source of environmental information for people. Morgan (1997) postulated that a significant amount of the public's knowledge of environmental issues is likely to come from the media. According to him much of what people hear about issues such as the greenhouse effect, global climate change, ozone depletion, water and air pollution, and other environmental threats, is likely to come from the media (or from others who have heard it from the media), since our first-hand knowledge of the state of the environment is likely to be minimal.

In fact, it has been suggested that the media is frequently the only source that people use to gather information about environmental issues (McCombs 1995). It could take up a crucial role by providing technical information about relevant environmental problems and possibilities. Arcury (1990:300-304) suggested that environmental quality are unobtrusive issue (issues that humans do not directly experience) which by their nature, are more susceptible to a significant media agenda-setting effect, and consequently the public needs the media to tell them how important an issue on the environment is.

Hansen (2007: 50) stated that “media discourses help to shape and set the parameters of discussion and understanding of environmental issues” and for resulting social and policy responses.

Media coverage of environmental issues can heighten or diminish the amount of attention the public pays to these issues and strongly influence the political discussions that take place about the environment. In the past, the role of media in human society was seen essentially as sources of information and to influence people. It is now being proposed that the media should be understood as a process of social interaction through a balanced exchange of information and experience. This implies participants critically analyzing the role played by the media in environmental protection and progressive management (Hansen 2007).

As a result of the significant role the media play in developing the public's understanding of environmental issues, it will give the confidence to act appropriately leading towards sustainability. Some researchers have concluded that the news media not only play a significant role in modeling the public's knowledge of environmental issues, but also play a part in the public's likelihood to participate in environmentally-friendly behaviors. All stated issues indicated that the media are a significant tool in raising awareness of people on environmental issues. Article 4:10(h) of the environmental policy of Ethiopia which was approved by the council of ministers in 1997 stress the role to be played by the media in raising environmental awareness (EPA 1997:25).

According to the World Bank Group (WBG 2005), radio, television and newspaper are considered the major media outlets in developing countries. The study also added that as is the case in developed countries measuring audience size by considering the number of households with radio/ television sets and distribution size of newspapers would determine the number of audiences in poor countries. The study argues that communal viewing, listening and reading habits are far more common in poor countries than wealthy ones. The actual proportion of the population that consumes radio, television and newspapers is likely to be considerably higher than the proportion that owns a set and the distribution quantity (WBG 2005: 30-31).

In poor countries like Ethiopia specifically radio tends to be an effective means of mass communication when compared to other media outlets. As Laekemariam (2000:185) notes, in the case of Ethiopia where there is rugged topography, high prevalence of illiteracy and poor transport, radio is the preferred means of mass communication. Moreover, most scholars agree radio is inexpensive with a small initial cost and operation is simple. From the perspective of the listener, radio sets are cheaper than television to buy (Mickael 1994:5). It is also the most cost effective way of providing environmental information and a voice to all members of society including the marginalized ones.

In Ethiopia, modern media has been present for nearly seven decades. Radio and television went on the air for the first time on January 2, 1934 (MOI 2006). One of the earliest programs was an agricultural program that focused on environment related issue. The program operated under different names during different periods, including *Arsoader* (farmer), *Gibrina* (agriculture) and currently *Awedegeter* (rural forum) and *Akababi-ena-lemat* (environmental and development). Currently the Amharic Service of Radio Ethiopia transmits two environmental programs (*Awedegeter and Akababi-ena-lemat*) per week. Most television and print media coverage of environmental issues are event based (MOI 2006). Despite the relatively long period of media presence in the country, environmental degradation still poses a threat to sustainable agriculture and forestry.

Numerous studies have criticized the quality of environmental news coverage. Wezel and Haigis (2000:523- 534) wrote that media coverage of the environment is poisoned by inconsistencies, distortion, and misrepresentations of the data. Buell (2005) noted that environmental news coverage is typically devoid of scientific explanations and pro-environmental mobilizing information and has been crisis or event oriented. Furthermore, coverage of environmental issues had centered on dramatic, improbable environmental risks and has emphasized problems and conflicts instead of solutions.

News coverage is an important means of debate and a source of information, so that appropriate decisions can be taken on environmental matters. But, unlike the media in the developed world, the Ethiopian media is inefficient in the face of the worsening environmental conditions (MOE 1997:14).

One explanation for the alleged poor quality of environmental news coverage is the assertion that journalists are ill-prepared and sometimes incapable of accurately reporting environmental issues. Their reporting relies on authoritative sources (Cohen 1994) and they have no interest in reporting what is really going on (Hiebert 2006:110). Hiebert (2006) added that there is a shortage of journalists who specialize in environment and related subjects in the country. Cohen (1994) noted that journalists themselves admit that their coverage of environmental issues is weak. In an ideal world the media has to be objective and journalists need to be professional but in reality this is not always the case. At times the media succeeds and at times it fails to meet its role and objectives.

According to Gore (2006) the media must do more than present myopic and sensationalized information about the environment. They must present detailed information in a contextualized, accurate manner so as to equip the public with the knowledge they need to guide their understanding and actions toward the natural environment. Hiebert (2006) stated that the media has a responsibility to inform and to educate, to tell us not only what is happening today but also why it is happening and what it will mean to us today and tomorrow.

Overall, there is ample research portraying the media's inaccurate, misconstrued representation of environmental issues. Collectively, these assertions imply not only that the news media play a significant role in developing the manner in which media users think about environmental issues, but perhaps more importantly, that the news media are not fulfilling this role acceptably. The review above highlights the need for more research to be conducted on the media's role in disseminating information about environment issues. Consequently environmental based news coverage and the effects of this coverage on audience will be explored in the next section.

2.5.1. THE ROLE OF DIFFERENT MEDIA ON ENVIRONMENTAL AWARENESS

The emphasis in this research is on the role of the media in increasing environmental awareness with the concept of media being a very broad one. The role of the modern media is one of the most important factors underlying the knowledge of environmental problems. This can only be done on the condition that the media are accessible to a

large proportion of the population, a specific period of time is allocated to environmental issues, and people are interested in the information on ecological issues provided by the media so that they view or listen to the corresponding programs as well as read newspaper articles or other written publications dealing with environmental issues (McQuail 1994).

According to Dobson (1997) media sources can be categorized as modern media (radio, television, newspaper and magazines), institutional media (schools, government officials or non-governmental organizations work), and traditional media (family members, friends and neighbors and Village leaders). In the following sections these three different kinds of media (modern media, institutional and traditional media) will be discussed and their efforts to create environmental awareness will be examined to determine how successful or unsuccessful they are.

2.5.1.1 THE ROLE OF MODERN MEDIA IN CREATING AWARENESS

The media considered here, in trying to explain environmental awareness, are radio, television and newspapers due to the fact that these are the most widely and frequently used modern media in Ethiopia. Radio is cheap, most easily accessible and its signals cover almost 83% of the country (ERTA 2005). Some studies indicated that the frequency of listening to the radio in urban area is relatively low. The role of the radio in creating environmental awareness is not very important due to the fact that there are only a few regular environmental programs on the radio. Although there are two Amharic service, radio programs on the environment should be broadcasted by the rural and agriculture development ministry in collaboration with EPA (EBA 2006).

Pollution of the environment is only unsystematically tackled in media programs designed for special target groups, such as people living in cities, event-based campaigns and industrial workers. The issues mentioned and the ways they are dealt with are naturally adjusted to the target group of the program. Sometimes environmental programs focus on scientific explanations for addressing local problems like air, water and noise pollution. On the national level the broadcasting of news on environmental issues is very scarce and even when news on the environment is broadcast it is most mostly event-based (EPA 2007).

Due to the high level of illiteracy in Ethiopia the modern media or electronic media are in a key position. The CSA (2008) census has shown that both radio and television are perceived as authoritative and friendly media by most of the population in the country. There are about 7 million television sets in Ethiopia which provide coverage to nearly 11.9 million people (EBA 2006 and CAS 2008) and television is one of the most powerful effective means of propaganda and persuasion. Television has become a new status symbol even in remote village. In rural areas prosperous people have at least some access to a television. The rapid growth rate of television sets will probably increase the importance of television in the future (EBA 2006).

A further advantage of television is that it is an educational media that is helpful in teaching practical work. A televised presentation can be as clear as a face-to-face demonstration. The radio and television program currently broadcasting makes sense of the complexities of this rapidly evolving landscape and are helping listeners to understand their place in it. The national channels are regulated by the EBA and required by law to offer environmental program. National radio is the most important channel of dissemination that reaches almost all over the country. It has two regular programs on the environment. Each of the weekly broadcast programs (*Awedegeter and Akababi-ena-lemat*) scientifically focuses on special environmental problems (EBA 2006).

What is true for radio is also true for television programs on environmental issues. They are tackled in the news as well as in children's, health, rural, agricultural and educational programs. Politicians have recognized the potential of television in creating environmental awareness but the use of televisions is costly. It costs quite a lot to produce films on environmental issues on a regular basis. This makes television less efficient for creating environmental awareness (EBA 2006).

The Ethiopia public newspapers are published in four languages and dialects (EPA 2007). According to the EPA (2007) 17 000 copies are distributed over the country per day. *The Herald* and *Addis Zemen*, has abandoned its weekly column which started before and none of Ethiopia's daily or weekly newspapers have a regular space reserved for environmental news. The focus is mainly on local and national issues like political, economic and social as well as sport and music. In some columns, global

environmental problems are mentioned occasionally if they are for example the topic of international conferences.

In general, the approach of journalists when writing on environmental issues was neither educational nor motivational and did not offer scientific explanation or background information (exceptions are environmental issues that are on at the top of the political agenda or event based). The approach is to inform their readers on the latest trends in political news related to the environment. A slight tendency towards motivational coverage of environmental issues can be observed in The Herald (opinion column) the English language news paper (EBA 2006). Despite all the limitations of media in increasing awareness of environmental problems, the role of media in that respect is still an enormous one.

2.5.1.2 THE ROLE OF INSTITUTIONAL MEDIA IN CREATING AWARENESS

Environmental Education (EE), is a relatively new discipline, aimed primarily at bridging the gap between the various disciplines thereby making instruction meaningful, integrated and problem oriented (Dalelo 2007:39). According to Dalelo (2007:39) environment education is not entirely new. It can, therefore, not be considered another type of education, rather, it stresses renewing the emphasis on the environmental and related issues in the existing system of education.

According to the environmental policy of Ethiopian, environmental education is an integral component of national policy to promote the teaching of environmental education on a multidisciplinary basis and to integrate it into the ongoing curricula of schools and colleges as well as at tertiary level. The policy is needed to create awareness and consciousness of the environment at all ages and within all sections of society (Dalelo 2007).

Environmental consciousness in schools and colleges should be integrated into the entire education process. According to EPA (2007:24 article 4:10a) there was no separate environmental education policy and plan of action at state level. Due to this, environmental education had been influenced by politics and plans of other sectors and strategies. By scanning the curriculum evidence has been found that environmental

education concepts in terms of awareness and knowledge seem to be adequately covered, while the development of skills for the study of environmental ethics, attitudes and actions need strengthening. Some studies concluded that the emphasis of their efforts was rather to create awareness of environmental issues and to give children concrete suggestions on how to behave in a more environmental friendly way than explaining the scientific background of environmental problems (Hiebert 2006).

The concepts of environment in the context of Ethiopia's primary and secondary education is extensively covered in subjects like science, geography, economics and social studies, but there is no special subject focusing on the environment and consequently no specific grade for knowledge on environmental issues. Local or national environmental problems, like pollution of air and water, pollution by waste, depletion of the ozone layer or the greenhouse effect are observed. This is more of a practical and motivational rather than a scientific approach (Hiebert 2006).

A new approach to address environmental issues at school is the eco-club scheme (MOE 1998). The most important difference to normal classes on environment is the project manner used to address environmental issues. These projects that are suggested by the EPA (2007) tackle a wide range of topics. The projects aim is to create a green and clean surrounding at the school by collecting waste and planting trees and flowers. Most of the projects urge the children to deal with environmental issues they are confronted with in their everyday life and give concrete suggestions how to behave in an environmentally friendly way. The emphasis of EPA (2007) is that among the younger part of the population awareness of environmental problems is quite high, but this awareness will only result in an environmental beneficial behavior if the students are told how to react.

The eco-club scheme is a very successful new approach to sensitize children to environmental problems in a motivating manner that could have lasting effects on their behavior towards the environment. The question is, however, whether the intensified efforts in teaching environmental issues at school level will be able to enhance the level of environmental awareness and lead to a changed behavior towards environment. The contribution of classroom education to the prevailing level of environmental awareness at Ethiopian schools (like the introduction of eco-club scheme) definitively proves that as

far as educational policy is concerned promoting environmental issues is important (MOE 1988). The efforts to teach from an environmental perspective and awareness creation will be assessed in more detail in chapter four.

2.5.1.3. ADDITIONAL FACTORS EXPLAINING ENVIRONMENTAL AWARENESS

Environmental education via the media (defined in the broad sense mentioned above) is supposed to play an important or even dominant role in creating environmental awareness. There is however no doubt that there are additional factors influencing the level of environmental awareness. Since they are not the topic of this study only some of them will be discussed very briefly.

The degree to which environmental issues are set on the political agenda is not only an indicator of the prevailing level of environmental awareness itself, but will also influence the general awareness among the population. At the national level of politics, Ethiopian constitution, legal and institutional arrangements concerning environment forms a good basis for the protection, but implementation still remains a huge problem. In past decades the attitude of people was dominated by development and do not have a culture of pollution control. The total insensitivity at the administrative level, which persists still, has given the nation a very heavy backlog of environmental degradation (Hiebert 2006).

Although there is no doubt that the traditional media create awareness (Buell 2005) through direct interaction and communication (Hiebert 2006) of an individual with his family, friends, neighbors or environmental activists. Another perspective would stress that the frequency of discussions on environmental issues or, in more general terms, the use of traditional media is more an indicator of the prevailing level of environmental awareness than a factor contributing to it.

In addition new religious convictions and traditions, highly influenced by the cultural context of an individual, may also contribute to the level of environmental awareness and influence people's behavior towards the environment. The religious teachings of Christianity, which is dominant in the country, contain messages about the importance of nature and how to live harmoniously with a person's surroundings (Banterer

2002:113). Exposure to environmental pollution in everyday life could be another factor contributing to an individual's level of awareness of environmental pollution. Buell (2005:22) concluded that the importance of education through modern media and institutional media in creating environmental awareness is very vital, because their own experience of pollution in every day life does not seem to be able to sensitize people towards their natural environment if further information or communication on environmental problems does not take place.

2.5.2 AGENDA-SETTING AND FRAMING ROLE OF MEDIA FOR ENVIRONMENTAL AWARENESS

An understanding of the agenda-setting and framing role of local and national media calls for some form of theoretical framework, in order to explain why and how the media play an environmental awareness creation role. The agenda-setting and framing theories have been developed by communication scholars in their examination of media contents. McQuail (1994) says that these ideas of salience and framing provide frameworks through which the degree of issues can be examined and explained. In this regard, the concept of agenda setting and framing can be said to be a component of environmental communication theory, particularly in the study of environmental coverage.

Agenda setting can be described as a process through which certain issues are more significant than others. McQuail (1994:426) explains that the media provide relevant attention to issues in news coverage by influencing the rank order of public awareness of issues and attribution of significance, which, in effect could influence public policy making. This means the examination of agenda-setting can offer an explanation of why information about certain issues are addressed frequently while other issues are event based to the public, as well as how public opinion is shaped. The perception of many communication scholars is that media system in developing countries often deemphasizes certain issues, with only some light coverage, and others rarely mentioned them or totally neglected such issues (Peterson 2003). By influencing media users to focus on a selected agenda and think in a certain way, the news media are thought to be engaged in what can be called indirect government interventions. This reduces them to mere propaganda machine of incumbent governments to distribute political power among societies. According to Peterson (2003:249) people's opinion of

reality are entirely contingent on the information available to them. It is therefore important to identify the agenda's and forms used by media system in order to understand what and how environmental issues are covered.

Like agenda setting theory, framing theory also provides an explanation about the critical role the media can play in influencing human perception of issues and events. The framing theory highlights how the media urges users to think in a certain way about the content they disseminate (McQuail 1994:430). In this sense, framing is not about facts but rather about the meaning it imposes on the reported facts. Framing, therefore, arranges a set of information in certain way so as to impose a definite meaning on it. Agenda setting and farming techniques indicate that media are not only pervasive in their presence but also persuasive in their ability to focus public attention on specific issues. Cohen (1994:97) has conceptualized this theory as follows:

Because of newspapers, television, and other media, people are aware or not aware, pay attention to or neglect, pay up or down grade specific features of the public scene. People tend to include or exclude from their cognitions what the media include or exclude from their content. People tend to assign an importance of what they include that closely resembles the emphasis given to events, issues and persons by the media.

Cohen (1994:13) argued that media sources may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its audiences what to think about. From these perspectives on agenda-setting and framing it can be concluded that the audience not only learns same facts about the "environment" from the media agenda, but also learns how much importance to attach to those facts on the basis of the emphasis placed on them by the news media. This information on agenda-setting and framing can be used to assess the role of the media in developing the public's disposition toward environmental issues and shaping debates in the country.

2.6. CONCLUSION

The literature review in this chapter provided a glimpse of the current research on the role of the media in creating environmental awareness and providing information for environmental protection. The literature review clearly indicated that environmental

change is very likely the biggest challenge that the world has ever faced. The scales of the problem as well as the scale of the response defy comparison. Unless an enormous amount of work is done to reduce environmental problems in the near future, it is very likely that many will suffer. It is therefore important to do research on what can be done to create environmental awareness and the consequence of such awareness. This will be further investigated in this thesis.

CHAPTER 3: RESEARCH PROCESS AND METHODOLOGY

3.1. INTRODUCTION

This chapter looks at the characteristics of the methodologies utilized in this research to investigate the role of the media in creating environmental awareness among the community in the study area and the effectiveness of the media in providing information on environmental protection. The objective to achieve was to find out what the level of environmental awareness is in the study area and what the actual and potential role of media is in terms of its commitment to environmental issues. With commitment, the researcher means whether it fulfills its purpose of having an impact on environmental management, public awareness and public involvement in environmental debates.

In order to come up with conclusions and recommendations, the researcher collected information from assumed audience, documents and indigenous experiences. To reveal the actual and potential role of the media in environmental issues, a survey study method was used and details are provided within the framework of the available methods and theories. In addition, the researcher had followed detailed procedures of data collection, analysis, interpreting and writing by using both quantitative and qualitative methods (mixed method). A detailed description is provided on the research strategy and design, how the data collection instruments were developed and presented along with study location, selection of sites and sample households, data collection and analysis. The specific research objectives and research questions are also discussed.

3.2. JUSTIFICATION OF INFORMATION GATHERING PROCESS

A comprehensive set of information was collected for this research by using more than one information collection approach. According to Strelitz (2005), triangulation in social research can be described as the use of more than one method of investigation and more than one type of data. Within this approach, quantitative and qualitative research methods are seen as different strategies of examining the same research problem.

According to Creswell (2003), researchers must “combine methodologies as different rounds raise different questions, some of which require qualitative and some which

require quantitative techniques". The methodological triangulation approach, which according to Creswell (2003) refers to the use of more than one method to investigate the same research problem, was therefore deemed appropriate to meet the study's data information needs. In this case, the triangulation technique was used to confirm cross-validate, and corroborate the findings of the study. The study used these methods separately as a means to clarify the weaknesses inherent within one method and with the strengths of the other method.

Creswell (2003) support this idea, by adding that this approach strengthens research findings through the combination of information sources and analytical approaches. In view of this, it is possible to use both quantitative and qualitative methods for a single research study. Methodological triangulation overcomes any bias, which is inherent within a single method approach and adds value to the theoretical debate (Creswell 2003:210). It also has the advantage of complementing the limitation of one method with the other's strengths. These methods were used because both are important to identify practices of media in creating environmental awareness and to apply relevant instruments that elicit answers for research questions.

The tradition of using mixed method is not new to communication researchers. Many scholars use it to obtain comprehensive information of cases under investigation. For instance, Savage (1993:166) used qualitative and quantitative methods in his research on the role of the media on different public affairs in the Dominican Republic. Similarly, the Population Media Center (PMC) (2006) used this approach when it conducted research to find out the impacts of a media program on its audience. In both cases, the mixed method brought successful results.

According to Jensen (2002:370), the favorable approaches for the study of media and environmental awareness are case studies and mixed approach of quantitative and qualitative methods. In such way, qualitative and quantitative data required to answer the research question included primary data collection through a questionnaire and interview. A sample survey was used as the main tool for data collection from the identified respondents in five (5) villages (quantitative method). Focus group discussion

and in-depth interviews (qualitative methods) complemented the data collection to investigate the core ideas of the respondents in the study area. The integration of these methods enabled the researcher not only to investigate the survey responses but also to obtain data from group discussion and key informants. In addition, document analysis was used to gather information from the theoretical framework, relying on books, scientific journals, discussion papers and internet sites.

In view of this, the researcher was convinced that through mixed approach, the quantitative findings that will be obtained from a field survey would be explained deeply by the qualitative data. The other reason for choosing the mixed method is to expand an understanding from one method to another and to confirm findings from different data sources. Generally, the appropriate data required to achieve this includes secondary data sources such as various policies and strategic documents related to the media and environmental programs. In addition, primary data collected through a questionnaire and interview from household survey respondent, focused group discussion and key informant interview. In the next section, an attempt is made to clarify how each method was used in gathering data.

3.3. DESCRIPTION OF THE STUDY AREA

The area selected for the research is the *Kidded Gamela* District (KGD), which comprises seventeen, local administrations and one city administration (refer to section 1.2.2). The study area is located in the *Kembata Tembaro* zone (KTZ), south Ethiopia, about 352 kilometers south of the Ethiopia capital, Addis Ababa (refer to figure 3.1). The strategic plan of Kidida Gamela district in 2006 states that the study area mainly comprises rural settlements with the altitude ranges between 1 500 and 3 028 meter above sea level. Average daily temperature fluctuates between 15 and 27⁰C in summer and between 13 and 25⁰C in winter.

The background information on the study area, and the map in figure 3.1 was obtained from the Ethiopian mapping authority (EMA 2010) and other secondary information was gathered from the 2008 census survey of Central Statistics Authority (CSA 2008).

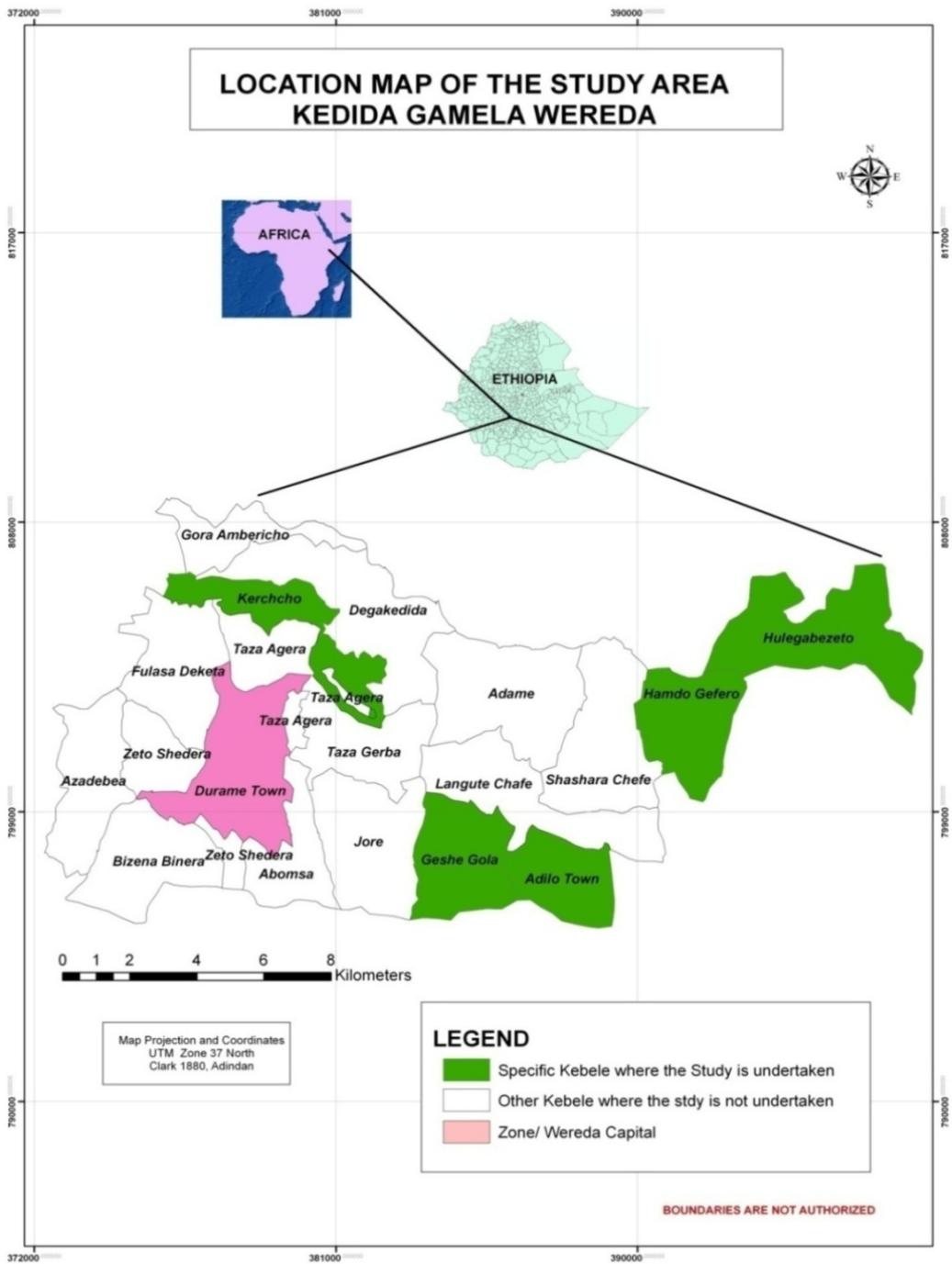


Figure 3.1: Map of Kidida Gamela district showing study area of 5 *kebeles* (villages) (Source: Ethiopian Mapping Authority 2010)

The study area offers an ideal geographic location for the research as the area represents precisely the kind of density of population in the country where environmental tensions are played out. The selected *wereda* has 90 197 people (CSA 2008). This is about 13.2 percent of the total *Kembata Tembaro* zone population. It was further estimated that 50.1 percent are women and 49.9 percent are men. The district has a relatively large population under the age of 15 years with 48 percent of the population classified as youthful (CSA 2008). According to the KGWARD (2007:10) annual assessment report, the population of the *wereda* (KGD) is very dense, ranging from 400-600 people per square kilometer in the highland part of the district. Due to this, there are serious land management problems that may be reflected in environmental outcomes as well as the manner in which communities address environmental issues. The district encloses 168.14 Km² which about and out of the total area 32.28 Km² are degraded (KGWARD 2007). The research will be limited to the rural district of five villages. Although the urban area in the KGD is also equally vulnerable to environmental problems, is not included in this study.

The study area has been selected on the bases of examination of feedback (personal assessment and telephone records) from Environmental Protection Authority (EPA), ERTA and Zonal administration as well as a prior discussion with the deputy director of the EPA and media producers (editors). Familiarity with the area and the work experience of the researcher, as well as scattered settlement situation (dry and semidry) in the selected area, were secondary criteria. This may ensure that a range from one extreme to the other is included, such as degraded and relatively less degraded environmental conditions. In addition, the media program on the environment such as *Awedegeter and Akababi-ena-lemat program* and *Addis Zemen* Amharic daily newspaper will be the focuses for the content analysis. Within the geographical area of the district, there are 17 local administrations and 9 to 11 villages or *Budin* in each local administration. The study covers the five local administrations (*Kebele*) of *Addilo, Hamdo-Gefero, Holagaba-zato, GesheGola, and Kerchicho*, which is the lowest administrative body in the Ethiopian government political hierarchy.

3.3.1. KERCHICHO AND GESHEGOLA (VILLAGE ONE AND VILLAGE SEVEN)

The area was selected for the study as its natural resources were depleted because of centuries old backward agricultural practices and deforestation. In the area, there are almost no natural forests except for some plantation of exotic tree species. The area has been affected by recurrent droughts (famines) in the past three decades. The rainfall distribution is irregular and it is unpredictable. Soils in this area are shallow (Belay 2000), and the main crop produced in the area are maize, wheat, and *teff* which require intensive tilling of the land, consequently the soils are susceptible to erosion and the area was relatively degraded. The research was conducted in two smaller villages from the selected two local administrations of the district (village one and village seven). In these two villages, there are hills and mountains with little vegetation cover. Most hilly farmlands are terraced. The area is prone to drought and many framers still depend on food aid to survive. Particularly, in 1983 / 1984 thousands of people died of starvation (DPPA 1987). Some of the environmental situations described above are depicted in figure 3.2.



Figure 3.2: Relatively degraded environmental situation in GesheGola (village seven) (Source: Photograph captured by Researcher in 2010).

