Addis Ababa University

College of Business and Economics

Department of Public Administration and Development Management

An Assessment of the Role of Environmental NGO's in Environmental Protection: Challenges and Prospects

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Declaration

I, the undersigned, declare that this thesis is my original work and has not been presented or submitted partially or in full by any other person for a degree in any other university, and that all sources of materials used for the purpose of this thesis have been duly acknowledged.

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List of Acronyms

1.	ACC	Association of County Council
2.	ACCRA	Africa Climate Change Resilience Alliance
3.	CCA	Climate Change Adaptation
4.	CCF-E	Climate Change Forum Ethiopia
5.	CFCs	Chlorofluorocarbon
6.	CIA	Central Intelligence Agency
7.	COP	Conference of Parties
8.	CRGE	Climate Resilient Green Economy
9.	CSOs	Civil Society Organizations
10.	DPPC	Disaster Prevention and Preparedness Commission
11.	DRFSS	Disaster Risk Management and Food Security Sector
12.	DRM	Disaster Risk Management
13.	DRR	Disaster Risk Reduction
14.	ECSNC	Ethiopian Civil Society Network on Climate Change
15.	ENGOs	Environmental Non-Governmental Organizations
16.	EPA	Environmental Protection Authority
17.	EPACC	Ethiopia's Programme of Adaptation to Climate Change
18.	Ethio-EIN	The Ethiopian Environment Information Network
19.	FfE	Forum for Environment
20.	GDP	Growth Domestic Product
21.	GTP	Growth and Transformation Plan
22.	HIPPO	Habitat Destruction, Invasive Species, Pollution, Human over Population, And Over-Harvesting
23.	ICLEI	International Council for Local Environmental Initiatives
24.	INGOs	International Non-Governmental Organizations
25.	IPCC	Intergovernmental Panel on Climate Change

26. LA	Local Authorities
27. LAC	Local Adaptive Capacity
28. MoA	Ministry of Agriculture
29. MoEF	Ministry of Environmental Forests
30. MoEPF	Ministry of Environmental Protection and Forest
31. MoFED	Ministry of Finance and Economic Development
32. NAMAs	Nationally Appropriate Mitigation Actions
33. NAPA	The National Adaptation Programme of Action
34. NCCF	National Climate Change Forum
35. NGOs	Non-Governmental Organizations
36. NMA	National Metrological Agency
37. OECD	Organization for Economic Cooperation and Development
38. SCIP	Strategic Climate Institutions Programme
39. SERA	Strengthening Emergency Response Abilities Project
40. SNNPR	Southern Nations, Nationalities and People's Region
41. ToT	Training of Trainers
42. UN	United Nations
43. UNFCCC	United Nations Framework Convention on Climate Change
44. USAID	United States Agency for International Development
45. WDRP	Woreda Disaster Risk Profiles

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The credit goes to my family, friends and colleagues who have assisted me throughout the completion of this research. I would like to thank my Advisor Dr. FilmonHadaro; the thesis wouldn't have been completed if it weren't for his constructive ideas, suggestions and comments. I would also like to thank staff members of Africa Climate Change Resilience Alliance, Climate Change Forum Ethiopia and Forum for Environment as well as consortium members of the organizations. It was a pleasure to have gained generous information and data from the organizations.

Abstract

Environmental protection is an irresistible issue. Every being and entity at national, regional, local and institutional level has an obligation and duty to protect it. Environmental protection is a practice of protecting the environment with policies and procedures aimed at conserving natural resources, reversing degradation and sustainable development for the benefit of the natural environment and humans surrounding it. Today, the necessity of environmental awareness and enforcement is more demanding and urgent than ever before. Despite provisions in Ethiopian Constitution providing for environmental protection and statutory provisions, the problem of environment still exists. The main cause for the continuing environmental problem is lack of sufficient system for management of resources coupled with lack of environmental awareness and weak participation of the public and organizations.

The involvement of NGOs in environment protection represents an organized response by civil society in those areas in which the state has either failed to reach or done so in adequately. This study examines the roles of environmental NGOs in environmental protection, focusing mainly on the roles of environmental NGOs in their role towards climate mitigation and adaptation. The study was carried out on three selected international environmental NGOs; ACCRA, CCF-E and FfE. It relied on both primary and secondary sources of data, methods of data collection and analysis. Personal visit was made to the organizations in collecting primary and secondary data. The findings of the study showed that, NGOs have been taking a number of steps to promote discussion and debate about environmental issues. Advocacy and awareness is especially crucial in promoting concepts such as sustainable development, natural resource conservation and the restoration of ecosystems. NGOs sensitize policy makers about local needs, provide training facilities and undertake research and publication on environment and development related issues.

The study recommends for the development of strong institutional framework. It is necessary to support and encourage genuine, small, local level NGOs in different parts of the country which can provide extended institutional support.

CHAPTER ONE

1. Introduction

1.1. Background of the Study

The environment has different meanings in different disciplines. It is divided into two types; natural environment and built-up environment (Pankratz, 1996). The environment where we live in is severely affected by the act of living and non-living things which demands a strong commitment in environment protection.

The protection of environment is a pressing issue. Every person, organizations and institutions have an obligation and duty to protect it. Environmental protection is the study, protection and conservation as well as the control and utilization of land, water, air, biodiversity and other similar environmental resources which affect the life and development of both human and non-human beings on earth (Boyce, 2013). Today, the stipulation of environmental awareness and enforcement of legal as well as moral forces into building environmental ethics is more demanding and urgent than ever before.

In Ethiopia good practice have been obtained from the ongoing environmental protection activities undertaken by government and organizations working on environment. Various environmental management practices have being enrolled and environmental impact assessment reports have been issued. However, some of sectoral ministries, bodies and regions experience administrative imbalances and failure of regulated communities to provide reports on their environmental performance that is needed to undertake evaluation on the implementation of environmental policies, strategies, laws, and regulations.

In addition the organizations face social and technological challenges; industries using outdated and environmentally unsound technologies have led to the loss of those cultural values and knowledge's having environmental values. In encountering the imbalances, in recent times Ethiopia had witnessed a dramatic increase in the involvement of NGOs in environmental protection.

The emergence of NGOs represents an organized response by civil society especially in those areas in which the state has either failed to reach or done so in adequately. The NGOs were established with an initiative to provide a plat form for advocacy and communication amongst individuals and institutions concerned with the Ethiopian environment. Their main objective is to advance advocacy in the areas of environmental preservation and conservation and provides research and awareness raising campaigns on environmental problems in collaboration with government institutions, such as the MoA to carry out environmental change vulnerability assessments and to implement projects aimed at reducing vulnerability.

In Ethiopia NGOs involved in environmental protection are diverse including national and international organizations. Africa Climate Change Resilience Alliance, Forum for Environment, Climate Change Forum and Farm Africa are among the prospective international NGOs involved in the preservation and protection of the environment. In addition, The Environment and Coffee Forest Forum, Nature and Biodiversity Conservation Union and SOS Sahel Ethiopia are among national NGOs working for the same cause. The focus of this study is to examine the role of selected international environmental NGOs in environmental protection in Ethiopia.

The purpose of this study is to assess the role of selected international environmental NGOs in environmental protection and analyze the challenges and prospects that the environmental NGOs encounter while undertaking their operational activities in fulfilling their objectives of ensuring the protection of the environment.

1.2. Statement of the Problem

Ethiopia has developed and implemented a range of legal, policy and institutional frameworks on environment; water, forests, climate change and biodiversity. The Ethiopian Federal Democratic Republic constitution provides basic and comprehensive principles and guidelines for environmental protection and management.

Ethiopian government has put forward efforts in tackling the consequences of environmental problems. The government has adopted a water and sanitation strategy that had witnessed the participation of different stakeholders including the private sector. The critical condition of Ethiopia's biodiversity and forests has increased Ethiopian government effort to increase forest cover as well as conserve the mass biodiversity by setting up policies and strategies.

The EPA has draft a comprehensive CRGE strategy that defines a clear path to build climate resilience and a green economy. To aid in the process of building climate resilience the government has developed a programmed of EPACC that will help put in place the local building blocks of adaptation and identifies opportunities for mainstreaming climate change into development strategies, which will be reinforced by action at the federal, regional and local levels. To seize the opportunities presented by low carbon technologies and to ensure that the country's economy is green and sustainable initiatives, like the NAMAs has been identified.

Furthermore, government of Ethiopia has designed a programme of NAPA which is designed to help Ethiopia in identifying priority adaptation needs to climate change. The government of Ethiopia has further identified technological needs for mitigation, enhanced public awareness on climate change and has given capacity building in priority areas with a project of climate change enabling activities. Internationally Ethiopia has participated in combating anthropogenic climate change by producing national communication to UNFCCC.

For all the effort, there remains much to be done. Lack of sufficient system and regulation for management of the resources of the environment coupled with lack of environmental awareness concerning pressing problems of environment and weak participation of the public in general and organizations working on environment in particular in environmental protection activities are the major environmental challenges Ethiopia is facing.

Environmental resources had been the main source of the stagnation and variability in GDP growth caused mainly by policy failures and exacerbated by recurrent draught, civil war, natural resource degradation, and poor infrastructure and the renewable natural resources providing the basic needs of the total population have now deteriorated to a low level of productivity with the present consumption of resources in excess of natural sustainable production. Accelerated soil erosion has caused a progressive annual loss in land and livestock production.

Moreover, the current stock of urban housing is both insufficient and of very poor quality and the serious deficiencies in sanitation services and the inadequacy of sewerage infrastructure and random defecation in urban creates dangerous health and environmental problems. Much of Ethiopia's natural and cultural heritage is under threat through neglect, decay, removal and destruction as well as through the less visible and tangible impact of changing socio-cultural values, foreign ideas and imported technologies.

Although, attempts have been made towards climate mitigation and adaptation, the issue of climate change is a fast becoming challenge to economic development policy and practice of the nation. Weak information flow, research, policy advocacy, capacity building, awareness raising coupled with feeble mitigation and adaptation measures has halted the proper utilization of the country's resources to better achieve sustainable development.

Government owned and funded institutions that are working on the environment face challenges that are often beyond their capacity. This is where the NGOs that work on environmental issues came into picture. Various environmental NGOs are involved in environmental protection to fill this gap.

What do these NGOs do, what role do they play, how do they achieve their objective and to what extent has their work been of help to the efforts already adapted by the government? These are some of the problems that are discussed in this paper.

For this purpose three ENGOs have been selected which are thought to be representatives of those stakeholders. The selected ENGOs are engaged in supporting the government in policy formulation, evaluation and implementation.

1.3. Research Questions

The study enquires the roles that the environmental NGOs have towards the protection of the environment and challenges and prospects that the environmental NGOs encounter while undertaking their operational activities in fulfilling their objectives of ensuring the protection of the environment. The specific research questions are;

- What are the activities implemented by the selected International environmental NGOs in Environment Protection in Ethiopia?
- How are the synergies used among actors in environmental protection in Ethiopia?
- Which method of environmental protections is effective in terms of results?
- What are the major challenges encountered by the selected environmental NGOs in fulfilling the environmental protection activities in Ethiopia?

1.4. Objective of the study

The study is aimed at assessing challenges of the selected environmental NGOs in their environmental protection operational activities in Ethiopia. The specific objectives are to;

- Assess the activities implemented by the selected environmental NGOs in Environment Protection in Ethiopia;
- Analyze the use of synergies among actors in environmental protection in Ethiopia;
- Evaluate effectiveness of the methods of environmental protection based on results;
- Identify the major challenges encountered by the selected environmental NGOs in fulfilling the environmental protection activities in Ethiopia.

1.5. Scope of the Study

Given that environmental protection is a broad and exhaustive subject, the scope of the study is limited to discussing the role of three international environmental NGOs in environmental protection in general and climate change in particular. The study is delimited to examine the role of ACCRA, CCF-E and FfE in environmental protection. It is further delimited to discussing their role in combating, mitigating and adapting climate change.

1.6. Significance of the Study

The prime purpose of the study is to sketch conclusions about the role of environmental NGOs in environmental protection. It will shade light into the reality of operational activities of the sector towards environmental protection. Findings of the study would help policy makers to correct any deficiency on the existing programs and strategies, facilitating the improvement of future policy insights.

The result of the study would serve as an input for further studies on the subject matter in which the findings and generalizations of the study would be an effort for other similar studies to be undertaken.

1.7. Organization of the Paper

The study is organized into five Chapters. The first chapter presented background of the study, statement of the problem, research questions, objectives of the study, scope of the study and limitation of the study. Chapter two is entirely committed in creating understanding about the topic; literature review. The methodological framework of the study and description of the study area are incorporated in chapter three. Analysis and interpretation of the subject matter is enclosed in chapter four. Conclusion and recommendation are articulated in the last chapter.

1.8. Limitation of the Study

Owing to lack of financial and material resources as well as ample time to launch deeper exploration on the subject matter, the study was restricted in discussing hardly any cases. In addition, lack of information is another constraint throughout the treatment of the study.

CHAPTER TWO

2. Review of Theoretical and Empirical Literatures

2.1. Review of Theoretical Literature

This chapter deals with the review of literatures concerning environment and environment protection. Concept of environment, environmental problems and actors involved in environmental protection are discussed in detail referring to several literatures. Reviews of literatures concerning the nature of environmental problems and internationally owned negotiations and agreements over the problem of climate change are also discussed. In view of this, various discussions culled from a number of sources are under review here.

2.2. Contextual Framework of Environment

An ecosystem is a community of living (biotic) organisms (plants, animals and microbes) in conjunction with the nonliving components (a biotic) of their environment (air, water and mineral soil), interacting as a system. Ecosystems are a biological community and its physical environment, and come in various sizes from limited spaces to the entire planet. Ecosystems are dynamic with networks of interactions among organisms, between organisms and their environment. They are linked together through nutrient cycle and energy flow. Ecosystems are controlled both by external factors (climate, the parent material which forms the soil and topography, and internal factors (decomposition, root competition or shading, disturbance, succession and types of species.) (Pankratz, 1996).

Today, with modern technology, humans can live in places where it was impossible before. This is achieved by the provision of buildings and complex infrastructure tuned to the existing climate, such as urban and rural water supplies, drainage, bridges, roads and other communications. These involve huge investments of time and money. Trade, particularly of food and fiber for manufactured goods, has also been strongly influenced by climate. Roads, buildings and towns are designed taking local climate into consideration.

Design rules, both formal and informal, zoning and safety standards are developed to cope not just with average climate but also with climatic extremes such as floods and droughts. If the climate changes, human society must adapt by changing its designs, rules and infrastructure; often at great expense, especially for retrofitting existing infrastructure (Pittock, 2009).

Report of National Statistics Abstract (2010), precisely explained the flexibility and interdependence of environment with other social as well as economical and demographical trends. The environment is variable, complex, and difficult to predict. That difficulty is in part due to imperfect scientific knowledge about environmental processes, but it is also a consequence of imperfect knowledge about economic, demographic, and social processes that drive environmental change and the feedback effects of environmental change on economic, demographic, and social processes. Sustainable pathways to address environmental and human health challenges will only emerge if societies choose to pursue sustainable solutions and devote resources to successfully designing sustainable policies.

The environment operated in a state of dynamic equilibrium. Water evaporates from the surface of the earth and the oceans, leaving behind salts and silt. Precipitation renews the fresh water reservoirs. As far back as the 1940s, energy conservation, water conservation, water reuse, material substitution, and reclamation and recycling were practiced, mainly for economic reasons. The motivation to implement these ideas has increased as environmental regulations become stricter and the cost of water, fuel and electricity increase (Cheremisinoff, 2002). Legislation that was introduced often ignored the technical aspects of the problem, and hence was unenforceable (Schnelle, Brown et al, 2002).

The essential compounds of life contain carbon, nitrogen, hydrogen and oxygen that cycle between organic and inorganic forms. Some of these compounds are water-soluble and travel with streams or groundwater; some are volatile and move into the atmosphere to be returned to earth by precipitation, photosynthesis, or nitrogen fixation. When these pathways and cycles are disturbed, life patterns are interrupted (Ibid, 2002).

The challenge is that toxic pollutants come in many forms and cause diverse harmful effects. Some accumulate in the flesh and organs of animals, some breakdown the environment, some are mobile while others are not, some cause cancer or birth defects after long exposure, some kill quickly at sufficiently high doses, and some upset normal body functions in suitable ways that we may overlook until the cumulative effect is serious disease (Cheremisinoff, 2002).

Investment in water supply and sanitation usually yield economic benefits. The reductions in adverse health effects and health care costs outweigh the cost of intervention. Nevertheless, environmental protection often comes after the development of schools, hospitals, telecommunications, transportation and other national needs. And it usually comes under pressure from a collection of laws that protect environmental quality and public health (Ibid, 2002).

Environmental issues have emerged as one of the most severe challenges humankind has to cope with carefully in contemporary and future world. The principal danger of environmental problems lies in that, they present risks within the state where it originates, to that state's neighbors and, possibly, the global commons (Ross, 1998).

A clean environment is a goal to which we all strive. However, we have been the victims' of severe environmental damages as a result of industrial growth and defense-related activities. The damage to our environment is substantially affecting our overall health and welfare. It is a credit to our human spirit that we remain optimistic and share an enthusiasm about environmental issues (Clarke, 2000).

What does it mean to say that the environment is our 'common heritage'? On one level this is a simple statement of fact: when we are born, we come into a world that is not of our own making.

The air we breathe, the water we drink, the natural resources on which our livelihoods depend, and the accumulated knowledge and information that underpin our ability to use these resources wisely; all these come to us as gifts of creation that have been passed on to us by preceding generations and enriched by their innovation and creativity (Boyce, 2013).

To say that the environment belongs in common and equal measure to us all does not mean that we have inherited a free gift with no strings attached. For our common heritage carries with it a common responsibility: the responsibility to share the environment fairly among all which are alive today, and the responsibility to care for it wisely to ensure that our children, our grandchildren and the generations who follow will share fairly in our common heritage too (Ibid, 2013).

2.3. Definitions of Key Terms

Environment

- "Environment" generally refers to a natural-resource base that provides sources (material, energy, and so forth) and performs "sink" functions (such as absorbing pollution). The term can include resources that people relied on in the past but no longer rely on (either because they are depleted or because they have been substituted by some other resource or technology). Similarly, it can include resources that people do not yet use, but could use with a change in knowledge or technology (Leach & Mearns, 1991).