3.3.2. Holagaba-Zeto, Hamdo-Gefero and Adillo (Budin four, village three and Budin six)

Holagaba-Zeto, Hamdo-Gefero and Adillo are located 25 km east of the district capital *Durame*. There are still remnant natural forests covering the hills and mountains in this area. Few of these hills are protected by the local administration and village guards and due to the increasing population pressure in the area, some people are encroaching into these forests. Most farmers cultivate the slopes and there are signs of erosion. Most of the soil and water conservation projects had positive impacts on the physical environment in the study area (Dalelo 2007). Some projects were considered as a model revealing the possibility of turning a barren land to green forest. In some cases, the projects failed to consider community interests. The farmers in the area mostly grow some perennial cash and main crops such as *teff*, maize and wheat.



Figure: 3.3: Highly degraded environment situation in Adillo (Budin6) (Source: Photograph captured by researchers in 2010).

In general, the two areas have the same histories, as far as natural resources depletion and droughts are concerned. The environmental situation and population density, educational background, economic situation and media access were all considered in the choice of the study area. The study also gathered facts on the protection, care and

mitigation of environmental problems, and the level of awareness to tackle these problems from the local administration of the selected villages.

3.4. METHODS AND PROCEDURES OF DATA COLLECTION

3.4.1. METHODS

Strauss and Corbin (1994) commented that the sources of information for all qualitative research are similar and include such modes as interviews and field observation. The information collection methods on the role of media for the environment were based on the knowledge and realities of the study area. Green and Hebron (1988) state that multiple methods and approaches are in generally lead to multiple realities. The approaches used in this research are primarily in the form of sample surveys that are supported by focus group discussion and in-depth interviews. The specific techniques, which will be used, are described below.

3.4.1.1. SAMPLING

Sampling is used for the purpose of "making estimated assertion about the nature of the total household population from which the sample has been selected" (Forum for Social Studies 2004:16). With this understanding, the researcher used sampling because it is not possible to survey the entire household population with the budget and time in hand. A sample was drawn from representatives of the selected villages. Sampling was used to select households in the study village. Finally, an individual from each household was picked by employing purposive sampling method. This sampling method will ensure the spread of samples across the households and minimize biases of any sort what so ever (Forum for Social Studies 2004).

To ensure the research objectives, respondents within the survey were found in a variety of ways. Initial contact was made with the development agents of Agri-service Ethiopia to identify research participants from a list of households in five villages or local administration. The participants in the study were identified using snowball and purposive sampling techniques .This is because there were difficulties in locating the target population from the list provided by the development agents of the Agri-service

Ethiopia. In purposive sampling, the selection of participants from the household was done based on the research objectives and the empirical assessment of the reasonableness, availability and / or accessibility of participants. The development agents of Agri-service Ethiopia found those farmers that are easily accessible and that were willing to spare their time and give valuable information to complete the study.

In addition, respondents were selected for the study taking the different topography and altitude of the villages into consideration. One of them, village 3, *Budin 6 and Budin 4* in *Holagaba–Zeto, Hamido Gefero and Adillo*, is on average 25 km away from the *wereda* capital, which is at a lower altitude. Many of the farm activities in these study areas are on level ground. The other respondents, village 7 and village 1 in *Kerchicho* and *GesheGola* are located at a higher altitude and are about 15 km on average away from the *Wereda* capital Durame. It has rugged topography and most of the farmlands are on the slopes.

The two topographically different study areas were selected by purposive sampling to see if the responses of the research participants would be different even within the same *wereda*. The researcher believes that a difference in topography has a strong relation with the extent of environmental deterioration. In the process of sampling, each village was given a quota of 15 to 21 (according to its household size) from the planned total sample size. From each village 15 to 21 participants were purposefully selected. This was done by consulting the officials of the local administration and agents of Agri-service Ethiopia for relevant data such as lists of heads of households for the selected villages. A list with 450 households from which 90 households from each village were selected was brought to the researcher by the local administration and development agents of Agri-service Ethiopia. All the villages were similar in many aspects. A detailed list of the sampled areas and the number of respondents, which were identified and recruited in August and September 2009, are provided in table 3.1.

Table 3.1: The selected study area and sample sites (Source: KWARD 2007 and CSA 2008).

S/ N	Local Administ ration (L.A)	Total popul ation	Total House Hold	selected L.A from seventeen L.A	Selected L.A, villages & study population				
					House Hold populati on	No of village	Selected village	Selected village house hold populati on	Ratio resea rch partic ipants (20%)
1	Holagaba-Zeto	5181	950	Holagaba-Zeto	950	11	Budin4	90	18
2	<i>Teza-Garba</i>	5186	840						
3	<i>Azei-Dobbo</i>	5683	1010						
4	Kerchicho	5161	870	Kerchicho	870	10	v ₇	75	15
5	<i>Odame</i>	5371	1004						
6	<i>Jore</i>	5526	1190						
7	<i>Bennerra</i>	5361	1100						
8	Hamdo-Gefero	4961	830	Hamdo-Gefero	830	9	v ₃	105	21
9	<i>Shashera</i>	5071	895						
10	<i>Langutte</i>	5051	835						
11	<i>Teza-Garba</i>	5471	1115						
12	Addilo	5181	998	Addilo	998	11	Budin6	85	17
13	<i>Fullasa-Dickita</i>	5284	1019						
14	<i>Abbonsa</i>	5590	1020						
15	<i>Dega-Kiddida</i>	5576	1140						
16	<i>Zeto</i>	5382	1002						
17	Gesh Gola	5183	990	Gesh Gola	990	11	v ₁	95	19
	Sum total	90,187	16,808		4,638	52	5	450	90

A large middle-aged group (between 18 and 56 years) and a decreasing portion in the older age groups characterized the demographic profile of the respondents used in the research. In addition, the study focuses on household population. The gender composition of the study indicates 30 percent are female and 70 percent are male. Education was also a key determining factor for inclusion in the sampled respondents from the overall sample.

Media representation on environment issues was used as the framework for the study. The data was collected on the media coverage in environmental issues in general and

Awedegeter, *Akababi-ena-lemat* program and *Addis Zemen* Amharic daily newspaper specifically. The researcher assessed the air time and space which media like television, radio and the *Addis Zemen* Amharic daily newspaper, provide information on environmental issues and what kind of issues were tackled. All the content and content forms (news, editorials, reportages, interviews and commentaries) in the *Addis Zemen* Amharic daily newspaper were taken as sample. In relation to time, the sample period extended over a period of five years beginning from September 11 (the beginning of Ethiopia new year) 2006 to August 30, 2010.

In this way a sample size of 120 editions were selected from an approximately total edition of 1800 over the period of five years. Twenty-four editions (two editions per month) were taken per year in order to evenly distribute the total sample over a period of five years. The September 11 2006 (week one Monday) edition was selected purposefully as the first day, and from there a purposive sampling method was used to avoid unnecessary repetition of days and weeks in the selection progresses.

The purpose of using this sample period was to limit the risk of disproportionately large or small amounts or coverage of environment issues that may appear during a shorter sampling period. In addition, the researcher selected and recorded seven *Awedegeter and Akababi-ena-lemat* radio programs that focused on environmental issues and analyzed the recorded programs. All the programs of these two shows that were produced in a one year period from September 11 2006 to July 31 2010, was examined to see to what extent environmental issues were covered in the programs. To avoid unnecessary bias or repetition of one day every other week, the seven days of the week (Monday to Sunday) were used alternatively every other year during a period of five years as presented in Table 3.2 below.

Table 3.2: Distribution of sample of weeks and Days (newspaper) from Addis Ababa office (Source: Sample taken by researcher from press agency in 2010)

Years	Months of the Year											
	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
2006	W- 1M	W-2T	W-3W	W 4Th	W-1F	W-2S	W-3ST	W-4M	W-1T	W-2W	W3TH	W-4F
	W-3T	W-4W	W 1Th	W-2F	W-3S	W-4St	W-1M	W-2T	W-3W	W-4 R1	W-1F	W-2S
2007	W-2w	W3T H	W-4F	W-1S	W-2St	W-3M	W-4T	W-1W	W 1Th	W-4S	W-4S	W 1SU
	W-4 TH	W-1F	W-2S	W-3St	W-4M	W-1T	W-2W	W 3Th	W-4F	W-2St	W-2St	W-3M
2008	W-1F	W-2S	W-3St	W-4M	W-1T	W-2W	W-3Th	W-4F	W-1S	W-3M	W-3M	W-4T
	W-3S	W-4St	W- 4m	W-2T	W-3W	W-4 Th	W-1F	W-2S	W-3St	W-1T	W-1T	W-2W
2009	W-2St	W-3m	W-4T	W-1W	W 2Th	W-31	W-4S	W-1St	W-2M	W-4W	W-4W	W-1Th
	W- 4M	W-1T	W-2w	W3Th	W-4W	W-1S	W-2S	W-3M	W-4T	W-2Th	W 2Th	W-3W
2010	W-1T	W-2w	W-3th	W-4F	W-1S	W-2St	W-3M	W-4T	W-1W	W-3F	W-3F	W-4S
	W-3W	W-4th	W-1F	W-2S	W-3S	W-4m	W-1T	W-2W	W3Th	W-1S	W-1S	W-2St

3.4.1.2. FOCUS GROUP DISCUSSIONS (FGD)

Bringing several different perspectives together in one contact session is a primary objective for conducting a group discussion (Morgan 1997). The writer notes that focus group discussions allows a researcher to see how people interact with regard to a topic, how they react to disagreement and identify socially unacceptable attitudes and behaviors. The group discussions provide an efficient means for focusing the researcher attention on the more salient aspects of the topic to be researched. The focus groups, in the current research, are useful because they facilitated an investigation into what and why people think the way they do and an exploration of topics that have little information available in the literature.

Strelitz (2005) provides a comprehensive definition of focus group discussions. He argues that the use of focus groups in communication studies has a long history but their role in investigating media audiences only become widely used since the early 1980s. Strelitz (2005) noted “they [focus groups] have become closely associated with content analysis”. Strelitz (2005:121) further states that the interactions between

respondents produce data and insights to stimulate, elicit and elaborate responses from the interviewees, which is not necessarily obtained from individual interviews.

As opposed to the face-to-face interview, focus group does not follow a planned conversation between the researcher and the respondent. Initially an unstructured approach allows themes and ideas to be generated that are not always part of the research. If an individual is having difficulty gathering their thoughts or ideas on a topic, this approach allows for semi-structured method using an informal discussion guide. The existence of this "unstructured dialogue" is considered the "strength" of a focus group. This is because the interaction among group members in the focus group produces information and insights into the behavior and attitudes of people that would not be likely to emerge from a one-to-one interview (Mytton 1999:128).

The focus group discussion participants can be naturally existing groups or communities (Hasen 1998:265). It seems that the selection of naturally existing communities become research groups from the selected study area. Concerning the composition and nature of focus groups, scholars have provided different alternatives leaving the decision of choosing the appropriate approaches to the researcher. In this regard, the basic question for a qualitative study for the researcher is whether to have groups who know each other, or ones in which participants are relatively strangers or belong to different socio-demographic backgrounds (Jackie 1991, cited in Lunt and Livingstone 1996:82).

This research used the alternative provided by Lunt and Livingstone (1996:82) namely to use naturally occurring groups of like-minded people. Jensen (2002:241), who favors the idea of using homogenous groups, also supports this way of selection. According to Jensen (2002), focused interviews with relatively homogenous groups in media and environmental studies have proven useful for gaining access to their distinctive experiences of media content. It is not advisable to form a group comprising of participants who have varying and observable differences, as this is likely to make conversation difficult (Mytton 1999:130).

The selection of participants for this study was principally done by looking for people who listen to the radio, watch television and read the newspaper. This method is also supported by Mytton (1999:130) who says “one very commonly used way of organizing groups is to divide them by whether they use the product or service being researched”. The ideal number of participants within focus groups is influenced by the objectives of the research and the availability of resources. Hansen (2007) further writes that the single main factor (cost and resources notwithstanding) in deciding on the number of groups must be the types of comparisons across different groups and population characteristics specified by the objectives of the research.

In line with the above arguments, the researcher decided to recruit focus groups participants in terms of their environment and geographical location (those coming from densely populated and highly degraded, and sparsely populated and relatively degraded environment) as well as their level of education. Two focus group discussions with a total of 12 participants organized in to six per group were used. Four of the participants were females, while eight were males. This was done purposely to keep the sex balance. As to the number of participants in each group, the researcher used Mytton’s suggestion that gives six to ten as an ideal number of participants. Mytton (1999:130) later indicated that eight seems to be the ideal number in most current practices.

The researcher indicate his interest in learning from the people in this research by being an active and empathetic listener, rather than critical or judgmental in a normal conversation. The researcher's experience with groups in his work environment (outside of the research) enable him to be empathic to people’s comments, whilst remaining critically reflective through his understanding of what was occurring within the everyday contact of each group. The role of researcher does not go beyond inspiring and helping the discussions run smoothly. This allowed the researcher to see the relevance of themes to the topic, contradictions in conversation and underlying issues that potentially needed to be addressed or clarified.

The focus group discussion was conducted in two-hour sessions with refreshments (lunch, and coffee and tea) provided. The scheduling of the time was properly cleared with all individuals to make sure it was convenient to them. The researcher also made sure that the discussion was progressing as per the topic listed in the interview guide and that all members of the focus group had a chance to air their views. Most scholars agree on the importance of recording focus group sessions, as they believe that it helps to ease the moderator's burden of taking detailed notes. The recording also provides the researcher with an accurate, comprehensive account of what was said, and what happened throughout each session (Strelitz 2005). During each focus group session the researcher started by asking the participant's permission to audiotape the conversation for the sake of reference and accuracy of the data. It was made clear to the participants that the audiotape would be destroyed after the publication of the research. The participants were requested to introduce themselves, which helped to identify their names against their voices when the researcher transcribed the sessions and wrote down the findings.

3.4.1.3. IN-DEPTH INTERVIEWS

In most cases, the term "in-depth interview" is used as a substitute for "individual interviews". It seems the word "in-depth" is added to deliberately imply that the researcher gets the benefit of using this approach, which is a means of creating a better understanding on the issue under investigation (Mytton 1999:141). This benefit is due to the nature of individual interviews that allows an interviewee to make additional reflections with the prospect of building up an argument or a narrative (Schroder 2003:153). In the same manner, individual interviews give the researcher the privilege of raising more and specific issues during the session. Also in situations where the researcher confirms anonymity to the informant, individual interviews are tools to discuss rather sensitive and controversial issues as opposed to the focus group interviews which may be characterized by the presence of a 'spiral of silence'. The individual interview is also a means to avoid the prospect of group pressure, which scholars take as a likely limitation in the case of focus group discussions (Schroder 2003).

While describing the nature of the in-depth interview Lindolf (1995:5) explains that these interviews resemble conversations between equals. Most of what is said and meant by both interviewer and interviewees emerges jointly in interaction. Social interaction as is the case of focus groups is not the feature of in-depth interview as it emphasizes the individual. Mytton (1999:141) argues that individual interviews are relevant means of data collection in media and environmental research and in particular, while studying radio and television audiences in many cultures, radio listening has become very much an individual rather than family-based of group activity.

In-depth interviews are also instruments that can be used to corroborate the findings of the focus group sessions. This view was expressed by Morgan (1987, cited in Strelitz 2005) who says one pays the price for relying on group interaction in that compared to the one-to-one interview one has less control in managing what data is actually collected.

One of the many reasons that demand a researcher to conduct an in-depth interview is when it is impossible to get enough participants for a focus group discussion (Mytton 1999:142). Hence, the researcher conducted in-depth interviews with research participants to supplement the focused group discussions. The selections of participants were based on those who had basic knowledge on the topic under investigation through in-depth interview. For the in-depth interviews, the researcher selected five respondents, after an examination of the participant of each focus group discussion and survey participants.

The researcher also conducted in-depth interview with selected media producers and environmental communication professionals. The first way in which these in-depth interviews contributed to the research was in providing practical information about how environmental issues are currently viewed in the media as well as how and why environmental activists overlooked the use of the power of the media. The responses from the interviews helped the researcher to set up articulated content analysis to further understand how environmental issues are currently viewed in the media. Over the course of this research, the researcher contacted three media producers of

Awedegeter and Akababi-ena-lemat and two environmental professionals for in-depth interviews. The question put to them was based on the ideas and issues raised by the discussions of the focus group and the survey respondents.

3.4.2. PROCEDURE OF DATA COLLECTION

Data collection procedure were started by making official contact with the concerned district bodies such as district administrator, rural development department and local administration (*Kebele*) to get permission and support for the research. Then the researcher visited the selected local administrations to establish a common understanding with the officials and to gather general and empirical data from the selected study area. In addition, the visits help to get information that was used as input for subsequent planning and for the sample selection. Furthermore, during the visit, formal and informal discussions were conducted with representatives of the selected study areas, briefing them on the objective of the study to build their trust and confidence so that they would cooperate and provide information without fear and suspicion.

Prior to undertaking the actual data gathering, the draft questionnaire was tested on five respondents selected through purposive sampling from the sample population of each local administration village. After completion of the test, the responses were checked to make sure the respondents understood the questionnaire properly and the intended information was gathered. The test also helped the researcher to estimate the average time required for the respondents to fill out the self-administered questionnaires. Based on the feedback from the test, some amendments were made prior to duplication of the questionnaires. Finally, the adjusted questionnaire was distributed to the sampled respondents of each selected area.

For data collection purposes, five people were responsible for the collection of primary data from the respondents. This consists of the researcher who was assisted by four field workers. The recruitment of field workers was based on their understanding and fluency of the local language (*kembategn*). The field workers were trained in various elements of the questionnaire, specific research issues and objectives and

simultaneously the instrument was pre-tested to ensure that they would be capable of interviewing in the target localities.

3.5. THE QUESTIONNAIRE

The main objective of the questionnaire survey was to capture information on respondents' awareness of environmental issues to determine the impact that can be directly attributed to the national environment protection intervention. As to data collection techniques, a structured or semi-structured approach, with open and close-ended questions, checklists and interview guide were used to provide both quantitative and qualitative responses. According to Yin (1994) interviews can take three different forms such as open-ended, focused and structured. In the open-ended interview, the key respondents are asked for the facts as well as for their opinions. The focused interview follows a set of questions derived from the research study and is performed in set manner. The structured interview follows a structured questionnaire and is best suited for surveys.

The use of in-depth discussion, focus groups, the completion of a researcher's questionnaire, the inclusion of secondary data obtained from the documents and strategies reports, and the utilized of a work plan by the people involved in this research, allowed for solid triangulation to occur. Questionnaires were prepared to collect data from household participants of the five local administration villages. It aimed to acquire data related to the role of the media in environmental awareness and the public concern in day-to-day development activities and incorporated questions eliciting responses to the performance level of environmental issues.

The interviewees were identified through a search of environmental protection websites and media contacts. Before the researcher started the fieldwork, he contacted the EPA communications division and interviewed a number of journalists. After this the researcher read written materials from the website of EPA to get an understanding of the media and environment issues in preparation for asking relevant questions. The researcher also used friends who worked in EPA and the media to get more information about the organizations in question. The interviews took an about hour, depending on

the time constraints of the interviewee. Interviewees were given clear information on the study and the aim and objectives were clearly explained. All the interviews were taped.

In-depth interviews (semi- structured interviews) were conducted with two experts on environmental issues from the Environmental Protection Authority (EPA), two editors and one reporter from *Awedegeter* and newspaper program producers of *Akababi-enalemat* and *Addis Zemen*. These semi-structured interviews were employed (as one of several methods) to explore the research questionnaire and to substantiate the results obtained by quantitative content analysis. To evaluate the main challenges of covering and reporting environmental issues, conducting qualitative interviews together with descriptive quantitative content analysis had great importance.

Each interviewee was asked to give his/her opinions about environment issues and the role of the media. The major questions asked of the research participants were on the effectiveness of the media in creating awareness, the coverage the media gives to environmental issues, and the challenges of reporting environment issues. They were also asked to give suggestions on the relationship between the media and media sources. The scope of the interviewing more or less focused on the challenges of covering and reporting environment issues. The main interview questions were used to collect the information provided in appendix 3. The following are some of the questions asked:

1. What is the aim of the media when reporting the environment?
2. What role do the media play in creating environmental awareness?
3. Why the media do not spent more time on environmental issues?
4. To what extent has the media influence individuals decision?
5. Who decide the content of environmental programs?
6. What are the goals of the environmental agencies in their communication with the media?
7. What kind strategies do the environmental agencies used to communicate with the media?

8. What is the relationship between the environmental agencies and the media?
9. How do the environmental agencies and the media perceive each other?
10. What are the communication difficulties between the two actors (EPA and the media)?

The interview guide used in this research has three parts. The first asks personal information of the interviewees such as age, gender, marital status, education status and occupation. The second part includes questions that help to find out to what extent the person being interviewed is aware of environmental issues in general and the environmental problems in his/ her area in particular. The third part consists of questions that focus on the role of the media in covering environment issues. In a situation where an interviewee had a time constraints the researcher had to be fast in asking the interview questions, taking notes and using a recorder to record the conversations.

3.6. CONCLUSION

This chapter has described the methodology and procedures used to gather the data to investigate the main objectives in the research and related research questions. The relevant methodological issues such as focus group discussions, in-depth interviews, household survey, and questionnaire design for data collection have been discussed in detail. The location of the study, sampling procedures and methods employed was also briefly discussed and the limitations encountered during data collection were pointed out. In finding the answers to these research questions and recognizing the limitations there in, the researcher was able to come up with the analysis that follow in chapter four and ultimately the conclusions and recommendation that follow in chapter five.

CHAPTER 4: DATA ANALYSIS AND INTERPRETATION

4.1. INTRODUCTION

This chapter provides data analysis and interpretation of result of the study by exploring how the respondents reacted to the actual and potential role of the media in creating environmental awareness. Based on the discussions, the researcher tried to identify whether the research respondents followed media programs, how much the media programs has shaped their understanding of environmental issues, and how understandable, interesting and relevant the programs aired are in terms of their respective environmental concerns. In addition, articles dealing with environmental issues covered by and presented in *Addis Zemen* Amharic daily newspaper during the selected period were also analyzed.

For the study, quantitative data were used in combination with qualitative data. The results obtained from the survey respondents and focus group interviews were analyzed to achieve the objectives and to address the basic questions of the study. In addition, direct quotes of research respondents are given and used depending on the degree of relevance and representation of the responses as well as the relative articulation of the respondents.

4.2. BACKGROUND INFORMATION OF RESEARCH RESPONDENTS

The purpose of this section is to describe the data collected concerning the media and environmental issues, and to identify the trends that exist within the media coverage. However, before proceeding in this direction, it is necessary to highlight the methods used to collect data and background information of respondents.

A representative sample from five *kebeles* (local areas) was taken from seventeen *kebeles* (local areas) and from each *kebeles* (local areas), five villages were selected purposefully. Finally, 15 to 21 households were chosen from each village using a table of random numbers (2008 census was taken as the base for sampling). The five villages are represented as follows: village one (v_1), with 19 households, village three (v_3), with

21 households, village seven (v₇), with 15 households, Budin four (B₄), with 18 households and Budin six (B₆), with 17 households. The background information such as sex, age, educational background and occupation composition of the respondent's in these five villages are shown in table 4.1.

Table 4.1: Number of respondents by sex, age, education and occupation.

Background characteristics		Study village										Total	
		V1		V3		V7		B1		B2		N	%
		N	%	N	%	N	%	N	%	N	%		
Age group	Male	12	70.5	10	76.9	14	70	11	73.3	16	64	63	70
	Female	5	29.5	3	23.07	6	30	4	2.67	9	36	27	30
Age of respondents	18-24	2	2.2	1	1.1	3	3.3	3	3.3	4	4.4	13	14.4
	25-34	4	4.4	5	5.5	8	8.8	6	6.6	7	7.7	30	33.3
	35-44	5	5.5	3	3.3	6	6.6	4	4.4	8	10	26	28.8
	45-54	4	4.4	2	2.2	2	2.2	1	1.1	3	3.3	12	14.4
	55 and above	3	3.3	2	2.2	1	1.1	1	1.1	2	2.2	9	8.8
Educational background	Illiterate	1	1.1%	2	2.2	5	5.5	3	3.3	3	3.3	14	15.5
	Read and write only	3	3.3	4	4.4	3	3.3	2	2.2	4	4.4	16	17.7
	Elementary school (1-8)	2	2.2	3	3.3	4	4.4	6	6.6	7	7.7	22	24.4
	High school (9-12)	3	3.3	4	4.4	8	8.8	7	7.7	6	6.6	28	31.1
	Diploma and above	5	5.5	1	1.1	1	1.1	2	2.2	1	1.1	10	11.1
Occupation	Student	6	6.6	3	3.3	5	5.5	2	2.2	4	4.4	20	22.2
	Private business	3	3.3	2	2.2	6	6.6	1	1.1	3	3.3	15	16.6
	Farmer	8	8.8	9	10	3	3.3	7	7.7	3	3.3	30	33.3
	Housewife	4	4.4	1	1.1	3	3.3	2	2.2	5	5.5	15	16.6
	Unemployed	2	2.2	3	3.3	4	4.4	-	-	1	1.1	10	11.1

The research sample, as indicated in table 4.1, consisted of 90 individual respondents, ranging from 18 to 55 and above years of age. Out of these respondents, 70% were male and 30% were female. The number of males is higher than the females, due to the total population characteristics of the study village and the cultural influence and willingness of female to respond to the questionnaire. While it may not be possible to say the study was gender sensitive, efforts were nevertheless made to incorporate women and the sample contained 27 women out of the 90 respondents. The respondents were from different educational background, ranging from illiterate to

tertiary education. A total of 90 questionnaires were distributed to the selected participants but a few of them could not be reached. The researcher managed to acquire the necessary information from 96.3% of the total. The data was collected through direct household visits and face-to-face interviews.

The respondents tended to interpret some of the research questions from two angles. They react from their own perspectives but they also gave the perspective from a rural communities' angle. To the understanding of the researcher, this might have happened because of two reasons. First, it might be their family background (83 of the 90 respondents were born and bred in rural areas). Secondly, most of the respondents in the future be living and working among rural communities. Thus, the discussions in this study give some consideration to the response from research participants that is relevant to rural communities.

According to Deacon (1999:54) the selection of research participants of focus group discussion is done purposefully based on the research agenda. In this research the researcher used relatively homogenous groups' which was effective in getting information of the experiences concerning media content based on their environmental information and responsibility within the community (refer to section 3.4.1.2 in Chapter 3).

Five individuals were selected for in-depth interviews. Out of these two were the producers of environmental media program (from radio and television), two were from *Addis Zemen* Amharic daily newspaper and the other individual was from the Environmental Protection Authority (EPA) who the researcher met in Addis Ababa. In addition, some officials who were picked by the researcher based on their responsibility and active participation in the area of their revealed interests in media and environment were also interviewed. The in-depth interview with the five officials were conducted in their respective offices (with four respondents) and in an open field (with one respondent). The researcher used in-depth interview as a chief means of data collection because recent studies on media audiences have come to show the more 'individual' nature of listening rather than family based or group activity (Mytton 1999:141).

As indicated in table 3.2 in chapter 3 a sample size of 120 editions of the daily newspaper were selected from the 1 800 editions over the period of five years. More than 81% of the sample comprised of inside page from the daily newspaper (*Addis Zemen*) and the rest were from the front page.

4.3. ENVIRONMENTAL MEDIA PROGRAMS (*AWEDEGETER* AND *AKABAB-ENA-LEMAT*) AND THEIR STATIONS

The level of awareness on the part of the public concerning environmental issues was mentioned by most respondents as an additional cause for environmental degradation. Only five respondents out of the twenty-seven do not miss the bi-weekly program *Awedegeter* transmitted on Monday and Wednesday mornings from 7:20 to 7:50 AM. A few of the rest of the participants listened to the program but not on a regular basis. Almost all respondents listen to the news on radio Ethiopia. Most listen to current affairs report, *Woqtawi* Report, a program that is transmitted on radio Ethiopia after the evening Amharic news. Two respondents said they listen to the Friday morning health program. Some respondents said they do not want to miss *Yegeen qignit*, a series radio drama, aired on Sunday evenings. A few young listeners said they listen to sport programs. One of the respondents said he listens to the Friday evening music program.

Most respondents listen to the radio in the evening. Almost no respondent listens to the radio during the day. Few listen in the morning. Here it is important to note that except the health program (transmitted at 7:20 AM on Friday morning); all of these programs are transmitted in the evening. Nobody mentioned the program on development and environment (*Akababi-ena-lemat*), another radio Ethiopia program that is transmitted from 11:30 to 11:50 AM on Tuesdays. None of the above-mentioned programs of different radio stations clash with the environmental media programs' (*Awedegeter* and *Akababi-ena-lemat*) transmission times. The other stations mentioned by the respondents include FM Addis 97.1 (mentioned by few respondents), FM Addis 96.3 (mentioned by one) and Voice of America (mentioned by one).

Few respondents in the study area listen to the regional radio station programs transmitted from *Hawasa* (a town 270 km south of Addis Ababa) on Saturday morning.

Those who listen to this station say they like the program on good governance. Most respondents in the study area listen to the local *Hawasa FM*, which has increasingly become popular in the area. The researcher listened to this radio station during the day in café's and hotels of Durame town. *Hawasa FM* is transmitted from 9 AM to 3 PM. For almost all who listen to *Hawasa FM* their favorite program is *quiz*, a journalist asks questions and listeners phone in with the answers.