- The environment includes the surroundings, conditions or influences that affect an organism (Denton, 2010). Along these lines, Lewis (2001) defined the environment as; all that which is external to the human host. Can be divided into physical, biological, social, cultural, etc., any or all of which can influence health status of populations. According to this definition, the environment would include anything that is not genetic, although it could be argued that even genes are influenced by the environment in the short or long-term.

Environmental Protection

- Environmental protection is a practice of protecting the environment, on individual, organizational or governmental level, for the benefit of the natural environment and humans (Pankratz, 1996).
- Environmental protection are policies and procedures aimed at conserving the natural resources, preserving the current state of natural environment and, where possible, reversing its degradation (Pittock, 2009).

NGOs

- NGO is any non-profit, voluntary citizens' group which is organized on a local, national or international level. Task-oriented and driven by people with a common interest, NGOs perform a variety of service and humanitarian functions, bring citizen concerns to Governments, advocate and monitor policies and encourage political participation through provision of information. Some are organized around specific issues, such as human rights, environment or health. They provide analysis and expertise, serve as early warning mechanisms and help monitor and implement international agreements. Their relationship with offices and agencies of the United Nations system differs depending on their goals, their venue and the mandate of a particular institution (Aubrey et al, 1998).
- NGO is an umbrella term which encompasses a broad array of organizations, varying enormously according to their purpose, philosophy, sectoral expertise and scope of activities. In the development field, NGOs range from large international organizations and charities (mostly based in developed countries) to small community based self-help groups in developing countries (Nelson & Wright, 1995).

ENGOs

- An ENGO is a non-governmental organization in the field of environmentalism. The goals of environmental NGOs include but are not limited to: creating relationships with the government and other organizations, offering training and assistance in agricultural conservation to maximize use of local resources, establishing environmental solutions, and managing projects implemented to address issues affecting a particular area.

ENGOs are organizations that are not run by federal or state governments but rather have funds issued to them by governments, private donors, corporations, and other institutions. In order to fully understand the social, economic, and environmental effects an organization can have on a region, it is important to note that the organization can act outside the formal processes that state governments and other government institutions must comply with (Levy & Newell, 2005).

2.4. Human, Nature and Environment

Human activities are responsible for a major decline of the world's biological diversity, and the problem is so critical that combined human impacts could have accelerated present extinction rates to 1000–10,000 times the natural rates (Wilson & Peter, 1988).

Human society and the environment interact with each other. Human impacts (i.e., anthropogenic impacts) on the environment refer to the impacts of human activities on biophysical environments, biodiversity and other resources. Those activities include agricultural practices (deforestation, genetically modified food, agricultural chemicals, soil degradation, agricultural plastics), fishing (overfishing, ecological disruption, by-catch), irrigation (soil Stalinization, reduced river discharge, evaporation, withdraw of groundwater drainage), livestock production (pollution, fossil fuels, water and land consumption), energy industry (climate change, biofuel use, fossil fuel, electricity generation, renewable energy, manufacturing (cleaning agents, nanotechnology, paint, pesticides, pharmaceuticals and personal care products), mining (erosion, sinkholes, loss of biodiversity, contamination of soil, contamination of ground water and surface water), transport (use of fossil fuels, air pollution, emission of carbon dioxide, traffic congestion, invasion of natural habitat and agricultural lands) (Pankratz, 1996).

When farmers grow and harvest crops, they remove some of nutrients from the soil. Without replenishment, land suffers from nutrient depletion and becomes either unusable or suffers from reduced yields. In practice, farmers tend to over-apply synthetic fertilizers or animal manures, which can improve productivity but can pollute nearby rivers and coastal waters.

Many farming practices can cause long-term damage to soil including excessive tillage (leading to erosion). Soil erosion is fast becoming one of the world's greatest problems.

The phenomenon is fast becoming one of the world's greatest factory farming techniques being called peak soil as present large scale factory farming techniques are jeopardizing humanity's ability to grow food in the present and in the future. Without efforts to improve soil management practices, the availability of arable soil will become increasingly problematic. Availability of water is crucial for sustainable agriculture. In some areas, sufficient rainfall is available for crop growth, but many other areas require irrigation. However, improper irrigation without adequate drainage can lead to Stalinization (Pankratz, 1996).

The natural environment and built environment can also affect human health. The World Health Organization defines environmental health as those aspects of the human health and disease that are determined by factors in the environment. The impacts of environment on human health include both the direct pathological effects of chemicals, radiation and biological agents, and the indirect effects on health and wellbeing of the broad physical, psychological, social and cultural environment (e.g., housing, urban development, land use and transport) (Ibid, 1996).

2.5. Environmental Problems

We must disturb the environment as we draw from it food, water, shelter, clothing, energy, and all of our material needs, and as we dispose in to it our wastes (Cheremisinoff, 2002). What does it mean to say something is 'bad for the environment' or 'good for the environment'? These value judgments rest, implicitly or explicitly, on ethical criteria by which we distinguish better from worse. A criterion that has gained many adherents in the past two decades is 'sustainable development.' The World Commission on Environment and Development defined this in its 1987 manifesto, Our Common Future (known as the Brundtland Report, after Commission Chair GroBrundtland), as development that 'meets the needs of the present without compromising the ability of future generations to meet their own needs.'

By this criterion, 'environmental harm' means actions that compromise the ability of future generations to meet their needs. Conversely, 'environmental improvements' would refer to actions that enhance the ability of future generations to meet their needs (Boyce, 2013).

National Statistics Abstract report (2010) summarized the challenges associated with environment. The challenges associated with environmental protection today are multifaceted and affected by many interacting factors. The challenges operate on various, often large, spatial scales, unfold on long temporal scales, and usually have global implications (for example, carbon dynamics, nutrient cycles, and ocean acidification).

Environmental harm is not randomly distributed across the population, but instead reflects the distribution of wealth and power. The relatively wealthy and powerful tend to benefit disproportionately from the economic activities that generate environmental harm. The relatively poor and powerless tend to bear a disproportionate share of the environmental costs (Ibid, 2013). In practice, many environmental costs are localized, rather than being uniformly distributed across space. This makes it possible for those who are relatively wealthy and powerful to distance themselves from environmental harm caused by economic activities (Princen, 1997).

A number of studies have found that race and ethnicity matter, even when controlling for income: communities with higher percentages of African- Americans, Latinos, Asian- Americans and Native Americans tend to face greater environmental hazards. This finding suggests that political power has an impact on exposure to environmental harm, above and beyond whatever can be explained simply by differences in purchasing power (Ibid, 2013).

The total magnitude of environmental harm depends on the extent of inequality. Societies with wider inequalities of wealth and power will tend to have more environmental harm. Conversely, societies with relatively modest degrees of economic and political disparities will tend to have less environmental harm.

When the beneficiaries from environmentally harmful activities are more powerful than those who bear their costs, greater inequality can be expected to result in more environmental harm. On the other hand, when those who bear the costs are more powerful than the beneficiaries, we might expect the opposite: greater inequality yields less environmental harm (Boyce, 2013). Political influences also play a role, prompting action in some cases and inaction in others. Consider the contrast in the international responses to ozone- layer depletion and global warming.

The 1987 Montreal Protocol on ozone- depleting substances successfully instituted a worldwide phase-out of the use of CFCs. Although the benefits of CFC use in; refrigeration, air conditioning, fire extinguishers, solvents, foams and aerosols; were concentrated in the industrialized countries, so were the environmental costs. Ozone-layer thinning is most pronounced at the higher latitudes, and light-skinned people are most susceptible to skin cancers and melanomas caused by increased ultraviolet radiation (Ibid, 2013).

Major socioeconomic factors are directly and indirectly driving environmental changes. Those socioeconomic factors are often reflected in population growth and migration, demographic shifts, land-use change and habitat loss, increasing energy demand and shifting energy supplies, new consumer technologies and consumption patterns, increasing emissions of greenhouse gases, and movement of organisms beyond their traditional ranges. These were the major and worldwide environmental challenges of the present time mentioned in the report of National Statistics Abstract of 2010.

Burning coal and oil overloads the carbon dioxide reservoir in the atmosphere. The heavy use of phosphate and animal wastes as fertilizer overloads the phosphorus balance in lakes, reservoirs, and rivers and causes excessive growth of algae and aquatic plants. The instability can be magnified because the cycles are linked. The carbon, oxygen, nitrogen, phosphorous, and sulfur cycles are linked to the oxygen cycle (Cheremisinoff, 2002).

Wastes from processing plants pose the most difficult disposal and environmental problems in view of the physical and chemical properties of the wastes as well as the enormous volumes involved, and consequently a large expanse of land must be used for the disposal (Wendt, 1999).

There is little doubt that environmental factors are major components of the burden of disease in developing countries. One study estimates that 20 percent of the total burden of ill- health in one state in India is due to environmental factors. In this case environment is considered as including household water supply, toilets, wastewater collection and treatment, indoor air pollution, agrochemical pollution, and urban air pollution (Hogue, 2009).

Furthermore, diseases related to environmental factors affect the (income) poor disproportionately. Respiratory infections and diarrheal diseases are the two biggest causes of death among the poorest 20 percent of the world's population as ranked by national gross domestic product per capita. These diseases are responsible for 13 percent and 11 percent, respectively, of deaths of the poor. Malaria is the tenth biggest killer of the world's poor, responsible for 4 percent of deaths. In contrast, respiratory infections are responsible for only 5 percent of the deaths of the richest 20 percent of the world's population; the contribution of diarrheal diseases and malaria is negligible. Respiratory infections and diarrheal diseases together are responsible for 33 percent of the total poor-rich mortality gap (Gwatkin & Guillot, 2000).

The following are major environmental issues that require urgent attention to make the ecology responsive.

2.6. Population Growth & Challenges to Land Use

The population growth is one of the grand challenges for sustainable development since an increasing population places additional strain on natural resources. Currently, most population growth occurs in the developing world and population is more or less stagnant in the industrialized world. The economic development is linked with the quality of life.

As the pattern of population shows, the rate of population growth could be stabilized by improving quality of life. However, improvement in quality of life and economic development has closely linked with enhanced consumption and associated depletion and environmental degradation (Pankratz, 1996).

Population growth and demographic transitions have increased the requirement of land area for residential, commercial, and transportation activities (Squires, 2002). With the dramatic increase in population, human activities have altered and will continue to alter an ever-increasing portion of Earth's surface (Wulder et al, 2012). Such activities have diminished natural ecosystems and the benefits that they provide, including water purification, flood control, climate moderation, and new crop plants.

CIA defined Ethiopia's population growth rate as "The average annual percent change in the population, resulting from a surplus (or deficit) of births over deaths and the balance of migrants entering and leaving a country. The rate is a factor in determining how great a burden would be imposed on a country by the changing needs of its people for infrastructure (e.g., schools, hospitals, housing, roads), resources (e.g., food, water, electricity), and jobs." Accordingly, Ethiopia's population growth rate in the year 2013 reached 2.9%; with this increasing rate, the growth and its counter effect on the environment is posing a negative string to the things surrounding it in particular and the society in general.

In its report National Statistics Abstract (2010) defined land use as, "Land use is a major factor driving environmental quality. Land use strongly influences water quality through runoff, water quantity through influence on the hydrologic cycle, air quality through emissions and deposition and carbon storage in terrestrial landscapes, and biologic diversity through habitat loss, disturbance, and resource availability."

Forests provide many ecosystem services. They support biodiversity, providing critical habitat for wildlife, remove carbon dioxide from the atmosphere, intercept precipitation, slow down surface runoff, and reduce soil erosion and flooding. These important ecosystem services will be reduced or destroyed when forests are converted to agriculture or urban development. For example, deforestation, along with urban sprawl, agriculture, and other human activities, has substantially altered and fragmented the Earth's vegetative cover.

Such disturbance can change the global atmospheric concentration of carbon dioxide, the principal heat–trapping gas, as well as affect local, regional, and global climate by changing the energy balance on Earth's surface (Marland et al, 2003).

Majority of Ethiopia's total cultivated land depends on semi-commercial or subsistence farming systems. With a rapidly growing population, Ethiopia needs to increase food production in which 85-90 percent of the population lives on agriculture. However, population growth and agricultural production are not growing in par, due to land shortage, expansion to marginal lands and protected areas. In addition, the arable soils are amongst the oldest in Ethiopia and are highly degraded and eroded by a combination of water and wind erosion.

2.7. Pollution

Pollution is the introduction of contaminants into the natural environment with adverse changes (air pollution, water pollution, land pollution, etc.). Pollutants can be either foreign substances or naturally occurring contaminants (Pankratz, 1996).

- **Air Pollution**

To have an air pollution incident, there are three factors that must occur simultaneously. There must be sources, a means of transport, and receptors. Air pollution sources are relatively common knowledge. Their strength, type, and location are important factors.

By transport, reference is made to the meteorological conditions, and the topography and climatology of a region, which are the important factors in dispersion; that is, in getting the material from the sources to the receptors. The receptors include human beings, other animals, materials, and plants (Schnelle, Brown et al, 2002).

Air pollutants can travel around the globe and do damage on a global scale. One example is the damage to the ozone layer; another is greenhouse gases and climate change (Cheremisinoff, 2002). Waste treatment itself produces emissions. Burning an unwanted by-product to produce energy creates exhaust gas that contains air pollutants. Capturing dust from the exhaust gas will produce a solid waste; absorbing gaseous pollutants into a liquid creates a new stream of waste water.

Achieving zero discharge of water-burn pollutants will leave some pollutants to be discharged as a gas, sludge, or solid (Ibid, 2002). Short- term exposure to ozone can cause shortness of breath; long-term exposure can cause permanent damage to the lungs (Ford, 1995).

We also know that air pollution can affect visibility and can endanger our lives simply by making it difficult to travel on the highways and difficult for planes to land. The dollar cost of air pollution is the subject of much debate. However, it must be an astronomical figure especially when you add such things as the extra dry cleaning and washing, houses that need more paintings than they should, etc. The dollars lost to poor crops is a costly item in our economy, notwithstanding the impairment to shrubs, flowers, and trees (Schnelle, Brown et al, 2002).

- **Water Pollution**

Water quality is of key importance to man and nature (Geiger, 1965). Freshwater is essential for food supplies, sanitation and human health. It is also critical for natural ecosystems and for many industrial processes, including many existing water-cooled power stations (Pittock, 2009).

Since 1970, although understanding of hydrologic systems has advanced, water problems have been overshadowed by the challenges and rapid changes in land use and economic systems (Leach & Mearns, 1991).

The water cycle, driven by the sun's energy, provides continual regeneration of fresh water by evaporation from land and sea. Snow and rain condense from this evaporated water. Preserving the integrity of this hydrologic cycle is a central problem in environmental protection (Cheremisinoff, 2002).

Flooding tends to reduce water quality by introducing large amounts of eroded materials. By transforming low lying areas to farm lands, man has removed much of the floodplain vegetation and wetland areas that act as natural stilling ponds, sediment intercepts, hydraulic sponges, and erosion protection. Compounding the problem, large quantities of chemicals are flushed into the surface water by overland flows. Chemical loading and poor water quality can have long and short-term consequences. Point sources for chemical introductions include inundated municipal and industrial sites, including wastewater treatment plants, chemical processing and manufacturing centers, and disposal or holding areas (Geiger, 1965).

Dealing with polluted water may create gaseous emissions or solid residues that are part of the same problem. Contaminated groundwater can be pumped and cleaned of a solvent without making it safe for discharge to a stream, and the solvent will still exist in some form, perhaps as a gas or adsorbed onto a solid. A solid waste disposal problem refuse into a sanitary landfill, will produce a strong leach ate and gas, both of which need to be collected and subjected to further management (Ibid, 2002).

2.8. Climate Change

In broad terms, 'climate' is the typical range of weather, including its variability, experienced at a particular place. It is often expressed statistically, in terms of averages over a season or number of years, of temperature or rainfall and sometimes in terms of other variables such as wind, humidity, and so on. Variability is an important factor. 'Climate variability' is variability in the average weather behavior at a particular location from one year to another, or one decade to another. Changes in the behavior of the weather over longer time scales, such as one century to another, are usually referred to as 'climate change' (Pittock, 2009).

Climate is critical to the world as we know it. The landscape, and the plants and animals in it, are all determined to a large extent by climate acting overlong intervals of time. Over geological time, climate has helped to shape mountains, build up the soil, determine the nature of the rivers, and build floodplains and deltas. At least until the advent of irrigation and industrialization, climate determined food supplies and where human beings could live (Ibid, 2009).

Pittock (2009), mentioned the fact that, climate has changed greatly over geological timescales. But what is of immediate concern is that climate has shown an almost unprecedented rapid global warming trending the last few decades. Climate change impacts are complex in that they can be both direct and indirect. For example, more rain may lead directly to either greater or smaller crop yields, depending on factors such as the type of crop, the soil and the present climate. Indirect effects could include changes in supply and demand as a result of these larger or smaller yields, both regionally and globally, and the resulting changes in commodity prices, the profitability of farming, and the affordability of food and effects on human health.

Impacts of climate change will not be distributed equally over the globe. Adverse impacts are likely to be greater and to occur earlier in low-latitude developing countries than in mid- and high-latitude developed countries. This is mainly because low-latitude countries are near or above optimum temperatures for many crops and activities already.

Such countries are also less able to adapt both because more heat-tolerant species and cultivars are less available and these countries tend to have less adaptive capacity.

As warming increases with time even the more developed countries will experience adverse effects, but the poorer countries will remain more seriously affected. Thus inequality between countries will be made worse. Inequalities in impacts will also apply within countries between the poor and the rich, and between vulnerable and less vulnerable regions (Pittock, 2009).

In the last several decades, it has become clear that human activities have had substantial effects on global climate. The global temperature has increased by an average of 0.6^{o}C since 1901 (IPCC, 2007).

Furthermore, there is strong scientific consensus that in coming decades climate change is likely to increase the frequency of heat waves, exacerbate problems with water supply and water quality, increase the severity of storms, and disrupt ecosystems, habitat, and food production (Ibid, 2007).

Disparate impacts arise not only from the greater vulnerability of poorer populations, but also, in some cases, from circumstantial factors. In the case of global warming, for example, the IPCC predicts that average surface temperatures on Earth will rise by 18–48^{o}C in the present century. Even if adverse impacts were distributed equally across humankind, the poor would suffer most by virtue of the fact that they start from a lower economic base. In addition, climate scientists forecast that the hardest- hit places will include parts of Africa, where droughts are expected to worsen in frequency and intensity, and low-lying regions of tropical Asia that are prone to increased flooding and cyclones.

The effects of climate change, the IPCC (2001) concludes, are expected to be greatest in developing countries in terms of loss of life and relative effects on investment and the economy.’