The uses and gratification approach assumes that media and content choice is generally rational and directed toward certain specific goals and satisfaction (McQuail 1994:70-71). According to this approach, listeners are active as they are able to choose which media stations and programs to listen to. "The uses and gratification approach assumes that even the most potent mass media content cannot influence an individual who has no use for it in the social and psychological context in which he lives"(McQuail 1994).

Only one young respondent said that he carries his radio around and listens to most programs on the radio. Many respondents from both research locations said it is not culturally accepted to carry radios around, as many people consider such people (especially the older ones) as lazy people. It may be because many people still consider radio as a medium for entertainment rather than for education. Attributes such as age, sex, years of education, socioeconomic status and personality affect audience selections of media products (McQuail 1994). For instance, FM radio stations tend to be listened mainly by the youth. They air many music and entertainment programs.

The position of environment issues in the newspaper is roughly divided into three page categories, each category having about four pages. The *Addis Zemen* daily newspaper has an average size of twelve pages. The first four pages are considered as the front-page category, the next four pages are taken as the middle page category and the remaining are taken as back pages, excluding pages for advertisements and cartoons.

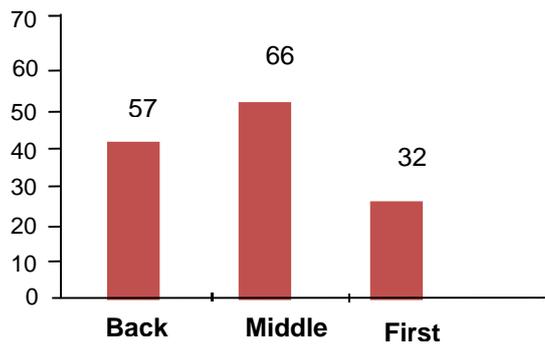


Figure 4.1: Total Quantity of environment texts on the pages of the *Addis Zemen* daily Amharic Newspaper

As illustrated in Figure 4.1, 32 from the total of 155 environmental stories appeared on the first four pages of the newspaper; 66 appeared on the middle pages, and 57 were on the last pages. That means that 68% of the environmental texts appeared in the middle and the back pages and only a third of the total environmental articles (texts) were placed on the front pages. Taking into account that editorials are usually placed in the first four pages it means that less attention was given to environmental issues. One can assume, however, that being on the very last page will draw more attention to an article than for instance being on page three, even if this is considered as the first group here. Yet, the very last page of the newspaper (in most of the sample editions analyzed) was mostly assigned to sport issues. Reasons for the high concentration of environment issues in the middle and back pages can be obtained from the interviews. As the findings from the interviews indicate, news value is considered to determine the position of the stories. Articles with high news value will be given first priority. Environment articles having high news value may be given space within the first four pages depending on the sensitivity of the issue and on the conformity with the general editorial policy of the press. In this regard, they underlined that the raising awareness of concerned bodies about environmental issues were not effective.

Forty-five year old Denial Petros, a development agent from village three, is one who lamentably expresses what he says 'little attention is given to environmental matters by the Ethiopian media'.

Daniel: *I do not understand why the media and in particular radio and television agency is not producing programs on environment alone. Damages to the environment are taking place in rural areas where people have radio sets to listen to. For long, I have been working in the district wereda agriculture office, which is located 350 kilometers south of Addis Ababa. By then I have been a regular listener to the radio, which did not have a single program dedicated to environmental matters so far. There was Awedegeter program on Ethiopian radio that more deals with agricultural issues than environmental ones. The one you [the researcher] are studying media has a small coverage and could not reach the wider rural communities. It was since last year that I started to listen occasionally to media program. Before that, I do not even know whether such an environmental media programs exists.*

This view is also expressed by Argaw as he concludes, "radio Ethiopia does not have a single environmental program dedicated to serve farmers as target audiences"

Argaw: *who is a coordinator of the environment media project and who has prior journalism experiences working at radio program says Awedegeter is the first and only radio program entirely dedicated to the coverage of environmental issues.*

4.4. RESPONDENTS AWARENESS ON CURRENT STATUS OF THE ENVIRONMENT IN THE RESEARCH AREA.

One may wonder why the researcher wanted to know the respondents understanding of the current status of their environment while the objective of the study is to generally evaluate the effectiveness of media in reporting environmental issues. It is because the effect of the media is not the only source of information on environmental knowledge. According to Yeraswork (2000) media influences, work amid other influences, in a total situation, similarly, "members of an audience will have prior attitudes and beliefs which will determine how effective media messages". He further notes that media effects can only be understood as a component part of a total social experience.

The life experience of a person also determines the effect the media have on him/her. Yeraswork (2000) underlines that the effect of information on the recipient depends on the environment she/he lives in and the personal life-experience of the individual. In this study, it was decided to include questions that help to see and evaluate how much audiences are aware about environmental problems. Moreover, an attempt has been made to assess how much the research areas are affected by environmental degradation and how the impact of the degradation affect people in that area understand media messages that are relevant to them.

In other words, the researcher wanted to know their respective areas and how these problems affect their perception of the media environmental programs and the programs' effects on them. He also wanted to know the status or their knowledge of environmental issues and whether the knowledge followers of media have about environmental issues has been acquired from the program or not. Considering the points noted by the above scholars, the researcher asked questions of the research participants to establish their level of understanding of environmental issues. The researcher also believes that such question could help to identify the source of environmental knowledge of respondents.

Results from the participants of the survey, focus group discussion and in depth interviews revealed that environmental problems are an extremely urgent problem, their confidence in this case weakened when comparing the priority of environmental problems with other problems that Ethiopian society has to face. This concern was expressed more in the survey and focus group discussions held with respondents from relatively fertile areas. It seems these participants rated forest as the most endangered natural resource in their respective localities. One may be surprised on hearing such reactions from respondents coming from areas with a highly degraded environment. Asked why they all feel the same about the dwindling forest resources, most replied that unlike the damage inflicted on other resources, the destruction of forests were something that are observable. They thus relate to the changes they observed since their childhood days.

All of the interviewees and focus group discussion participants said that the forest cover in their respective localities is diminishing from time to time. There are no worth mentioning remnant natural forests in study area. Exotic trees, mostly eucalyptus, are overtaking the degraded hills and mountains. Some of the hills and mountains are devoid of trees. There are still some natural forests of indigenous trees in relatively degraded area but they have been under intense pressure as many farmers are encroaching into them despite some efforts by the local administrations of study area and neighboring Wereda to stop deforestation. Older respondents said the forest cover of the area has been decreasing at an alarming rate. Yilma Delebo is 54 years old.

Yilma: *I was born and grew up in this area. There were dense forests. There were majestic big old trees [his facial expression is of sadness] in those forests. There was always mist and heavy rain. When the forest cover of that time is compared to that of today, there is a wide difference. Now the forest is very much depleted. There is high population pressure. Under the canopy of the remaining forests you find lots of houses*

Another respondent, Matthews Ligamo, 47 years old, from a relatively degraded area argues that the forests are being destroyed because the incumbent government cares little to stop deforestation. He appreciates the way the Dreg (communist) regime was able to protect forests by force and serious legal measure.

Matthews: *The Dreg regime was not good for people but it was good for the forests. This government, on the contrary, does not care much about forests. The Dreg regime also protected the forests well. There was a man who served a seven years prison term in Durame town, as he was found guilty of cutting trees. There was a slogan posted in our area that said, "Ten people would rather die than one tree." This strictness was to stop deforestation. However, these days, all those forests have gone.*

Yeraswork (2000) says forests are being destroyed by people in the neighboring wereda and by the people of study area. The traditional economic thinking, which does

not center equity as well as sustainability, has exacerbated environmental problems in many parts of Ethiopia. The question raised by researcher that why do people destroy forests? Is it because they are poor?

Mathews: *I do not say that people destroy forests because they are poor. We (people in study area) know that if we destroy forests poverty will be aggravated. We are also poor. I have 0.5 ha of land but most people have plots of land that are measured in square meters. There are for instance people that have only 1000 square meters of land. In addition, no one has cut a single tree because if we cut trees we will be poorer than we are today. If we protect the trees, there will be rain. Moreover, our streams will have more water. We can use the water to irrigate our land in the dry season. We have understood the use of forests.*

From Matthews' answers it is easy to understand that though people are poor, they will not destroy forests if they know how important the forests are to them. Yeraswork (2000) also argues that the poor do not, as a general rule, recklessly abuse the environment. The researcher believes that further investigation is needed to have a clear understanding of the relationship between poverty and environment.

Contrary to this the relatively degrade area is a drought-prone area. Though the area has been affected by recurrent droughts, particularly in the past three decades, the respondents, even the young ones, claim that there were more forest resources two decades ago than today. However, the forests they claim existed were plantations of mainly exotic tree species that were planted through food-for-work program during the Dreg regime. Fentaw Indris, 45, agrees with Matthews that forests were well protected during the previous regime.

Femtaw: *Forests and trees were conserved and protected during the Dreg. However, when the Dreg regime was overthrown, all those protected forests were destroyed.*

Seid: *The Dreg officials saw that farmlands on hills and mountains were not productive because of floods and soil erosion. The floods coming down the hills*

and mountains also affected those, who had farmlands on the plains below the mountains. The Dreg then controlled the mountains as state land and it made the farmers plant trees on them through food-for-work program. The trees grew, and there was no more floods coming down the hill. This hill that you see [pointing at a hill with few trees] and all the hills and mountains were covered by dense forests. Nevertheless, when the Dreg was overthrown everybody went to the forests and chopped down each and every tree. Once again the floods washed the soil from the fields below. The EPRDF government has now divided the hills and mountains what are called, the communal lands, among us saying, "You can only protect your trees when they are your private property."

All respondents say that the incumbent EPRDF government is currently giving them hilly plots land for planting trees and use the wood they produce. The hilly plots of land are too steep to be used for crop production.

Fentaw: *During the Dreg regime when we were given seedlings to plant, we used to throw them away. Now we have understood the use of trees and we raise seedlings ourselves and plant them. We have known that the trees belong to us and we are taking care of them.*

Seid: *was able to see the forest during the Dreg regime though I was not born during the reign of HaileSELLASSIE. In addition, there were dense protected forests. The people destroyed them because they did not know the use of forests. Now when they could not get wood to make agricultural tools, they are asking the government to provide them with seedlings. The government gives them seedlings and farmers are planting them.*

From these responses it can be concluded that farmers have learnt more from their mistakes and practical experiences than from participating in forceful tree planting campaigns. Past experiences show that, conservation activities farmers are forced to involve cannot be sustainable. The involvement of farmers in large-scale conservation activities during the Dreg regime was induced either by force or the food-for-work

payment (Yeraswork 2000:270). The assumption was that the externally introduced conservation measures would halt the environmental degradation and lead to sustainable land use. The farmers were dissatisfied because the conservation measures were neither addressing their needs and priorities nor fitting to their farming system. They cut down trees they had planted and demolished the soil conservation structures they had constructed after the fall of the Dreg because they did not belong to them. Yeraswork (2000) writes that some farmers recognize the contribution of off-farm soil conservation structures in reducing run-off, and few of them understand that trees planted on hillsides help to hold the soil firmly in place. However, most of the farmers associate the plantations loss of land and the problems they faced in terms of loss of grazing land, and the harassment they had to put up with because of animals straying into the plantations (Yeraswork 2000)

A respondent from village v7 of Tamiru estimates that only 25 percent of those who received the hilly communal lands are planting trees on them. Another respondent from village v3 said farmers fear that the land may be taken away from them, as they have not yet been given land ownership certificates.

Tamiru: *We fear that the government may one day take this land, on which we are planting trees.*

In the past few years, the Ethiopian government has been giving certificate that guarantees the land ownership right of farmers, although the land basically belongs to the government. Farmers in village v3 told the researcher that the land is being measured and they are told that they would be given the certificates when the demarcation is completed. One of the respondents in village v7 said the people are divided.

Yimer: *The people are divided; some are planting trees, others are not. Some plough the hilly land for crop production; and those farmers whose farmlands are below the hills are affected by floods. Farmer's plough the steep land do not*

benefit as the floods easily wash the soil away, but they just want to get what they can get from the land quickly.

According to this respondent, the use of such steep plots of land for agriculture is the result of the feeling of insecurity regarding land ownership right. Efforts to increase agricultural productivity conserve natural resources for farmers and pastoralists will have to be focused to significant extent of efforts to foster a feeling of assured and uninterrupted access to the same land and natural resources for farmers and pastoralists (SIDA 2003).

The south region rural land administration and use policy and proclamation Article 8 sub Article 2 says every farmer that uses land or farmers that use communal land for any purpose (agriculture, grazing, forest etc.) must have certificate that certify their ownership. Sub article 5 of the same article says, "Using land without having the appropriate land ownership certificate is punishable by law." This means as long as the farmers are not given the land ownership certificate, they cannot do anything on the land. The farmers in the study area have not been given the land ownership certificate for the communal lands, and this has created the feeling of insecurity.

Some are frustrated that everyone is not planting trees on the hilly land. According to Assefa, a lot of efforts need to be exerted to grow trees to usable size.

Assefa: *Some are planting while others let their cattle graze on the hills. The cattle will trample the trees you have planted if you are not there to protect them. You cannot always guard your trees from such destruction. It would be good if everybody plants trees and protects them.*

There is also another problem on lands covered with trees. Despite the concern of foresters and environmentalists, eucalyptus trees are being widely planted by farmers in study area. Eucalyptus trees are easy to propagate, fast growing and they coppice (such as new trees sprout out from the stumps after they have been chopped down). These characteristics of different eucalyptus tree species have made them to be highly favored by farmers across Ethiopia. Eucalyptus trees are, however, blamed for

absorbing a lot of water, and for inhibiting the growth of vegetation under their canopy because of their allelopathic effect. Allelopathic effect is the inhibition of growth in one species of plants by chemicals produced by another species.

There are many obstacles for farmers to engage in tree planting activities in the study area though they are aware of the uses of trees. Economic advantage is an important motivation to plant trees. In addition to their economic advantage, many farmers have learnt from experience that the trees on the hills were useful to prevent floods and soil erosion. However, they do not want to plant trees, as they are not sure the land belongs to them or not. In addition, those that have dared to plant trees, despite their feeling of insecurity about their land ownership right, are discouraged as it needs a lot of commitment to protect their trees from cattle that are left recklessly to graze on the hills.

It is striking that people do think of the problems mentioned above as interrelated, but do not see the connection between environmental destruction. This indicates that priorities are generally not set on environment. The survey results showed that there is still a lot of work to be done in informing people on the major environmental problems.

Renewable energies or conservation of biological diversity were even less known. In contrast to that, many people were aware of problems like air pollution, soil and forest depletion. Deforestation was considered as the most serious problem as seen by a majority of respondents followed by soil and water. These results provide strong evidence for the fact that the efforts in educating people on environmental awareness in school and media should be integrated environmental focused activities. Most people stated that government's activist as far as environmental policy is concerned that they wished environmental issues should play an even more important role in government politics. Some respondents aired their opinion as follows:

Daniel: *I do not know. The situation of the soil, water and other resources in my area are getting bad from day to day. However, how can I prove that? When it comes to forests, I can see and tell the difference from last summer for the coming summer months. When I was a child some 33 years ago, everything was*

covered with forests except for our homes and some small farms. Eventually everything started to clear away. Now it is common to see barren lands in my area.

On the contrary, the focused group participants from degraded areas did not consider forest as the most affected part of the environment in their localities. These respondents argued that it was only from elders and at times from the media that they knew that their surroundings used to be covered by forest. Therefore, they said it would be inconvenient to comment on a resource that is almost nonexistent currently. A typical mention here is Asneckch Obolla from village 7 of the study area, who was a participant of a focus group discussion. She lives in an area, which is part of the degraded area of the district. She is 24 and has lived all her life in the place where she was born.

Asneckch: *All I know about the environment in my surrounding since my childhood is hilly and that gets green when the rainy season comes and become dry and rocky as it stops raining. How can I tell you whether the forest coverage in my area is improving or diminishing? I saw dense forest for the first in western part of Ethiopia when I appointed to visits as a development agent in the resettlement program area. I do not know the forest exist or before I born in my village.*

When asked about the situation of the natural resources other than manmade forest, the respondents noted that since all the other resources have direct relations with forest, they too are getting affected in the same manner. They were also asked about what they think about causes for environmental degradation in their areas.

With the shrinking of the forest in study area over time, the amount of water flowing in the streams and rivers is decreasing at an alarming rate. This is a great concern for farmers in the area as almost all of them use water for different purpose. All respondents indicated that the amount of water flowing in the streams has been decreasing in the past few years.

Senayit: *During the dry season, the river water decreases significantly. Relatively degraded area was famous for its forests and water resources but now most springs have dried up. Most of these springs flow from the foot of the mountain. There are times that people irrigate their farmlands waiting for their turns.*

Older respondents ascribed this problem to the destruction of forests.

Matthews: *I was born and grew up here. The river that we use now is called legabora. Let me tell you. Previously during the Dreg regime even in the dry season you could not cross some of the study area putting on your shoes. Now you do not find it in the dry season. You see dry sand on the river course. Its water has decreased significantly*

In addition to deforestation, Obolla, 52, ascribed the decrease in the amount of water to the plowing of swampy areas and the planting of eucalyptus trees in areas where the springs originate. He says unlike eucalyptus indigenous trees by their nature preserve water.

Obolla: *Previously, there were trees such as korch [*Erythrina abyssinica*], girar [*acacia*], qerero [*Annigeria adolifi-firedericii*], wanza [*Cordia Africana*], and warka [*Ficus vasta*]. They accumulate water and give it to human beings but after eucalyptus was planted the water dried up.*

Although farmers like Obolla do not understand well why forests of indigenous trees balance the rainy and dry seasons' flow of rivers, they knew that deforestation results in reduction of river water and drying up of springs. They learnt this from their life experience. The problem is very serious and the younger generation cannot afford to wait for many years to understand this fact.

As discussed in section 2.4 in chapter 2, forest and soils are porous and where soils are better at retaining moisture, spring and river flows are extended and evened out. This is important for irrigation development (Demel et al. 2003:12). Lower levels of infiltration

and water storage in soils affect the availability of water for human use throughout the year. It also results in the overflow of streams and rivers causing floods and soil erosion.

In the past few years there seems to be little or no problem in study area with regard to water resources. A young woman participant of the focus group discussion in study area said she has not observed any spring drying up though some have little water during the dry season. Only one of the springs dries up in the dry season and she said this has been happening since she knew that spring. There are no rivers flowing in village 7. Only few farmers use the water from *legabora* for irrigation.

The researcher could understand that the respondents in the study area know little about the relation between forests and water resources. It is because they have not had the chance to see the drying up of springs. There are no larger water bodies such as streams or rivers in study villages. In addition, no respondent has noticed a decrease in the amount of the water in the past several years. The level of the water might have not reduced because of soil erosion. The mountains in the vicinity and on the shores of the lake are bare. Apparently, they are susceptible to erosion. This is something that needs to be investigated.

Farmers in relatively degraded area have not been affected by soil erosion as farmlands are situated on flat ground and the hills and mountains still are covered with some forests, although the forests are highly disturbed. The fact that most farmer's plant perennial crops such as false banana (locally known as *enset*) and *khat* (a mild stimulant plant) could have helped in protection the topsoil from being washed away. All respondents agree that though the soil is not washed away, soil fertility is declining. Because of high population, pressure there is no chance for fallowing. As the cost of commercial fertilizer is skyrocketing, all farmers in the area have begun using compost. The researcher was able to see many carts pulled by donkeys loaded with compost crossing the roads in study area. Two of the respondents said they have learnt to make compost from the radio. They said they had used only dung as a fertilizer but after they listened on the radio how compost is prepared by mixing dung, weeds and leaves they begin to make compost.

Matthews says he is afraid that they may be affected by floods in the future if the nearby mountains are devoid of trees. He said even now commercial fertilizers have not been effective because of floods.

Matthews: *We buy expensive commercial fertilizer with high price from the government. We apply the fertilizer to our farm and the flood takes it away. There is no forest to stop the floods from coming down. What trees are there to stop it?*

Matthews also believes that the land may split open to swallow people if it is devoid of forest cover. For instance at a place called Muleti, which is located in between Shashemene and Hawasa towns, like Korah and Nathan of the Bible, the land split apart and swallowed people. Our fathers used to look after their cattle in that area and it was covered with forests. That forest has been destroyed. It was because there was no forest cover that the land split apart and swallowed the people.

The researcher assumes that the people must have been killed by a landslide, which was caused by floods. Even though Matthews has not understood the effect well, he knew that when there are no forests the land is affected by floods, which cause erosion and land slide.

Similarly, farmers in the study area have been affected by soil erosion. The areas have lots of mountains and hills and most of them are with little or no tree or vegetation cover. The mountains and the foot of the mountains have been washed by floods. The researcher has noticed many sloppy terraced farmlands. It seems that many people have learnt from the problems they faced in the past years.

Farmers in village 7 say that they first learnt to construct terraces through food-for-work program during the Dreg regime. They have also been constructing terraces during the incumbent government, as they are not given food aid without working. Previously, most farmers used to demolish the terraces as they did not understand their use or as they were not willing to understand their use. They have now learnt from their life experience that terraces can protect the soil from being washed away. Now it has almost become a

culture among some farmers to construct terraces on their sloppy farmlands. According to some respondents, it is not for the sake of food-for-work program, as it had been in the past, but it is because they have understood the benefit of terraces that they are constructing them in their farms these days.

Haile: *There is a difference between the productions of crop that grew on land that is not terraced as compared to the production on terraced-land. The soil that comes from up the hill is accumulated on the terrace and the crop that grows on such terrace is more productive. In addition, we are construction terraces as we have seen the difference practically. Previously, we construct terraces only through food-for-work program. We did not care much to build terraces. Now I construct terraces by myself.*

The researcher has observed farmlands on steep mountains without terraces in Budin⁶. Responding to the question why some people do not construct terraces, the respondents said those farmers who plow steep mountains know that the soil can easily be washed away, but they want to reap some crop on the hilly land they were given for tree planting. They say that terraces would decrease the size of the land. However, their main reason, as mentioned above, is the fact that the farmers do not have land ownership certificate. They fear that the government would take the land away from them. They asked why they should build terraces that consume a lot of energy and time or plant trees that take years to grow to usable size when the land is not theirs. Crop production gives them the chance to benefit from the land for at least one season. The respondents agree that not all farmers have understood the use of terraces and other soil conservation structures and methods. Some have, others have not.

According to McCann (1998:5) leaving trees as windbreaks or construction of other soil conservation structures in their farmland was uncommon among Ethiopian farmers. He wrote they had to cut trees in their farmland to be able to swing their plow beam freely. According to the respondent quoted above, this same reason makes farmers less interested in constructing terraces or in taking other soil conservation measures.

When asked about the situation of the natural resources other than manmade forest, the respondents noted that since all the other resources have direct relations with forest, they too are getting affected in the same manner. They were also asked what they think about the causes for environmental degradation in their localities. All research participants mentioned that lack of proper protection and management of the surrounding environment by the government was the main cause. According to the participants' the government should enact laws against those who damage the environment and encourage those who rehabilitate and protect the environment.

4.4.1. GENERAL ENVIRONMENTAL CONCERN OF RESPONDENTS (OPTIMIST OR PESSIMIST)

With regard to general environmental concern, the researcher hypothesized that concern (awareness) would be appreciably greater at local level when compared to the national level. In the first place, the researchers investigate whether or not an individual expressed an opinion with regard to the quality (deterioration) of the environment.

The vast majority of respondents (86.09%) expressed an opinion with regard to quality of the natural environment in their locality. Thus, implying that some of the oldest and lifetime residents of the community linked environmental concern to local issues and more likely to perceive the local environmental situation, while higher status and more educated (follow the media) individual tend to offer opinions on broader geographical scale.

Some respondents in the study area are optimistic about the future of their environment and natural resources. They believe that the future will be bright. They say that they have learnt from their past mistakes and experiences and they hoped they would not repeat those mistakes again at least on a large scale as if they have done it before. Those respondents said the future would be bright as they are aware of the environmental problems and how to address the problems.

Birhanu: *Personally, I feel that we have become aware that we have been the ones who caused the problems we have faced by destroying the forests. I do not*

think there will be deforestation in the future. The farmers are trying to plant trees.

Indris: *Soil erosion and floods have affected us because we have not planted tree. We have learnt from our mistake and I do not think we will continue making the same mistake in the future.*

Mohammed: Land has been given for forest development. I think that is good.

In v7 one farmer, Seid Hailu, 50, said he fears that the future could be dark as the area is drought-prone and as the farmers continue to be food insecure.

Seid: *People are more aware about the problems caused by deforestation and soil erosion. The farmers are struggling. They are construction terraces and are doing everything they can. This is promising. However, we cannot do anything if it does not rain, Farmers despair if it does not rain. I hope we will have a bright future.*

The respondents from v3 also emphasized that because the people in the area are aware, their future would be bright as they would increasingly be conserving and developing natural resources. Surprisingly, unlike farmers in v3 most respondents from Budin 6 are pessimistic about the future of their environment.

Yilma: *Unless the government takes certain measures to stop deforestation the future is bleak.*

Abebe: *We are very much afraid that the future would be dark. The amount of water may continue to decrease as the population is increasing. Unless agriculture professionals teach us how to harvest rainwater, the future will be dark.*

Senayit: *if there is a strong Kebele administration, it can be able to protect the forests from further deforestation. Even if the local administration is changing every one and then, I do not think that there will be a better future*

Gonie. *Most farmers are not aware. I fear that the future will be bleak.*

Matthews: *I never [He stressed the word] expect a better future. We need to have ministry of forests. The government has a ministry of water resources but unless there are forests if you tell the people to harvest rainwater and to dig boreholes to use ground water, it is meaningless.*

Kassaye: *Our land may be affected by desertification. Unless the people are educated, I think the problem will exacerbate.*

Debebe: *without forests you cannot think of water. People have already understood that decrease in the amount of water is caused by deforestation. Therefore, they are concerned about forests. I hope there will be a bright future.*

Four of the respondents from *Budin 6 Kassaye, Gonie, Debebe* and *Abebe*, underlined that the farmers need to be aware and educated to be part of the solution to environmental problems. Although they have not spoken in detail how people can become aware, the media indeed has a role to play in raising the awareness of the public on environmental issues. People could be stimulated to attentively follow up information relevant to their problem and that help address those problems. People that are affected by environmental problems may be more likely to listen to environmental programs than those that have not been affected. However, there is little experimental evidence that media use in general begins with an experience of a problem or lead to the solution of one, although we can usually find occasions when this does apply (McQuail 1994:73).

One notices that more than a quarter of the respondents have indicated that they had not got information on environmental problems despite their being under media coverage for some times. This indicates that in study area the community was not aware of some of the surrounding environmental problems. The lack of awareness of environmental issue should be tested further.

As set of in-depth interviews were conducted with representatives of EPA, local government authorities, and journalists, with a view to eliciting attitudes that are more specific, concerns, priorities and perceptions about environmental quality. As Information collected and checked with other things, their positions on possible environmental actions to be taken to the possibility of informing a community to seek and sustain a consensus among different environmental issues.

To start with, almost all the interviewees agreed that environmental degradation was a great magnitude in Ethiopia, almost all referring with different accentuation to problems associated with pollution and over use of natural resources. Similarly, they tended to agree that not much action had been taken so far in dealing with the ongoing degradation, and that there was not much optimism for the future in terms of improving environmental conditions unless radical measures were undertaken. When two interrelated questions were raised regarding (i) what are the reasons for the failure of regulating the economic & social aspects of life with the aim of protecting the environment, and (ii) what needs to be done change the failure story in to a success one.

Regarding the reasons for failure, interviews from the government bodies put emphasis on the lack of effectiveness and the remaining ambiguities in the existing legislation, especially underlying the fact that the responsibilities between communities and representative institutions of the central government were not clearly defined. In this regard increased demand for new arable land for the population, which increased at alarming rate, and the lack of funds to be able to undertake large projects, as in the case of a complete solution to the reforestation mentioned by respondents as a cause.

4.4.2. DISCUSSION WITH OTHERS

The respondents were asked if they discuss with friends, relatives and neighbors information they get from the media in general. Most of them said yes. They mostly discuss information they hear on the news. This may be because almost all of them do not miss the evening news.

Mesfin: *When the media says heavy rain is going to fall in our area, I tell that to people living around. I tell them to harvest crops that are ripe enough to be harvested. In addition, if the media (radio) says the rain persists for few more days. I tell them to pile the harvested crop in a way the rain does not spoil it.*

Seid: *If I want to go to a faraway place and if I hear in the weather report that a heavy rain is going to fall, I tell people and children not to go as rivers could overflow. Moreover, even if I have to go to the market, I do not,*

Shiferaw: *I tell what I hear on media to farmers if I find it to be interesting to them.*

Burgess (1990) has concluded that it was often easier to change the values and practices of a group than of an individual. If the group discuss and decide to change, then each individual who changes will have the support of the entire group. However, discussion does not necessarily mean that all who have heard the information would be motivated to make use of it. Mesfin, 50, is frustrated that most other farmers are not ready to put into practice that useful information they get from the media even if he is.

Mesfin: *I may tries to put into practice what I hear from the media but most do not listen to the media and I cannot do anything alone by myself.*

Mesfin cannot put into practice the useful information he gets from the media, as it is mostly very difficult for an individual to turn against a strong group norm. As discussed in chapter 2 any given person in the audience reacts not merely as an isolated personality but also as a member of the various groups to which he belongs and with which he communicates (McQuail 1997).