It is often argued that as human societies become richer and more technologically advanced, they become less dependent on nature and more able to adapt to climatic change. Poorer societies are likely to be more adversely affected by climate change than richer ones, so the capacity of a society to adapt, it is said, will inevitably increase with economic development.

In terms of the number of deaths from weather and climatic disasters, such as storms, floods and droughts, this appears to be borne out by common observations and statistics. However, the same statistics show that monetary damages from such disasters are greater in many richer developed countries, and that, irrespective of climate change, there is a rising trend in such damages (Pittock, 2009).

Even in rich countries, there are trends towards greater exposure to weather and climatic hazards, such as flooding by rivers and along low-lying coasts, drought, hail and windstorms. Examples include the increasing population and investments along the hurricane-prone Atlantic Coast of the United States, and the cyclone-prone coasts of northern Australia. These developments lead to greater potential economic losses. Reductions in loss of life are only achieved through large expenditures, for example on cyclone-proof buildings, early warning systems, evacuation, and rescue services (Ibid, 2009).

Biodiversity is the degree of variation of life forms at all levels of biological systems (i.e., molecular, organism, population, species and ecosystem) and is used to measure the health of ecosystems. However, most biologists agree that the period since human emergence is part of a new mass extinction, named the Holocene extinction event, caused primarily by the impact humans on the environment via the acronym HIPPO (Habitat destruction, Invasive species, pollution, human over population, and over-harvesting) (Pankratz, 1996).

2.9. Climate Change in Context

A common reaction to climatic change research by scientists in other disciplines, and by many decision-makers, is that there are other global change issues (such as land-use change, water supply or economic development) deserving of greater priority both for research funding and for policy concern and action. Climate change must be seen in the context of these other problems and stresses. The climate change issue should be put in context and given its due weight and not more (Pittock, 2009).

Pittock (2009) in his book Climate Change; The Science, Impacts and Solutions, explained the relationship of climate change with other environmental problems as follows:

- **Air Pollution and Climate Change**

There are a number of connections and feedbacks between surface air pollution and climate change. Near-surface ozone air pollution and the emissions that drive it are important contributors to global climate change. Pollutants such as nitrogen oxides, carbon monoxide and volatile organic compounds lead to ozone pollution in urban environments and to a global increase in ozone concentrations in the lower atmosphere. Ozone in the lower atmosphere is the third largest human induced contributor to global warming, after carbon dioxide and methane. Global warming tends to make urban air pollution and surface ozone concentrations worse (or at least different) by affecting the chemistry of the atmosphere, and changes in water vapor content and atmospheric circulation.

- **Land-use Change, Biodiversity, Agriculture, Forestry and Climate Change**

Changes in land-based and marine plant and animal systems occur for many reasons, including land-use change, pollution, and climate change and increasing atmospheric concentrations of carbon dioxide. In turn, changes in these biological systems affect climate by changing the exchange of greenhouse gases including carbon dioxide, methane and oxides of nitrogen between the land and ocean surfaces and the atmosphere.

Land surface cover by vegetation also has an important effect on the reflection and absorption of sunlight at the Earth's surface, and thus on temperatures and evaporation. Massive land-clearing for agriculture or biomass production (for example from palm oil or other oilseed crops) can lead to a number of problems, notably loss of stored biomass in existing forests and soils, changes in albedo or reflectivity of the surface, and the introduction of invasive species. Competition for land between agricultural production for food and for biomass energy is also a major consideration in relation to food shortages and prices, other factors such as increasing oil prices, population demand and market speculation may have played a larger role in recent food price escalation.

Natural climate variability, from year to year and decade to decade, demonstrates that the biosphere is sensitive to climate and thus to climate change. But the effects of other stresses such as erosion, fire, sea-level rise, and Stalinization and air pollution are also evident.

These can amplify the effects of climate change, or at least add to stresses on humans reliant on the biosphere for food, fiber and shelter. Other stresses on the biosphere, many driven by the rapid growth in human population and consumption of resources, such as land-clearing, air and water pollution and over-exploitation also increase the vulnerability of the biosphere to climate change and sea-level rise.

➢ Fresh Water and Climate Change

Strains on urban water systems are likely to increase due to global climate change. Typical strains are likely to include:

- increased water demand in hotter, drier seasons when water supply is at a minimum;
- floods exceeding the design capacity of protection works;
- more extreme rainfall events exceeding sewage design capacities, leading to overflows;
- less dilution of wastewater discharge into rivers with less dry-season flow;
- increased eutrophication and reduced water quality due to high nutrient loadings, low water flows and high temperatures;

- Conflicts in the management of dams to simultaneously protect against greater floods, limit eutrophication, generate electricity and store water for dry seasons.

➢ Population Growth and Climate Change

Ever since Thomas Malthus' Essay on the Principle of Population in 1798, global population growth has loomed as a major environmental issue. The Malthusian argument is that population growth would outstrip the capacity of the Earth to support the population. Applied to the greenhouse effect, this relates to the Earth's capacity to accept additional greenhouse gas emissions without harm. In 1965, E Boserup offered the contrasting view that high population densities favor technological innovation that enables the environment to support more people.

Applied to the greenhouse effect this suggests that technological innovation may avoid harm by either increasing our capacity to adapt, or by providing less carbon-intensive means of supplying energy services.

Greenhouse gas emissions are a product of population, energy use per person, and carbon intensity of energy production. Population is thus a driver of greenhouse gas emissions, but it is usually downplayed relative to economic growth and a failure to decrease energy intensity since 2000.Empirical evidence from data from 1975 to 1996, analyzed by Anquing Shi of the World Bank, indicates that greenhouse gas emissions increased more rapidly than population in developing countries, but less rapidly than population in developed countries.

2.10. Methods and Approaches of Climate Change Adaptation & Mitigation

Adaptation is an automatic or planned response to change that minimizes the adverse effects and maximizes any benefits. It is one of the two possible means of coping with human-induced climate change and sea-level rise. The other option is to reduce the magnitude of human-induced climate change by reducing greenhouse gas emissions, this is called mitigation.

Adaptation is essential to cope with the climate change and sea-level rise that we cannot avoid now and in the near future, while mitigation would limit the extent of future climate change (Pittock, 2009).

Adaptation can be purely reactive, autonomous or automatic in response to some perceived change in the climate. In natural systems this is the only type of adaptation, although humans can intervene to facilitate adaptation, in which case the systems become managed. For example, as climate changes natural species will die out in areas that become unsuitable, and may spread to other areas that become suitable. This is often a slow process, taking decades for seed to spread, germinate and grow into mature plants. Where there are obstacles, such as unsuitable soils or developed land, spread maybe halted. Human intervention can facilitate and speed up such species migration by creating vegetation and wildlife corridors, planting seeds or seedlings in new areas, or by eliminating competition from other species (Ibid, 2009).

Rapid climatic change allows less time to adopt than slow change of the same eventual magnitude, and may incur larger costs in terms of investment in new farming practices, rezoning and new design standards for engineered structures such as buildings, bridges, drains, dams and levees. Moreover, natural ecosystems have not only limited absolute ranges of adaptability, but also limited rates of adaptation. And human beings will find it psychologically and politically easier to respond appropriately to climatic change if it is slow and well established statistically, than if it is rapid but less clearly a part of some long-term change (Ibid, 2009).

The projected climate changes in the twenty-first century are so large that, even at the low end of the range of possibilities, impacts will require costly adaptations, and in some cases our capacity to adapt will not be enough to avoid serious damage to individuals and society. It will therefore be necessary to reduce climate change by reducing net greenhouse gas emissions to the atmosphere. In the language used by the IPCC and the UNFCCC, this is called ‘mitigation’ (Ibid, 2009).

The percentage reduction needed in greenhouse gas emissions to avoid dangerous changes to the Earth's climate is large but uncertain. Stabilizing the concentration of greenhouse gases in the atmosphere requires total emissions per annum at some time in the future to be less than or equal to the total removal of greenhouse gases per annum from the combined atmosphere–shallow oceans–land/soil biota system. Removal can occur by natural processes or it can be artificially accelerated (Pittock, 2009).

Mitigation, or greenhouse gas emissions reductions, can be achieved in several general ways: through increased energy efficiency, fuel substitution, use of non-fossil-carbon fuels (including nuclear power and renewable), carbon sequestration (or removal from the climate system), and infrastructure and lifestyle changes (Ibid, 2009).

When water withdrawals are greater than about20% of the total renewable resources, water supply is often a limiting factor in development, while withdrawals of over 40% mean serious water stress. In many arid regions this is being overcome by withdrawals from underground reservoirs, which were laid down over thousands of years (Ibid, 2009).

Other areas of concern include restoration of environmental flows to preserve riverine ecosystems and maintain freshwater fisheries, and the potential effects on runoff of reforestation (for various purposes, such as control of soil erosion and Stalinization, and for carbon sequestration) (Ibid, 2009).

Major technological fixes or adaptations being considered include water diversions between river systems. However, these are very costly and controversial, involving ecological problems and in some cases displacement of large numbers of people. Other costly solutions include desalinization plants, which need large energy supplies. Rationalizations that these can be supplied from renewable sources such as wind power miss the fact that in most situations such renewable energy installations are urgently needed to replace fossil fuel energy for other uses.

Alternative adaptations include demand management through water conservation and pricing and recycling of water. Reducing the extent and rapidity of climate change through mitigation actions appears necessary (Pittock, 2009).

Population is already declining in most developed countries. This is thought to be a result of increased income, growing family security, and the education of women, which together provide both the incentive and the means to limit population growth. This is often referred to as the 'demographic transition' that comes with development (Ibid, 2009).

Due to population age structure, family planning will take a generation or more to take effect, and thus will not substantially reduce emissions in the short term. Thus population measures, however necessary they may be in the long run, should not detract from the need for urgent reductions in emissions per person, especially where this is already high. Fostering energy conservation and low-carbon technology therefore remain critical; especially in the short term until a demographic transition occurs globally (O'Neil, Mackellar et al, 2001).

The following are major adaptation approaches and measures used widely across the world;

- **Short-term Adaptation Measures**

This adaptation method is usually essential to initiate and encourage urgent response measures to prevent or mitigate short-term impacts that are already occurring and likely to arise from climate change.

- **Medium and Long-term Adaptation Measures**

These types of approaches are necessary to enhance adaptive capacity to prevent and mitigate possible impacts, by assessing the risks of impacts that may occur in the medium and long term, and by controlling the impacts, reducing vulnerability, and strengthening resilience.

➢ Cross-Sectoral Adaptation Measures

These are measures implemented with the intention of adapting to estimated impacts in specific sectors. Even in sectoral adaptation, it is essential to evaluate the risk-reduction effects, costs, and other relevant factors comprehensively. (E.g., new construction and functional improvements of embankments to cope with sea level rise and storm surges, soft (non-structural) measures such as improvements in tsunami and storm surge hazard maps, and strengthening of measures to prevent outbreaks of infectious diseases such as dengue fever.)

➢ Integrated Adaptation Measures

These approaches include integration of measures planned on a sectoral basis to a unified and effective adaptation plan, and enhancement of basic capacities of localities and sectors such as technologies and human resources. These should be implemented with a systematic and long-term perspective. (e.g., the identification of issues that require cross-sectoral approaches.)

➢ Awareness-raising Adaptation Measures

It is of fundamental importance to raise the awareness and understanding of the people and government agencies responsible for adaptation. These measures are important to identify the responsibilities, roles and collaborations among organizations both at national and local levels.

➢ Information Consolidation Adaptation Measures

These are institutional arrangements and methodology development for gathering, managing, and utilizing basic information on the target areas and sectors. They are the basis for planning and implementation of adaptation measures.

➢ Research and Technology Development Adaptation Measures

Research and technology development should be promoted in such areas as monitoring and projections of climate change, measures for the short-term, and the medium- and long-term adaptation effective to improve the resilience of local societies.

2.11. Actors in Environmental Protection

Environmental threats are produced and dealt with by organizations whose missions are broader than simply protection of the environment. Environmental agencies, however, have the mission of ensuring that producers do not forget their environmental responsibilities. Those responsibilities are to the third player in this process: the public.

Through the political process, the public caused an environmental policy to be put in place to protect health and the environment, and at the grass-roots level the public maintains oversight on the specific actions of both regulators and producers (Clarke, 2000).

➢ The Private Sector

The producers have a completely different set of responsibilities, the foremost of which is the fact that they must continue on with their production task in order to survive; environmental issues are a secondary concern. When a cleanup does become necessary, the producer must pay, and its payment comes out of its normal operating expenses.

To some degree, consumers will absorb some of this cost, but in general, passing on too much of the cost will simply drive the producer out of business (unless the producer happens to be a government agency). With limited discretionary funding available for environmental restoration, then, producers need to accomplish as much as possible with the resources they have (Ibid, 2000).

➢ The Government

Normally, government regulatory agencies act as enforcers. Once enforcement has *oc*curred, however, one is faced with the need to restore the situation. Then, and especially in the case of the Superfund, the government becomes a “producer” and needs to act and think like one (Ibid, 2000).

Ideally, the role of governments vis-à-vis civil society is to take note of the concerns, and where necessary to mediate among often competing elements of society, before acting for the common good.

In particular, governments have a role to encourage cooperation and competition across a level playing field, with a long-term perspective, in the long-term interests of the whole society (Pittock, 2009).

Governments have a duty, therefore, to set standards, goals, and rules of behavior on an equitable basis. Governments can facilitate the attainment of goals, although in most cases actually achieving change is up to individuals and groups, including businesses, consumers, and investor's and innovators. Policies and laws are only effective if civil society in the main wants them to work, otherwise they are empty rhetoric or worse (Ibid, 2009).

Issues such as climate change are highly complex, with imperfect information, highly technical and scientific connections, issues of human behavior and values, and large uncertainties. In the case of climate change this is further complicated by large time lags between actions regarding greenhouse gas emissions, and their eventual consequences, which may be large but delayed by decades to centuries (Ibid, 2009).

Modern democracies consist of representative governments usually elected for terms of three to six years. The electoral cycle for democratic governments is very short compared to the timescale on which climate change usually takes place. Moreover, politicians and the media too often focus on the short-term in terms of income, profits, taxes and jobs rather than on planning or investing for the following decades and generations. A key question is how longer-term thinking about cause and effect can be built in to the decision-making process, both of governments and of businesses.

In part this must come from an informed and highly educated electorate. Institutions that have a longer time perspective than the next election are vital, because they can bring a greater level of foresight to government and the political process (Pittock, 2009).

Examples include business companies and corporations, trade unions, trade and business associations, educational and research institutions, religious groups, environmental advocates, social justice advocates, professional bodies and many other associations, many with their own form of total or partial democracy. Collectively these groups are termed non-governmental organizations (NGOs). They, and their hopefully peaceful manner of operating, are often referred to as 'civil society' (Ibid, 2009).

- **The Public**

The public tends to be easily excited over health and safety issues, although a much smaller (but more active) group maintains vigilance over non-human health and natural resources, and a very small group is both active in and knowledgeable about global ecology issues. In addition, the public is concerned about jobs, general economic issues, property values, and the quality of life in communities.

Thus, the public concerns tend to be more diffuse than the single focus enjoyed by enforcers and producers. Because of that diffuseness, the public seldom speaks with a coherent voice, which makes it easier for activists and extremists on all sides of an issue to misrepresent or override the public will (Clarke, 2000).

- **Local and State Authority**

The Association of County Councils (1990) provides a summary of the environmental functions of local government, and places them into 5 main categories:

1. Prevention – i.e. development control, land use and emergency planning.
2. Regulation and control – i.e. waste disposal and pollution control.

3. Restoration, conservation and enhancement – i.e. in terms of transport facilities and nature conservation.
4. Monitoring and coordination.
5. Organizational – maximizing the environmental performance both within authority and through services provided.

The Audit Commission (1997) state that LAs will play a key role in preparing public opinion for the lifestyle changes that will be necessary to achieve environmental improvement in the future. Therefore, the LA provides the critical link between global legislation and policy, and its grassroots implementation. As a service provider LAs have a responsibility to provide for the welfare of the community. In environmental terms this includes the removal of substances such as waste and the prevention of activities which harm the environment (Nelson & Wright, 1995).

LA management of the environment is not a new phenomenon and is the third largest area of spending after social services and education (Ross, 1998). When considering large events the role of the LA will be to facilitate the organizer by providing advice and assistance and using its experience to educate. As a service provider the LA can prevent environmental damage before it occurs with appropriate planning. LAs capability to make a practical impact on the environment is particularly important in four areas; waste management, energy conservation, planning and transport, and pollution control (Ibid, 1997).

Local and state governments have authority over many areas affecting the environment, such as land-use planning, transportation, building standards, regulation of natural gas and electricity supply, air pollution standards and enforcement, and economic development. These regional and local authorities are thus able to exert pressure to minimize greenhouse gas emissions, encourage energy efficiency, and to foster renewable energy developments. They have also set standards and examples that others may follow (Pittock, 2009).

Globally, local governments have become actively involved, through the organization Local Government for Sustainability, formerly the International Council for Local Environmental Initiatives (ICLEI). ICLEI has over 875 member towns, cities, counties and municipal associations in 70 countries and undertakes international campaigns, programs and regional projects on sustainable development, including the climate change issue (Pittock, 2009).

➢ The Role of Environmental NGOs

It is a legitimate and indeed necessary role of civil society to influence both governments' and voters, especially regarding longer-term issues. In democracies, such influence is subject to the will of all citizens at government elections (Ibid, 2009).

Like states, NGO diplomats have access to a number of resources that give them power in multilateral negotiations. Although, they rarely possess significant military capabilities, NGOs have considerable economic resources, particularly in the private sector. Some argue that it is not their economic resources per se that make business/industry actors powerful but their central position in national economies and the international political economy (Levy & Newell, 2005).

NGOs can make the following contributions (Agarwal, 2008):

- Conducting education and citizen awareness programmes in the field of environment;
- Fact – finding and analysis;
- Filing public interest litigations;
- Innovation and experimenting in areas which are difficult for government agencies to make changes in providing expertise and policy analysis;
- Providing factual and reliable information with a network of professional expert staff;
- Remaining independent while passing relevant information to the public and governmental bodies;
- Solidarity and support to environmental defenders;
- Working in collaboration with the government for capacity building and promotion of community participation in environmental awareness and protection and

- Working out at the grass root level and reaching far- flung areas with or without the government invitation.

2.12. ENGOs, Environmental Policies and Agreements

As stated before, environmental problems have been widely acknowledged as one of the most serious challenges mankind face in contemporary and future world. As a result, environmental issues have become one of the main concerns in international relations in recent years (Stalley, 2013).