Many Ethiopians abstain from eating chicken when they celebrated the 2006 Easter, as they feared that the virus that causes avian flu might infect them. One respondent from the study area said he and his neighbors trusted the television news and eaten chicken.

Yilma: *I saw on television a female doctor saying that the chickens in Ethiopia have not been infected by bird flu, I discussed it with my neighbors, and we all ate chicken on Easter.*

There is a need to discuss and put into practice important and relevant information aired on the media. Yilma, the farmer quoted above, might not have eaten chicken on Easter if his neighbors have agreed to eat. He is a 55-year-old man who has completed grade 7. He is a respected elder among his community. He can be an opinion leader in accordance with the two-step flow of communication. As discussed in chapter 2 Savage (1993) write, Ideas often flow from media to opinion leaders and from these to less active sections of the population. Almost half of respondents in study area have access to radio and some of others have TV sets. They must have listened to the news themselves. Yilma might have only created the forum for discussion. However, it cannot be concluded here that the others made the decision because he decided to eat. He also did not actually claim that he influenced them.

Personal influence is more important than the influences of the media. Mass communication is less likely than personal influence to have direct effect on social behavior (Savage 1993). He said personal communication has been found to be more influential to help individuals make decisions whether to adopt or not to adopt innovations.

This of course does not mean that the media do not have direct effects. As discussed in in section 2.3 in chapter 2, the two-step flow of communication is criticized for ignoring evidence of direct flow of information. A major news story can have direct effect on the audience without the need for opinion leaders. The media are more likely to reinforce than to serve change; however, when mass communication does function in the service of change, the mediating factors will be inoperative and the effect of media will be direct; or the mediating factors, which normally favor reinforcement, will be themselves impelling toward change (Savage 1993).

During a focus group discussion, three of the participants suggested that if there is a chance for farmers, particularly those that do not have radio sets, to listen to media program together in small groups and discuss interesting points arising from the program afterwards, they can benefit a lot from the educational information. They mention the experience of media programs, which was given to 26 people in their village to listen.

Abegaz: *Within SNNPR in some area like Kembata community radio has given radios to groups of farmers. They gather on Saturday morning from 9 to 11 AM and listen to the program. They [listeners] send reports to the station in which they write what they want to be added. They also send letters. It is good practice if it this can be done in this study area.*

The researcher believes, it may not be possible to distribute media, like a Kembata community radio among farmers to listen to a radio Ethiopia program such as *Awedegeter and Akababi-ena-lemat* that is transmitted all over the country. However, if *Awedegeter and Akababi-ena-lemat* is aired during prime time (in the evening) the issues raised in the program could be points of discussion like that of the news. This would thus help listeners to translate the information obtained from the program into action.

4.4.3. MEDIA PROGRAMS AND GENERAL ENVIRONMENTAL CONCERN.

Respondents of this study were asked about the source of environmental knowledge. They mentioned that the development agent's in rural areas were the main source of environmental information. Only two respondents, who have been working in district (*wereda*) agricultural offices, said that they used to attend training on matters related to environmental protection and had sufficient knowledge. Most respondents mentioned the media, in particular the radio and television, as their second source of environmental information. A few mentioned school mini-media as their second sources and others placing radio and television as third source.

4.5. ACCESS AND REASON FOR ENVIRONMENTAL INFORMATION

The study focused on the access and reason of respondents' attitude and its relationship with environmental awareness. The access and reasons of respondents toward media is described in the following section.

4.5.1. ACCESS TO MEDIA

The accessibility to media considered all the different means available to users. These were different for different media. Figures 4.1, 4.2, and 4.3 depict the way the respondents accessed radio, television and the *Addis Zemen* newspaper, respectively.

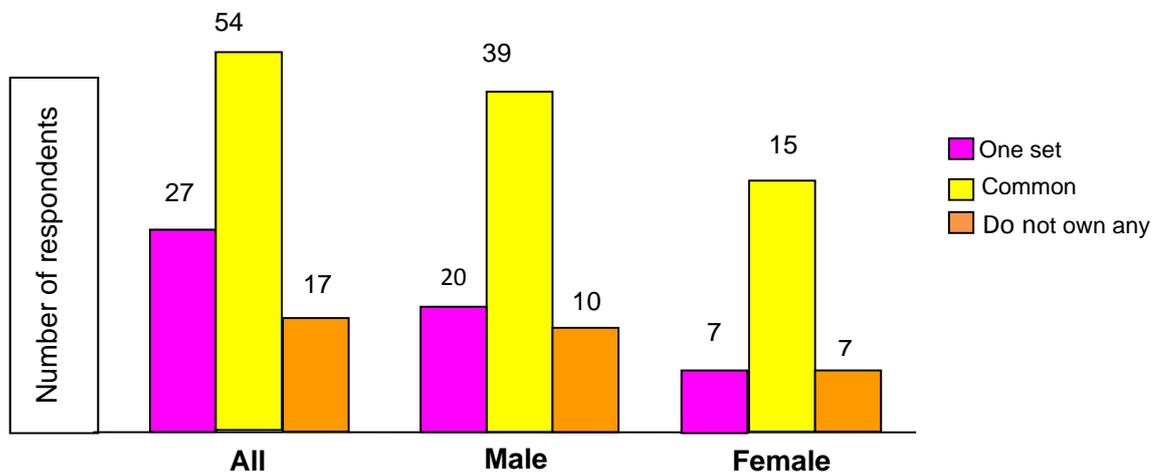


Figure 4.2: Accessibility to radio (responses analyzed by researcher in 2011)

It was found that the majority of respondents (54.4%) listen to a radio shared with their families or friends (see figure 4.2). About 17.7% of the total respondents owned one set, and 27.7 % did not own any. The majority of females and males shared a radio set with their families and friends. About 15.5% of males had their own radio set and only 2.2 % of females had their own set.

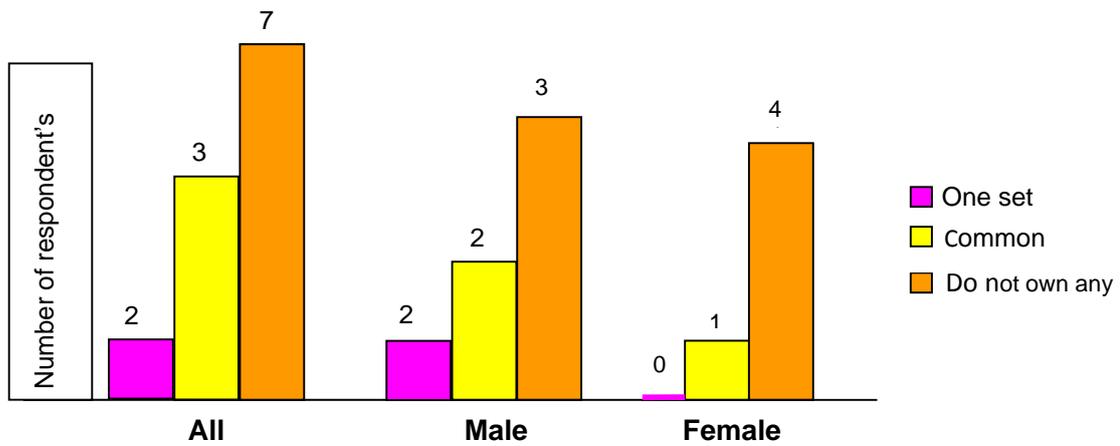


Figure 4.3: Accessibility to television (Respondents response analyzed by researcher in 2011).

More than 70% of the respondents did not have access to watch television either through their own or other sources. Around 26.6% of respondents watched television shared with their families or friends. Only 3.3% of the total respondents owned a television set. The majority of female have no access to watch television either with their families or on their own.

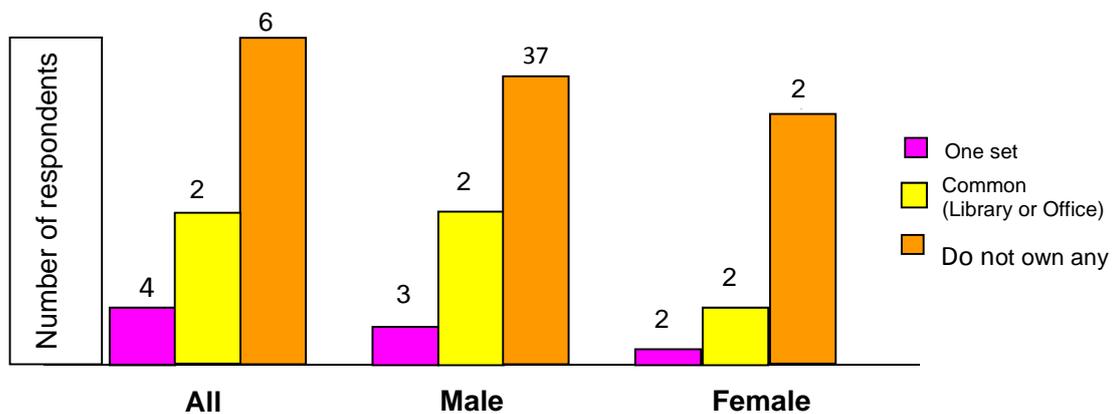


Figure 4.4: Accessibility of Addis Zemen newspaper (Responses analyzed by researcher in 2011).

With regard to access to newspaper (*Addis Zemen*), the majority of the respondents (65.5%) did not have access either through a subscription, the public library, a reading room or at the office. Around 25% of the respondents read the newspaper (*Addis Zemen*) at the public library or at the office. About 65% of the total sampled population in the study area did not read or buy *Addis Zemen* at all.

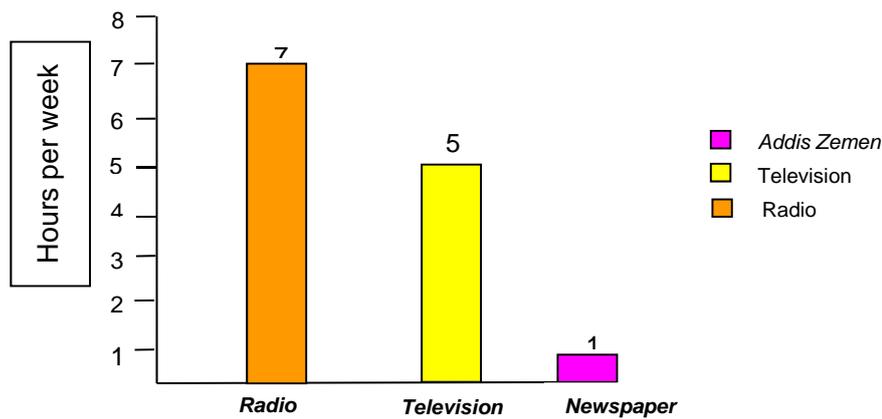


Figure 4.5: Average hours per week spent on media (Responses analyzed by researcher in 2011).

Figure 4.5 indicates that on average respondents spent one hour reading *Addis Zemen*, five hours watching television and seven hours listening to the radio. Therefore, it can be inferred that a comparatively greater number of hours per week were spent listening to the radio. Given the fact that there is a circulation of daily editions of the *Addis Zemen*, the average person spends less than an hour per week per issue, due to the problem of distribution and reading habit of the society.

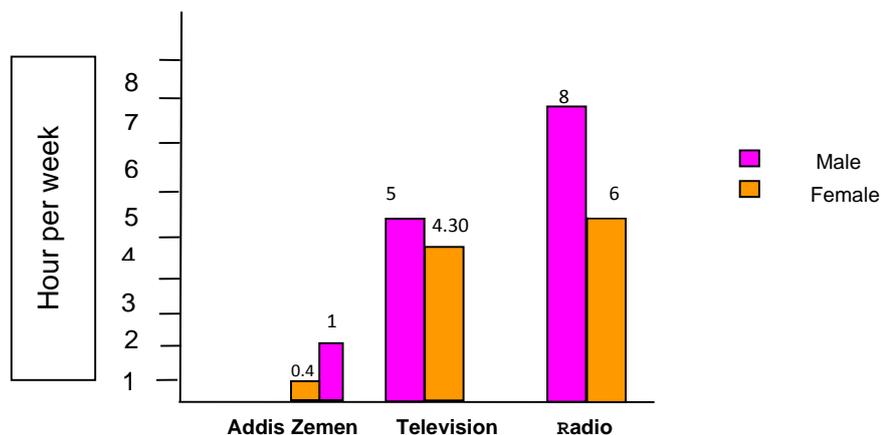


Figure 4.6: Average hours per week spent on media according to gender (Responses analyzed by researcher in 2011).

The average number of hours spent in a week on the media was further examined according to gender and the results are presented in figure 4.6. It can be seen that both genders spent almost an equal number of hours reading *Addis Zemen* newspaper per week. The males spent more hours in a week listening to radio and viewing television. This may be because a greater number of the male respondents have independent access to radio and television than their female counterparts. It may also indicate that men have relatively more leisure time than females to attend the media.

4.5.2. REASONS FOR USING THE MEDIA

Respondents were asked to state their reasons for using the media. The reasons could fall into the following categories: information, education and entertainment. Most of time, all these reasons could be relevant to the media in question (McQuail 1994). Therefore, the respondents were asked to indicate the sequence of relevance, if they found more than one of the above reasons to be true for a particular media.

The respondents noted that the programs aired on weekends, which are mostly entertainment, are their favorites. Concerning programs with environmental issues most of respondents said that they listen to environmental media at least one of the bi-weekly environmental media programs (*Awedegeter and Akababi-ena-lemat*) The fact that they

are listening to environmental media programs (*Awedegeter* and *Akababi-ena-lemat*) might be because of their daily activities. The active audience theory that associated pleasure, purpose or wishes of the potential audience member (McQuail 1994:70) with viewing preferences supports this.

Table 4.2: Most importation reason for using media

Reasons	Reading	Listening Radio	Viewing Television
	%	%	%
Information	15.5	44.4	18.8
Education	11.1	12.2	5.5
Entertainment	3.3	15.5	11.1

It is clear from table 4.2 that the majority of respondents considered information were the most important reason for using each form of the media. In particular, a greater number of respondents tended to listening to the radio mainly for information. An equally number of respondents claimed that television, and *Addis Zemen* daily newspaper was an important source of information, after the radio. However, this is higher (11.1%) compared to the number of respondents suggesting that television were used mainly for entertainment purposes and less for educational purposes. About 15.5 percent of the respondents believed that the most important reason for listening to the radio is for entertainment. Information seemed to be regarded as the most important reason by a moderate number of respondents.

When it comes to radio program all respondents of the study revealed their interest to listen to radio programs. They, however, say it will not be easy to listen to radio program in rural area.

Tesema: *Whenever you want to listen to radio channel, you have to either walk to a nearby hilly location with your radio set or stretch longer electric wire that ends at the top of the three-storied building to connect it to the antenna of your radio set found in your living room. I always do one of these things, as I have been a regular listener of most programs on radio.*

Table 4.3: Most important reason for using media according to gender

Reasons	<i>Addis Zemen</i> (%)		Radio (%)		Television (%)	
	male	female	male	female	male	female
Information	13.4	2.1	24.2	20.2	15.4	3.4
Education	10	1.1	11.1	1.1	4.2	1.3.
Entertainment	3.3	-	6.7	8.8	4.8.	6.3

From table 4.3 it is clear that the most important reason of males and females for using the various media in question, is for information but males and females seemed to derive information differently from different media. Almost an equal percentage of males and females remarked that entrainment after information, is the most important reason for using the radio and television.

However, the use of the different media as source of information differed between the male and the female respondents. In general, the male respondents claimed it to be the radio and the female respondents claimed it to be television, but when it comes to the *Addis Zemen*, both genders agreed that for environmental information the newspaper would be the most important source of information in future.

In general terms access to and reason for environmental information discussed by different scholars who say that, people do not always attend or access certain media outlets even in the absence of alternative media outlets (Williams 2003:178-179). In the same way, the media preferences reported by respondents in this study might be affected by the kind of media out lets available to them.

Almost all respondents SAID that they listen more to the radio, followed by television. Regarding the *Addis Zemen* some of the respondents said that there is not any distribution of the newspaper in their localities and that they have no access to read it. This is how a respondent described their access to *Addis Zemen*

Petros: *I have now with me copies of three weeklies that I bought in Addis Ababa last March. I do not think others have a more recent newspaper. We are almost secluded from the outside world. There is no regular transportation that*

links us to a very small town Durame of 20 kilometers away from here. Even there (Durame) you do not see any newspaper or magazine circulating. The only things that keep us informed by our mobile phones even though there are problems of network.

4.5.3. WHO FOLLOWS ENVIRONMENTAL MEDIA PROGRAMS (AKABABI- ENA-LEMAT AND AWEDEGETER)?

From the focus group discussion, only four participants indicated that they follow the media programs on a regular basis. Six participants responded that they occasionally listen to the media programs and the other two respondents said that they listen to environmental issues in the media only after the researcher talked to them.

The four regular listeners have to carry their radio sets to a nearby hilly location to find the right channel. Out of these four regular listeners, two were listening to the environmental media programs (*Awedegeter* and *Akababi-ena-lemat*) because they have listened to the program on regular base and could not afford missing whatever the challenge of reception is. The other two listeners are late comers. For the occasional listeners the problem of not having clear reception or signal around the residential quarter is described as the main reason for their occasional tuning to radio to environmental media programs (*Awedegeter* and *Akababi-ena-lemat*) which are aired. Moreover, these six occasional listeners mentioned the airing time of the programs (*Awedegeter* and *Akababi-ena-lemat*) which is on Monday and Wednesday morning from 7:20 AM to 7:50 AM as inconvenient for listening. They said environmental media programs (*Akababi-ena-lemat* and *Awedegeter*) should be transmitted in the evening, preferably just after the evening news, so that farmers are able to listen to it.

Indri, 37, did not even know environmental media programs called *Awedegeter* and *Akababi-ena-lemat* exists.

Indris: *I have never listened to the radio in the morning. I cannot wait until the day breaks to go to my farm. Even in the evening I listen to the radio only from 8 to 9 PM*

Birhanu: *In the morning, during the time environmental media programs (Awedegeter and Akababi-ena-lemat) are transmitted it is a time to work. I have to go to my farm early in the morning. Unless it is a holiday, I do not listen to the radio in the morning and during the day.*

Even the four respondents, who do not want to miss environmental media programs (Awedegeter and Akababi-ena-lemat), listen to the program in the morning paying sacrifices.

Kassaye: *When I stay at home to listen to environmental media programs (Awedegeter and Akababi-ena-lemat) in the morning, I feel that I should be working at that time. The time is not appropriate, but I like the programs and I do not want to miss it. It would be nice if it were transmitted right after Woqtau report [in the evening], If it were aired in the evening, others also would listen to it.*

Two of the four attentive listeners of environmental media programs (Awedegeter and Akababi-ena-lemat) have been able to listen to the program as their farmlands are nearby and they can afford to spend a few more minutes listening to the program.

Shiferaw: *My farm is 20 minutes away from my house. I would prefer to listen to environmental media programs (Awedegeter and Akababi-ena-lemat) in the evening. I, nevertheless, have been listening to the program paying some sacrifice. Sometimes when I have to go to my farm early, though some people wonder, I take my radio with me and listen to environmental media programs (Awedegeter and Akababi-ena-lemat) while working.*

Another attentive young listener, Seid always listens to environmental media programs (Awedegeter and Akababi-ena-lemat) while working. Unlike the older farmers, it is not unusual to see young farmers carrying a radio around. A radio requires less attention of its user than that insisted upon by television or print (McLeish 1999:6).

The two major reasons why most of the respondents do not listen to environmental media programs (*Awedegeter* and *Akababi-ena-lemat*) are the time of transmission and the fact that they have not realized that the program is of use to them. If somebody has not listened to the program, how could she/he know whether it is useful or not?

Argaw: *the station [radio Ethiopia] is saying that it has little airtime in the evening. We are saying that priority should be given to this program. They [the management of Radio Ethiopia] say they would study the issue but several years are passing by. They do not have the tendency to change the time. We carried out a small-scale qualitative research this year. Farmers and different professionals, from Meteorological Agency, the Ministry of Agriculture and Rural Development and the Ethiopian Agricultural research Organization that we interviewed said the program should be aired either from 8:300 to 9:00 PM in the evening or from 3:00 to 4:00 PM on Sunday in the afternoon. According to them, currently its target audiences are not listening to the program.*

One of the producers of *Awedegeter*, Getachew, says farmers are too busy to listen to their voices in the morning.

Getachew. *After I interview farmers, they ask me, "When is it going to be aired?" when I tell them that it is transmitted on Monday or Wednesday morning, they say, "Oh, we can't in the morning." They cannot even listen to their choice!*

The educational program head of radio Ethiopia, Asfaw, says it is because of a lack of attention that *Awedegeter* time of transmission has not been changed.

Asfaw: *there have been two program reforms made in 1995 and in 1999. Since 1995, it was known that the target audience wants Awedegeter to be transmitted after the evening news from 8:30 PM to 9:00 PM. However, more attention and priority was given to adding new programs and increasing the daily time of transmission than changing the time of programs like Awedegeter. The main reason was lack of attention. We will consider it in the study we are conducting now.*

According to Soper (1995) the uses and gratification approach assumes that even the most potent mass media content cannot influence an individual who has no use for it in the social and psychological context in which he lives. The opposite is also true. If a listener finds a program useful, it will not be surprising if s/he sacrifices valuable working time to listen to that program. Those farmers who have to leave for their farms early, such as Indris, do not seem to have the chance to listen and evaluate the program and decide whether it is useful to them or not.

The concern of these respondents both who listen and do not listen to environmental media programs (*Akababi-ena-lemat and Awedegeter*) were to enable farmers across the country follow to those environmental media programs (*Akababi-ena-lemat and Awedegeter*) which they think is more relevant to rural communities.

Ashebo: *the programs we followed were to more important to farmers in my area elsewhere in the country than those living in the cities. I do not think the programs are reaching the right listeners.*

Markos: *while listening to the environmental media programs I was thinking of the people in study area. Would be good, the whole farmers of Ethiopia could listen to it. I even recommend the programs to be translated in to other languages that people in rural areas could easily understand them.*

The idea of transmitting environmental media programs (*Akababi-ena-lemat and Awedegeter*) a channel with national coverage is something the producers would like to do. However they said finding an airtime on national transmissions are not as easy as the FM ones. They also argue that as the program it needs drafting of a new argument that the availability of airtime needs to be checked. Environmental media program like *Akababi-ena-lemat* that the coordinator underlines, if the outsourcers have agreement with the broadcaster to switch environmental programs to a station with a national coverage, it should not commit the same mistake.

Argaw: *we have to conduct a baseline survey about potential target audiences. Then we have to get the airtime that could most suit our target audience. We*

have to also set the objectives of the program. The problem of trained work force should be addressed, so that Akababi-ena-lemat can entertain as many voices as possible. I do not think this will be an overnight job. It needs time. Also, know from experience that the task of securing an airtime on national services will not be easier as the FM ones. It is unusual to see independent producers or NGOs like out source's airing their own productions on national channels.

The theory of reception analysis depicts audiences as having free will to decide what and when to watch, listen and read of a certain media product (Williams 2003:199). All respondents suggested that the convenient time to listen to *Akababi-ena-lemat* and *Awedegeter* environmental media programs would be in the evening time.

This view of the respondents is also supported by their preferences for programs to be aired on weekends. Most of the respondents argued that if *Akababi-ena-lemat* and *Awedegeter* environmental media programs wants to reach the rural community, the present transmission time should be changed as it will be more convenient for farmers to listen to. This is also supported by another study that found that programs transmitted in the morning are inconvenient for farmer listeners (Eyob 2006:81).

Argaw: *Baseline survey was not conducted on the preference of audiences before launching the Program. It was launched with people who have a media background and did not consider that as important. Even now we are not thinking about that. However, what I believed is it will not be easy to find youth listeners during the daytime so the options are either mornings or evenings. In addition, weekends are most preferred ones.*

Considering the current signal coverage of radio Argaw is seems that the messages of the environmental media programs (*Akababi-ena-lemat* and *Awedegeter*) do not reach their potential listeners. Concerning their reaction to the duration of each weekly program, most respondents said 30 minutes is reasonable for them to stay at a place and follow the programs.

Some said that it is difficult to say whether 30 minute is too long or short. For this group it is the 'beauty' of the programs that keeps them listening.

Getahun: *I may keep on listening to a good program for an hour without feeling that I have spent so much time. However, when it is something boring, it makes me restless within minutes and I either tune to another station or go out.*

The producer feels the 30-minute duration is long for a program focusing on environmental issues. His effort to air 15 minutes programs two times a week was aborted previously.

Argaw: *Environment reporting by its nature tends to be boring. You can provide the audience with a relatively quality program with variety of issues in 15 minutes. However, the broadcaster did not allow us referring to directives that say 30 minutes is the minimum airtime one can buy. Actually, they have recently decreased it to 20 minutes.*

4.6. ROLE OF MEDIA ON ENVIRONMENTAL AWARENESS

The media considered here in trying to explain environmental awareness is newspaper (*Addis Zemen*), radio and television, due to the fact that these are the most widely and frequently used modern media in Ethiopia. The researcher analyzed the supply side and the coverage of environmental issues in those media, and secondly look at the demand, considering the aspect were people are interested in the offered information on environment and use it.

In the survey, one fourth of interviewed persons SAID that they read the newspaper (*Addis Zemen*) for less than one hour per week. This amount of time spent on reading the *Addis Zemen* newspaper, “the back of news” in Ethiopia, is considerably very low. The figures mentioned above underline the need for attention to spreading information on the environment.

The total number of texts mentioning environmental issues found in the 120 sampled editions drawn from a period of five years (2006 – 2010) is 149. These texts (articles) were assigned to one of the following five genres of newspaper content: news, editorials, reportages, commentaries and interviews. Among these genres, news, editorials and reportages are the three major genres in relation to environmental issues covered most permanently by the newspaper.

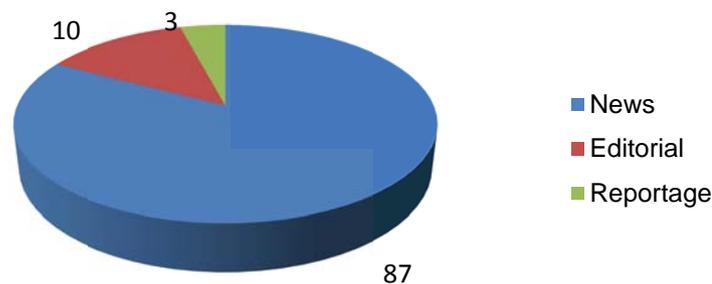


Figure 4.7. Coverage of Environment Issues in Five Years (2006 – 2010)

As Figure 4.7 shows, the most frequent newspaper content genre in relation to environment issues is news. Of the 149 articles on environmental and related issues, 130 stories (87%) belonged to the category of news. The next genre covering environmental issues is editorials, comprising fifteen or 10% of the total amount of environmental stories, followed by reportages consisting of four articles (3% of the total amount of environment stories). The proportion of the three leading genres of environment issues presented on the newspaper, namely news, editorials and reportages is, is illustrated in figure 4.7.

No single item was presented either in the form of commentaries made by a reporter or an expert, or interviews held with experts and environmentalists. From this data, one can easily imply that a relatively high number of environmental issues are dealt with in the form of news articles compared to the other genres. This may probably be because reporters and journalists usually tend to cover news items in their newspapers. However, they could have given more attention to timely and acute environmental

issues rather than simply following the development and the progress of chronic environment events. The lack of more investigative coverage may also be a result of a lack of professionalism and lack of awareness among the reporters and in the newsroom. This was the opinion of the interviewed editor, Sebsbe, from Addis Zemen Amharic daily:

Sebsbe: *Journalists have no trainings on environment issues; as a result it is difficult for them to understand the scientific jargons. It is difficult to face and analyze issues which have long lasting effects and hence, difficult to tell what the consequence of these complexities will be. Lack of professionalism and lack of awareness about the environment on both the reporters and the newsroom is also a major problem.*

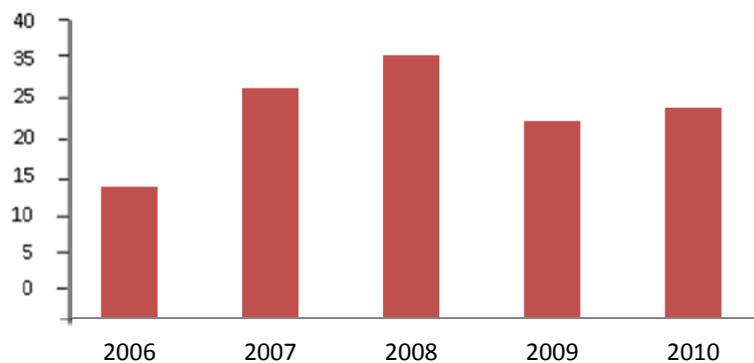


Figure 4.8. Quantity of environmental texts in five year period (2006- 2010)

The graph in figure 4.8 shows the trend of the environmental issues in *Addis Zemen* Amharic daily in the selected 120 editions over a period of five years. The total number of environmental issues and articles was relatively small in 2006 and very interestingly increased (almost doubled) in the year 2008. The data may be related to the Ethiopian

new millennium celebration of 2007/2008 in the country. During 2008/2009 although agricultural production recovered fully (IMF Report: 2009), the coverage of environment issues did not increase in parallel; in fact, articles and stories that appeared in the years 2007 and 2008 were mostly related to Ethiopian new millennium celebration. Environmental reporting during the Ethiopian new millennium celebration was mostly on tree plantations. Coverage directly of the agricultural sector and indirectly of the environment issues was wide in the year 2007, primarily reflecting the impact of agricultural yields on the content selection of *Addis Zemen* Amharic daily. It seems that fluctuation in agricultural production affects the content of the newspaper to a larger degree than the impact of environmental issues. This in turn seems to emanate from the editorial policy of the government press, which emphasizes agricultural led economic development reporting. However, the coverage shows a slight decrease in 2009 and continued slight increase at a level up to the year 2010 without a remarkably rise or fall in number.

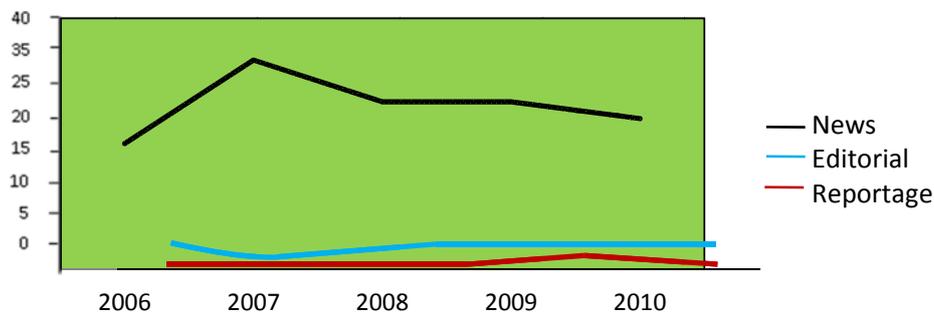


Figure 4.9. The trend of each genre in the newspaper over a period of five years

However, when we see each genre of the newspaper individually the trend is different as illustrated in figure 4.9. News articles show a sharp rise (increase) from 2006 (15 in number) to 2008 (33 in number) doubling the figure of 2006 and this is reflected in the total number of texts as well. In 2009 the number of news articles on environmental

issues fell from 33 to 25, and then there was a slight increase in 2010 as the number of article rose to 29.

The coverage of environmental issues in the form of editorials was meager and insignificant. The coverage was also rather inconsistent. The highest number of six news articles and editorials of environmental issues appeared in 2008. The number fell sharply to three articles in 2009. Although it is difficult to interpret exactly why the highest number of editorials mentioning environment issues was in 2008, the inconsistency in the coverage is clearly seen.

The number of articles covering the environment in the content genre of reportages is not much different from commentaries and interviews. Reportage is a genre that requires background knowledge and depth. The lack of resources and professional journalism may be the causes for a little reportage about environmental issues. Furthermore, there is a lack of awareness on the part of the Environment Protection Authority to provide background information to newspapers and explain the whole picture to the media. The editor put it this way:

Sebsbe: *Logistics also hinders from reaching the information on time. Poor and haphazard linkage with Environment Protection Authority and difficulty of access to information is also another challenge. Public awareness about the environment is also poor. Resistance to cooperate on the part of the industries is also another challenge. Cooperation among the major stakeholders is loose.*

This may also be because the Environment Protection Authority uses alternative media (brochures, its newsletter and magazines) to convey environment education to the society. As an expert on environment issues from Environmental Protection Authority explained:

Mesfin: *Reports and other articles are transferred to the public through the Amharic English magazine called Tefetro (Nature) published biannually and a newsletter. We also publish and distribute brochures, posters, banners, others, we arrange workshops, seminars and we also celebrate internationally*

recognized world environment Days: Environment Day, Desertification Day, Biodiversity Day, and water day.

A total of four articles were presented as reportages and these appeared as follows. Only one article appeared in 2006 and one in 2007. The remaining two articles appeared in 2008. In 2009 and 2010 no environmental content was covered in the form of reportages within the selected newspapers. This considering the use of 24 sample editions from a total of approximately 360 editions each year. No environmental article was found in the reportages in forty-eight editions in 2009 and 2010. The reasons for the insignificant coverage of environment issues as obtained from the respondents were discussed above. Most of the explanations are in some way related to the challenges and problems of reporting environment issues in Ethiopia, such as a lack of professionalism, a lack of environmental awareness in both society and within the newsroom, a lack of awareness on the part of the experts on how to use the newspaper to convey environment issues, difficulties in accessing the necessary environment information, and poor linkage and integration among the different concerned organs of government. Environmental issues are also absent from the objectives of the editorial policy. This may in turn have an effect on the selection and emphasis of issues in the newspaper in general although *Addis Zemen* has been given the responsibility of setting agenda of public concern. This implies, as explained by interviewees in their own words, that *Addis Zemen* Amharic daily has not given environment issues a reasonable coverage.

The tone when environment articles (texts) are mentioned in any of the five genres of the newspaper is taken as another indicator of how much attention is given to environmental issues. As an operational definition for this research, news articles are regarded as directly stating (referring) environment issues when the tone of the headline, the lead and the body all talk about the environment issues. They are said to indirectly stating environment issues when the headline and other details talk about something else one or two sentences on environment issues are inserted in the middle of the article. The same rule of thumb works for the editorials and reportages as well.

Table 4.4. Tones of environmental Issues presented on the newspaper

Genres	Quantity	Direct	Indirect
News	130	40	90
Editorial	15	3	12
Reportage	4	1	3
Total	149	44	105

As seen in table 4.4, the tones of the articles on the environment vary considerably. From the 149 articles on environmental issues, only 44 articles (30%) directly refer to such issues. This means only 40 of the 130 News articles, 3 of the 15 editorials and as little as one of the four reportages directly refer to environmental issues.

Most of the articles, which mentioned environment issues indirectly, are directly referring to agriculture, tourism, development and investment, population, business and economic policy. This is supported by an interviewee:

***Sebsbe:** generally seen, the editorial policy gives high emphasis to development, agriculture and economic issues. As these issues cannot exist independently of the environment, then we can say enough attention is not given to environment issues. On the other hand, they are addressed implicitly on either of the issues mentioned. Some issues of the environment are addressed sporadically, but the coverage is not sustainable and integrated with other issues'*

From this it could be concluded that neither the *Addis Zemen* newspaper nor the editorial policy of the press place emphasis on environmental issues or give priority to create environment awareness.

The average physical space of one edition of the newspaper was multiplied by the average size of a page, which is approximately 42 cm by 60 cm. The total area given to environmental issues was calculated and it was found that it is only approximately 1% of the total physical area of the sample editions of the newspaper. In 2006 only 0.7% of

the printed space was used for the environmental issues. In 2010, almost similar portions (1%) were utilized. It is during 2008 that the highest physical space of coverage was given to environmental issues. In this year, environmental issues represented 1.35% of the total area of the sample editions studied. Next to the coverage in 2006 the lowest space given to environmental issues was in 2008 and 2010.

The trend shows a slight shrinkage in 2009/2010 due to the Ethiopian national election. As a matter of fact, editions of *Addis Zemen* Amharic daily from 2009/2010 were full of articles that talk about activities of the national election, registration of contestant parties, voters, candidates and related issues. The environmental issues were not only ignored but also (if at all covered) they were given very small portions of the newspaper and marginalized in relation to their presentation.

At the end of the Ethiopian millennium, the Environment Protection Authority was reorganized to take responsibilities by declaration to plant trees for environmental protection. Having this in mind, it is natural to expect more environmental stories on the pages of the leading newspaper, which is owned by the government and assumes more responsibility to deal with such public issues. However, only the smallest portion of the newspaper pages was assigned to environmental issues during this year. A slight increase through the years may be taken as an encouraging development but a sharp decline in 2009 again shows the inconsistency of the focus given to environmental issues. The following example is taken to support that environment issues have been given very a small portions on the newspaper.

Environment Sanitation week to be held in Addis Ababa (ENA): 'Tsiduna Arewnguade Addis Ababa Association' announced sanitation week will be celebrated as of 20 November in recall of the November epidemics occurred by dry wastes 100 years ago. As the association announced yesterday, the sanitation week is an opportunity to make the Addis Ababa residents aware about sanitation. The association announced yesterday that the residents should dispose the wastes properly. The sanitation week would stay from 20 to 28 November. The association more over remarked that competitions on sanitations

would also be held. *“This campaign is not only a one time plan but it would be continuous to create awareness about what environment sanitation means,” said the association (Addis Zemen: 63rd Year, No.68. Nov. 16, 2009 Translation: Mine).*

The environmental media programs (*Awedegeter* and *Akababi-ena-lemat*) on broadcast media is transmitted through radio and television. Radio is a cheap, most easily accessible and signals cover almost all part of the country. The sample survey indicated that around 64.4 % of respondents have radio set in the study areas. Furthermore, the frequency of listening to the radio is relatively low: only 44.4 % of the interviews declared to listen to the radio for seven hours per week. The relatively small number of people listening to the radio in relation to the total coverage of signal means that the role of radio in creating environmental awareness cannot be sufficient because there are only very few weekly environmental media programs like *Awedegeter* and *Akababi-ena-lemat*. *Awedegeter* and *Akababi-ena-lemat* is a national environmental media program that aims to educate all farmers across the country that can understand Amharic well. It is not produced for a specific local audience. However, most of the programs are produced in the four relatively more developed regional states.

Getachew: *I do not believe that environmental media programs (Awedegeter and Akababi-ena-lemat) are giving fair coverage of activities in the nine regional states [of the country]. Mostly, we go for fieldwork to the four relatively developed states, south, Amhara, Oromia and Tigray states, as farmers in these states are believed to be a model for other farmers in the other less developed regional states.*

In Ethiopia, even within one regional state, for instance the South Nations and Nationalities and People' regional state, there are more than 56 groups with different languages and cultures. Similarly, within the same region, the climate and vegetation in one area may differ in many ways from another area. In other regional states, such as Oromia and Amhara, most of the people speak one language but they live in diverse agro climatic zones with cultures that differ in several aspects.

The researcher wanted to see if this reality affects farmers' interest to listen to environmental media program and thereby the program's effectiveness. Copies of a few environmental media programs were taken to the research locations. The respondents listened to at least one environmental media program item for three to five minutes. They were then asked if the program was interesting and understandable to them although it was about a farmer or farmers living further away from them. Almost all respondents said they listen to such programs happily and learn from the experiences of farmers who live far away from them.

The researcher let the focus group participants in village 7 listen to a program on the conservation of natural forest in Konso special *wereda*, which is over 1 000 kilometers away from them. The program was about the Konso people who culturally conserve natural forests well as they can get wild coffee in them. Almost all of the focus group discussion participants were listening to the program with interest. They were asked if they understand the respondent's environmental awareness through practice. This program talks about forests in Konso. It tells also about wild coffee. You live in Kidida Gamela where coffee does not grow. Does this make sense to you? Some of them gave the following responses.

Almaz: *Yes, it does. Though it was in Konso I was happy to listen to the farmers saying that forests are life. Yes, it is true forests are life. We need to listen to such programs.*

Adem: *We have suffered because we have destroyed our forests. If the forests had been there, this place would have been like Konso. We could get wild coffee in the forest and we might have used the trees for different purposes.*

Other respondents in other *kebeles* in the research areas agreed that they learn from the success stories of farmers they listen to on the radio no matter how far they live away from them and even if the same achievement cannot be replicated in their locality because of climatic, geographic and other factors.

Matthews: *One can learn from the other. Even if I am in Durame, if I have some good experience, another farmer in Somali region can learn from my experience.*

Kassaye: *I do not get bored even if it is about farmers living far from here. What is happening there may happen here one day as time goes by.*

Generally, most respondents are motivated to learn from the experiences of other farmers far away from them. It seems that the fact that they share the same profession makes them put themselves in the shoes of others. To benefit from the information they get from the environmental media programs, listeners have to be emphatic. Savage (1993) stresses the need for empathy, which, he says, is an indispensable skill for people moving out of traditional settings.

All respondents who listen to environmental media programs (*Awedegeter and Akababi-ena-lemat*) said the programs cover wide-ranging issues that focus mainly on agriculture and that sometimes incorporates environmental issues such as forest conservation and development, water harvesting, soil conservation among others. One female respondent said that she has never heard any environmental program. The four attentive listeners said they have heard about forests, water and soil on the program but they also agreed that the program does not give as much attention to environmental issues as it does to agriculture. They also emphasize that what made the program interesting to farmers is the fact that it covers agricultural issues.

The researcher roughly examined the programs transmitted in one year, 2007 and found that 43 programs related to forests, water or soil was aired. Ten of the programs focused on irrigation, 33 were articles taken from magazines without sound bites or interviewees (mainly the magazine prepared by the Ministry of Agriculture and Rural Development). There were 4 programs on irrigation. Only 10 programs had sound bites.

The educational programs department head, Asfaw, says environmental media programs (*Awedegeter and Akababi-ena-lemat*) gives less coverage of environmental issues because there is another program that exclusively covers environmental issues.

Asfaw: *environment and development program covers environmental issues; that is why Awedegeter and Akababi-ena-lemat gives little attention to environmental issues.*

The producer of *Awedegeter*, Argaw, also gave the researcher the same answer. The researcher had first been interested to see the effectiveness of those programs from the point of view of the farmers but he decided not to pursue this after a brief interview with the producer of the program. The producer of these programs, Argaw, says the target audience of the program is environmentalists and other relevant professionals, not farmers. This means radio Ethiopia does not have a single environmental program dedicated to serving farmers as target audience. If farmers listen to few environmental programs, it is only the environmental media programs (*Awedegeter and Akababi-ena-lemat*). As indicated in one of the sections above, no respondent mentioned environment and development programs. The farmers generally do not listen to the radio late during daytime. Moreover, the environmental media programs (*Awedegeter and Akababi-ena-lemat*) do not have a magazine format like that of the environment and development program. There is mostly one interviewee talking for fifteen minutes about an issue. Therefore, the program is less attractive not only to farmers but also to its target audience.

According to Argaw, he has never gone out for fieldwork to produce program items for the environmental media programs.

Argaw: *I may produce environmental media programs (Awedegeter and Akababi-ena-lemat) when I am sent for other assignments. I have never gone out for fieldwork to produce programs exclusively for those programs. Not even once.*

Argaw's response shows that very little attention has been given by the broadcast media to cover environmental issues. The producers of environmental media programs (*Awedegeter and Akababi-ena-lemat*) produce environmental programs not because they are obliged to do so, but mainly because they are personally motivated to produce

such programs when they see some interesting environmental activities when they go out for fieldwork.

On a question posed to respondents about their preference to listen to environmental issues exclusively on one program or to incorporate programs on environmental issues in programs like environmental media programs (*Awedegeter and Akababi-ena-lemat*) all the respondents said they want information about environmental issues together with agricultural issues, as the two issues are two sides of the same coin.

Matthews: *It is good to mix agriculture and environmental issues in the media program because they are tightly interrelated. They are part of the lives of farmers.*

Ashamo: *If there is no forest, there is no water so it is important to tell about forests along with agricultural issues.*

Tamiru: *I think it is important to have the media programs about forests on regular basis. If the program is only about forests, farmers may not hear it. Farmers want to hear more about fertilizers.*

Kassaye: *Farmers need to be aware about wide-ranging issues; thus, along with agriculture, it is important to include other issues that are relevant to farmers on media programs.*

The researcher noticed that the respondents were mainly interested to listen to the stories of fellow farmers who are successful in their agricultural activities. Most respondents feel that more attention should be given to forest conservation and development, but practically in their day-to-day life, they give less priority to conserving and developing natural resources and focus more on their agricultural activities. It will not be surprising if a program that exclusively covers environmental issues is less interesting to farmers.

Producers of environmental media programs (*Awedegeter and Akababi-ena-lemat*) say that on average 10 to 15 letters are sent to the letters section of these programs every week. Most of the letters are written by listeners who are deeply concerned about forest depletion in their localities.

Argaw: *one of the producers of media programs compiles and presents letters sent by listeners. Every week we receive letters written about deforestation. Sometimes, more than half of the letters could be about forests. Some even write poems on the importance of conserving forests and planting trees. Although very few write about successes in conserving forests, the overwhelming majority write their deep concern on the ongoing forest destructions in their localities.*

The letters in the environmental media programs (*Awedegeter and Akababi-ena-lemat*) has enabled listeners to hear about environmental problems prevalent in the country on a regular basis every Wednesday morning. However, given that many listeners are concerned about the future of their environment, the researcher believes it is appropriate to cover environmental issues on regular basis on those media programs.

On the other hand, of the modern media, television is the most powerful effective means of propaganda and persuasion and it also a new status symbol even in remote villages. In rural areas, peoples have at least some to television in small restaurants. Probably, the growth rate of television sets will increase the importance of television in the future.

A further advantage of television as an educational media is that it is helpful in teaching practical work. A televised presentation can be as clear as face-to-face demonstration. An average amount of 5 hours is spend on watching television per week and more than 26.6% out of all the interviewees watching television forty to forty five minutes per day. Television dominates newspaper followed by radio in the frequency of usage, and in the amount of time spent on it. Considering these promising tendencies the use of television in environmental education is good news.

The document analysis from 2007 indicated that television is the most important channel of dissemination of information all over the country and it has three regular

programs on the environment. Each of the weekly broadcasts of *Akababi-ena-lemat* focuses on one special environmental problem. Targeted at educated people *Akababi-ena-lemat* offers information on the sources, explains the consequences of the problem considered and gives suggestions for solutions by changing individual behavior. Weekly the broadcasted program of 30 minutes is published in the form of a magazine. The EPA in cooperation with television plans successful initiatives of individuals.

The survey conducted revealed that despite the limitations of the media in increasing environmental awareness of the population, the media's role in that respect is an enormous one. The focus of Ethiopian media when covering the environment is definitely on the global scale and typical Ethiopian problems are neglected. Research participants themselves seem to be convinced of the dominant role of media in creating environmental awareness. More than half of the interviewees declared that the information provided by the media has been most important in making them aware of environmental problems.

A new approach to address environmental issues at school is the eco-club scheme that aims to bring NGO's and EPA'S more closely to the school system. It was introduced in 2005 and up to now 34 schools was chosen by the district administration in the study area. **Alemen** is credited for establishing the eco-clubs and he plans further expansion. The most important difference to normal classes on the environment is the project manner eco-clubs scheme uses to address environmental issues. These projects are suggested by the EPA to tackle a wide range of environmental topics and the schools can chose their own campaigns that they want to launch. The projects range from campaigns like "say no to plastic bags" to the banning of use of crackers in an to efforts to create a green and clean surrounding of the school by collecting waste and planting trees and *flowers*.

Alemen: *He said eco-clubs usually meet once or twice per week under the guidance of a teacher. Especially considering the lack of education of teachers on how to teach environmental issues, it has to be appreciated that eco-club teachers are not only offered special literature, but also further training in the*

form of workshop organized by the EPA close cooperation with different NGOs. Although participation in eco-club activities is on voluntary basis the number of students involved in eco-club activities are around 80 to 100 and by this, even exceeds the target figure of the EPA of 50 students per eco-club. Furthermore, eco-club teachers are selected by the criterion of personal interest in environmental issues by the schools.

In general, news is often brief and most of them are written in combination with others. As most of the environment articles are very brief when they appeared in the media, it is difficult to figure out the significant facts in the articles. The interview made with the expert confirmed this analysis and interpretation:

Mesfin: *The coverage generally lacks depth and continuity. In many circumstances, it is too brief that not alone the public even the experts could not figure out the complexity of environmental issues from the coverage. The problem lies on both sides. There is a problem with the environmental issues coverage and on the side of the Environment protection Authority, there is lack of awareness on how to use media to convey environmental information to the public at large. Efforts in this regard are not encouraging. On the journalist's side, lack of awareness and knowledge about the environment sets them back from asking the environmental expert for explanations of complex environment issues and jargons. Journalists usually ask very frequently simple questions and the expert in charge gives answers accordingly. Ordinary questions ordinary answers. Though some media are eager to give coverage to environment issues, they lack the basic environmental training and knowledge. Therefore, I can say print and broadcast media did not address environment issues (even if they appear on the media the way it addressed other issues such as football and music. I don't think enough coverage has been given to environment issues on both media compared to what we see in the real situation.*

The news in the media refers to the environment issues only indirectly. The media's emphasis seemed to be less than other issues such as agriculture, development,

investment and tourism. The news stories on environmental issues are not well sourced and balanced; they are unidirectional without enough acknowledgements and they are rather shallow ignoring the very complex nature of environment issues. The news studied also does not create awareness about environmental issues but simply inform. It seems that reporters and editors took the issue simply as a policy matters or as a simple violation of law. The news referring to environmental issues are not well substantiated or well developed; they present complex issues simply in a kind of “As she/he said ...” approach. None (at least within the sample news and editions) mentioned the Ethiopian Environmental Protection Authority as their major source of information. Other stakeholders such as the government, experts on environment issues, media and industries have said nothing. Local sources are the most frequently used sources but only officials’ voices have been given great coverage and weight. No grassroots voices, no mass sayings and no affected one are mentioned in the selection of the media studied. However, it is the assumption of this study that strong environmental conscience and sensitivity may be created when medias give environmental issues due credit. The extent to which they play this role depends on stories being accessible and interesting and civil society can help with this.

4.6.1. PERCEPTUAL AND POTENTIAL ROLE OF MEDIA IN ENVIRONMENTAL AWARENESS.

Regarding public participation on delivering and accessing environment information, Principle 18 of the Rio Declaration on environment and development issues states as follows:

Environment issues are best handled with the participation of all concerned citizens at the relevant level. At the national level each individual shall have appropriate access to information concerning the environment which held by public authorities including information on hazardous substances and materials and activities in their communities and the opportunity to participate in the decision making process. States shall facilitate and encourage public awareness and participation by making information widely available (UNCED 1992).

How can this public participation come unless the government media such as print and broadcast media creates a forum for the society to discuss environment problems? Environment stories are most of the time buried in the middle of the pages or thrown in the back part of the paper or as the last order of a news transmission on the radio. Even if some articles appear on the front pages of a newspaper, they are written as sidebars not as main stories. Headlines often refer to a different topic rather than directly talking about environment issues. Most of the sources are global ignoring the fact that environment issues are local. Sources utilized are not diversified. Reporters rely mostly on the government media (Ethiopian News Agency) for most of their information.

Another objective of the study was to reveal the perception of the respondents and their expectations of each media type's role in generating environmental awareness. The results are presented in two sections, firstly the perceptual role, and then the potential role of the media in enhancing environmental awareness. Firstly, the individual respondents were asked to give the role of each media in promoting environmental awareness a rating. This constituted the perceptual role of the media in environmental awareness. Secondly, an attempt was made to find the respondents' expectation of each form of the media in creating and promoting environmental awareness. This was done to find out the extent to which media could play a role in enhancing environmental education and make sound public participation. The respondents impression of the perceptual (actual) and potential role of media in environmental awareness is summarized in table 4.5.

Table 4.5: Perceptual role of media in environmental awareness.

Media	High	Medium	Low
	%	%	%
Radio	44.4	15.5	12.2
Television	18.8	11.1	5.5
<i>Addis Zemen</i>	15.5	11.1	3.3

It is clear from table 4.5. that the majority of listeners and readers claimed that the role of radio, television and *Addis Zemen* newspaper in promoting environmental awareness is very unequal. A very small number of readers (3.3%) claimed that *Addis Zemen* play

a very low role in promoting environmental awareness. Most the remaining respondents believed that the role of radio and television for raising environmental awareness is below average.

Table 4.6: Potential role of media in environmental awareness

Media	High	Medium	Low
	%	%	%
Radio	42	18	8
Television	21	12	6
<i>Addis Zemen</i>	17	9	2

As seen in table 4.6, the majority of respondents answered that radio and television could play a very significant role in environmental education, while an almost equal number of respondents claimed that the *Addis Zemen* newspaper could play a moderate role. The result indicates that the respondent's expectation of the media in raising environmental awareness is high in radio and television in the future.

4.6.2. QUANTITATIVE CONTENT ANALYSIS

The content analysis intended to examine the tone of coverage of the environment. This content analysis meant to specifically evaluate whether the media has begun to take notice of the deteriorated environmental situation over time, as demonstrated by an increase or decrease in the coverage of environmental issues. This content analysis was basically designed to answer the following questions. How do you generally evaluate the coverage of environmental issues on media? Are there plans to air environmental media programs to increase or decrease from existing duration? Who decide the content of environmental programs?

To assess the environmental news coverage of broadcast media a sample was chosen from 5 consecutive years (2006-2010) purposefully. The study covered broadcast news of September, November, January, March, May and July (2007) from 5 consecutive years and it also covers 120 days publication of *Addis Zemen*. Reportages are all well

researched or investigated; they are written single handed by the reporter consulting no experts or the Environmental Protection Authority of Ethiopia. Most of the environment issues are in the form of traditional news with no attention to analytical reportages. It is interesting that no investigative reportage about the topic in question was found in the totality of the selected research material.

The tone of most of the editorials is not directly referring to environment issues inclining and directing to agriculture, development and investment, policy matters and others. The science of the environment and the complications it may bring are ignored. Reportages and editorials lack depth; they are rather shallow with poor investigation. No discussion and interview were conducted and no acknowledgment is given to the responsible bodies. As the government of Ethiopia is the principal agenda setter and as the government media are supposed to be more responsible to cover such public issues, the media should at least to some degree change its focus towards environment issues.

The tone of the reportages is mostly inclined to agriculture and development issues. No company, experts or other environmental journalists are cited. There was no mention of the great stakeholders on environment issues. It is rather astonishing that from all 149 environmental topics covered in the 120 sample editions over the period of five years, no single interview was ever made and presented in the material covering environment issues. Neither the press releases nor the explanation about the environment issues by EPA was covered or presented in the analyzed material.

Addis Zemen Amharic newspaper allocated less space to environmental issues than for example to sports, advertising and politics; it has neither a special section nor a permanent column for environmental issues throughout the paper. The only column, which touches on the environment to some extent, is the section '*Environment and Development*'. However, the section's focus is mainly on development. Even this column is not constant over time and does not appear on a regularly basis. It changes and varies from one edition to another. The researcher only found two columns that talk about environment and development after having gone through 120 editions. One of the interviewees expressed it this way:

Sasbe: *environment issues are covered together with other issues. There is no permanent column or section on which environment stories could appear more regularly. Previously there was a half-page, 'population and environment', which touches environment, issues a little, but now that section is abandoned when the paper is reorganized in terms of contents and environment issues are now curled in the section.*

These findings show that coverage of environmental issues is not constant or routinely made. At times news on environmental issues may appear on the front pages (very seldom on the first page), however not as a main headline story only as a side bar on the bottom of the paper.

The media do not provide as much coverage to the important environmental topics and news as to the coverage of Spanish and English football clubs. Some of the texts analyzed are included in section 3 of Appendix 1 of this thesis to provide a visual picture of the coverage given to environment issues compared to other issues. The researchers is of the opinion that these examples can make the study more alive to the reader and hopefully it will enable readers to compare the emphasis given to environment issues to the emphasis given other issues such as sports.

Table 4.7: Other issues (sport and deforestation) covered by *Addis Zemen* (No.93, Dec.10, 2008).

Sample Topics	Paragraphs	Words	Position and area given
Sport	15	1180	Half Last page
Deforestation	4	150	Middle small

Comparing the depth and the length of the two texts included in section 3 of the Appendix, it is clear that text one has been given an unnecessarily large area (half of the newspaper's last page) and much emphasis. The position on the last page of the newspaper is comparable to the front page in many respects. The article is also well sourced. The environmental article (text two) is constraint to a small part of the page, it is buried in the middle page of the newspaper, and it was not well sourced. The irony is that text one has nothing to do with the day-to-day activities of the Ethiopian society and

even though it has some entertainment and education value, the content was also covered in other media outlets (both government and private).

Environmental reporting in the media and the need to assess the situation regarding media outputs of environmental issues is linked to the requirements of reception studies. Mass communication expert Davis (2002:276) warns researchers involved in reception studies not to make their own statements about encoding or decoding but rather to meticulously examine the situations in which the media messages are produced as much as the audiences. The environmental media programs (*Awedegeter and Akababi-ena-lemat*) were launched in November 2005 by a group of people who were participants of the 2002 World Summit on Sustainable Development (WSSD) held in South Africa. None of these individuals had any media background and therefore they did not come up with a clear understanding as to who will be the target audience of the environmental media programs.

In the interview with Argaw, he clarified that the goal of the program, set by the founders, was designed to create an ecological sensitive and conscious society.

Argaw: *It was in the year 2005 that the producers begun to have a clear objective and target audience. Public awareness creation about environmental issues among the community and in particular the youth become the objective of environmental media program (Awedegeter and Akababi-ena-lemat).*

Although Argaw admitted that there was some confusion as to who belonged to the target group, professionals working on environmental issue and agriculture development agents were the main target audience. In the early days of the environmental media program (*Awedegeter and Akababi-ena-lemat*), the producers had an annual plan designed at the beginning of each year. This plan was produced based on thematic areas such as ecological issues relating to water, forest and soil.