It would be difficult to overstate the importance of the environment as a policy issue. Aside from the ecological implications of decisions in many "non environmental" policy fields, environmental policies have impacts on other policy fields. The recent controversy over whether protecting the spotted owl should weigh more or less heavily than protecting the jobs of timber industry workers is not going to be solved here. The important thing is to realize that environmental policies, often considered to be based on scientific analysis, must include consideration of nonscientific issues such as fiscal realities, economic growth policies, and cultural values. Even race has surfaced as an issue in this field (Clarke, 2000).

Scientific research in the latter half of the twentieth century led many climate scientists to alert governments to the issue of climate change. This was done individually and through conferences and policy statements. This led to the setting up of the Inter-governmental Panel on Climate Change to provide policy-relevant scientific advice, and it led to discussion in the United Nations General Assembly (Pittock, 2009).

The General Assembly called for a UNFCCC in 1990. The Convention was finally adopted in New York in May 1992, and was opened for signatures at the Inter-governmental Conference on Sustainable Development, held in Rio de Janeiro in 1992.

Framework conventions are general agreements that leave the details of implementation to be worked out later via a series of protocols, legal devices or agreements to be adopted by the countries that signed the Convention. Up to late 2007, 193 countries have ratified the UNFCCC (Pittock, 2009).

As Pittock (2009), affirmed The UNFCCC contains no binding commitments on emissions levels, but it does lay down some general principles and objectives to shape future negotiations on these commitments. These include that:

- Developed countries (most members of the Organization for Economic Cooperation and Development (OECD)) plus former communist states undergoing transition to a market economy, should take the lead with abatement measures.
- The climatic and economic vulnerabilities of developing countries should be recognized.
- Abatements, or emission reductions, should be consistent with sustainable development and not infringe the goals of an open and supportive international economy.

These provisions, and negotiations towards their implementation, have led to much argument between the countries that are parties to the Convention (and who meet as the 'Conference of Parties', or COP), especially over the contents and implementation of the Kyoto Protocol adopted in 1997. These arguments have been compounded by uncertainties as to the actual risk from climate change, and the costs of impacts and abatement measures. There has also been a clash of various national and corporate interests, ideological positions, and economic advantages. As at 12 December 2007, 176 countries had ratified the Protocol, with those agreeing to an emissions reduction target accounting for some63.7% of world emissions. Australia agreed to ratify the Protocol following a change of government in November 2007. The one major country refusing to ratify the Protocol as of late 2008 is the United States (Ibid, 2009).

The Rio Declaration on Environment and Development, produced at the 1992 Earth Summit, consisted of 27 principles for future sustainable development around the world (Monteith & Unsworth, 2008). The Vienna convention for the protection of the Ozone Layer of 1985 is a multilateral environmental agreement that was ratified by 196 states, including all United Nations members and the European Union. It acts as a framework for international efforts to protect the ozone layer, but it does not include legally binding reduction goals for the use of CFCs, the main chemical agents causing ozone depletion. These are laid out in the accompanying Montreal Protocol (Ibid, 2008).

Every pollution control project has a legal component. The laws are complicated. It is difficult, but necessary; to learn the applicable rules and regulations and work within the legal constraints they impose. They will dictate which chemicals and substances are to be controlled, and they constrain the quantities and concentrations that maybe released into the environment. Some laws specify pollution control technology. Some prescribe analytical methods and how remedial investigations are to be done. They establish requirements for getting permits to discharge effluents and gaseous emissions and to transport and store solid wastes (Ibid, 2008).

The Kyoto Protocol is a first agreement to start the process of reducing greenhouse gas emissions, with very modest targets set for reductions in countries averaging 5.2% relative to 1990emissions, to be achieved by 2008–12 (Pittock, 2009). The Koyoto Protocol is an international treaty that sets binding obligations on industrialized countries to reduce emissions of greenhouse gases. The goal is to prevent “dangerous” human-induced interference of the climate system (Ibid, 2008).

Many developed countries have agreed in two commitments periods. The first period applied to greenhouse gas emissions from 2008 - 2012. Developed countries may use emissions trading until late 2014-2015 to meet their first-round targets.

The second commitment period applies to emissions from 2013-2020, but this amendment has (as January 2013) not entered into legal force (Monteith & Unsworth, 2008).

The 37 countries with binding targets in the second commitment period are Australia, all members of the European Union, Belarus, Croatia, Iceland, Kazakhstan, Norway, Switzerland, and Ukraine. Japan, New Zeeland, and Russia participated in Koyoto's first round between have not taken on new targets in the second commitment period. The United States signed but did not ratify the protocol and Canada withdrew from it in 2011 (Ibid, 2008).

2.13. Review of Empirical Literature

Similar scholarly researches and assessments showed that, environmental non-governmental organizations, in recent years, have grown in size and in number as a result of governmental negligence and financial constraint towards the environmental crisis. NGOs have grown in importance to a point where the act as key arbitrating agents within the field of environmental policy. By interrelating global and local concerns, NGOs find themselves able to not only emphasize important ecological issues, but also raise consciousness about the environment.

Agarwal (2008), assessed that the very existence of NGOs and the role played by them in the protection of the environment is not only important but also necessary because no government alone with any amount of laws and acts can achieve the objectives of environment protection without individual and public participation which can be achieved only through a network of motivated and dedicated voluntary organizations, like the NGOs.

Similarly, studies in Ethiopia asserted the very existence of environmental NGOs in environmental protection and strong partnership with government. Conclusions drawn from the studies showed that, environmental NGOs are engaged in providing research, capacity building and policy support tools in areas where government presence is weak.

CHAPTER THREE

3. Research Methodology

3.1. Introduction

The thesis employed qualitative and quantitative research approaches. Both exploratory and descriptive research methods were used. Qualitative and quantitative data collection methods were applied. A key informant interview was used to collect qualitative data. Semi-structured self-administered questionnaires were prepared for ACCRA, CCF-E and FfE to collect quantitative data. A total of 44 respondents; 23 from ACCRA, 11 from CCF-E and the remaining 10 from FfE, were targeted. A review on available literature and data from ACCRA, CCF-E and FfE was undertaken to generate secondary information. The secondary document research focused on the role of the selected environmental NGOs which are working on climate change mitigation and adaptation in Ethiopia.

3.2. Research Approach and Design

The thesis employed case study research design. For an in-depth understanding and description of the subject matter in narrative form and because of the small sized characteristics of the samples, the researcher used qualitative research design. Quantitative research design was used to support the preliminary findings from the qualitative data. These approaches together enabled the thesis to measure data in numerical form and triangulate the evidences obtained but most importantly to validate the facts and figure on the selected case (environmental) organizations.

3.3. Types and Sources of Data

Both primary and secondary sources of data were used. Primary sources of data include questionnaires distributed to selected respondents from ACCRA, CCF-E and FfE, and in-depth interview with key officials of ACCRA, CCF-E and FfE. Secondary sources of data include, review of available literature and secondary data from the selected cases.

3.4. Sampling and Sample Size Determination

A total sample size of 44 respondents was chosen from ACCRA, CCF-E and FfE. A non-probability purposive sampling technique was employed to select respondents. This was because the researcher wanted to specifically address respondents with knowledge of climate change adaptation and mitigation and with the work of these organizations.

3.5. Research Methods and Instruments of Data Collection

Both primary and secondary methods of data collection were used. Primary sources of data include in depth interview and self-administered questionnaire while secondary sources of data include review of available literature from ACCRA, CCF-E and FfE.

- **In-Depth Interview**

Selected staffs, those with knowledge of the climate change adaptation and mitigation programs, of the selected environmental NGOs were interviewed using semi-structured interview guide. The specific individuals from the three institutions that participated in the interview were ACCRA's advisor, climate action and networking officer and project officer of; ACCRA, CCF-E and FfE. The interviewees were selected purposively because these are the key persons in charge of completing a task concerning climate change adaptation and mitigation processes.

- **Documentary Review**

Secondary sources of data, like; scholarly research results, publications, documents, write-ups, bulletins and records kept by; ACCRA, CCF-E and FfE was used in collecting information on issues of climate change adaptation and mitigation vis-a-vis the methods used.

Available literature and documentation that are relevant to environmental protection in general and climate change mitigation and adaptation in particular were reviewed. Personal visit was made to relevant organizations for acquisition of secondary and primary data. The institutions contacted include; ACCRA, CCF-E and FfE.

- **Case Study**

Owing to lack of time and resource constraint, three international ENGOs are selected for this purpose of study, namely; ACCRA, CCF-E and FfE. Besides lack of plenty of time to explore deep into the role of ENGOs in environmental protection, the major considerations for choosing the specified organizations are, they (ACCRA, CCF-E and FfE), all carry out their operational activities in a networked path linked to the government and civil society organizations moreover with communities at large. ACCRA an association works with governmental organizations, like; MOA and civil societies; Care International, Oxfam, to mention few and moreover it works with communities vulnerable to environmental problems. By the same token, CCF-E in its effort to combat environmental harms function with government organizations, CSOs and the community at best, including districts/words and keels. Complementary to ACCRA and CCF-E, Fife undertake its operational activity through the process of engagement on hosting policy briefings, undertaking researches and embarking on areas where there is a need for assessment in support with the government and society. With these, the researcher believes that, addressing and being able to get information from the selected case studies is taken as equally putting an effort into getting access to information from the organizations, whether government or CSOs found in the network, separately.

3.6. Methods of Data Analysis and Interpretation

After the data has been gathered different techniques of data compilation are employed in order to interpret the raw data into meaningful outcome. To quantitatively interpret the raw data SPSS is used. Methods like graphs, charts and tables are used. The secondary data collected is interpreted and presented in accordance with theories and principles discussed in the literature review. Detailed description of the role of ACCRA, CCF-E and FfE is qualitatively analyzed and key findings are presented in a meaningful and narrative way. The likert- scale responses are analyzed using SPSS; the responses are then converted into graphs, charts and tables and are given interpretation accordingly. Qualitative matrix is prepared to summarize the results obtained.

3.7. Description of the Study Area

3.7.1. African Climate Change Resilience Alliance

ACCRA in Ethiopia is a consortium made up of Care International, Oxfam, Save the Children, sWorld Vision and key government actors including, DRMFSS, MoA, NMA, MoEPF. These organizations are key ones in supporting citizens in their efforts to adapting the climate change and mitigating the climate change effects. Internationally, ACCRA works on climate change adaptation and disaster risk reduction across Ethiopia, Mozambique and Uganda.

The impact of climate change is real and exacerbates already vulnerable populations, compounding the challenges they face to survive. ACCRA's mission is to support vulnerable people to be more resilient to climate change through strengthening policy and practice and building on existing structures and systems.

In Ethiopia, ACCRA works at the national, regional and Wereda (district) levels and also with communities through its consortium members. ACCRA works with key multi-sector stakeholders with an interest in CCA and DRR, such as donors, INGOs, national civil society, research institutions and vulnerable communities. It supports linkages between local, regional and federal government and encourage civil society involvement where possible.

3.7.2. Climate Change Forum Ethiopia

CCF-E is a resident civil society organization that works to tackle the challenges of climate change. It strives to relief people from climate-induced challenges and contributes to moving forward the nation's socio-economic development.

The history of CCF-E all begun in 2007, as per the response of climate action and networking officer, the main reason behind the formation of the forum lies in preserving, conserving and protecting the environment. At the early stage of the formation, the forum's objective was creating awareness and advocating the society at large, particularly those societies vulnerable to environmental problems in general and climate change in particular. Besides, creating awareness and advocating, the forum is actively involved in networking.

The primary objective of CCF-E is to craft localized knowledge and share it to build a plant society that can harmonize itself to withstand the pressure of climate change. Communication, convening, coordination and community development endeavors are the prime means that CCF-E employs to reach its goal based on identified gaps. CCF-E organize direction setting high level meetings and collaborate in undertaking assessment studies and contributes to negotiations through facilitating preparatory meetings prior to major international negotiations.

CCF-E undertakes studies focusing on spotting deficiencies, recommending solutions and discovering the state of affairs surrounding climate change issues. Moreover, CCF-E enjoys strong partnership with key stakeholders whose activities are strongly linked to climate change including government agencies, CSOs and international development organizations. The climate action and networking officer said, as per the role of CCF-E in preserving and conserving the environment in collaboration with government and environmental organizations, CCF-E is actively collaborating and working with; MoA, EPA, Ministry of Youth & Women, Municipalities, Kebeles and Weredas/districts.

3.7.3. Forum for Environment

FfE has been registered and licensed by the Charities and Societies Agency as an Ethiopian Residents Charity. It serves as a platform for environmental communication and advocacy among people concerned with the Ethiopian environment.

FfE is an environmental communication and advocacy group that was established in Ethiopia in 1997. FfE focuses on six major thematic areas; forests, fresh water, flowers, renewable energy, pollution and climate change. Its main activities include awareness raising through public engagements, research and publications, mobilizing the public through establishing and strengthening local groups, capacity building, policy level debates and discussions, and incentive and acknowledgement schemes. Moreover, it is one of the main environmental organizations focusing on both climate change and forestry in the country.

Furthermore, FfE currently hosts the Ethiopian Civil society Network on Climate Change that consists of 60 member organizations working on climate change issues. Since its establishment FfE has been actively engaged in drawing the attention of citizens to the severity of environmental challenges in the country and promoting solutions and challenges.

The impact of climate change is becoming severe and continues to destroy resources of communities vulnerable to the effect. FfE's mission is to make the communities aware of the resultant negative effect of climate change on their resources causing; soil erosion, excessive land degradation, deforestation and the like, if not properly managed in the first place. In response to these, FfE is engaging in organizing and participating public meetings, workshops, awareness and advocacy forums.

CHAPTER FOUR

4. Data Analysis and Interpretation

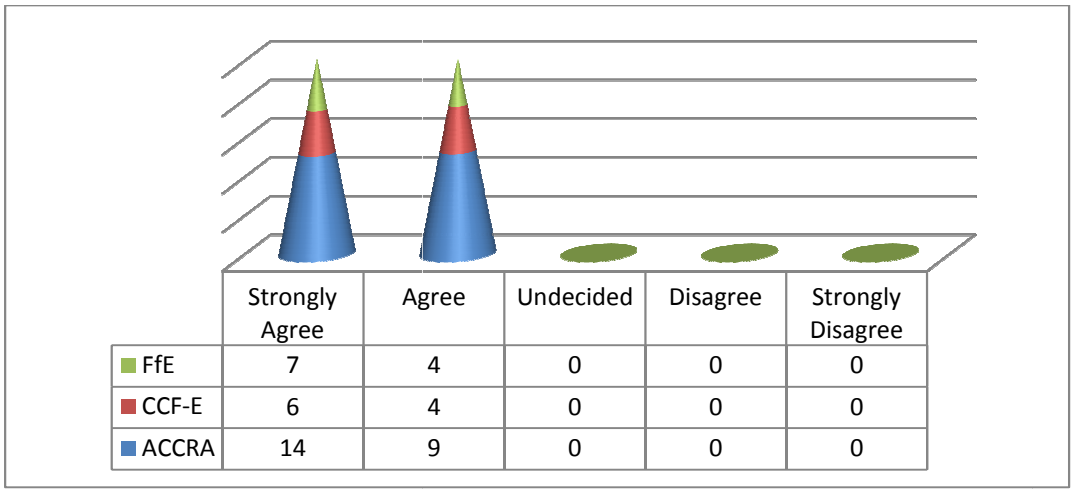
4.1. Introduction

This chapter explains the information obtained from respondents as well as review of documents, researches and publications on the role of environmental NGOs in environmental protection in case of ACCRA, CCF-E and FfE. In this chapter, findings from the case studies, data gathered from the respondents and review of secondary data, linking it with review of the literature review are presented and discussed. The findings are presented and discussed under several headings.

4.2. Environmental Protection, Climate Change and NGOs

Currently Ethiopia is facing severe challenge towards environmental protection and combating climate change. The researcher wanted to find out if the country needs the support of NGOs in alleviating environmental problems and adapts and mitigate climate change effects. The responses are as follows;

Figure 1: The Need for the Support of NGOs



	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
FfE	7	4	0	0	0
CCF-E	6	4	0	0	0
ACCRA	14	9	0	0	0

Source: Field Survey, 2014

Out of all respondents all agreed with the support of NGOs in environmental protection and in combating climate change effects. 61.36% of the respondents strongly agree with the direct involvement of NGOs in environment protection sector as environmental problems and a change in climate are becoming the fastest growing challenge Ethiopia is currently facing. While 38.64% of the respondents simply agree with the support of NGOs which are specialized in mitigating, adapting and alleviating climate change effects and environmental problems. This clearly shows that there is a strong need for the support of NGOs in environment protection as the government alone cannot pursue the challenges by itself.

Respondents were further asked to state the areas of risks that their organization is providing assistance to government. Responses from ACCRA, CCF-E and FfE are discussed below;

ACCRA has been providing assistance in collaboration with different government led and civil society organizations. ACCRA, through its partnership with DRMFSS, its approaches and its project's content are being integrated into the roll-out of national disaster planning. These elements, as well as ACCRA's LCA framework have been integrated into wereda level DRR planning. This has involved development of guidelines, ToT and support to weredas to develop DRR and contingency plans. Through this work, ACCRA is ensuring national and local level planners to take into account climate change and other trends into DRR planning.

ACCRA is working with MoEF to support the capacity of weredas and regions to put national development plans into practice. ACCRA is assisting with the design of wereda level CRGE investment plans. It attempted to bring input from the local level into regional and national level planning and implementation of CRGE.

It is also proactively engaging civil society actors to see benefits of linking DRR and CCA. Using a unique gradual training approach, stakeholders are being trained and coached on how to mainstream DRR and CCA into processes, policy, programmes and practice.

Similarly CCF-E is also involved in giving capacity building to different government led programmes and projects. The government is trying to contribute its share towards the process of climate mitigation and adaptation through the design of CRGE strategy.

The development of renewable energy especially hydro and wind power, among others, is a project which will have huge impact both on mitigation and adaptation. According to the information obtained from the climate action and networking officer, CCF-E believes that, the implementation of such projects will contribute to the region in supplying energy from green technology which will in turn reduce the extent of emissions in the region.

Moreover, CCF-E has been supporting the current initiative on SLM by the government. CCF-E's proposed project is to identify the specific needs of the community in the CRV of Ethiopia. In the CRV of Ethiopia, a number of achievements have been recognized by CCF-E. This includes; complementing the Initiatives that the Communities are doing on SLM in the CRV, East Shoa Zone and Local Institutional Capacity Building Project, in which partnership and coordination with government is strengthened.

FfE is actively collaborating with governmental actors as well as environmental stakeholders in protecting the environment. As part of its effort in achieving its objective towards making the environment cleaner, FfE has been actively engaged in the establishment of local FfE groups in different parts of Ethiopia. As per the information obtained from the project officer the rationale behind the formation of the local groups has emanated from the intention that, communities around the country are believed to have the willingness to make their environment safe, but lack the capacity to do so.

Therefore, the establishment of the local groups is believed to be a help for the communities to link up with FfE, environmental stakeholders and governmental actors. With this background 12 such environmental activist groups are already established in six regional states and Dire Dawa City Administration. The 12 local groups have got their own legal status and FfE is mainly involved in building their capacities through providing trainings, office equipment and some financial assistance.

Moreover, FfE creates and joins networks. At present, FfE is the secretariat for ECSNCC, which comprises 58 organizations working on climate change related issues. FfE is also a member of the Ethio-EIN which is chaired by Federal EPA.

Other national/international and loose/legal FfE networks include; member of the Ethio-EIN, member are Population and Health Consortium Ethiopia, Horn of Africa Regional Environment Centre/Network, Green Forum, Forest Working Group, Sheka Forest Alliance and Central Rift valley Working Group.

It is a fact that climate change is actually happening. Effects of climate change are fast becoming challenges of development and severely affecting the agriculture sector which accounts for more than half portion of Ethiopia's economy. Temperatures are raising and unpredictable rains are increasingly seen in some parts of the country. It is expected that these changes will continue and that extreme change in climate will result in frequent and intense deforestation, draught, flood and pollution.

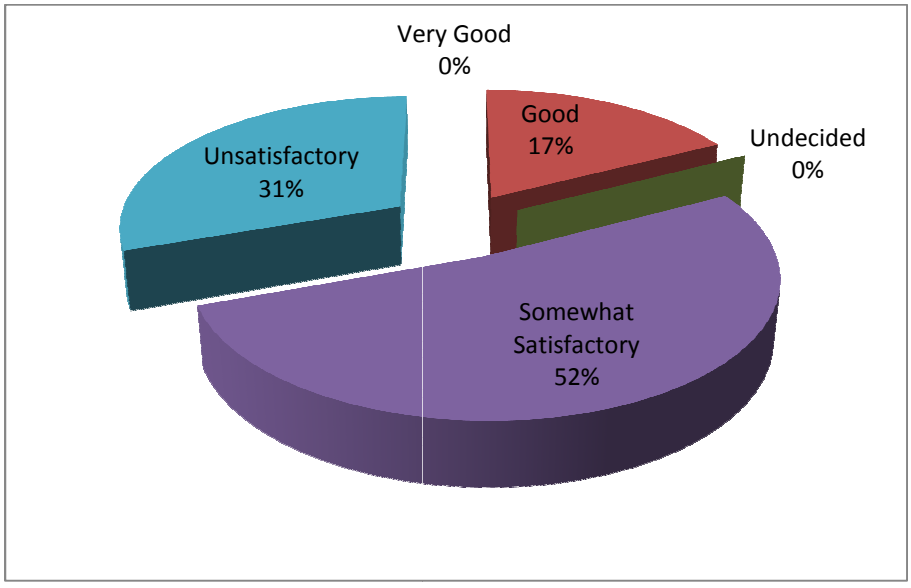
Greenhouse gas emissions which are the major causes of climate change are emitted by both natural processes and human activities. The emissions negatively affect agriculture, forestry, energy production and infrastructure in general. The government of Ethiopia cannot alone bear the challenges and consequences of climate change by itself. There is a strong need for the active involvement of different environmental stakeholders. Environmental NGOs must be at front-line to promote government and individual action to limit human-induced climate change effects and promote sustainable environmental policy.

4.3. Government's Environment Policy Framework and Approach in View of ACCRA, CCF-E & FfE

This was to find out the view of ACCRA, CCF-E and FfE towards the effectiveness of environmental problems policy frameworks, the area that they cover and their enforceability. Respondents were asked to choose one of the following; Very Good, Good, Undecided, Somewhat Satisfactory and Unsatisfactory, on environmental problems of; deforestation, availability of fresh water, renewable energy, pollution and climate change.

Out of twenty three (23) of ACCRA's respondents, four (4) constituting 17% of the participants were of the opinion that government deforestation policy framework and its enforceability is good. Twelve (12) respondents constituting 52% of the sample respondents believed that policy framework, guidelines and their enforceability is somewhat satisfactory. Seven (7) participants were of the opinion that deforestation policy framework exercised by the government is unsatisfactory and asserts the weakness of the system in addressing the continuous deforestation problem that Ethiopia is currently facing alongside with its lack of accurate enforceability system. These respondents constitute 31% of the total participants.

Figure 2: Policy Framework of Deforestation/ACCRA

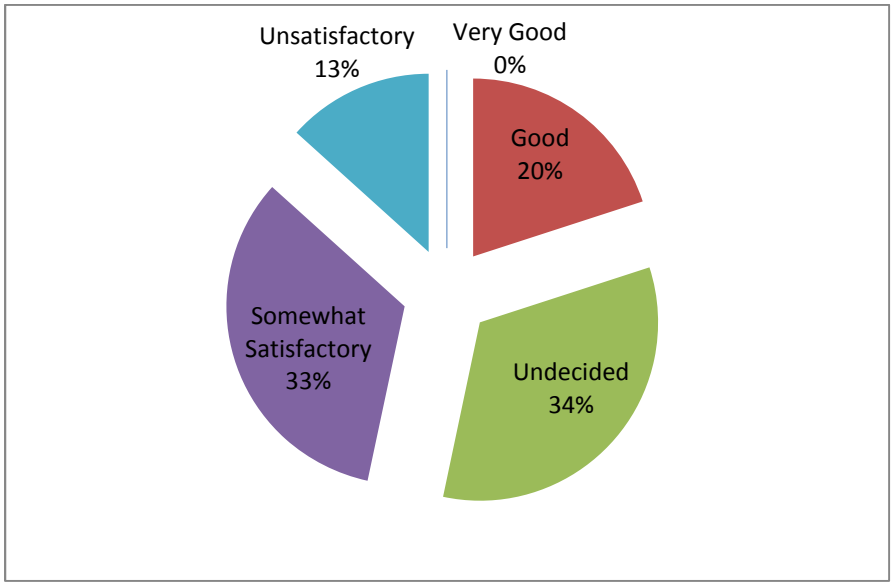


Source: Field Survey, 2014

Three (3) respondents of CCF-E, constituting 20% of the sample respondents believe that there is a good practice of reducing the effect of deforestation by the government and that there is a good policy guideline. 33% of participants making up of five (5) respondents were of the opinion that there is somewhat satisfactory strategy undertaken by government towards the problem of deforestation, while two (2) respondents constituting 13% of the participants believe that guidelines, measures and approaches undertaken by government are unsatisfactory.

Moreover, five (5) respondents are indifferent on the effectiveness of the measures, approaches, strategies, policy guidelines and their enforceability. These constitute 34% of the total respondents from CCF-E.

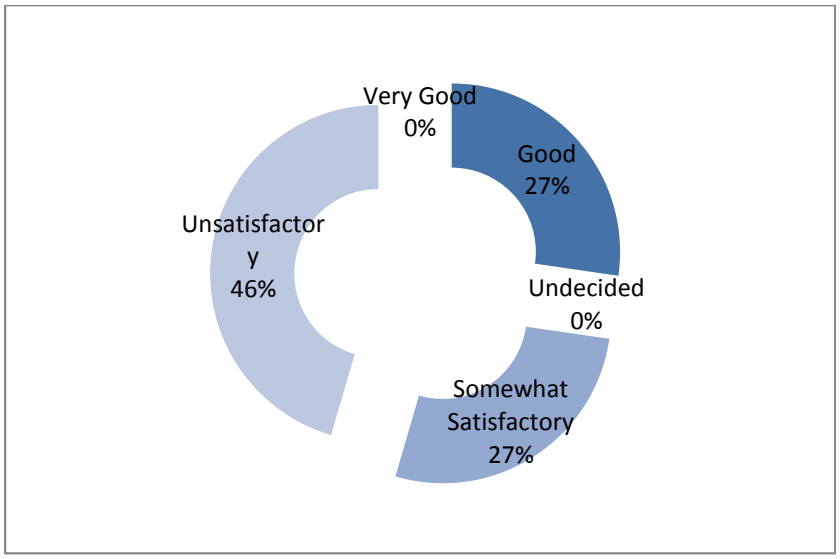
Figure 3: Policy Framework of Deforestation/CCF-E



Source: Field Survey, 2014

Three (3) respondents of FfE constituting 27% of the sample respondents believe that there is a good guiding principle of deforestation formulated by government, similarly three (3) respondents believe that the policy framework, its approach, the area it covers and its enforceability is somewhat satisfactory. Five (5) respondents constituting 46% of the total participant believe that measures taken by government towards deforestation are inadequate and unsatisfactory.

Figure 4: Policy Framework of Deforestation/FfE



Source: Field Survey, 2014

Commonly, it can clearly be understood that government's policy framework, measures and approaches towards combating the problem of deforestation is not satisfactory, as the majority of the responses pertain to reflect government's weakness in its effort to alleviate the problem of deforestation.

Furthermore, It can be observed from the below chart that 17.39% of respondents from ACCRA believe that there is a good attempt by the government towards alleviating the problem of availability of freshwater. 52.17% of the respondents agree with the fact that there is somewhat satisfactory progress by government towards making fresh water available. Respondents with the view of unsatisfactory strategy by the government in reducing the struggle towards the scarce resource of freshwater comprises of 30.44%.

Shortage of renewable energy mostly used as to cover part of critical water needs is another environmental problem Ethiopia is facing as a result of lack of; human, material, financial resources and technology. Respondents were further asked to rate the renewable policy framework provided by government.

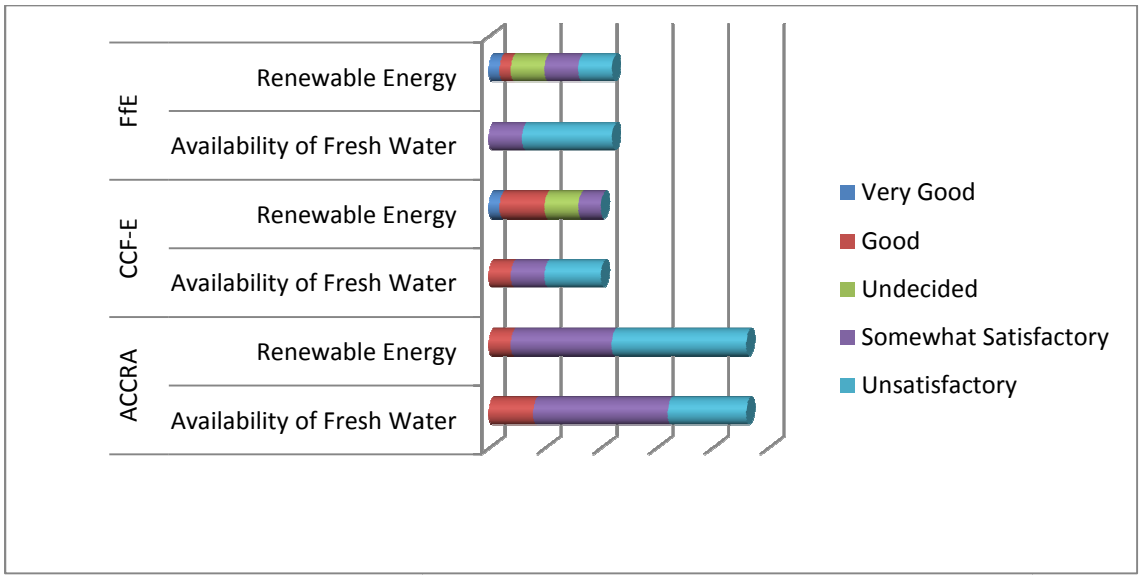
As can be seen from the below chart; the majority of responses from ACCRA fall under the policy framework being somewhat satisfactory and unsatisfactory; 39.14% (Somewhat Satisfactory) and 52.17% (Unsatisfactory). While only 8.69% of the respondents' rate the measures, approaches and the strategy as good.

20% of CCF-E's respondents rated the policy framework used by the government to make availability of freshwater sustainable as a good attempt. Respondents comprising of 30% rated the strategy as somewhat satisfactory. Half of the participants believe that the strategy used by the government is unsatisfactory. These constitute 50% of the total respondents from CCF-E.

Moreover, the below chart shows that majority of the respondents from CCF-E have rated the policy framework of renewable energy used by the government positively. Accordingly 10% and 40% of the respondents rated the policy framework as very good and good, respectively. 20% of the respondents rated it as somewhat satisfactory. Furthermore, the researcher observed the presence of respondents which are indifferent on whether the policy framework is good or not, these constitute 30% of the total participants from CCF-E.

In addition, as can be seen from the below chart respondents from FfE has a negative attitude towards effectiveness of availability of freshwater strategy undertaken by government, accordingly 27.27% of the respondents rated the policy framework as somewhat satisfactory and 72.73% of them rated it as unsatisfactory. More to the point, policy framework of renewable energy has been rated by respondents from FfE as very good and good comprising of 9.09% each. Out of the total respondents from FfE 27.27% of them are indifferent, while the rest 55% rated the policy framework as somewhat satisfactory and unsatisfactory. The rest sample respondents comprising of 8.64% of the total participants are indifferent.

Figure 5: Policy Framework of Renewable Energy & Availability of Fresh Water



Source: Field Survey, 2014

Seven (7) respondents from ACCRA constituting 30.43% of the total respondents consider that a pollution control policy guideline undertaken by the government is good. 43.47% of the respondents constituting ten (10) respondents believe that the measures taken by government are somewhat satisfactory. Six (6) respondents comprising of 26.08% of the respondents rated the policy framework as unsatisfactory.

20% of the respondents from CCF-E rated the pollution control policy framework as very good and good, while 80% of the respondents rated it as somewhat satisfactory and unsatisfactory, each constituting 40% of the total respondents. Similarly respondents from FfE believe that there is good policy guideline exercised by government in controlling pollution; these respondents comprise of 27.27% of the total participants. The rest 72.73% of the respondents rated the policy framework as somewhat satisfactory and unsatisfactory, each comprising of 36.36% of the total respondents.

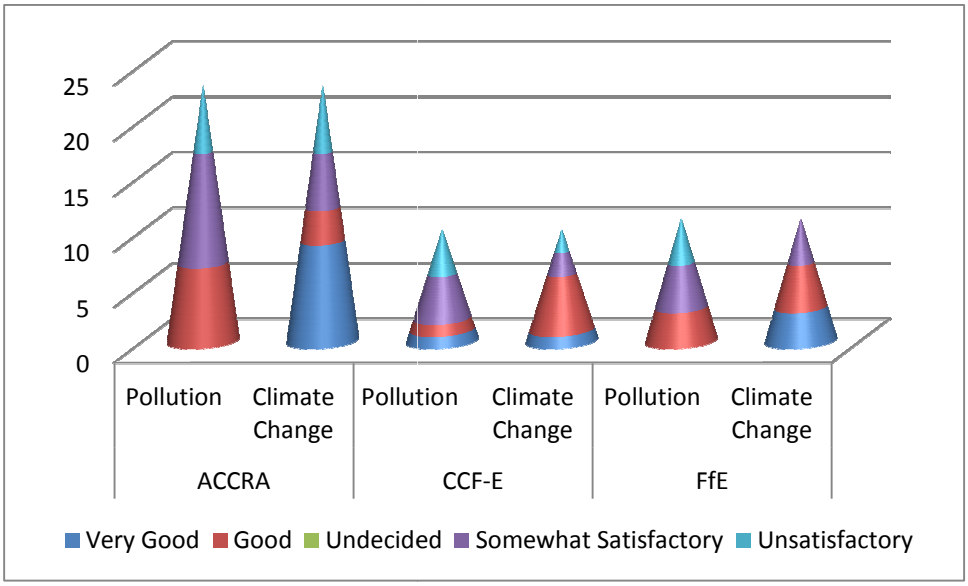
Climate change is becoming the fastest growing environmental problem Ethiopia is currently facing. The impact of climate change is affecting all facets of lives of people as well as their resources. Respondents were asked to rate the policy framework, measures and approaches used by government to adapt and mitigate climate change effects.

39.13% of respondents from ACCRA have rated the policy framework as Very good and 13.04% of them as good. 21.74% of the respondents were of the opinion that the measures and approaches applied by government are somewhat satisfactory. However, 26.09% of the respondents believe that the approaches used by the government towards mitigating and adapting climate change effects are unsatisfactory.

Furthermore, 10% of respondents from CCF-E rated the policy framework as very good and 50% of them as good. A total of the remaining 40% of the respondents believe that there is somewhat satisfactory (20%) and unsatisfactory (20%) policy guideline that could help mitigate and adapt climate change effects. As observed by the researcher majority of the respondents from FfE have a positive outlook towards the measures and approaches used by government in mitigating and adapting climate change effects.

Out of the total respondents 27.28% of them rated the policy framework as very good and 36.36% of them as good. The rest 36.36% of the respondents rated the climate change effect mitigating and adaptation strategy used by government as somewhat satisfactory. The chart below will further shade light into the interpretation made above regarding policy framework of pollution and climate change exercised by government in view of ACCRA, CCF-E and FfE.

Figure 6: Policy Framework of Pollution and Climate Change



Source: Field Survey, 2014

Respondents were further asked to state what is missing in the policy framework of deforestation, availability of freshwater, renewable energy, pollution and climate change. Responses are discussed below;

Despite the formulation and implementation of policy and strategical measures no significance change is brought in the field of forestry. Problems of deforestation are continually increasing leaving more than half of the country's land degraded. Ethiopia's forest management system is characterized by lack of well-organized institutional setup. There is no independent forest institution responsible for the planning, coordination, controlling, organizing and execution of forest related activities.

There is no mechanized optional alternative for the people living in rural area who are intensely involved in the act of cutting trees to commercialize the wood for personal use and use of land for agriculture and livestock. These problems have led to the destruction of forest, loss of wild animals and climate change. To this effect, a strong institutional setup should be build where there is a clear distinction of duties and responsibilities of concerned parties. Efforts must be made to create an independent responsible party assigned to carry out forestry activities. Alternative livelihoods should be set out by environmental stakeholders involved in forest management activities.