Solomon: *Strictly following the annual plan has eventually proved in the transmission of programs that it is unattractive and 'full of rhetoric with rare human element'. After 2005 it seems the producers begun to be flexible and started to cover a wider range of issues include topical ones.*

A rough examination of the programs transmitted in 2007 shows that the subjects listed in the annual plan, topical issues as well as those done with the initiative of the producers, were covered adequately in the programs like environmental programs. Currently five producers and their sound technician (editor) make up the production team of the environmental media programs (*Akababi-ena-lemat and Awedegeter*). Every week the producers are expected to come up with at least a report not exceeding 20 minutes, and have to compile environmental news and events for 5 minutes, usually at the beginning of the program. This covers both national and Africa-wide issues. One article taken from an environmental magazine or a website will be read in the weekly program. They also conduct interviews or have discussion as needed.

Out of five producers, two producers say that they have no regular editorial meetings. The final say as far as content is concerned lies in the hands of the coordinators (interview with Argaw and Solomon) who are also a producer and manager. The other producer is free to propose any idea he thinks will be part of environmental media programs (*Awedegeter and Akababi-ena-lemat*) and discuss it with the coordinator. Since the end of 2007, an editorial conference was established to support and direct the work of journalists working on the content of environmental media programs (*Akababi-ena-lemat and Awedegeter*). This conference is composed of different departments.

Solomon: *Though the contribution is limited, the conference members in some case have helped us to see the issues we cover from different angles and take their inputs. The members were used as resource persons. Actually they were supposed to meet every day but this not happening as they have their own commitments.*

Table 4.8. Extent of coverage of the media in 2007 (Broadcast media) (Source: Broadcast Authority 2006)

S/N	Program type	The main focus of the media program	%
1	Economic type	Economic inflation	15 %
2	social related	HIV /AIDS	20 %
3	Political related	election, Party Dialogue	23 %
4	Environment related	Soil conservation	2%

The general question is, to what extent do environmental issues get media coverage? In the news articles assessed there is an almost equally division between radio, television and *Addis Zemen* newspaper. The information was collected from documentation of the Broadcast Authority (Broadcast Authority 2006). The coverage of each media issues is expressed as a percent of the total number of news or articles. During a six-month transmission period, the radio and television stations' broadcasted of music, sport and advertisement took the lion share of the airtime.

It must be noted, that no program had a regular transmission date and time except for music. This was one of the unique characteristic of the media stations. It can also be taken as a weak point because the media stations did not give their audiences the chance to plan for or expect their favorite program at a defined time or day. The research findings show that almost all the respondents remember music and advertising as media programs. This is the expected since because almost 60% of the airtime of the station was dedicated to music, advertising and political issues (Broadcast Authority 2006).

In addition to music and advertising, the respondents also remembered some of the programs transmitted. After music and advertising, 23% of the respondents recalled political issues (election campaign) and the other 20% remembered the programs that were related to health issues (HIV/ADS) and economic issues (inflation). Only 2% did not forget the existence of environmental media programs (*Akababi-ena-lemat and Awedegeter*) which was transmitted weekly. We can assume that a program can be remembered bases of its occurrences. Based on the findings, it is possible to imagine that the media placed emphasis on programs in the following hierarchy: music and advertising, political related issues, health (HIV/AIDS) programs and economic (inflation) respectively. This fact was also stated during the focus group discussions.

Solomon: *the absence of daily program other than music forced the media stations to depend on occasional occurrences and that was its great mistake. I have raised this particular issue. He has solemnly admitted this fact, as an excuse he pointed out that the media stations and publication lacked many facilities to run in full capacity.*

In general, the responses of the research participants are a good indication of the program type that was presented frequently. Therefore, as it has been indicated earlier, this outcome proves that the media station were by and large music-driven. In addition to the coverage of environmental issues by the media, other important points are the media's presentation of environmental news and how their presentation affect (influence) their respective audiences.

Framing theory allows for the identification and systematic isolation of specific patterns in news coverage of environmental issues. As previously explained, these findings have important ramifications because they provide an empirically based understanding of how media news presents their coverage of current, prolific and volatile environmental issues.

Most of the environmental news is event reporting rather than depth reporting. If the event focusses on a policy issues related to the environment, a guest of the owner addresses the opening or if it is an interview with a high official, it appears on the front page. Other events from other sources appears in the inside pages. In general, as the data indicates, the coverage of environmental news in media lack depth reporting and do not influence the audience in order to create awareness, rather it simply informs the audience. People are interested in topics that affect their lives, like environmental issues.

4.6.3. QUALITATIVE CONTENT ANALYSIS

The study used qualitative content analysis as a supportive method, which focus on analyzing interview answers. The in-depth and focused group discussion were interview sessions conducted with purposefully selected professional of Environmental Protection Authority, and the chief editors of media and other concerned bodies. The interview

focused on the content of environmental news and relationship between environmental activities and media. Most of environmental media programs (*Awedegeter and Akababi-ena-lemat*) are in magazine format in weekly programs. In most cases, the programs comprise three packages (items) that usually have a set structure of flow as indicated in figure 4.10.

Content analysis was done to help the researcher to conduct fruitful and 'focused' dialogue (Schroder et al 2003:155). It is also out of the conviction that the study will emphasize the audience's need to look at the content of media (Jensen & Jankowski 2002:135). It was with this understanding that the researcher tried to make an examination of environmental media programs (*Akababi-ena-lemat and Awedegeter*) transmitted between the months of September 2006 to July 2007, which is equivalent to about 12 hours of audio production. A total of 24 programs with 46 packages dealing with various environmental issues were aired by the broadcast media in this time.

Twenty-four of the 46 packages of the environmental media programs (*Akababi-ena-lemat and Awedegeter*) were interviews and out of these 25 interviews only one was with an experts or official. The 5 sounds bites were of celebrities and youth who are planting and selling trees. Only one of the interviewees happened to be a rural community member. Out of the 17 panel discussions aired, 15 had parliamentarians, environment officials or experts as panelists. There were no voices of ordinary people. The remaining two discussions were on the prime minister's discussion with representative of farmers held in Addis Ababa. It seems difficult to consider the appearance of these representatives in environmental media programs (*Akababi-ena-lemat and Awedegeter*) as voices from the grassroots because the delegates are usually elites in their respective areas.

To give a more vivid picture, 87% of the programs had the voices of experts and officials as inputs, while journalists read 5.5% and these dealt with discoveries in environment sciences, information on environmental problems and the activities of organizations working on environment. It seems that programs aired recently dealt with

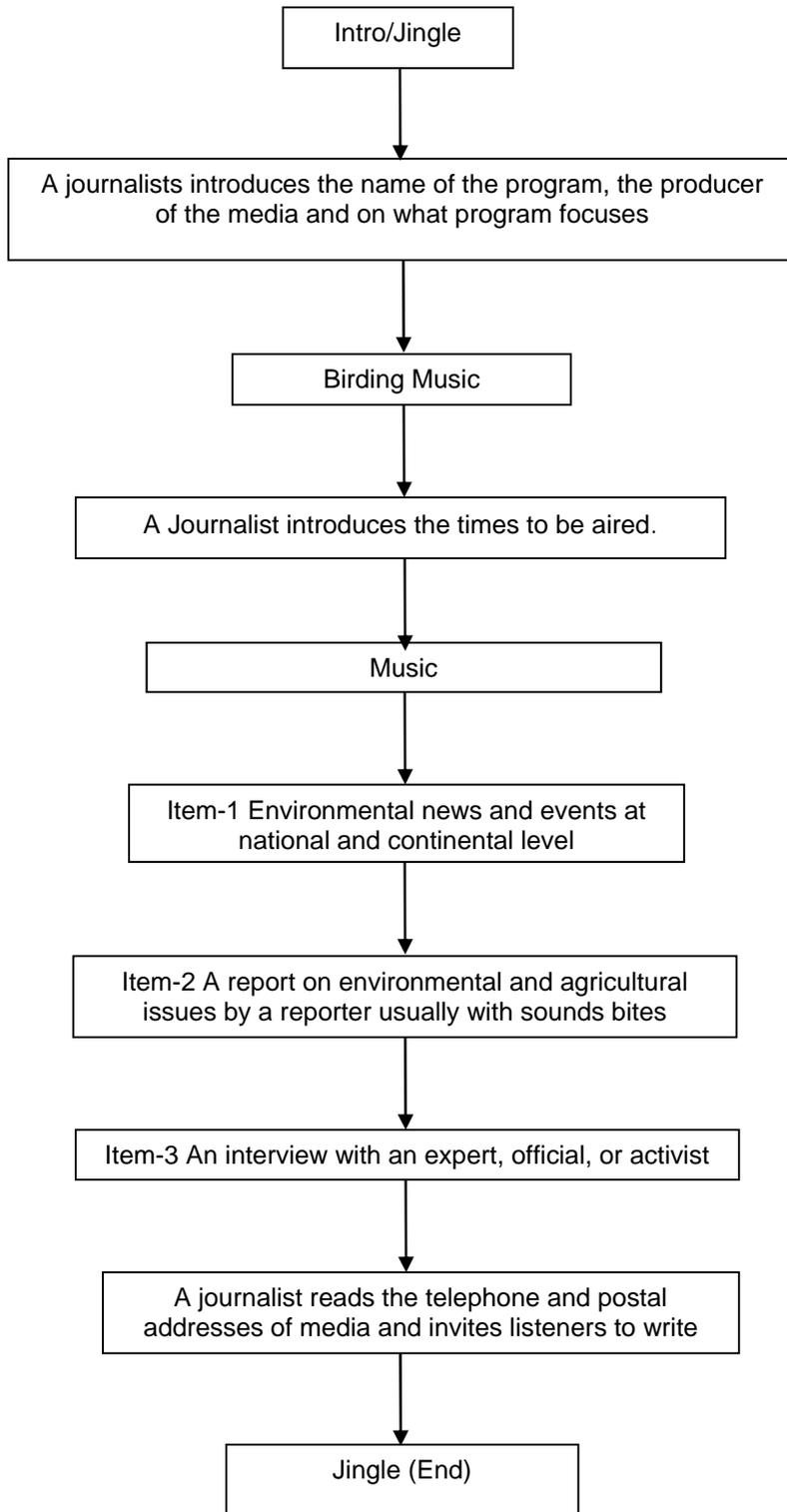


Figure 4.10: Flow chart of environmental media programs (Source: Ethiopia radio and television agency 2007)

wide-ranging issues of environmental concerns. Issues related to forest and soil seems to be given more airtime. Except for some issues that have global and national concerns, most programs have their focus on Addis Ababa rather than local areas.

Getachew: *Environment is the base for development, without protecting the environment, every activity could be meaningless. The coverage of environmental news was event based. Journalist assigned when there is workshop or celebration day of environmental events. Environment not considers as an agenda and attention has not given to it. Media have to pay attention for environment and have to play their role in order to create awareness. He also mentioned that Environmental protection Authority plan to work closely with media institutions and to train journalists. The other respondent was from Environmental protection Authority, and he is professional of environment.*

Messifin: *Deputy Director of EPA, claim that the coverage of environmental issue is like fire brigade. Journalists invited by his organization when there is only workshop, and they cover news based on speech of guest of owner. Because of the shortage of time, they never touch the subject matter. As environment is a very complex issue, it needs interpretations that have to assign journalists for further investigation and reporting. Otherwise, it is impossible to create awareness. Each environmental issue should be analyzed and interpreted to the listener and reader. However, attention has not given to environmental issues. Even if there are different activities, the coverage is less. Environmental issue is so vast in order to cover by giving priority the media's have to establish permanent programs and news page to interpret and analyze news story. It is also important to focus on serious problems of the environment. Public media should have to give special attention for environment as far as it is readable listenable, viewable and used as a document.*

4.7. CHALLENGES OF REPORTING ENVIRONMENTAL ISSUES

How well a journalist performs his/her professional duty determines to a significant extent the quantity and quality of the information the public gets from the media.

However, scarcity of information, lack of editorial support, ignorance and misunderstanding of environment issues on the community, pressure from industry and environmental groups and lack of skill and training are some of the challenges of environmental reporting (PMC 2006). Covering environmental stories requires an understanding of both the “science” involved as well as the many complex environmental laws that govern these issues; it also requires the skill, the training and background to cover technical environmental issues (Soper 1995). On the other hand while playing a critical role in helping the public understand of environmental issues journalists themselves often feel ill-prepared to cover the environment. Laekemariam (2000) reached a similar conclusion in his assessment of environmental protection and mass communication in Ethiopia, and he concluded that journalists and editors themselves have no clue about what environment is. The PMC (2006) survey done in some countries (e.g. in Tanzania and in Jamaica) also indicated that journalists lacked access to timely, accurate, clear and understandable information on environment issues which and some criticized scientists for using excessive jargon.

4.7.1. THE NEED FOR TRAINED JOURNALISTS

When this study was conducted, there were five producers of environmental media programs (*Awedegeter and Akababi-ena-lemat*) named Argaw Ashine, Eyenallm Tefera, Haileamlak Kassaye Getachew Maluku and Assegid Kebede. All of them had trained in areas that are different from agriculture or environment. Haileamlak and Argaw has BA degrees in Ethiopian Languages and literature, Getachew has a diploma in geography, while Assegid has a diploma in Adult Education.

All of them agree that it would be better if professionals trained in fields that are relevant to agriculture or environment produced environmental media programs (*Awedegeter and Akababi-ena-lemat*). Getachew and Assegid lived in the countryside and they say they did not face serious problem when they began to produce these programs but they still think that it would be more appropriate if professional agriculturalists and environmentalists produced the program. Haileamlak is from Addis Ababa and he says he faced lots of challenges at the beginning.

Haileamlak: *At the beginning when I was sent for fieldwork, I did not even know what to ask and I ended up coming back with shallow interviews. However, through time, when I interviewed many professionals, I learnt a lot. Personally, I do not believe that I did a good job at the beginning.*

Argaw: *you might have heard about environment training workshop organized for journalists working for such and such media, but they all are briefing or an environment impact assessment professional. They are not well tailored in manners that try to answer the questions of journalists such as how to report on environment there has never been training on environment reporting in the country.*

Educational program department head of Radio Ethiopia, Asfaw Geremew, also agrees with the producers that those journalists who are trained in the area can produce better programs.

Asfaw: *Previously, we used to hire journalists that are graduates of colleges of agriculture. Currently, there are not such producers of environmental media programs (Awedegeter and Akababi-ena-lemat) but we should employ journalists trained in relevant field of studies in the future.*

Journalists trained in fields that are relevant to agriculture and environment can ask their interviewees better and challenging questions and they can also better analyze different information they have and write with confidence their program's scripts. These qualities can make a program more interesting and educational.

4.7.2. LANGUAGE USAGE AND INTERPRETATION

When conducting media audience's studies, it seems imperative to know whether respondents speak and understand the language used by the media program under investigation, which in this case is environmental awareness. Environmental media programs (*Akababi-ena-lemat* and *Awedegeter*) are Amharic programs and the researcher did not find it difficult to understand that respondents had problems understanding Amharic. Out of the 90 respondents in the sample survey, only three

have Amharic as their mother tongue while the rest understand and can respond to the Amharic language but prefer to speak *kembategn*.

In the environmental media programs (*Akababi-ena-lemat* and *Awedegeter*) the language used by the journalists of the program are full of new terminologies. These were recently coined by Ethiopian scientists to express ideas that need one word to express the idea. Some of these words are *Bizha-hiwot*, which means biodiversity, *sine-tewaldo* (reproduction), *sine-hizb* (population), and *sine-mihidar* (ecology). Most of these words were created by Ethiopian scientists by blending Amharic and Geez (an extinct ancient language of Ethiopia) words.

The researcher asked the survey participants about their familiarity with newly coined terms, as well as English terms, that are mentioned on the radio. They indicated that they face some problems in understanding these terms, which are sometimes used by development agents. Some raised concern about other listeners, like farmers, who have never heard these words and who might find it difficult to understand the whole context due to the insertion of one or two such terms in programs. The following excerpts from two respondents can be taken as a representative opinion.

Temesgen: *Though Amharic is my second language. I can understand those new terms that are related to agriculture and environment for the only reason that I learnt them in the school. Think of the various illiterate listeners including those that have Amharic as their mother tongue, I do not think they understand them. Even for me if you ask me about other Amharic terms used in health science, I cannot understand them.*

Tamiru: *Previously when I hear new words on the media, I start to lose interest. These words were not familiar to me. I started to know about the meanings of these words after I heard from experience of daily activity. I know for sure the farmers will not understand these words. I do not even think my friends there (in office) who are high school graduates understand these words.*

It seems producers of environmental media program (*Akababi-ena-lemat* and *Awedegeter*) acknowledge the concerns of the respondents and add to the list a number of terms that have no equivalents in the Amharic language.

Solomon: *For those terms that have substitute in Amharic we mention the term first and elaborate on what they imply. The worst comes when we or the experts have to use jargon that has no corresponding term in Amharic. Take for example English terms such as bio-diesel and biogas; how can you find an Amharic term for each of them? In such cases the only option we have is to use the English term as they are explain immediately what they mean. Concerning terms like bio-diversity, we prefer to use the Amharic term "Sine-mihidar" and make explanations. While working on hazardous chemicals, the expert tells you about the "PH content" and "residue" for which you have no Amharic term so far.*

Despite their fluency in Amharic, most of the respondents said they do not want to hear such words unless they are explained.

Seid: *I try to think over these new words but the journalists are quick. They should read it slowly. It would also be good if they translate new terms.*

Kassaye: *Personally, these words disturb me. These words are known only by the journalists. The public does not know them. They should try to teach us with the words we can understand.*

As discussed in section 2.5.3, McQuail (1997) notes that when the decoder reads the message as the encoder intended it, the encoder has been successful. Nevertheless, he says, if there is a misunderstanding, it results from a "lack of equivalence" between the encoder and decoder. There seems to be "lack of equivalence" between the listeners and producers of environmental media programs (*Awedegeter* and *Akababi-ena-lemat*) with regard to the use of newly coined words.

McQuail (1994) says media texts are polygenic (that is capable of resulting a variety of interpretations) and audiences are active decoders who will not necessarily accept the preferred reading being offered by the texts. The above-mentioned words, the meanings

of which are not clear, can be more polygenic than simple words that are understood by most. "Communication (is) effective when the idea or message, as it was initiated and intended by the sender, corresponds closely with the message as it is perceived and responded to by the receiver. Good writing 'talks' the way people want to listen. The enemy of good writing is the official, the bureaucrat and the so-called expert who uses words as a barrier to understanding instead of as a means of communication" (Soper 1995). He stresses the broadcast story has to be crystal clear the first time of hearing. There cannot be effective communication when there are less understandable words here and there in any media program.

In the researcher's opinion, the producers' use of unfamiliar words and phrases is to affect the interpretation of listeners of environmental media programs (*Akababi-ena-lemat* and *Awedegeter*). This might make the audiences to understand the media texts differently from the intention of the producers of those environmental media programs (*Akababi-ena-lemat* and *Awedegeter*). According to the producers, the problem of mixing English words and phrases as well as the use of jargon is reflected from the interviewees. Solomon relates the cause of this problem to the education of the environmentalist that took place abroad and in foreign languages.

Generally, scholars in broadcast media recommend producers to abstain, as far possible, from using words or phrases that listeners might not understand. The result of inserting such words or phrases will only make audiences lose their focus to the program.

4.7.3. PRACTICAL APPLICATION OF MEDIA INFORMATION

As far as natural resources conservation is concerned, very few respondents have put into practice what they listened to on the media. However, there were farmers who said that they emulate other successful farmers they have listened to on the media.

Seid: *I have constructed terraces and I do not plow down the hill because I have heard on the media about the use of terraces and contour plowing. I have also listened about water harvesting and I harvest rainwater. I even once got 900 birr from the sale of onions that I produced using the rainwater I have harvested.*

Seid might not have been influenced by the media to carry out the activities he mentioned above, but the information he gets from media can give him more confidence to put the information he gets from Development Agents (DAs) and other neighbors into practice.

One respondent from the study area has witnessed hundreds of people in his village rallying to plant trees after listening to a media program on the eve of Ethiopian Millennium. He noted that due to a series of program transmitted on media in relation to millennium celebrations the people in study area were inspired by the message and organized a tree planting campaign.

Mokonnen: *It was a year ago and I was back to my parents [in Durame] for vacation. I saw all my friends engaged in transporting seedlings to fields. They told me that they started preparing holes two months ago. I asked them who is behind the initiative. All told me that the programs aired on media dealing with the alarming rate of deforestation and the campaign in relation millennium celebration. To our disgust, the producers of media did not come to report despite the series of letters sent by some of our friends to media agency.*

Another respondent cited the behavioral changes he achieves as an outcome of environmental media programs (*Akababi-ena-lemat* and *Awedegeter*).

Birhanu: *before attend these discussions, the source of my knowledge about environmental issues were environmental media programs (*Akababi-ena-lemat* and *Awedegeter*). The program helped me to visualize the idea of environmental protection beyond tree planting activities. I remember a program they once transmitted on drinking water and how the wastages from households affect the whole water supply. From that time on I started to care for water.*

Of the regular listeners, one was bold enough to say that he has never thought of implementing what he listens to on *Akababi-ena-lemat* and *Awedegeter* program.

Getahun: *Honestly speaking, I do not remember a particular activity I performed as a result of environmental media program transmitted on *Akababi-ena-lemat**

and Awedegeter. This does not mean that I was opposing their teachings or did not like program. As I said before, I always like to listen to the program but could not remember a time where I did something to implement what they said on the program. By the way is it necessary to implement what you hear on the radio? I just take it as a source of information.

Given the power of audiences as forwarded by proponents of the active audience, it is difficult to assume media as sole sources of change. It however seems reasonable to agree with the view that says "the media are more likely to reinforce than to change" (Servaes 1999, cited in Eyob 2006:71). Likewise, some respondents said the environmental media programs on *Akababi-ena-lemat* and *Awedegeter* have served them as reminders of environmental issues they already know. They also claim that the messages they listen on the media may inspire them to relate the issue with their environmental situations and act accordingly.

Birhanu: *I have heard about the benefits of using modern beehives on Awedegeter. I have bought two modern beehives. I am going to try them next June.*

Gonie: *I learnt to make compost mixing cow dung with weeds and other leaves and the remains of plants from environmental media programs. Before I began making compost, I had only used cow dung as natural fertilizer.*

Yilma: *we only used dung as fertilizer but after I heard on the radio that farmers in Amharic make compost from leaves, I do not now throw leaves away.*

The National Meteorological Services Agency works with environmental media program producers and it gives them regularly weather forecasts every week during rainy seasons. The weather reports are specially prepared for farmers. There is also a weather report transmitted on Radio Ethiopia evening news regularly. Some respondents said they benefit a lot from such weather reports.

Shiferaw: *I listen to the weather report transmitted at the end of the evening news and also on Awedegeter. When the weather report tells when the rain will fall I began plowing the land. The radio warns that the crops could be affected by*

floods so that we take necessary precautions. Weather forecasts of the coming ten days, or the next few months are also told on Awedegeter. Farmers have to listen to such weather report. It is very important (stressed).

Haileamlak: *Farmers' children learning in different universities and colleges tell us that they listen to environmental media program mainly to know if it is raining in their parents' locality.*

Others said they have practically applied some information they got from other programs of both radio and television.

Matthews: *I once saw on television an old farmer in Amhara region, who could save 10,000 birr in a bank by rearing cattle. I then bought two cows and their number increased to seven. I have sold some of them and have bought others.*

In the researcher's opinion, the above response by the research participant is just a showcase of what most participants feel about environmental protection. To the participants, when the issue of environmental protection is raised, the first thing that comes to their mind is the seasonal greening campaigns often organized by some groups including government offices. Of them, relating environmental issues with wider level activities like pollution and residential and personal hygiene is far from their experience. One of the producers of environmental media programs (*Akababi-ena-lemat*) Eyenallm mentions a deep-rooted outlook on the part of the urban dwellers that associates environmental protection with tree planting as an impediment to his reporting specially when trying to get interviewees.

Eyenallm: *When you tell them [residents of city] that you are working for a media program that covers issues of environmental protection, they start saying 'what do you get from me' I do not have a plot to plant trees or I am not a farmer?' All they expect is that I am going to ask them about tree planting or farming. There are people who immediately turn off their radio sets upon hearing the word environment at the beginning of Akababi-ena-lemat and Awedegeter program. They do not think the issues are relevant to their lives. It was only when we*

recently aired programs on the shortage of water supply in the city that people begun calling and appreciating us.

The researcher believes it would be difficult to ascribe audiences' supposed implementation of media message as something that comes because of the environmental media output alone. This view becomes more valid when one identifies that the audiences have other important sources of information that in this case is respondents' lessons from development agents. In conjunction with the discussion in chapter, it is important to consider the media as "influences working amid other influences, in a total situation" (Kapper 1960; cited in Soper 1995:40).

All respondents agree on the importance of the relevant messages they receive from media outlets in reinforcing the knowledge they acquire in the outside field. The respondents added that the messages would be taken to the farmers who they are going to meet and work with. The above-mentioned experiences of different respondents show that information from the media is being used by listeners. Uses and gratification theory suggests that media users play an active role in choosing and using the media and are goal oriented in their media use. As discussed in Chapter 2, media use depends on the perceived satisfaction, needs, wishes or motives of the prospective audience member (McQuail 1994:70).

4.7.4. REACTION OF MEDIA WITH ITS BROADCASTERS

The media authority has the right to suspend or cut the contents of media program on environmental issues supplied by other stakeholders. The media coordinator has faced such kind of suspension before.

***Argaw:** we conducted a panel discussion on food security and water resources of Ethiopia. The whole theme was about answering the question why Ethiopia becomes food insecure while at the same time holding the nick named 'the water tower of Africa. There were hydrologist and other pertinent professionals as participants. The panelist finally associated the problem with polices which they said promote household food security as opposed to the one that used to be implemented by the former regime. After listening to the program, the person in*

charge told me that it would not be aired as it is against the editorial policy of the station.

The researcher asked the follow question to the producers Did you produce the program without consulting the editorial policy of radio Ethiopia?

Getachew: *I already know the editorial policy. There is no statement that prohibits the transmission of programs critical of policies. The thing is it depends on who is the person on charge. Though I do not right now remember the content of the program we had a program aired that was very critical of government policy. You know it was another official. Also cites another case where part of the environmental program was made not be on air due to reasons that have nothing to do with the editorial policy of the station.*

Argaw: *Today there the flourishing flower industry in of the towns. In addition, at the same time there were rumors that the chemicals used in the green housed are affecting the heath of employees. We followed this story and managed to be in the farms where meet victims. We received their testimonies and came up with a program. We also include in the program the fact that government ministries like the Ministry of Agriculture and customs office responsible for monitoring the entry of hazardous chemicals. Men at Radio Ethiopia told us to cut that story out and their reason was simply that the program discourages investment flow to Ethiopia. Another challenge faced by the producers of environmental media program is the attitude journalists and officials in government media have toward issue of environment.*

Getachew: *working on environmental issue is considered as a low profile task among journalists themselves. Hosting music and sport shows is taken as a skillful task that environmental reporting. I at time ask myself do the practitioners know what the government development policy says. The Ethiopia government is preaching Agricultural Development led Industrialization (ADLI). Paradoxically government media bosses do not comfier environmental reporting as an*

important component of development. To them taking about environment is boring.

According to the editorial policy of the Ethiopia state owned media (2002) outlets have three responsibilities, namely: to introduce and explain policies strategies and activates of the government to be medium for the activities of the government to be medium for the active involvement of the public in the development and democratization of the country of the media programs were not done according to the editorial polices.

Out of the resources allocated to the environment media project, more than half goes to the broadcaster as airtime fee. This is unfair to environmental outsourced programs, since radio Ethiopia is allowing airtime for free to other shows like music and sport.

***Argaw:** The regular music shows are on air for free. They even make money. Sixty percent of the income from the promotions aired on music and shows will go radio and television while the producer of the program takes the forty percent. In addition, we are paying money to create awareness about environment and development among the public.*

4.8. HIGH-LEVEL COMMITMENT FOR ENVIRONMENTAL PROTECTION.

Environmental guidelines and literatures suggested that effective mainstreaming of environmental issues in to strategies and programs within the government activities in a task that by nature requires strong leadership and high-level commitment. The study attempted to reveal the status of government activities in connection to the issue.

In the fore-going part of this chapter, the result of sample document analysis revealed that strategic plans, annual plans and programs of the government bodies describe their commitment to address the environmental problems in different way. Likewise, research participants were asked their opinion on governmental body's commitment to protect the environment. About 45% of the respondents indicated that the strategic plan, annual plan influenced their dedication to see environment protected. On the other hand, 55% of the respondents said that government bodies did not explain their commitment to fight against the environmental problems.

It was, however, observed that government bodies have shown little or inadequate leadership and high-level commitment in many of the activities that call for timely decision and devotion. For instances, it was revealed by different sources of data that strategic plans, annual plans and programs of government sector did not describe their commitment to address the impacts of the environmental problems on their organization, on their staff and on the community to which they provide services.

4.9. GENERAL EVALUATION

In the semi-structured interview guide of focus group discussions as well as the in-depth interviews the final question was on how the respondents evaluate environmental media programs. Moreover, the last question of all "If you were to evaluate environmental media programs, where do you put it and why?"