Regardless of efforts towards making clean water available at every door of people, lack of clean drinking water and inadequate sanitation infrastructure remains to be a high concern. In areas where there is availability of water, the quality of the water and its scarcity makes it very difficult for the community to cope with the high demand for clean water and the current supply of water.

Lack of investment in freshwater is another constraint that pose a great shortage of clean water in most rural areas of the country. Inadequate access to safe drinking water and absence of adequate waste disposal system has exacerbated the problem of usage of clean water. To meet the demands of water usage in the country, efforts must be lifted up. Governmental as well as environmental stakeholders funding should be raised and different usage of clean water programs should be initiated.

Ethiopia's continuing renewable energy problem will continue to be one of the major causes for underdevelopment and poverty. Because of major structural challenges Ethiopia's electrical energy is facing a great threat which is dependent on sources of renewable energy. Resource constraint has also lead to serious problems in energy supply and utilization. Renewable energy play a significant role in climate change mitigation and adaptation, thus effectively mobilizing and utilizing renewable energy source in which Ethiopia is endowed with will pose a significant impact on adapting climate change effects in the long-run.

Nowadays, Ethiopia is highly involved in industrial and manufacturing services. Earnings generated from these sectors yields a significant growth in the country's economic growth. Though, uncontrolled waste disposals released from industries and manufacturing plants has led to surface and ground water pollution putting the health of the communities dwelling near river basing at risk.

Emissions from industries and power plants have been the causes of air pollution. Emissions from cars, fast population growth and inadequate infrastructure have also been the major causes of environment pollution. Climate change which is the most pressing issue of the time is strongly influenced by strong forest management system, clean water supply, sufficient renewable energy and adequate pollution control system. Building a strong system to manage environment problems will be a good way to adapt and mitigate climate change effects.

4.4. Environmental Problems and ENGOs

This was to find out the degree of concern that ACCRA, CCF-E and FfE have towards environmental problems of deforestation, availability of freshwater, renewable energy, pollution and climate change. Respondents were asked to choose the following; not at all, only a little, an average amount, more than average and a great deal. Responses are as follows;

4.4.1. ACCRA's Degree of Concern for Environmental Problems

Table 1: Degree of Concern for Environmental Problems

Environmental Problems		*Deforestation*		*Availability of Fresh Water*		*Renewable Energy*		*Pollution*		*Climate Change*	
		Frequency	*Percentage*	*Frequency*	*Percentage*	*Frequency*	*Percentage*	*Frequency*	*Percentage*	*Frequency*	*Percentage*
Degree of Concern	Not at All	3	13.1	5	21.7	0	0	3	13	0	0
	Only a Little	9	39.1	12	52.2	0	0	0	0	0	0
	An Average Amount	9	39.1	4	17.4	9	39.1	8	34.8	1	4.3
	More than Average	2	8.7	2	8.7	11	47.8	12	52.2	5	21.7
	A Great Deal	0	0	0	0	3	13.1	0	0	17	74
Total		**23**	**100**	**23**	**100**	**23**	**100**	**23**	**100**	**23**	**100**

Source: Field Survey, 2014

As can be seen from the above table, three (3) respondents constituting 13.10% of the total respondents responded not at all for ACCRA's degree of concern for deforestation. 39.10%, making up nine (9) respondents believe that there is only a little concern for the problem of deforestation by ACCRA.

Similarly, nine (9) respondents' comprising of 39.10% of the total respondents believes that there is an average degree of concern by ACCRA towards Deforestation.

The rest sample respondents believe that there is a more than average degree of concern by ACCRA towards the problem of deforestation; these respondents constitute 8.7% of respondents. It can be observed from the responses that ACCRA is not highly involved in the act of preserving forests.

Furthermore, majority of respondents believes that there is only a little degree of concern for availability of freshwater, constituting 52.20% of the total participants. 21.70% of the respondents comprising of five (5) respondents were of the opinion that there is no concern for availability of freshwater by ACCRA at all. 17.40% of the respondents responded to an average degree of concern by ACCRA towards the problem of availability of freshwater, while 8.7% of them believe that there is more than average amount of concern for the problem of availability of freshwater by ACCRA. Responses show that there is a weak degree of concern towards availability of freshwater by ACCRA.

Moreover, as can be seen from the above table ACCRA's degree of concern for renewable energy is good. Majority of the respondents representing 47.80% of the total respondents responded to a more than average degree of concern, while 13.10% of them believe that there is a great deal of degree of concern for renewable energy by ACCRA. The rest of respondents representing 39.10% of the sample respondents responded that there is an average amount of degree of concern. This clearly shows that there is a high degree of concern for renewable energy compared to deforestation and availability of freshwater by ACCRA.

In addition, similar to high degree of concern for renewable energy, responses showed that there is also high degree of concern for pollution by ACCRA compared to that of deforestation and availability of freshwater. Respondents representing 52.20% of the sample respondents responded to a more than average degree of concern for pollution, 34.80% of them to an average amount and the rest respondents representing 13.00% of the total population believe that there is no degree of concern for pollution by ACCRA.

The researcher observed from the responses that ACCRA gives a great deal of concern for climate change constituting 74% of the total population. The rest 21.70% and 4.3% of respondents responded to more than average and an average amount of degree of concern for climate change, respectively.

4.4.2. CCF-E's Degree of Concern for Environmental Problems

Table 2: Degree of Concern for Environmental Problems

Environmental Problems		*Deforestation*		*Availability of Fresh Water*		*Renewable Energy*		*Pollution*		*Climate Change*	
		Frequency	*Percentage*	*Frequency*	*Percentage*	*Frequency*	*Percentage*	*Frequency*	*Percentage*	*Frequency*	*Percentage*
Degree of Concern	Not at All	0	0	0	0	0	0	0	0	0	0
	Only a Little	0	0	0	0	3	30	2	20	0	0
	An Average Amount	3	30	3	30	1	10	4	40	0	0
	More than Average	5	50	3	30	3	30	4	40	2	20
	A Great Deal	2	20	4	40	3	30	0	0	8	80
Total		**10**	**100**	**10**	**100**	**10**	**100**	**10**	**100**	**10**	**100**

Source: Field Survey, 2014

The above table shows that CCF-E has different level of degree of concern for the environmental problems listed above. The total respondents believe that there is an average, more than average and a great deal of concern for the problem of deforestation by CCF-E. Respondents who responded to an average amount of degree of concern comprise of 30% and, another 50% of the respondents ticked the box for more than average degree of concern. The rest respondents representing 20% of the sample respondents responded to a great deal of concern for deforestation.

Nine (9) respondents representing 40% of the sample respondents believe that there is a great deal of concern for the problem of availability of freshwater. Six (6) respondents constituting 60% of the sample respondents responded to an average amount and more than average degree of concern, each representing 30% and 30% of the total participants.

Out of the total ten (10) respondents; three (3) constituting 30% of the total respondents responded to only a little degree of concern for renewable energy, one (1) respondent representing 10% of the sample respondents replied to an average amount of concern, the rest 60% responded to an average amount and more than average amount, each comprising of 30% of the total respondents.

Responses concerning the problems of pollution and climate change are as follows; out of ten (10) respondents two (2) representing 20% of the sample respondents ticked the box for only a little degree of concern for pollution and four (4) comprising of 40% responded to an average amount of degree of concern and the rest 40% of the sample respondents were of the choice for more than average degree of concern for pollution. The researcher observed that there is a great deal of concern for climate change by CCF-E, more than half of the total respondents representing 80% of the total participants responded to a great deal of concern and the rest 20% responded to more than average amount of degree of concern for climate change.

4.4.3. FfE's Degree of Concern for Environmental Problems

Table 3: Degree of Concern for Environmental Problems

Environmental Problems		*Deforestation*		*Availability of Fresh Water*		*Renewable Energy*		*Pollution*		*Climate Change*	
		Frequency	*Percentage*	*Frequency*	*Percentage*	*Frequency*	*Percentage*	*Frequency*	*Percentage*	*Frequency*	*Percentage*
Degree of Concern	Not at All	0	0	0	0	0	0	0	0	0	0
	Only a Little	0	0	0	0	0	0	0	0	0	0
	An Average Amount	2	18.1	5	45.5	5	45.5	4	36.4	2	18.2
	More than Average	4	36.4	4	36.4	2	18.1	7	63.6	3	27.3
	A Great Deal	5	45.5	2	18.1	4	36.4	0	0	6	54.5
Total		**11**	**100**	**11**	**100**	**11**	**100**	**11**	**100**	**11**	**100**

Source: Field Survey, 2014

Respondents from FfE responded to their organization degree of concern for environmental problems listed above in the following manner; majority of the respondents replied to a great deal of concern for deforestation, these comprises of 45.5% of the total respondents. 36.4% of the respondents believe that there is more than average amount of degree of concern for deforestation, while 18.10% of them believe that there is an average amount of concern for deforestation.

Respondents representing 45.5% of the sample respondents were of the opinion that there is an average amount of degree of concern by FfE towards availability of fresh water. 36.4% of the responses fall under the more than average degree of concern for availability of freshwater. Of the total respondents 18.10% of them responded to a great deal of concern for availability of fresh water.

Responses for degree of concern for renewable energy, pollution and climate change are as follows; out of the total of eleven (11) respondents 45.5%, 18.1% and 36.4% of the participants responded for, an average amount, more than average and a great deal of concern for renewable energy, respectively.

Regarding degree of concern of FfE towards pollution; 36.4% of the respondents responded to an average amount of degree of concern, while the rest respondents representing 63.6% of the sample respondents responded to more than average degree of concern for the problem of pollution. Half of the respondents representing 54.5% of the total participants responded to a great deal of concern that FfE has to climate change. The rest 18.2% and 27.3% of the total respondents responded to an average amount and more than average degree of concern for climate change, respectively.

4.5. ENGO's Existence to Fill the Gap Observed in Fighting Climate Change by Government

Table 4: ENGO's and Gaps in Fighting Climate Change

ENGOs Existence to Fill the Gap Observed in Fighting Climate Change by Government		*ACCRA*		*CCF-E*		*FfE*	
		Number of Respondents	*Percentage%*	*Number of Respondents*	*Percentage%*	*Number of Respondents*	*Percentage %*
Category	Strongly Agree	11	47.8	5	50	4	36.4
	Agree	12	52.2	5	50	7	63.6
	Undecided	0	0	0	0	0	0
	Disagree	0	0	0	0	0	0
	Strongly Disagree	0	0	0	0	0	0
Total		**23**	**100**	**10**	**100**	**11**	**100**

Source: Field Survey, 2014

Climate change is one of the direst challenges the world is facing nowadays; the challenge is becoming the fastest growing problem most developing and African countries are coping with at present time. Ethiopia as a developing country is facing the challenge of climate change as there is lack of material as well as human resource adding to the existing different problems the country is reserving in. The government of Ethiopia is taking different maneuvers towards alleviating the problem of climate change. Respondents were asked to comment on the existence of environmental NGOs to fill the gap observed in fighting climate change by government. They were made to choose one of the following; strongly agree, agree, undecided, disagree and strongly disagree and responses are as follows;

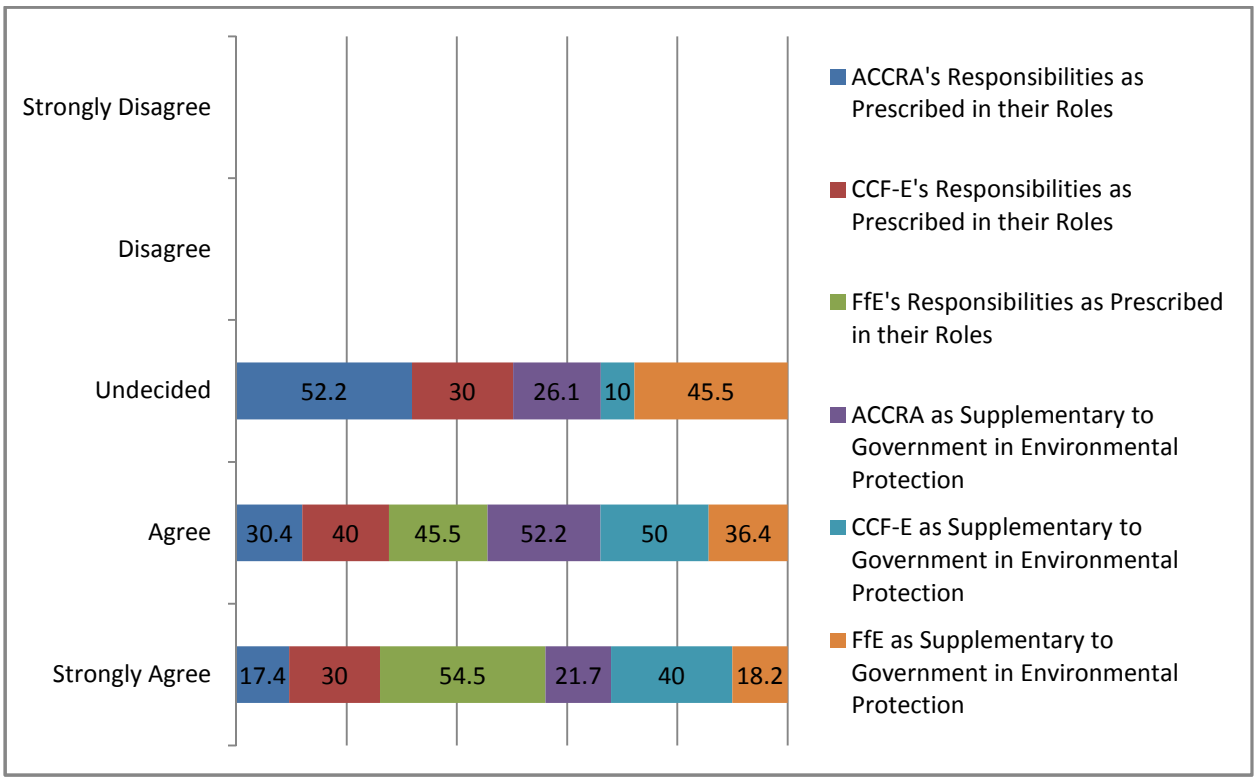
The researcher observed that out of all respondents from ACCRA, CCF-E and FfE all are in favor of ENGOs existence to fill the gap observed in fighting climate change by government. Out of twenty three (23) respondents from ACCRA eleven (11) respondents representing 47.8% of the total population strongly agree with the existence of ENGOs to fill the gap observed in fighting against climate change by government.

The rest 52.2% of them simply agree with the question. Half of respondents' constituting 50% of the total participants from CCF-E were of the opinion that ENGOs are there to fill the gap observed by government and they have responded strongly agree. The remaining half comprising of 50% simply agrees with the preposition. 36.4% of FfE's respondents responded strongly agree and the rest respondents representing 63.6% of the total participants responded agree on the existence of ENGOs to fill the gap observed by government in fighting climate change.

4.6. ENGOs, Government and Environment Protection

This is to find out if, ENGOs involved in environmental protection and preservation act are discharging their duties and responsibilities as prescribed in their role. The researcher also wanted to find out if ENGOs can be supplementary to what the government is doing to protect the environment. Respondents were asked to choose among the following; strongly agree, agree, undecided, disagree and strongly disagree. Responses are as follows;

Figure 7: Responsibilities of ENGOs and their Supplementary Characteristics



Source: Field Survey, 2014

The above chart contains the responses from ACCRA, CCF-E and FfE. Responses were made on whether ENGOs are properly discharging their responsibilities and on ENGOs as being supplementary to government in environment protection.

Most respondents were of the opinion that ENGOs involved in environment protection are properly discharging their responsibilities as prescribed in their role and some respondents are indifferent. Same goes for responses for ENGOs as being supplementary to government in environment protection.

As can be seen from the above chart respondents representing 17.4% of the total population of ACCRA strongly agree that ACCRA is properly discharging its responsibility towards the protection of the environment and mitigate and adapt climate change effects while 30.4% of respondents has simply agreed. Half of the respondents constituting 52.2% of the total participants of ACCRA are indifferent on whether ENGOs are discharging their responsibilities towards environmental protection as properly as described in their role.

Moreover, half of ACCRA's respondents representing 52.2% of the total participants has simply agree that ENGOs can be a supplementary to what government is doing in protecting environment and respondents comprising of 21.7% of the population strongly agree with the notation. The rest 26.1% of the respondents are observed to be indifferent.

Furthermore, the researcher has presented responses of respondents from CCF-E and FfE as follows; from the total respondents of CCF-E, 30% and 40% has strongly agree and simply agree that ENGOs are properly discharging their prescribed responsibilities and duties towards protection of environment. The rest respondents representing 30% of the total population of CCF-E are indifferent. As regards to ENGOs being supplementary to government in environment protection; 40% strongly agree, 50% agree and the rest 10% are indifferent.

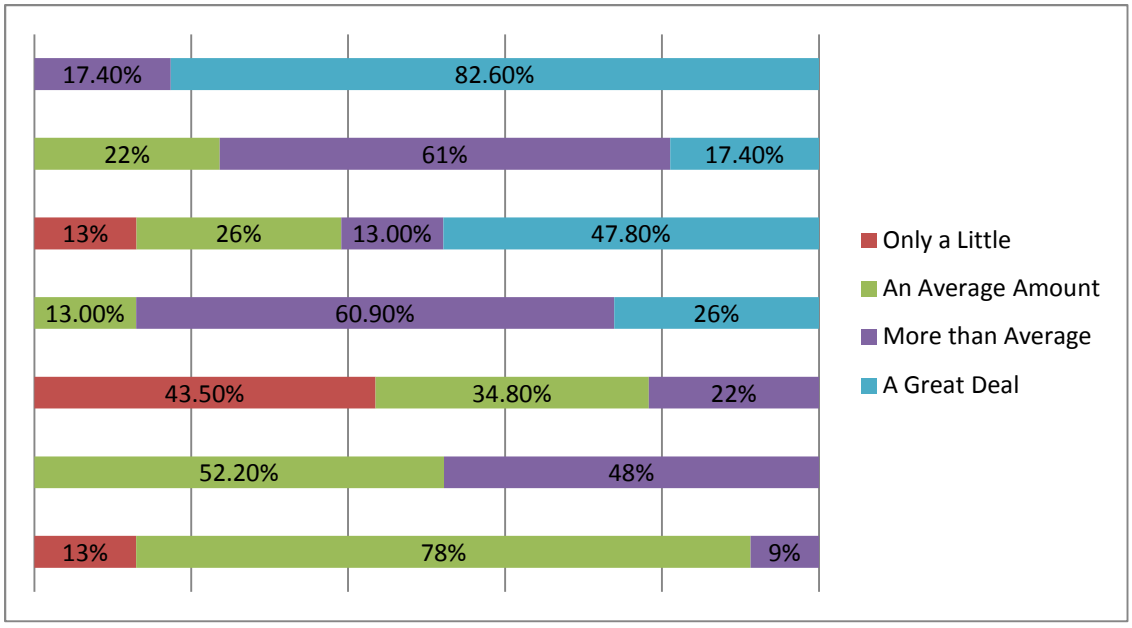
More than half of the respondents representing 54.5% of the total population of FfE strongly agree that ENGOs are clearly discharging their duties and responsibilities as prescribed in their role, while the remaining 45.5% of them has simply agreed. A great proportion of the respondents constituting 45.5% of the total participants of FfE are indifferent on whether ENGOs are supplementary to what government is contributing in environment sector. The rest 18.1% and 36.4% of the respondents strongly agree and merely agree with the preposition.

4.7. Climate Change Adaptation Approaches

The researcher wanted to find out which of the following listed climate change adaptation approaches is ACCRA, CCF-E and FfE is using to fight against climate change, the approaches are; short-term adaptation measures, medium and long-term adaptation measures, cross-sectoral adaptation measures, integrated adaptation measures, information consolidation and research and technological development measures. Respondents were asked to choose one of the following; not at all, only a little, an average amount, more than average and a great deal. Accordingly, responses are as follows;

4.7.1. Approaches Used by ACCRA

Figure 8: Climate Change Adaptation Approaches



Source: Field Survey, 2014

As can be seen from the above chart 82.6% of respondents responded that ACCRA uses a great deal of research and technological advancements as a measures in combating climate change. Respondents representing 17.4% of the total population think that there is a more than average involvement of ACCRA in research and technological development measures as remedies to climate change effects.

From the total population of respondents representing 22% and 61% responded to an average amount and more than average amount of ACCRA's concern for information consolidation as a measure to adapt climate change effects. The rest 17.4% of the respondents responded a great deal of ACCRA's involvement in information consolidation.

47.8% of respondents believe that there is a great deal of awareness raising adaptation measure undertaken by ACCRA in an attempt to adapt climate change effects. Respondents comprising of 26% and 13% of the total population responded to an average amount and more than average involvement of ACCRA in awareness raising campaigns. The remaining respondents constituting 13% of the total participants think that there is only a little amount of involvement by ACCRA in raising awareness towards climate change.

Respondents representing 60.7% of the total population from ACCRA believed that there is a more than average involvement of ACCRA in integrated adaptation measure in an effort to combat and adapt climate change effects. Similarly, 22% of participants responded a more than average cross-sectoral adaptation measure usage by ACCRA as an alternative way of adapting climate change impacts. Out of the total respondents 48% and 9% participants thinks that there is a more than average degree of involvement by ACCRA in using medium and long-term and short-term adaptation measures.

Respondents who responded to an average amount of involvement in an integrated adaptation measures constitute 13%. Participants representing 34.8% of the total population thinks that ACCRA is involved in a cross-sectoral adaptation approach in an average amount. 52.2% of respondents replied for an average amount of medium and long-term adaptation measures used by ACCRA. A greater proportion of respondents constituting 78% of ACCRA's population believe that there is an average amount of involvement by ACCRA in short-term adaptation measures. Another 43.5% and 13% of respondents thinks that there is only a little amount of ACCRA's involvement in cross-sectoral and short-term climate adaptation measures.

The researcher observed that ACCRA is highly engaged in using the approach of research and technological development adaptation measures towards adapting climate change effects. Cross-sectoral adaptation approach is not as such used by ACCRA in adapting climate change impacts, while there is somewhat more than average amount of integrated adaptation measures used by ACCRA as a remedy to climate change effects.

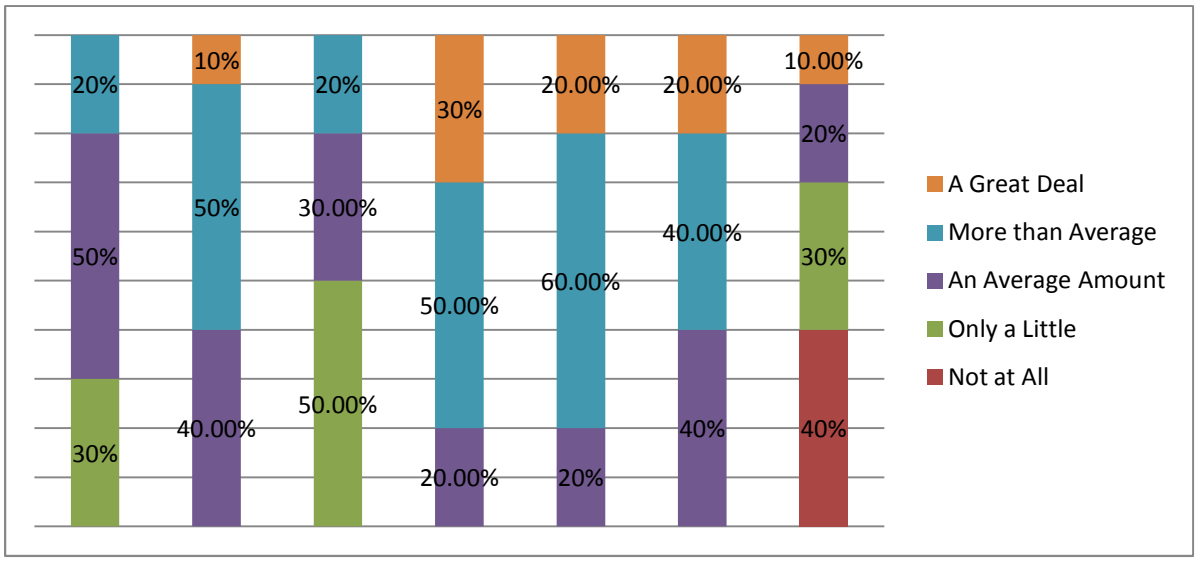
Furthermore, ACCRA uses a different set of approach towards environmental protection. Even though, many development actors continue to plan for the near-term, with little room for maneuver or contingency, policy makers face difficult trade-offs in planning for a changing and uncertain future. ACCRA therefore choose to focus on one specific characteristic of adaptive capacity in order to help decision makers and planners to better prepare themselves for the future and that is possible through FFDM.

As for ACCRA decision making is flexible and forward-looking when it; recognizes that change will happen and requires adaptation, but that the specific direction and magnitude of change, as well as the implication for development trajectories, are uncertain and when it is able to consider and reason about the impacts of different drivers of change on development trajectories and plans accordingly in order to maintain progress. Moreover, decision making is believed to be flexible when it can identify enablers and initiate steps to overcome barriers to adaptation and, where needed, make changes to structures and planning processes of adaptation effectively, whether incremental or transformational.

ACCRA's advisor noted that the challenges associated with carrying out FFDM and the need for a new kind of method to help communicate and promote the principles that make up FFDM. In practice, it is often hard to communicate and to relate to complex real-world problems using FFDM even if it is relatively straightforward to understand. One solution comes in the form of 'serious games' supported by tools to initiate reflection on how to relate principles of FFDM experienced during the game to the real world. In collaboration with The Abaci Partnership and the Red Cross/Red Crescent Climate Centre, ACCRA developed a 'game-enabled reflection approach' to promote FFDM.

4.7.2. Approaches Used by CCF-E

Figure 9: Climate Change Adaptation Approaches



Source: Field Survey, 2014

As can be seen from the above chart half of the respondents representing 50% of the total population believe that CCF-E uses an average amount of short-term adaptation measure in combating climate change effects. The remaining 30% and 20% think that CCF-E employ only a little amount and more than average amount of short-term approach in adapting climate change effects. Responses for medium and long-term adaptation measures used by CCF-E are; 50% of the respondents replied to a more than average amount, 10% of them to a great deal and respondents constituting 40% believe that CCF-E employ medium and long-term adaptation measure in an average amount.

Moreover, the researcher observed CCF-E uses cross-sectoral adaptation measure in an average and more than average amount. Respondents replied for an average amount constitute 30% and 20% of them responded to a more than average amount of cross-sectoral measure used by CCF-E. The rest half respondents representing 50% of the total population think that CCF-E uses only a little cross-sectoral approach. Respondents comprising of 50% of the total participants replied that CCF-E uses a more than average amount of integrated adaptation approach, 30% of them responded to a great deal and the rest 20% to an average amount.

Furthermore, the researcher observed information consolidation used by CCF-E as a tool in adapting climate change effect. 60% of respondents believe that CCF-E uses information consolidation in a more than average amount. The rest respondents representing 40% of the total population responded to a great deal and an average amount; each constituting 20%. Respondents were further asked to reveal how and to what extent CCF-E using awareness-raising is and research and technological development measures in fight against climate change.

Responses are; respondents comprising of 20% believe that there is a great deal of CCF-E involvement in awareness-raising adaptation measures. The rest respondents representing 80% of the total participants responded to an average amount and more than average amount of CCF-E's involvement in awareness raising adaptation measures. 10% of respondents believe that there is a great deal of involvement by CCF-E in research and technological development advancements in an effort to combat climate change impacts. 20% and 30% of the respondents responded to an average amount and only a little amount degree of concern by CCF-E to research and technological development engagements towards adapting climate change effects.

However, the rest respondents comprising of 40% of the population believe that CCF-E does not use research and technological development approaches and measures. The researcher observed that CCF-E is highly engaged in using a more than average amount of information consolidation system in an attempt to combat climate change effects. Moreover, CCF-E is using short-term adaptation measure in an average amount. Furthermore, the researcher observed that CCF-E is not actively involved in research and technological development activities towards adapting climate change effects.

Moreover, in response to reaching out for its objective CCF-E uses different approaches. The basic purposes of CCF-E's proposed projects, policy and researches are mainly designed to find out vulnerable societies to environmental problems and find solutions for the same. To do this, CCF-E uses the approaches of; alternative livelihood information, capacity building, policy and implementation as a means of building local institutional capacity, improved livelihoods, water and land management.

Moreover, as per the response of the climate action and networking officer, in every attempt made by CCF-E in working towards alleviating environmental problems, CCF-E uses participatory approach.

4.7.3. Approaches Used by FfE

Respondents representing 45.5% of the total FfE's population believe that there is only a little amount engagement by FfE towards short-term adaptation approach. 27.3% of the respondents think that there is an average amount of concern for short-term adaptation measures and the rest 27.3% of the participants replied to a more than average involvement of FfE in using short-term adaptation approaches. Respondents comprising of 45.5% of the total population believe that FfE uses medium and long-term adaptation measures in a more than average amount. 36% of the respondents think that there is a great deal of FfE involvement in medium and long-term adaptation approaches. The rest 18.2% of the respondents responded to an average amount.

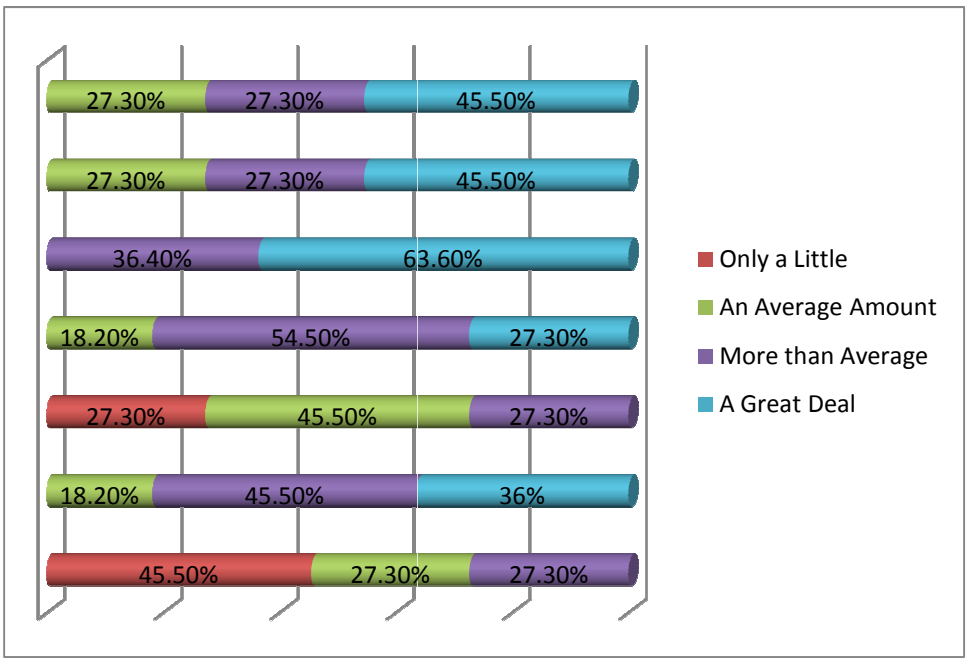
Cross-sectoral adaptation measures used by FfE as observed by the researcher is; 45.5% of the respondents replied that FfE uses cross-sectoral measures in average amount, 27.3% of them as a more than average amount. However, the rest respondents constituting 27.3% of the population replied that FfE does not use cross-sectoral adaptation measure at all. Majority of the respondents representing 54.5% of the total participants replied that FfE uses integrated adaptation measure in a more than average amount. The rest 18.2% and 27.3% of the population believe that FfE uses integrated climate change adaptation measure in an average and a great deal amount.

Furthermore, the researcher observes that FfE uses approaches of information consolidation, awareness-raising and research and technological development measures in an average, more than average and a great deal of amount. As per the information obtained from the respondents; concerning information consolidation, 36.4% of the respondents responded to more than average and the rest 63.6% to a great deal of information consolidation.

Regarding awareness raising adaptation measures and research and technological development adaptation measures, 45.5% of the respondents replied to a great deal of FfE involvement in the act awareness towards climate change. The rest representing 54.6% of the total population responded to an average and more than average amount of degree of concern towards awareness raising adaptation measures.

It can be clearly understood that FfE is strongly involved in information consolidation, awareness raising activities and research and technological advancement practices. Though, FfE is not actively involved in cross-sectoral as well as short-term adaptation measures towards adapting climate change effects.

Figure 10: Climate Change Adaptation Approaches



Source: Field Survey, 2014

In order to carry out its mandate, FfE organizes public meetings and debates on issues of environmental and climate change concern; publishes a magazine (Akirma) and information dossiers, prepares speaking engagements, conducts researches, facilitates access to advisory services, creates and joins networks, establishes and strengthens local groups in various parts of the country, undertakes lobbying and campaigning and acts as liaison for funding projects that focus on protecting or improving the environment.

4.8. Suitable Climate Change Adaptation Approaches to Ethiopia in the Context of ACCRA, CCF-E & FfE

Table 5: Suitable Climate Change Adaptation Approaches

All Survey Responses	Total Count	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree	Total
ACCRA's Respondents							
Short-term Adaptation Measures	23	8.7	17.4	8.7	56.5	8.7	100
Medium & Long-term Adaptation Measures	23	26.1	73.9	0	0	0	100
Cross-Sectoral Adaptation Measures	23	8.7	8.7	39.1	43.5	0	100
Integrated Adaptation Measures	23	47.8	52.2	0	0	0	100
Awareness-raising Adaptation Measures	23	82.6	17.4	0	0	0	100
Information Consolidation	23	39.1	60.9	0	0	0	100
Research & Technological Development Measures	23	91.3	8.7	0	0	0	100
CCF-E's Respondents							
Short-term Adaptation Measures	10	10	40	20	30	0	100
Medium & Long-term Adaptation Measures	10	30	70	0	0	0	100
Cross-Sectoral Adaptation Measures	10	0	40	40	20	0	100
Integrated Adaptation Measures	10	60	30	0	10	0	100
Awareness-raising Adaptation Measures	10	100	0	0	0	0	100
Information Consolidation	10	70	30	0	0	0	100
Research & Technological Development Measures	10	70	30	0	0	0	100
FfE's Respondents							
Short-term Adaptation Measures	11	0	45.5	0	54.5	0	100
Medium & Long-term Adaptation Measures	11	45.5	54.5	0	0	0	100
Cross-Sectoral Adaptation Measures	11	0	0	45.4	27.3	27.3	100
Integrated Adaptation Measures	11	36.4	45.5	18.1	0	0	100
Awareness-raising Adaptation Measures	11	100	0	0	0	0	100
Information Consolidation	11	72.7	27.3	0	0	0	100
Research & Technological Development Measures	11	63.6	36.4	0	0	0	100

Source: Field Survey, 2014

Since Ethiopia is a developing nation it needs a thorough full analysis of climate change adaptation measures and approaches before implementation. The measures to be undertaken need to take into account the country's demographic, social, cultural and economical background. Priorities should be set to adapt climate change effects without comprising the chance of future generation to have stable climate system. In order to do this, the country needs to employ appropriate climate change adaptation system. The researcher wanted to find out which of the above listed measures are suitable to Ethiopia in combating climate change impacts. Respondents were asked to choose among; strongly agree, agree undecided, disagree and strongly disagree. Responses are as follows;

As can be seen from the above table majority of ACCRA's respondents strongly agree that research and technological development measures are more suitable approaches to fight against climate change. Similarly, greater part of CCF-E's and FfE's respondents strongly agrees that Ethiopia needs awareness-raising adaptation measures to combat climate change effects. A greater proportion of respondents from ACCRA, CCF-E and FfE disagree that short-term adaptation measures are suitable to Ethiopian context in an effort to combat climate change effect. Moreover, as can be observed from the above table some respondents from ACCRA, CCF-E and FfE are indifferent on whether Ethiopia should use cross-sectoral adaptation measures.

Respondents had further depict their justification as follows; in Ethiopia, it is very hard to essentially initiate short-term adaptation measures because of the fact that, due to lack of information, impacts that are already occurring or likely to arise from climate change are not known. Besides, due to lack of technological facilities and resources it is very much unlikely to combat climate change effects using short-term adaptation approaches.

At the grass level society's vulnerable to climate change need to be made aware about the cause and consequence/pros and cons of climate change. Fundamentally it is impossible to adapt climate change effects without raising the awareness and understanding of the public, government agencies, NGOs and private sector responsible for adaptation.

It is when there is a strong research and technological development that other measure like short-term and medium-term adaptation measures works. It is a suitable approach in that; we can project possible future scenarios and areas that need priority.