Almost all respondents gave it 'very good' and 'good' marks. All the regular and occasional listeners believed that the program would be a very useful program for farmers as it has been for them. All complained about the time of transition. The respondents who do not listen to environmental media programs (*Awedegeter and Akababi-ena-lemat*) said that they did not rate the program as 'very good' and 'good' because they did not listened to a program that is relevant to their lives and professional career and think that they will start listening in the future.

It must be noted here that all listeners and non-listeners of environmental media programs focused on environment have once again mentioned their concern for the limited coverage of the media program. It is recommended that a national broadcast program with expanding time be implemented so that more rural communities have the opportunity of listening to it.

4.10. CONCLUSION

This chapter has presented the main findings of the research. Some responses have been paraphrased and verbatim transcripts have also been heavily used to give ideas and comments in the words spoken by the respondents. The discussion was underpinned by the theoretical and methodological framework informing the study; by applying the uses and gratification theory. Different scholarly perspectives on media

effects and audiences as well as on environmental issues also informed the discussion. In their reception of messages of environmental media programs, they rather develop meaning by actively relating to their lived experiences and social settings. In the next chapter, conclusions and recommendations are provided.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1. INTRODUCTION

Although a detailed discussion of the scientific nature of the environment is beyond the scope of the study, the nature of the environment and its complexities was briefly discussed in the literature review chapter of this thesis. Concepts of environment, human intervention in the environment, dynamic characteristics of the environment, major environmental issues of the globe and the state of environment in Ethiopia, are some of the main issues discussed in the literature review. The role of the media in covering environment issues, media effects and messages, agenda setting, sources of environmental information, challenges of covering and reporting environment issues constitute the theoretical framework of the study. Furthermore, an overview of the role of the media in Ethiopia was presented as an additional background for the research.

In this chapter, a summary of findings, conclusions and recommendations related to the research problem and objective of the study are given. Efforts have been made to collect information and data related to knowledge and concepts of media and environmental awareness. Different methodological approaches were used to assess the role of the media in environmental awareness. There are, however, still some shortcomings, which have a negative affected on the results of this study. Thus, the findings in this chapter must be seen against the background of the limitations discussed in section 1.9 in chapter 1.

5.2. SUMMARY OF FINDINGS

In developing countries like Ethiopia people are highly dependent on natural resources and this dependency often leads to the depletion and degradation of the environment. Added to this, the lack of awareness about the environment by parts of the society, the media, experts and environmentalists, makes the situation even worse. According to different reports, Ethiopia is facing a disruption of ecological balance triggered mainly by the rapid growth rate of its population. Overtime environmental issues and the risks in future have become more complex. It was argued in this dissertation (in section 4.6)

that the covering and presenting of environment issues in the media should be in a form that can be easily understood, to create the required awareness among the public. In a situation where environmental degradation is going on at an alarming rate, the need for creating public awareness on the environmental issues should be high on the agenda. For most people the media is an important source of information about the environment. The government, via its media section, must put environment issues on the public agenda. However, little is known about the ways in which environmental issues are treated in the media. This research has focused on the role of the media and the extent of environmental coverage in the government's media outputs. The results obtained, from both the quantitative and qualitative interviews, indicate that a set of reality certainly need to be taken into account in any attempt to reconsider the ongoing environmental degradation in Ethiopia (in section 4.6.1).

The aim of the study was to investigate the overall operations of media to create environmental awareness (section 1.5). To this end, based on the theoretical background, the role of media was analyzed from the point of view of its programming, audience or users and legal ground. Each of these factors is a significant indicator of the success or failure of the media. In addition, the researcher has tried to understand how the media listeners and readers react to the message of the environmental media programs thereby evaluating the effectiveness of the program itself. It is also worth repeating here that whenever answering questions in interviews, most respondents tend to consider the farmers or the localities they came from.

It seems plausible to generalize from the reaction of the research participants in the study area that the environmental media program (*Awedegeter* and *Akababi-ena-lemat*) are programs that mostly appeals to farmers (section 4.4). The majority of the respondents belong to those who did not listen, watch or read the media reports, followed by those who listened, watched and read occasionally. The reasons for their not tuning into media programs, especially television, seem to be the bad signal in the study area. Also the fact that most respondents come from areas with no access to these media (especially television and newspaper) limited their information about environmental media programs. The fact that most respondents are watching and

listening to at least one of the bi-weekly programs on environment and agriculture aired on the television and radio implies their interest in environmental media programs (section 4.4.2).

As indicated in chapter two (section 2.4.3) the number one victims of environmental degradation in Ethiopia are the farmers (Cleaver 1994:67). Despite their different listening behaviors towards environmental media programs (*Akababi-ena-lemat* and *Awedegeter*), all respondents want the program to reach all rural communities across the nation. This signifies the need to air environmental media program (*Akababi-ena-lemat* and *Awedegeter*) in rural communities

Many of the research participants tend to learn more about environmental issues from their life experience than from any outside sources of information (section 4.4). Farmers in highly degraded area chopped down the trees they had planted on hills and mountains during the Dreg regime after the collapse of the communist government. They understood the uses of the plantations after they had begun to suffer from floods and soil erosion. Similarly, farmers in relatively degraded area have become more concerned about deforestation after the water they use for irrigation has begun decreasing significantly.

The study has also revealed that the research participants' views about the future of their environment are mainly determined by their level of awareness about the problem (section 3.3.2). Respondents in highly degraded area believe that most people have learnt from their life experience and are aware of environmental problems; consequently they do not expect further deforestation or the demolition of terraces or other soil conservation structures. All in all, they are optimistic about the future of their environment.

Contrary to the situation in highly degraded areas, most respondents from relatively degraded area feel that most of the people, especially those who came from neighboring areas to encroach into their forests, are unaware of the dangers involved in forest destruction (section 3.3.1). They are also afraid that the future would be bleak if

measures were not taken to raise the awareness of environmental problems. They are generally pessimistic. Interestingly, respondents from both research areas emphasized that awareness is the key to stop further environmental degradation. The researcher believes the media can play an important role in raising the awareness of rural people.

Environmental media programs like *Awedegeter* and *Akababi-ena-lemat* is aired on Monday and Wednesdays from 7:20 to 7:50 in the morning for half an hour. The time of transmission is inconvenient for most of the respondents. They need to set out to their farms early in the morning. Among the respondents, only very few listen to these environmental media programs attentively. They listen to the environmental media programs either because they are very interested in the program and are prepared to sacrifice their valuable time or their farmlands are near to their home (Section 4.3). The rest that access the short bi-weekly environmental media programs do not listen to them regularly.

For most subsistence farmers the environment is not a priority issue. The focus of these farmers is mainly on agriculture. They are concerned about forest destruction, shortage of water, floods or soil erosion when these issues have a negative impact on their agricultural activities. They have no interest in listening to environmental media programs unless they heard it from other farmers. Programs that exclusively cover environmental issues may not catch these farmers' attention. From the responses of the research participants it can be concluded that even if environmental media program are produced and transmitted in the evening in a magazine format, the farmers may not listened to them attentively. Even if they are interested to follow environmental media programs regularly, most of farmers simply lack access to both print and electronic media (section 4.4).

Media programs (*Awedegeter* and *Akababi-ena-lemat*) do not cover environmental issues on a regular basis. The producers of these media programs and the educational programs department mention that "development and environment" media programs covered environmental issues well and there was no need to cover environmental issues on other media programs regularly. Development and environment programs are

not transmitted at a time when farmers are at home (for example between at 11:50 or 12:35) since its target audience is environmentalists and other relevant professionals. None of the respondents mentioned development and environment media programs when they were asked which programs they listen to. This clearly shows that the program is not interesting to farmers (section 4.5.3)

Producers of *Awedegeter* and *Akababi-ena-lemat* (section 4.3) say that on average 10 to 15 letters are sent to the letters program of *Awedegeter* and *Akababi-ena-lemat* every week. Most of the letters are written by listeners who are deeply concerned about forest depletion in their localities. The letters program has enabled attentive listeners to hear about environmental problems prevalent in the county on a regular basis every Wednesday morning.

Almost all research participants prefer to rather listen to the voices of farmers that to that of journalists and other interviewees on environmental media programs (section 4.7.2). They trust the farmers' account of success stories. Most environmental programs on *Awedegeter* and *Akababi-ena-lemat* are only scripts taken from magazines. Journalists lack the very important component farmers need. Such as sound bites of other farmers. One of the reasons that the respondents are less interested in the voices of journalists and professionals is their language. The journalists use newly coined Amharic words, the meanings of which farmers do not know well. The professional interviewees on their use English words while talking and that offends the farmers.

Environmental media programs (*Awedegeter* and *Akababi-ena-lemat*) are a national program. Although it doesn't cover activities in all regional states, generally most respondents are motivated to learn from the experiences of other farmers far away from them. The fact that they share the same profession makes them put themselves in the shoes of others.

For most respondents from relatively degraded area, the media, both television and radio, are their sources of educational information (section 4.6.2). There is little or no educational information they get from Development Agents (DAs). A few respondents

complained about young and inexperienced DAs. Most respondents in highly degraded area are getting the support of DAs and the radio is an additional source of information, which serves as reinforcement.

As far as natural resource conservation is concerned, very few respondents have put into practice what they hear on the media. Few respondents in relatively degraded area indicated that they learnt how to make compost from the media. There were respondents who said they emulate other successful farmers they listen to on the radio.

Producers of environmental media programs (*Awedegeter* and *Akababi-ena-lemat*) define development as better life and better income. They do not believe that media programs can bring about development on its own although most farmers trust information they get from media. According to the producers, the support of development agents, schools and governmental and non- governmental organizations is needed to make the program more effective (section 4.6.2).

The analysis of the print media (*Addis Zemen* Amharic daily newspaper) focused on consecutive five years editions (section 4.6.2). A sample of 120 editions were selected from a total of 1 800 editions. For each year, 24 editions were drawn. A content analysis was done for each text that appears on the pages of the newspaper except advertisements and cartoons columns. All texts were counted and allocated to the predetermined five genres of the newspaper (news, editorials, reportages, commentaries and interviews). To categorize texts under the theme of environment issues key word strategy and operational definition of the theme were used as qualifying criteria. To analyze whether the newspaper has given the issue in question a significant focus, tables and registration of the data were prepared based on Griffin's (2006) criteria (position of the story, length of the story, the lead editorial) (section 4.6.2).

A total of only 140 articles on environmental issues were were found in the sample of 120 editions of the newspaper. The total area given to environmental issues was calculated and it was found environmental issues occupied only about 1% of the total physical area of the sampled editions of the newspaper. This content varied between

0.7% in 2006 to 1.35% in 2008. *Addis Zemen* allocated less space to environmental issues than to sports, advertising and politics. The newspaper also did not have special section or a permanent column for environmental issues whereas there were dedicated spaces and columns for sports and politics in the newspaper.

Another finding from the analysis of the newspapers was that 68% of the environmental texts appeared in the middle and the back pages and only a third of environmental articles appeared in the front pages of the newspaper. The reason for this is that articles with a high news value get priority and environment articles have a lower news value and is therefore placed in middle sections of the newspaper. Since readers tend to give more attention to the front and sometimes back pages for little awareness raising is done through the newspapers.

In addition to the low priority of environmental issues in the newspapers very few of the respondents had access to the newspapers. Only about 25% of the respondents read the newspaper (*Addis Zemen*) at the public library or at the office while the rest did not read *Addis Zemen* at all. Respondents thus did not consider the newspaper to be a significant source for creating environmental awareness.

The most frequent newspaper content genre in relation to environment issues was the news. Of the 149 articles on environmental and related issues 87% were news, 10% were editorial and 3% were in the reportages category. No environmental issues were presented as a commentary or interviews. This lack of more investigative coverage may be a result of a lack of professionalism and lack of awareness among the reporters and in the newsroom. Other explanations are related to the challenges and problems of reporting environment issues in Ethiopia. Environmental issues are also absent from the objectives of the editorial policy of *Addis Zemen*. In addition the study underscores that leadership and high-level commitment of news editors and reporters has been weak.

This inadequate commitment of leadership is also evident from other data. The majority of the survey respondents, focus group participants, key informant interviews and

document reviews, indicated that strategic plans, programs and annual plans does not show adequate commitment to address environmental problems. The study showed that the top challenges to protect the environment in development activities are the fact that the concept of the environment itself is poorly understood by the community and leaders. This result from weak leadership and a low level of commitment, lack of assessment of impacts of environmental issues on the sector, inadequate support to environmental committee and poor integration among development sectors.

5.3. CONCLUSION

Recent developments in Ethiopia and at a global level show that environmental concerns command greater public interest and require more media attention. It is the conclusion of this research that media can play an important role in stimulating discussions on the environment. The media can create awareness about the conditions of environmental resources and the trends in the utilization and management thereof. Strong environmental conscience and sensitivity can be created if the media, broadcast and print, give environmental issues due consideration in their output.

Throughout this study it was found that a scarcity of environmental information, lack of awareness about the environment, poor cooperation among the different bodies concerning environment, poor information delivery and communication system and lack of the necessary skill and training on the concepts of environment and journalism itself, are major challenges for covering and reporting on environmental issues. The interviews conducted showed that journalists are largely scientifically or environmentally illiterate or ignorant when it comes to environmental issues.

The findings also show that no permanent section was assigned for environment issues to be presented in the form of news, reportages, interviews or commentaries in the newspaper. Throughout the study period, no interview with an expert on environment issues was found, nor was commentary given either by an expert or a journalist. The coverage was inconsistent and quantitatively there was a rise in volume of environmental coverage in one year and then a sharp decrease in the next year. The

research also revealed that no proper emphasis was given to environment issues either within the newspaper or in the editorial policy; if at all covered; most of the environment issues were too brief and covered only indirectly giving high priority for other issues such as sport, development, investment, agriculture, health and education.

The editorial policy of the newspaper emphasized the economic principles and strategies stated in the constitution of Ethiopia: rural development strategy, economic and infrastructural development strategy, education development strategy and health development strategy. Nowhere in the editorial policy is an environment development strategy found. The editorial policy emphasized the agriculture led economic development policy of the government, and the role of the media is then to cover stories that aim at alleviating poverty and ensuring economic development and prosperity.

Whether or not the absence of environment issues in the editorial policy was the reasons why reporters in the newsroom of media ignored environment issues of great concern is difficult to tell. The poor emphasis of environment issues in the editorial policy may have ultimately resulted in poor and inconsistent coverage in the newspapers and on radio and television. As the editor of both media explained, the personnel in the newsroom are trying to fulfill the objectives of the press stated in the editorial policy. The editorial policy is their guide and they are abiding by it; it guides the editorial room in every detail like selection, exclusion, prioritizing and killing of stories. Yet, the editorial policy has also given to the newsroom a mandate of setting any public issue as an agenda for the media, giving it the possibility of covering environment issues as one of the major issues. However, as the findings showed, environment issues were considered as major issues neither by the editorial policy nor by the newsroom, and this shows that there is a gap in the knowledge on environment issues both in the editorial policy and among journalists themselves.

Despite the existence of many environmental problems in both rural areas (such as deforestation, loss of biodiversity, soil degradation and erosion, desertification) and in the urban major cities (such as sanitary problems, water and air pollutions), these were seldom mentioned in the media. The main sources of information used were very limited

(government authorities, Ethiopian News Agency); whereas the major stakeholders of environment issues such as environmentalists, research institutions, industries, NGOs, and the society at large were ignored.

The research participants viewed the participatory role of media audience in program production as very low. The answer to the second research question (section 1.6) is also be related to the question of ownership. Since the audience of the media had no control over the media they also did not get the chance to fully participate in the production activities. Their participation was only limited to authority in discussions on environmental protection campaign programs and very few of them came up with their items during those campaigns. The main factor for this is that the station did not appreciate audience to participate in program production. Here the researcher would like to raise the argument made by PMC (2006:8), that “media theory signifies a two way process, which entails the exchange of views from various sources and is the adaptation of media for use by communities.” In this regard media created no significant stage for its audience to exchange their views and air their concerns. In addition, the media stations were not using volunteers in amateurs and production. By so doing, the station did not utilize the valuable involvements of audience in bringing basic information for the society. All these imply that media was not properly acting as a participatory media in treating audience in production activities.

The research question on whether the contents of media programs were appropriate and meaningful to the audience can be answered based on the respondent's answers. The findings of the research show that most of the contents, particularly the music, and politics reflected the local contents. When it came to environmental content it was done only occasionally. The media stations did make efforts to disseminate the burning issues such as environmental degradation.

However, these efforts would have resulted in a better outcome if they were supported by direct participation of the audience. Concerning this Soper (1995) notes “by providing at least the possibilities of a broad-based system of participation, media takes advantages of the inherit relationship between the producer and the audience in a way

other forms of media cannot." Due to the general problems that have to be faced when media are used in an educational approach there will be a lack of feedback, interactive communication and control of the audience. The fact that the media's approach will always stay a theoretical one, enhancing the efforts in creating environmental awareness should not be restricted to media alone, however powerful they may be as an instrument of environmental awareness creation.

A general conclusion from the study is that there has been confusion, lack of clarity and a narrow understanding about the concepts of environmental problems and the protection of the environment. It was found that concepts are not understood well and knowledge of the terms vary considerably even in environmental committees. These conceptual confusion and misunderstanding have hampered effective implementation and it was observed that community responses to environment issues have continued to be focused on limited conditions. Without a clear concept of how the environment might be protected within a community, it is unthinkable to implement effective environmental protection.

The study also indicated that the media and environmental sectors have not organized awareness creation workshop or training for either journalist or high-level managers, to build a shared understanding of what environmental protection means to their sector and what they should be trying to achieve through environmental protection. However, it was revealed that a significant number of the journalist and environmental committee members had the opportunity to participate in environmental protection training arranged by the EPA.

The findings of the study have led to the conclusion that the environmental media programs and its audiences have not assessed the impacts of the environment on their community and the effects that environmental media programs and plans may have on environmental protection. In a community where environmental impact assessment has not been done, it is hardly possible to perform effective environmental protection activities in line with the need of the community and its comparative advantage.

It can further be concluded that policy documents do not adequately and comprehensively consider environmental problems as a development constraint. However, some respondents in the study area have attempted to recognize the environmental problems as challenges of development. It was also evident from the documents that the environmental committees have not analyzed their major strategies, programs and plans through an environmental perspective.

Generally speaking, it can be concluded from the Responses of the respondents that media programs are useful educational programs that are attractive to farmers. Most farmers do not listen to the environmental media program mainly because it is transmitted in the morning, when they have to work in their farmlands. According to the top management of the media, the media programs (*Awedegeter* and *Akababi-ena-lemat*) have been airing in the evening since 2007. With this, it expands the airtime for the Amharic service in the evening to include environmental media programs.

Despite some problems, the agricultural coverage of the program is more or less effective. However, its environmental coverage is far from effective as most of the programs on environmental issues are only scripts (articles taken from magazines) that do not incorporate local community sound bites. Moreover, the environmental coverage of the program is not aired on a regular basis. The fact that most letters written to *Awedegeter* express the deep concerns of listeners about environmental problems in their areas makes it appropriate for media in general, and environmental media programs producers in particular to consider producing environmental programs at least once in a week as a component of the magazine program.

It can be concluded that currently media doesn't have a single environmental program dedicated to serve farmers as target audience. The producers of *Awedegeter* and *Akababi-ena-lemat* environmental media programs and the education programs department in radio Ethiopia, however, believe that 'development and environment' program gives good coverage of environmental issues. If farmers listen to any environmental programs at all it is to *Awedegeter* and *Akababi-ena-lemat*. No respondent mentioned 'development and environment' program when they were asked

which programs they listen to. The researcher doubts if the respondents even know such a radio program is being transmitted. The media program on development and environment is regularly transmitted on Tuesdays from 12:35 to 12:50. Farmers generally do not listen to the radio during daytime. All respondents were more interested to hear about agricultural issues. If the target audience of an environment program is farmers, the program should be a component of a program like *Awedegeter*, which also covers agricultural issues.

Most respondents do not like the newly coined Amharic words such as *sine hizb* (population), *Bizha-hiwot* (biodiversity), and *sine tewaldo* (reproduction), that are used in the environmental media programs. When the decoder reads the message as the encoder intended it, the encoder has been successful (Hall cited in Hungwe 2006). Nevertheless, Hall says, if there is a misunderstanding, it results from a “lack of equivalence” between the encoder and decoder. There seems to be ‘lack of equivalence’ between the listeners and producers of environment media programs with regard to the use of newly coined words.

The producers of the program should either all the time explain these words using phrases or try to describe the concept with simpler words avoiding the newly coined words. The most preferred option would be to develop terms in the Amharic language. Hall says media texts are polygenic (that is capable of resulting in a variety of interpretations) and audiences are active decoders who will not necessarily accept the preferred reading being offered by the texts (Hall cited in Hungwe, 2006). The newly coined words, the meanings of which are not clear to most farmers, can be very polygenic unless they are explained.

The respondents do not also want to listen to sound bites of professional that mix their language by using English words. The journalists need to inform professional interviewees in advance not to use English words; and if that is impossible to some interviewees, the producers need to transcribe their sound bites and narrate them in more understandable language.

Fortunately it has been realized recently that education at school is a powerful means of addressing environmental problems. It reaches a vast part of the population at a young age and a more environmental friendly behavior can be practiced on a daily basis and in contrast to the media a direct feedback mechanism exists. The introduction of the eco-club scheme will in the opinion of the researcher be able to both enhance the student's knowledge on environmental issues and motivate them in a more environmental friendly way in their everyday life.

The research also found that print media (*Addis Zemen*) did not have a proper communication system with concerned government bodies (such as EPA) or with other bodies working on environment (such as NGOs). As understood from the interviews, the line of information between Environment Protection Authority and *Addis Zemen* is very weak. There is no proper linkage which could enhance exchange of environmental information.

Overall, from the study's findings it is possible to generalize in saying that environment issues were not considered an important public issue, and were not included in the major public agenda either by the broadcast or the print media in the periods covered by the research. Therefore, it can be concluded that under the current coverage, environmental awareness would remain very low; by implication, environmental mismanagement due to limited know-how would continue to affect the quality of environmental resources in the country

From the results of this study the general conclusion can be reached that the role of the media in creating environmental awareness in the study area is largely insignificant. The main reasons for this is that the print media's environmental education or awareness raising articles as well as radio and television programs are very poor in content and also very few in number. Another reason is that most farmer households lack access to both the print media and to radio and television programs and the few that access the short biweekly radio or television programs do not listen to them regularly. What's more, if and when they do, they do not listen with interest. Whatever

environmental awareness the people have, it appears to be more a product of either their life experiences or the work of the Das.

5.4. RECOMMENDATION

The present Ethiopian government claims to follow an agricultural driven economic development policy, which is rooted in its origin in rural areas. The current development challenges of the country have their roots in the degradation of the environment. Development at grassroots level requires a participatory structure of communication to create "ecological sensitive and conscious society" (SIDA 2003). Therefore, facilitating things for the people to get complete access to all sorts of information is very essential. One way of achieving this objective is to provide support to the media to create a conducive media environment, in which policies and laws related to communication media strengthen the environmental protection activities that takes place at grassroots level. The environmental policy of Ethiopia has clearly identified a role for the media in raising environmental awareness. The media of Ethiopia has a responsibility to popularizing government policies among the public. Thus, strategic policies could ideally reduce and/or prevent mass hysteria and save millions of lives from environmental crisis.

In line with this idea; and based on the findings and conclusions in this study the following specific recommendations for improvements of effective media activities in environmental awareness creation can be made.

- The study reveals that there has been confusion and a lack of clarity about the meaning and practice of environmental protection, which hampers take-up and effective implementation within communities. The findings of this study suggest that the programs need to involve the voices of people, volunteers/amateurs and producers at grassroots level who have direct attachments with environmental issues. This has many advantages, since it provides a good chance for the community to air its environmental concern, it gives an opportunity for talented

people to exercise the profession of journalism; and it is one means of running environmental media programs with a minimum cost.

- Awareness obstacles should be identified first. Trainings of journalists on various environmental issues and in professional journalism itself are imperative; it is when journalists themselves are aware that they can play a role in creating environmental awareness. Therefore, the media should seek mechanisms of getting its journalists trained in the basics of environment issues and enhancing their awareness about the environment problems of the country and the globe. In addition universities and colleges in the country need to develop a curriculum for environmental journalism.
- Different programs should be planned in order to expose journalists to unexplored resources in the environment, the effects of environmental degradation, the requirements of new environmental laws, the requirements of conveying ratified environmental laws and the requirements of the inclusion of experts' explanations and government officials in the coverage.
- The impact of human activities on environment resources are news stories that need to be told. Journalists must deal appropriately with their sources (experts, the government, pressure groups, and the public), the audiences (reading public) and their immediate supervisor. Stories about the effects of environment issues on ordinary people should also be delivered to enable listeners and readers to grasp the complicated issues of the environment.
- The media producers need to develop a method to popularize newly coined Amharic words as well as foreign terms that have no equivalent terms in Amharic or they should avoid using such unknown terms. The media producers need to always explain the newly coined terms and jargons immediately after mentioning them. Concerning interviewers, before every interview the media producers must remind the experts that their listeners and readers are people who mostly understand Amharic. It is also recommended that journalists, in consultation with professionals working on environment, have to come up with a style book for environmental reporting.

- Fundamental to success in environmental protection is ensuring strong leadership and high level commitment to the environment. With regard to this, the study revealed that one of the major challenges that impedes effective environmental protection in development activities were inadequate upper-level commitment and leadership. Therefore, it is imperative to strength upper-level commitment and participation of senior management in the process of environmental protection. It is advisable to assign environmental protection focal person in development sectors and institutions must have full-time dedicated staff that can mainstream environmental protection into development activities, and advocate environmental strategies and plans. In addition, enlightened media management must ensure better coverage of environmental issues.
- Media should also use diversified sources so that stories are more reliable and balanced. The EPA, for example, has a newsletter and a biannual magazine called *Tefetro* (Nature) from which journalists can get environmental information. The media should also create information exchange channels with one another (for example between print, broadcast and electronic media) as well as with government and non-government media.
- Since this is a new area of research in which media and environmental awareness are combined, there is a need for more and more comprehensive research to investigate the best directives of media application to environmental issues on the basis of the country's existing realities.

5.5. CONCLUSION

In this chapter the findings, conclusions and recommendations of the research project was summarized. The effectiveness of the media in communicating the environmental messages, which can increase knowledge and influence the behavior of the audience, was investigated. Throughout the study, it was found that poor information delivery and communication systems are the major challenges for the media to effectively create awareness of the environment.

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APPENDIX

Appendix 1

Description of sample media programs (*Awedegeter* and *Akababi-ena-lemat*) and *Addis Zemen* Amharic daily news paper.

1. *Awedegeter*: Monday, September 10, 2007

BEGIN

Program Intro

* One of the producers introduces the program items.

Program Item 1

The first item is an article on the use of honey.

The source of the article is Agriculture and Rural Development magazine; the magazine took the article from an English magazine called World News.

According to the article, honey is useful to solve the problem of sexual impotence. By mixing it with cinnamon it also helps to cure heartache, facilitate digestion, to prevent common cold, to smoothen skin, to live a long life, to lose weight, to cure wounds, to avoid acne and bad mouth odor as well as to improve hearing capacity (for those who have hearing problem), to prevent bone and stomach cancer.

The article tells how, how much and in what way the honey [and cinnamon] should be taken to solve the above mentioned health problems.

Jingle [piece of instrumental music]

* A journalist introduces the next program.

Program Item 2

Participatory forest management

The journalist narrates that population growth has a negative impact on forests and natural resources. Two NGOs namely farm Africa and SOS Sahel are working together in the Southern regional state to wisely use forest resources through participatory forest management with the active participation of the public.

The first sound bite is of participatory forest management project coordinator with farm Africa and SOS Sahel. He emphasizes the need to participate the people in forest management and to make them benefit from the forest properly as forceful conservation of forests has failed to be sustainable.

The second interviewee is a farmer. He says the project has provided them with improved varieties of crops and fruits. He says they have also stopped practicing polygamy and have become beneficiaries of family planning services.

The third interviewee is also another farmer. He says there is a need to have as sense of belongingness among the public so that they can protect the forest.

The fourth interviewee is a female farmer. She says the participatory forest management project works in close consultation with farmers and has been providing seeds of improved varieties and sheep to her so that she stops selling fuel wood chopping down trees in the forest.

The fifth interviewee is head of Humbo *wereda* agriculture and natural resources development office. He says where there has been the intervention of farm Africa, forests are being conserved and the farmers are becoming aware about the uses of forests. The sixth interviewee is a reproduction department officer with farm Africa. He says population pressure has a negative impact on forests. And he says forests have been shrinking because of population pressure.

The first interviewee once again says that the population increase and poverty forces people to encroach into forests and expand agricultural land. He stresses that conserving forests needs an integrated approach to eradicate poverty by helping people

increase their productivity, by introducing stoves that decrease fuel wood consumption and by also introducing farmers with modern bee keeping technology among others.

All the sound bites are separated by short narration and description of the producer.

2. Akababi-ena-lemat: Wednesday, January 4, 2007

BEGIN

Program Intro

* One of the producers introduces the two program items.

Program Item 3

An article on a spice called cardamom.

Source: "Agriculture in south Ethiopia" magazine

According to the article, the origin of cardamom is in India and Sri Lanka. The spice gives good flavor to different foodstuffs. It is also used for oil and medicine production. It grows in areas whose altitude ranges between 760 and 1400 meters above sea level and where the average rainfall is 1500mm. Cardamom is also known as "Queen of Spices". It doesn't grow on swampy land. Cardamom should not be liable to the sun and wind. It doesn't grow on swampy land. Cardamom should not be liable to the sun and wind. It needs shade trees. It can be planted with coffee. The article also tells cardamom can be propagated with seeds or branches. It is expensive and there is high demand for the spice in the international market. It is being produced in some parts of Ethiopia, particularly in south western part of the country...

Jingle (piece of instrumental music)

* A journalist introduces the next program.

Program Item 4

The culture of forest conservation in Kaffa

The program begins with a piece of music about Ethiopia's natural beauty. The journalist speaks in brief about the uses of forests and the need to conserve them. He says most communities do not have the culture of conserving forests. However, he notes the people in Kaffa zone, southern regional state, protect forests and believe that forests are their lives.

The first interviewee is a farmer. He says wild coffee grows in the forests. The coffee belongs to farmers, youth, and women's associations. Nobody cuts trees from the forest without informing the local administration and the people in the neighborhood. And he has to have convincing reasons to be allowed to take wood from the forest. A person found while cutting a tree will be taken to the court. The farmer says the people know that there is no coffee without the forest and they do not cut trees.

The second interviewee is an agricultural professional from Decha *wereda*. He says the people culturally consider forests as their child and personal property as they get several benefits from them. He says the forest is the source of coffee, honey and spices.

The third interviewee is a researcher who did research on the history and culture of the Kaffa people; He says the Kaffa people traditionally consider the forests as one of their properties like their cows and sheep. The people know that the forests are the sources of springs and large rivers cannot be filled with water without the forests in their catchment area. They know that no water means any livestock. Individuals found cutting trees are punished by the culture. There is cultural punishment what the *Kaffa* people call *sheresho*. And those who cut trees are punished in accordance with *sheresho*. Father passes to posterity big trees they use to hang their traditional bee hives.

Jingle (A piece of traditional music from *Kaffa*).

The producer says that areas in the vicinity of Kaffa are being destroyed for various purposes and because of forest fire. The south agriculture and rural development public relations officer is the next interviewee. He says the people are more aware about the uses of forests. But, he says, because of the deep rooted poverty many are being forced to destroy forests. He said some farmer's burn forests with the intention of destroying that suck the blood of cows. He says efforts are being exerted to raise the awareness of the people.

The producer indicates that forest destruction causes soil erosion. He concludes emphasizing the need to examine the activities of forest protection task forces, advising them to discharge their duties and responsibilities to the satisfaction of the people in their respective localities.

Introduction: The next program and the producer were introduced.

Jungle

Program Item 5

Letters sent to *Awedegeter*

The first letter was sent from listeners in Arba Minch Zuria wereda, Gamu Gofa Zone of the south region. He wrote a quotation on the need to use time efficiently.

The second letter was sent by a student in Arba Minch town. He appreciates the training he was given by an indigenous NGO on efficient use of water resources, reducing the use of plastic bags, promoting the use of stoves that consume less firewood sere some of the important parts of the training.

The third letter was sent by a teacher Kaffa zone, Chena wereda in south region stresses the need to use rivers and other water resources for irrigation purpose. He advises farmers not to rely on rain-fed agriculture.

The fourth letter was sent by a reporter in Arba Minch Zuria wereda (the same area the above two letters came from). He described the Arba Minch Zuria wereda; its neighboring wereda, the climate, the natural resources etc. He says farmers are benefiting from irrigation scheme and are producing three times a year and are improving their standard of living.

The fifth letter was sent by a health professional living in *Woldia* town, north Wollo zone of Amhara region. He wrote about an orphanage found in *Tehulederie wereda*, south Wollo zone. He says the orphanage is no more in use and it is crumbling. He said the artificial and natural forests in the vicinity of the orphanage are being depleted.

The sixth letter was written by a young listener from Kembata Tembaro Zone kidded Gamela Wereda in south region. He wrote a poem that appreciates Das.

The seventh letter was written by a listener from *Afdera* in Afar region. He wrote some facts about whales.

A cameraman from Melaka Wereda information office in the south region wrote the eighth letter. He said silk worms are being kept by different individuals after an individual began production of silk thread in the *Wereda*.

The names of three other listeners who sent letters were mentioned before the end of the letters program.

3. TEXTS TAKEN FROM *ADDIS ZEMEN* AMHARIC DAILY NEWS PAPERAS AS A SAMPLE TAKEN TO AREA OF COVERAGE

Text 1- Desertification

Negligence on law enforcement aggravate desertification

Mekele (WIC): An expert from the Tigray Regional State Agricultural Development and Natural Resources Bureau indicated that although the regional state has prepared declarations regarding forest deforestation, decisions on those defendants are so insignificant that it could not avert the action of deforestation.

Although 2,519 individuals appeared before the court in the outgoing fiscal year alone, only 61 defendants were punished. According to the expert, the punishment itself is not more than 10 birr which has no contribution to stop the ongoing damage on the forest resources.

W/ro Tsehaytu Kassa, Head, Registrar of the Higher court of the region, said that to levy appropriate punishments on those who destruct the forests which causes social damage, the interpretations of the law should be clear. She added measures would be taken to create common understandings among different justice organs on the interpretations of the declaration (*Addis Zemen*: Year 63rd, No. 93. Dec. 10, 2007. Translation: Author).

Text 2: UEFA Champions League Fixtures

Spanish and English football clubs leading in the UEFA champions League

London (Reuters): In the UEFA league of champions, four Spanish and three English clubs have been showing their dominancy in the European football by qualifying for the next round. In the round competition which comprises 32 clubs in eight groups, football clubs representing Spain, England and Germany all have got points to qualify for the next round. Moreover, two from four three French clubs have qualified for the next round. Czech Republic and Portugal are limited to only one club each.

According to the results obtained from the 96 fixtures including those 16 fixtures held last Tuesday and Wednesday, the 16 clubs have qualified for the next round. They are Real Madrid, Depurative La Coruna, Real Seceded and Selta Vigo from Spain, Arsenal, Chelsea and Manchester United from England, Stuttgart and Bayern Munich from Germany, Juventus and Ac Milan from Italy, Monaco and Olympic Lyon from France, FC Porto from Portugal, Locomotive Moscow from Russia and Sparta Prague from Czech Republic.

Those clubs which have qualified for European Community Cup after qualifying third in their respective groups are panatanayacos of Greece, Galatasaray and Bishtasish of Turkey, FC Bruzh of Belgium, Celtic of Scotland, PSV Idenhoven of Netherlands, Inter

Milan of Italy and Netherlands, Lazio of Italy. Partisan Belgrade of Serbia and Monte Negro, Rangers of Scotland, Olympiakos and AEK Athens of Greece, Dynamo Kiev of Ukraine and Anderlecht of Belgium are disqualified from both major European trophies. They stood last from their respective groups.

Results of the last round on each group are presented below: Manchester United 2:0 Stuttgart, Panathinaikos 3:1 Rangers, Sparta Prague 1:0 Lazio, Chelsea 2:0 Bistritsa, FC Brukh 2:1 Ajax Amsterdam, Selta Vigo 2:1 AC Milan, Olympiacos 3:2 Celtic, Bayern Munich 1:0 Anderlecht, Arsenal 2:0 Locomotive Moscow, PSV Eindhoven 3:2 Deportivo La Coruna, Juventus 7:0 Olympiacos, AEK Athens 0:0 Monaco, Real Madrid 1:1 Glatzary, Dynamo Kiev 1:1 Inter Milan, Real Madrid 1:1 Porto, Partisan Belgrade 1:1 Maribor, From the last fixtures those fixtures Arsenal against Locomotive and Bayern Munich against Anderlecht were given higher expectations and attracted great attention. As expected, Arsenal and Bayern Munich have won their opponents 2:0 and 1:0 respectively encouraged by their supporters. They have qualified for the next round with these splendid results.

From the fixtures held on Wednesday, the fixture Juventus beaten Olympiacos seven to nil is the one ended with a highest goal difference in the history of the championships. It is recorded as the first in the league's history. On the other hand, Juventus striker, the Frenchman, David Trizquet has scored the 3,000th goal of the trophy since the championship has been reorganized in a new format in 1992-93. UEFA information shows that Trizquet's goal is the 3,000th of the UEFA champion's league competition since it started in a new format since 1992-93. In addition AEK Athens of Greece has never won in any one of the fixtures after eighteen consecutive games. AEK Athens has been registered as the weakest club in the consecutive games. AEK Athens has been registered as the weakest club in the competition, It was known that in 18 games it made in the last three years it has been beaten in nine fixtures and draw in nine other. FC Brukh goalkeeper, Danny Varlindin, has been given a record for his club in his age forty. FC Brukh's goalkeeper Danny, 40, has got a record as he played being the oldest man in the league.

“Before three games no one has expected us to qualify for the next round. Especially, after we have been beaten three to nil to Inter Milan many people believed that our hope for the next qualification has been ended. If we were not qualified, our frustration would have been sour. But with hard work and great determination we showed to everybody that we are one of the European giants. I am very glad and happy,” said Arsenal Manager, Arsene Wenger, after the end of the first round fixture, Celtic Manager has blamed the referee for giving penalty to Lyon on the dying minutes of the game. He did not accept Lyon’s victory. He took the late penalty as the cause for his team’s defeat. Inter Milan manager on the other hand has accused of his players for the club’s poor performance and annoyance result (dismissal from the competition). Manager of Locomotive Moscow on his part said that although his team was beaten by Arsenal, the draw fixture of Inter Milan and Dynamo Kiev has given them a chance to qualify for the next round and this made him very happy. He decried the result as ‘unforgettable and great’ to show the historical nature of the team’s performance. He said that they would be happier if his wish to get Chelsea in the fixture to quarter final fulfilled.

Bayern Munich Manager Othman Hitzfield told the reporters that his club has the ability to qualify for quarter final but he underlined that in the season there is no a weak team so far in the competition. “There is no club to be given low value and criticisms from papers would not affect our performance”, he added. “The penalty given to us in Wednesday was right and we deserve it. The last shot saved by the goalkeeper Oliver Khan has made me shock,” revealed coach, Othman Hitzfield. However And elect coach claimed that the penalty given was a great mistake by the referee and it was absolutely a great loss for his team. The coach also added that even his players did not believe that the penalty was given correctly and he also indicated that his team has shown better performance, better ball possession and has created better goal opportunities. “Anderlecht should have been one of the teams which deserve victory,” he said in great dismay and sadness. The coach of Real Seceded on the other hand said, “I am very happy for our plan to be one of the 16 teams qualifying is fulfilled. “He has also given his admiration for De Paul who has scored the decisive equalizing goal.

Coach of Ajax Amsterdam, the 1996 UEFA champions and which is known for bringing star players such as Kruf Van Basten Brcamp and Kulivert, Ronald Kunmen in his remark after has club has dismissed from the champions league competition said, "Young players' lack of experiences and sorry by the result I still hope for the future. I imagine criticisms on us will not be high. If I will be given a chance for about two years I will build a team which would not be set back from defeating and beating any team. I am sure to do this, I am sure," Drogba from Marcy, Suker from Galatasary, Maccay from Bayern Munich and Didi from Monaco are leading the scoring least with five goals each. Juniniho, Van Nistelrooy, Trezeguet, Morienties and West have scored four goals each (Addis Zemen: Year 63rd, No. 93. Dec. 10, 2007. Translation: Mine).

APPENDIX 2: RESEARCH PARTICIPANTS LIST

1:- Respondents Selected For Survey, Focused Group Discussion (FGD) and key Informant interview (KII).

Village 1 Respondents of sample Survey

No	Name	Sex	Age	Place of residence	Mother Tongue	Edu.status	Media exposure
1	<i>Yilma Delebo</i>	M	55	V1(<i>GesheGola</i>)	<i>Kembategn</i>	7	Occasional
2	<i>Matthews Ligamo</i>	M	32	"	"	10	"
3	<i>Senayit Shellamo</i>	F	23	"	"	12	"
4	<i>Gonie Abamo</i>	M	55	"	"	4	Don't
5	<i>Abebe Anullo</i>	M	30	"	"	11	Regular
6	<i>Debebe Habte</i>	M	18	"	"	9	Occasional
7	<i>Kassaye erimis</i>	M	32	"	Hadygn	11	Regular
8	<i>Mohammed Hussien</i>	M	29	"	<i>Kembategn</i>	8	Don't
9	<i>Sied Mohammed</i>	M	24	"	"	8	"
10	<i>Gethun Ahmed</i>	M	27	"	"	10	Regular
11	<i>Arifiche Hirgo</i>	F	38	"	"	7	"
12	<i>Abebech Bakallo</i>	F	21	"	"	9	Occasional
13	<i>Marta Methos</i>	F	27	"	"	10	"
14	<i>Asalafach Laloto</i>	F	29	"	"	7	Occasional
15	<i>Sied Hillu</i>	M	50	"	"	illiterate	Don' t follow
16	<i>Mesfin Rega</i>	M	33	"	"	8	Regular
17	<i>Gezebo Bunta</i>	M	26	"	"		"
18	<i>Abrham Agino</i>	M	37	"	"		Occasional
19	<i>Harkos Yohannis</i>	M	40	"			Regular

Village 3 -respondents to Survey

No	Name	Sex	Age	Place of residence	Mother Tongue	Edu. status	Media exposure
1	<i>Shiferaw Fanta</i>	M	33	V3 (Hamido Goffero)	Kembategn	10	Regular
2	<i>Zenebech Lagiso</i>	F	28	"	"	9	"
3	<i>Marate lallove</i>	F	23	"	"	8	Occasional
4	<i>Fentaw Indris</i>	M	27	"	"	9	Occasional
5	<i>Sied Abagaz</i>	M	31	"	"	10	Regular
6	<i>Almaz sheferaw</i>	M	27	"	"	9	Occasional
7	<i>Ayelech Trago</i>	F	22	"	"	7	Occasional
8	<i>Asamitu Achiso</i>	F	32	"	"	10	Don't follow
9	<i>Worke Ashebo</i>	F	36	"	"	5	"
10	<i>Dellalo Mekebo</i>	M	51	"	"	illiterate	Don' t follow
11	<i>Degmu Herego</i>	M	50	"	"	illiterate	"
12	<i>Deselegn Degmu</i>	M	27	"	"	9	Occasional
13	<i>Duballa Legabo</i>	M	33	"	"	7	"
14	<i>Antinos Medebo</i>	M	49	"	"	illiterate	Don't follow
15	<i>Tereza Methwas</i>	F	40	"	"	illiterate	"
16	<i>Aster Annulla</i>	F	35	"	"		Don't follow
17	<i>Alemu Genatto</i>	M	49	"	"	11	Regular
18	<i>Lachamo Mikail</i>	M	42	"	"		Don't follow
19	<i>Selamu W/Tsion</i>	M	26	"	<i>kembategn</i>		Regular
20	<i>Lukas Eco</i>	M	49	"	"		Occasional
21	<i>Abbo Latamo</i>	M	56	"	<i>Kembategn</i>		Don't follow

Village 7 - Sample Survey respondents

No	Name	Sex	Age	Place of residence	Mother Tongue	Edu.status	Media exposure
1	<i>Tesefye Kabatto</i>	M	24	V7 (Kerchicho)	<i>Kembategn</i>	8	Occasional
2	<i>Alambo Kalibore</i>	M	30	"	"	7	"
3	<i>Tesema Lemango</i>	M	29	"	"	8	"
4	<i>Tamiru Delello</i>	M	24	"	"	6	Occasional
5	<i>Deginte Bereto</i>	M	29	"	"	10	Regular
6	<i>Tesfonesh Samule</i>	F	32	"	"	9	Occasional
7	<i>Ludege Perteros</i>	F	42	"	"	illiterate	Don' t follow
8	<i>Zenebech Hadaro</i>	F	37	"	"	illiterate	"
9	<i>Amarach Helliso</i>	F	34	"	"	7	Occasional
10	<i>Lonsike Lodebo</i>	F	24	"	"	9	"
11	<i>Elias Denballo</i>	M	19	"	"	10	"
12	<i>Daniel Lombabo</i>	M	22	"	"	10	Regular
13	<i>Lakore Laliso</i>	M	29	"	"	10	"
14	<i>Achamo Deliso</i>	M	48	"	"	illiterate	Don' t follow
15	<i>Zekantias Hedro</i>	M	53	"	"	illiterate	Don' t follow

Budin 6- Sample survey respondents

No	Name	Sex	Age	Place of residence	Mother Tongue	Edu.status	Media exposure
1	<i>Temsign Tellun</i>	M	33	B3 (<i>Addilo</i>)	<i>Kembategn and Hidiyeg a</i>	8	regular
2	<i>Tibeb Ashamo</i>	M	32	"	"	7	Occasional
3	<i>Sinkinsh Demto</i>	M	30	"	"	6	"
4	<i>Lambor Achiso</i>	F	50	"	"	illiterate	Don't follow
5	<i>Handro Halliso</i>	M	48	"	"	illiterate	"
6	<i>Amarch Addise</i>	M	31	"	"	9	Occasional
7	<i>Taphano Tedissa</i>	F	35	"	"	10	Regular
8	<i>Shembo sullamo</i>	M	40	"	"	illiterate	Don't follow
9	<i>Merkos Ergana</i>	M	38	"	"	9	Occasional
10	<i>Selifiso Herigo</i>	M	49	"	"	illiterate	Don't follow
11	<i>Tedella Asafa</i>	M	46	"	"	6	Occasional
12	<i>Lekech Lelliso</i>	F	32	"	"	10	"
13	<i>Lombabo Asamo</i>	M	29	"	"	12	"
14	<i>Worke Hador</i>	F	36	"	"	illiterate	Don't follow
15	<i>Abrham Leigabo</i>	M	51	"	"	illiterate	"
16	<i>Lambro Lellago</i>	M	43	"	"	illiterate	Don't follow
17	<i>Abbute Methowas</i>	M	55	"	"		"

Bud in 4- Sample survey respondents

No	Name	Sex	Age	Place of residence	Mother Tongue	Euc.status	Media exposure
1	<i>Rose Mikial</i>	F	30	B4(<i>Hollaba-Zeto</i>)	<i>Kembategn</i>	8	Occasional
2	<i>Addise H/ maria</i>	M	35	"	"	12	Regular
3	<i>Aster Helisso</i>	F	31	"	"	6	Occasional
4	<i>Ermias Delalo</i>	M	36	"	"	illiterate	Don't follow
5	<i>Abebe Ayano</i>	M	40	"	"	illiterate	Don't follow
6	<i>Tmru Methose</i>	M	30	"	"	12+1	Regular
7	<i>Terkeign Ashebu</i>	M	33	"	"	9	"
8	<i>Worke Wontam</i>	F	28	"	"	12+1	Occasional
9	<i>Tafasu Tedewos</i>	F	23	"	"		"
10	<i>Alamitu Hadaro</i>	F	27	"	"	illiterate	Don't follow
11	<i>Ayano Lerabo</i>	M	52	"	"	illiterate	Don't follow
12	<i>Gebrele Lombabu</i>	M	45	"	"	illiterate	"
13	<i>Shgitu Lendbo</i>	F	29	"	"	9	Occasional
14	<i>Abera Hadro</i>	M	36	"	"	12	"
15	<i>Denal Lobanco</i>	M	39	"	"	illiterate	Don't follow
16	<i>Bekele Abera</i>	M	27	"	"	illiterate	"
17	<i>Temrat Lonbebo</i>	M	27	"	"	8	Occasional
18	<i>Alibu Gedebo</i>	M	36	"	"	7	Occasional

2- Respondent Selected for Focused Group Discussion (FGD)

No	Name	Sex	Age	Place of residence	Mother Tongue	Second Language	Edu.status	Media exposure
1	<i>Daniel Delikaso</i>	F	32	Village 1	Kembategn	Amharic	12+2	Regular
2	<i>Asneakch Abolla</i>	M	24	Village 7	"		12+1	Occasional
3	<i>Tamiru Zekeria</i>	M	45	Durame	"		12+4	Occasional
4	<i>Tesema Tafasa</i>	F	40	<i>Durame</i>	"		12	Occasional
5	<i>Getachew Melaku</i>	M	37	<i>journalist</i>	"		12+4	Regular
6	<i>Getachun Hilla</i>	M	48	<i>Durame</i>	"		5	Don't follow
7	<i>Alemenhe Tassfu</i>	M	42	V7 (School)	"		12+4	Regular
8	<i>Surfel Peteros</i>	M	36	<i>Durame</i>	"		12+2	regular
9	<i>Abera Soman</i>	M	40	<i>Durame</i>	"		12+4	regular
10	<i>Brhane Hadro</i>	F	38	"	"		illiterate	Don't follow
11	<i>Teshomich Tesase</i>	F	33	"	"		9	Occasional
12	<i>Merkos Haddro</i>	M	39	<i>Budin 7</i>	"		8	Occasional

3- Respondents selected for in depth interview

No	Name	Sex	Age	Responsibility	Educational status	Media exposure
1	<i>Argaw Asine</i>	M	38	- Media program-Producer (<i>Akababi-ena-lemat</i>)	- Diploma in radio Journalism - BA degree in Developmental study	Regular
2	<i>Solomon Tesfaye</i>	M	42	- National / radio program Deputy manager	- BA in media and communication - MA in management	Regular
3	<i>Massifine Habtom</i>	M	43	- Deputy Director of Environmental protection Authority.	- BA in Environmental Education.	Occasional
4	<i>Sabsbe</i>	M	41	- Manager of Ethiopian press Agency (<i>Addis Zemen</i>)	- BA in media and commutation	Regular
5	<i>Haileamalka Kassaye</i>	M	39	- Editor / reporter of media program(<i>Awedegeter</i>)	- Diploma in journalism	Regular

APPENDIX 3- Interview Questions for survey respondents (farmers)

Region: _____ Zone: _____ Wereda: _____ Kebele _____

Respondent Location: a) Near to the town _____ b) far from the town _____

Part 1: Personal Information

1. Name/Code: _____ 2. Age _____ 3: Gender _____
4. Educational level" a) illiterate b) 1-4th grade c) 5th -8th grade d) 8th grade
5. Status of Amharic: a) mother tongue b) 2nd language c) 3rd language

Part 2: Knowledge of Local Environmental Issues

1. Which component of the environment is more affected in your locality? (put them in sequence) a) forest b) soil c) water d) air
2. To what extent forests in your locality are depleted? Why forests are depleting?
3. To what extent soil/land in your locality is degraded? Why soil/land is degrading from time to time?
4. How much the water resources (rivers, streams, lakes) in your locality have been affected? Why water resources are shrinking from time to time?
5. What is the impact of soil degradation on your yield or household economy? (Yield decline, crop failure, reduction of effective farm size?)
6. What is the impact of forest depletion on your yield or household economy? (Shortage of construction and fuel wood, soil erosion?)
7. What will be the fate of the natural resources in your locality? Are you optimistic or pessimistic about their future?
8. What are your solutions to the environmental problems? (e.g. prayer, better resource management)

Part 3: About Media

1. Whose media do you commonly listen to?
a) Your own radio b) neighbor's radio c) relative's radio d) other
2. For how long have you been listening to media (radio, TV, News page)
3. How frequently do you listen to the radio?
a) Almost daily b) about 2/3 days in a week c) once in a week d) other
4. Which radio programs are your favorites? (put them in sequence)
a) Agriculture & environment b) sport c) health
d) News e) other
5. What are your major reasons for the above answer?
6. Do you listen to the *Awedegeter* and *Akababi-ena-lemat radio* program?
a) Yes b) no
7. If you are listening to *Awedegeter* program, how often do you listen?
a) Regularly b) irregularly
8. In what condition you are listening the program (while working, eating, and sitting?)
9. [If you are listening to the *Awedegeter* program, when did you start listening?
10. Have you ever given up or decided to stop listening to *Awedegeter* program?
a) Yes b) no
11. If your answer is yes to the above question, what is your reason?
a) Inconvenience of the broadcast time with activity b) irrelevance of the program to personal activities c) overlap of the *Awedegeter* program with other radio station d) other
12. Is the bi-weekly program of *Awedegeter* adequate? For how many days a week do you want to listen to *Awedegeter* program?
13. What do you feel about the duration of each *Awedegeter* program? Should it be longer or shorter?
14. Have you ever got inspired by the environment programs on *Awedegeter*? Could you tell me any such program you remember?

15. Are the program topics presented to you on their right time (compatible to the farming calendar?)
16. Which issues have you listened very often from *Awedegeter* program? (issues on agriculture, water and irrigation, forest, soil, other)
17. If you have regularly listened to forest, soil and water issues, how relevant are the programs to the environmental problems in your area?
18. How clearly do you understand the language/words used by the journalists and the interviewees?
19. Whose language do you understand better: the journalists? Or the interviewees?
20. Among the interviewees, whom do you understand more: the professionals (media person) or the interviewed farmers?
21. To what extent has the radio program helped you to know the solution for some of your environmental problems?
22. Have you ever heard from DAs (development agents) what you have heard from the media?
23. Does the radio program conform to what the DAs or other professional are telling you?
24. What do you feel when you hear again the same issue from the DA?
25. Do you discuss the issues raised by environmental programs with your friends, relatives and neighbors? If so, how frequent do you discuss?
26. Have you ever put into practice the information you have got from the media program? (e.g. constructed terraces, planted trees/stopped cutting trees, dug soil for rain water harvesting?)
27. How do you generally evaluate the environment coverage on *Awedegeter*?
28. Excellent b) very good c) good d) not bad e) poor .
Which part of the environment is more affected in your area? (List them in sequence):
 - a. Soil
 - b. forest
 - c. water
 - d. air

29. Why do you think the above component of the environment is/are affected?
30. How much you perceive the environmental change and how does the status of these changes affect every day of your life?
31. To what extent do you act in an environmental friendly way?

2. Questions to Journalists, managers or producers

1. Name _____
2. Position _____
3. Responsibility in the production of media programs _____
4. Educational background _____
5. For how long have you produced media programs?
6. How do you get ideas for the programs you produce?
7. Is your coverage nationwide or do you focus on some regional states?
8. What kind of programs is transmitted on *Awedegeter and Akababi-ena-lemat*?
9. How do you cover environmental issues? Regularly or once in a while?
10. What are the sources of the scripts/essays you read on media programs?
11. Do you edit the scripts from magazines to make them more suitable for media?
12. Can't you stop using newly coined Amharic words such as *sine mihidar, sine tewaldo, sine hizb*, etc?
13. Do you edit the interview you have with experts that mix English words?
14. Do you strive to have farmer's sound bites when you go out for field work?
15. How do you balance farmer's voice with that of professionals?
16. What is the problem to change the transmission time of media programs (*Awedegeter and Akababi-ena-lemat*) to be transmitted in the evening?
17. Is there any plan to produce *Awedegeter* more than 2 times a week or to increase the duration?
18. How do you get the audience feedback about the programs you produce?
19. What kind of comments do you get?
20. In which part of the country do you have many listeners?
21. How many letters do you on average get weekly?

22. What kind of messages is sent through letters?

23. What are the challenges you faced if you are not trained in the field of Agriculture or forest

INTERVIEW GUIDES

A. INTERVIEW GUIDE FOR THE INTERVIEW WITH THE EDITOR AND THE REPORTER

1. What do you think are the major environment issues of national or international nature that you focus on the coverage? What are your sources?
2. Do you assign special editions or permanent pages/sections to cover environment issues? Do you cover environment issues on a regular basis – daily, weekly, biweekly?
3. How do you explain the journalists and the knowledge and training on the concepts of environment issues? Have the journalists enough knowledge to both the profession and the complexities of environment issues?
4. What do you think about the major problems and challenges of covering and reporting environmental issues? How do you treat environment issues of chronic nature?
5. How do you explain the relationship with your sources, major stakeholders (government, environmental protection authorities, NGOs, industries), the public?
6. Where do you put environment issues and how do you cover most Frequently?

Genres

News

Editorial

Reportages

Position on Pages

Front

Middle

Back

Interviews

Commentaries

7. Do you think Addis Zemen has given enough coverage to environmental issues compared to the real life situation you are observing?
8. How do explain the representation of environmental issues on the editorial policy of the press? Do you think enough emphasis is given to environment as compared to other issues such as development and agriculture?
9. In your opinion what should be done to improve press coverage of environment issues?

B. INTERVIEW GUIDE FOR THE INTERVIEW WITH THE EXPERT

1. What are the major environment issues and problems that the Federal Environment protection Authority focuses on?
2. As the Federal Environment protection Authority is one of the governments body mandated to handle environment issues how it transfers information to the public? Which means of communication are mostly used to convey environment information to the public?
3. Do you think media are helpful to transfer environmental information? Do you think the media can cover the complexities of environment issues in full context?
4. Do you think Addis Zemen has given enough coverage to environment issues of any kind? What do you think are the reasons behind?
5. What are the major obstacles on the parts of the authority to convey the information to the public or the media? What do you think are the solutions to alleviate these problems and to get better coverage?

Appendix 4. Data Registration Sheet

Genres of the news paper Content	Quantity of texts	Position of pages of the newspaper		
		Front pages (1-4)	Middle Pages (5-8)	Last pages (>8)
News				
Editorial				
Reportage				
Commentary				
Interviews				
Total				