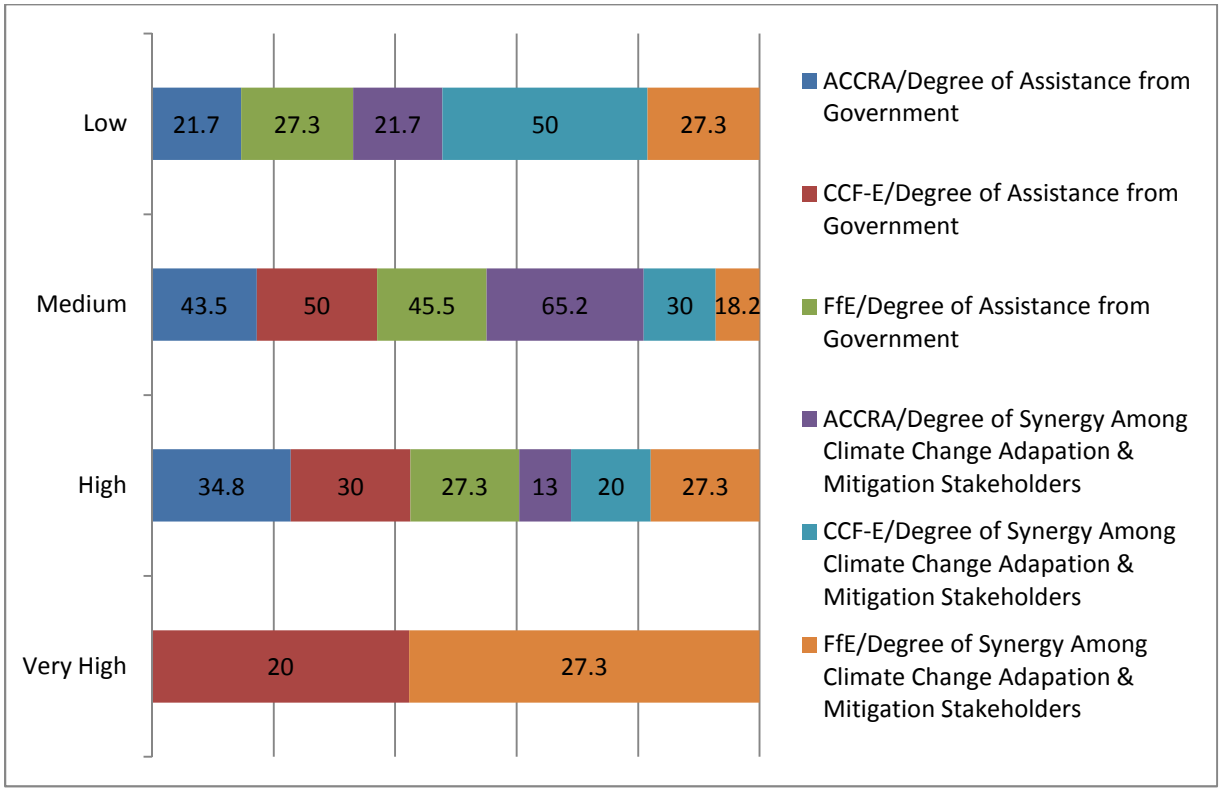
Furthermore, respondents were asked their opinion on the issue of whether Ethiopia should be put in a rigorous environmental regime. Majority of ACCRA's respondents representing 60.9% and 13% of the total population strongly disagree and disagree with the notation that Ethiopia should not be put into rigorous environmental protection regime. 4.3% of respondents agree with the statement, while the rest respondents comprising 21.7% are indifferent.

Same as ACCRA's respondents, 40% of respondents from CCF-E strongly disagree with the preposition that since Ethiopia is a developing nation, it should not be put into rigorous environmental protection regime. 2% of the respondents are indifferent. The rest respondents representing 40% of the total population strongly agree and agree that Ethiopia should not be put into rigorous environmental protection regime; each constituting 20%.

In contrary to ACCRA and CCF-E, respondents from FfE somewhat agree that Ethiopia should not be put into rigorous environmental regime. Accordingly, 36.4% of respondents, each representing 18.2% of respondents from the total population strongly agree and simply agree. 27.3% of the respondents, each constituting 18.2% and 91.1% of the total participants have responded to strongly disagree and disagree. The rest 36.4% of the respondent are indifferent.

4.9. Government's Support to ENGOs and Synergy among Environmental Protection Stakeholders

Figure 11: Degree of Support & Degree of Synergization



Source: Field Survey, 2014

The researcher wanted to find out the degree of support from government to environmental organization and their degree of synergy with other government as well as non-governmental environmental organizations. Respondents were asked to choose among; strongly agree, agree, undecided, disagree and strongly disagree. Responses are as follows;

As you can see from the above chart majority of ACCRA's respondents constituting 43.5% believe that there is a medium amount of support that ACCRA is receiving from government. 34.8% of the respondents think that there is a high degree of support and the rest 21.7% think that the support is low. In contrary CCF-E has observed the support of government at a highest rank than ACCRA.

20% of the respondents replied that there is a very high support from government while 30% of them think that the assistance is high. The remaining half respondents representing 50% of the total respondents believe that there is a medium support.

27.3% of FfE's respondents replied to a high level of degree of support from government. 45.5% of them believe that there is a medium support coming from government. The rest 27.3% of the respondents think that the support is low. It can clearly be observed that the support that government to environmental protection towards their effort to protect the environment is somewhat satisfactory.

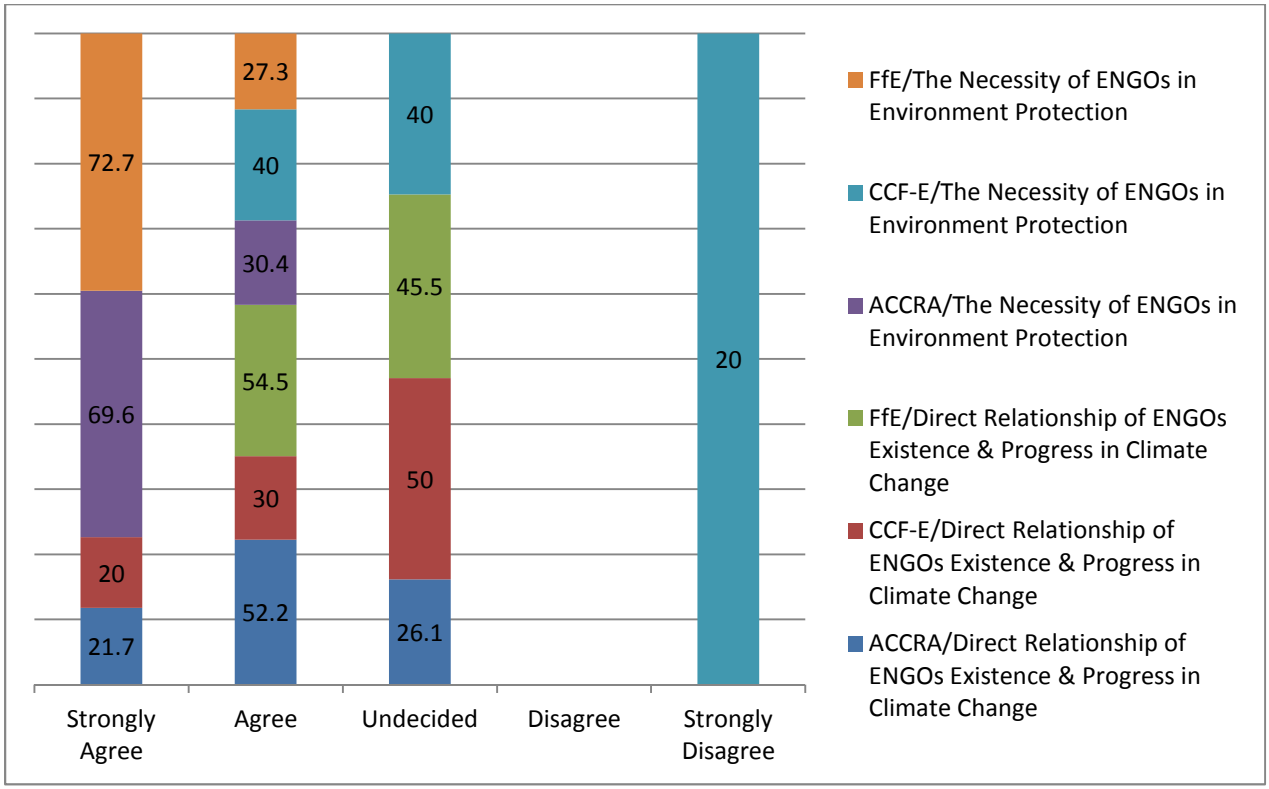
Respondents were further asked to specify the degree of synergization among environmental stakeholders in environment protection. Majority of ACCRA's respondents think that the degree of synergy among environmental actors is medium; these respondents constitute 65.2% of the total population. 13% of the respondents said there is a high degree of synergization. The rest 21.7% of the respondents believe that there is a low level of collaboration among environmental stakeholders.

Similarly, 50% of CCF-E's respondents think that there is a low level of synergy among environmental actors. 30% of them think the synergy is at its medium level and the rest 20% said the synergy is high. FfE's respondents representing 54.6% of the total population said there is a very high and high degree of synergization among environmental stakeholders, each comprising of 27.3% of respondents. The rest 18.2% and 27.3% of respondents believe that the synergy among different stakeholders of environment protection is seen to be medium and low, respectively. Responses showed that the degree of synergization among environmental actors in environment protection is not satisfactory.

4.10. The Necessity of ENGOs in Environmental Protection

This was to find out how necessary is the existence of environmental NGOs in environmental protection and the direct relation that their existence have with the progress that is seen in climate change. Respondents were asked to choose; strongly agree, agree undecided, disagree and strongly disagree. Responses are as follows;

Figure 12: The Necessity of ENGOs



Source: Field Survey, 2014

As can be observed from the above chart, from the total population of ACCRA, CCF-E and FfE; a total of 69.6% of respondents from ACCRA strongly agree with the necessity of ENGOs in environment protection. A greater proportion of respondents comprising of 72.7% of FfE's total population strongly agree with the necessary existence of ENGOs in environment protection. Similarly, 27.3% of FfE's respondents, 40% of CCF-E's respondents and 30.4% of ACCRA's respondents simply agree with the necessity of ENGOs in environment protection. From the total population of CCF-E respondents comprising of 40% of the total participants are indifferent whether or not ENGOs existence in environment protection is necessary or not.

However, 20% of respondents from CCF-E strongly disagree with the necessity of ENGOs in environment protection. It can be clearly understood that, ENGOs existence in environment protection sector is a matter of necessity, as indicated by much of respondents.

Moreover respondents were further asked if they agree with the direct relationship of existence of ENGOs and the progress seen in climate change. As can be seen from the above chart, 52.2% of respondents from ACCRA agree with the fact that there is a direct relation between the existence of ENGOs and the progress that is seen in climate change. 50% of CCF-E's respondents strongly agree and simply agree with the direct relationship, each comprising of 20% and 30%, respectively. FfE's respondents representing 54.5% of the total population has agreed with the direct relationship between ENGOs and a progress in climate change. The researcher further observed the presence of indifferent respondents, 26.1%, 50% and 45.5% of ACCRA's, CCF-E's and FfE's respondents are observed to be indifferent.

Common traits of ACCRA, CCF-E and FfE

The common traits observed by the researcher among, ACCRA, CCF-E and FfE are the following:

In reaching out for their objectives, ACCRA, CCF-E and FfE are working with governmental actors, CSOs and the community;

- ACCRA is a consortium made up of international CSOs and key government actors which are key ones in supporting citizens in their efforts to adapting and mitigating climate change.
- CCF-E in its effort in preserving and conserving the environment as well, to craft localized knowledge and share it to build a plant society that can harmonize itself to withstand the pressure of climate change, is actively collaborating and working with; MOA, EPA, Ministry of Youth and Women, Municipalities and weredas/districts.
- FfE in its attempt to make the communities aware of the resultant effect of climate change and severe environmental destructions that results in a change in climate, is actively engaging in organizing public meetings, workshops and advocacy forums, where there is a strong participation of key government actors, CSOs and the community.

ACCRA, CCF-E and FfE works towards accomplishing the same mission;

- ACCRA's mission is to support vulnerable people to be more resilient to climate change through strengthening policy and practice and building on existing structures and systems.

- CCF-E's mission is to tackle the challenges of climate change; it strives to relief people from climate-induced challenges and contributes to moving forward the nation's socio-economic development.
- FfE's mission is to make the communities aware of the impact of climate change and forward the way in which communities are able to manage their resources efficiently and effectively.

ACCRA, CCF-E and FfE, share common traits in the way they approach vulnerable communities;

- ACCRA works at the national, regional and district levels and also with communities through its consortium members. ACCRA works with key multi-sector stakeholders with an interest in tackling environmental hazards. It supports linkages between local, regional and federal government and encourage civil society involvement where possible.
- Communication, convening, coordination and community development endeavors are the prime means that CCF-E employs to reach its goal based on identified gaps. CCF-E organize direction setting high level meetings and collaborate in undertaking assessment studies and contributes to negotiations through facilitating meetings prior to major international negotiations, where there is a strong participation of key stakeholders and government actors at the national, federal and regional level.
- FfE's main activities include awareness raising through public engagements, research and publications, mobilizing the public through establishing and strengthening local groups, capacity building, policy level debates and discussions and incentive and acknowledgement schemes, in reaching out for vulnerable communities.

ACCRA, CCF-E and FfE play basic roles towards alleviating environmental problems;

- ACCRA, through engagement with local government provides a set of research, capacity building and policy tools that supports participatory planning processes around climate change adaptation. ACCRA uses demand-driven capacity building through training and ongoing support to begin the way people think about climate change, through its partnership with DMRFSS, MoEF, government actors, CSOs and the community.
- ACCRA through its partnership with DRMFSS is working towards the integration of its local capacity adaptive framework into wereda level planning.

It is also assisting with the design of CRGE investment plans with its partnership with MoEF. ACCRA is also actively engaging civil society actors and stakeholders in to the process of mainstreaming DRR and CCA in to processes, policy, programmes and practice.

- CCF-E through its three focus areas; climate change adaptation, climate change mitigation and climate change coordination plays roles of creating public awareness, raising people's knowledge of climate change and undertake policy, strategy development and international negotiations. Through its partnership with government actors, CCF-E is assisting through the design of CRGE strategy, which is a government led strategy that works towards the process of climate mitigation and adaptation. CCF-E is supporting the current initiative on SLM by the government through its proposed project targeted at identifying the specific needs of the community in the CRV of Ethiopia. Furthermore, CCF-E had been engaged in undertaking climate hearing campaigns in different parts of Ethiopia in pursue of creating awareness about the seriousness of climate change.
- As per the role of FfE, it has hosted six policy briefings on climate change. The briefings include; climate finance briefing, briefing on lessons learned from the Copenhagen accord, climate policy brief on SLM, briefing on climate change strategy for Ethiopia, policy brief on assessment of selected development policies and strategies and policy brief on the outcome of climate finance. In its role in undertaking research, FfE had been engaging in initiating researches on issues related with climate change.

  It has carried out a research on "Traffic Air Pollution in Addis Ababa and its Impacts".FfE had also been engaged in undertaking research on assessment of Gumare forest and its dynamics.

4.11. Impact of Human and Natural Process on Environment in view of ACCRA, CCF-E and FfE

Argument 1

Are humans responsible for global warming?

Human activities contribute to global warming by enhancing earth's natural greenhouse effect. Most climate scientists argue that the main cause of the current global warming trend is human expansion of the greenhouse effect. The burning of coal, oil and natural gas well as various agricultural and industrial practices, are altering the composition of the atmosphere and contributing to a change in climate. These human activities have led to increased atmospheric concentrations of a number of greenhouse gases, including CO_2 in the lower part of the atmosphere.

Carbon dioxide is a greenhouse gas that warms the atmosphere since pre-industrial times, atmospheric CO_2concentrations have been and is increasing extraordinarily. Researches demonstrate that the increased CO_2 in the atmosphere comes from burning fossil fuels and forests. At the same time since pre-industrial times, global average temperatures have been increasing.

Emission of CO_2 is caused by several reasons; it is produced when coal, oil and natural gas are burned to produce energy used for transportation, manufacturing, electricity generation and other functions. Land clearing for logging, ranching and agriculture, also lead to CO_2 emissions. In general human activities, such as the burning of fossil fuels and changes in land use, have increased the abundance of small particles in the atmosphere which change the amount of energy that is absorbed and reflected by the atmosphere.

Argument 2

Is nature responsible for global warming?

Natural processes emit large quantities of CO_2, which constitutes natural sources; like, volcanoes, into the atmosphere. Natural process that have caused global warming include; increases in the energy emitted by the sun, continuous change in earth's orbital patterns and volcanic eruptions that are capable of producing ash and sulphur dioxide.

It is reasonable to assume that changes in the sun's energy output would cause the climate to change, since the sun is the fundamental source of energy that drives our climate system. The amount and distribution of solar energy that earth has received, due the earth's natural orbital variations, is thought to be responsible for triggering major climate change. The variation in earth's orbital patterns follows cyclical patterns that take thousands of years to repeat. The point the earth is at in the cycle changes the distribution of solar radiation, and therefore, cooling or warming, in different parts of the world.

As per the information obtained, ACCRA, CCF-E and FfE are the proponents of the first argument. The view point of ACCRA's advisor, climate action and networking officer and project officer, is summarized as follows;

Human activities result in emissions of greenhouse gases which are attributable to human activities. The releases have increased from fossil fuel used to transportation and manufacturing industries. Deforestation, agricultural activities, fertilizers, fossil fuel burning and landfills are also the main causes of greenhouse gases.

In Ethiopia, agriculture is the dominant sector where most of the population makes their livelihood out of it. Ethiopia's agriculture is affected by periodic draught, soil degradation, overgazing, deforestation and high population and this has led to a change in climate. Moreover, and Ethiopia in its attempt to be registered in the middle income generating countries is strongly engaging in undertaking developmental activities as well as in industrial expansion. However, the cost of the developmental activities is seen to be outweighing the benefits of the initiatives.

Anthropogenic impacts on the environment can be reduced if not fully addressed. Emission of greenhouse gas like that of carbon dioxide can be best controlled by putting restriction on industries and manufacturing industries. Other agricultural as well as environmental problems can be reduced through awareness raising, training and capacity building. On the contrary, natural hazards like that of; earthquake, floods, storms and tsunamis, occur naturally and unexpectedly and it is difficult to control as well as to manage the source as well the impacts produced by the same.

4.12. Challenges and Prospects

Challenges

As per the response of ACCRA's advisor, for ACCRA the challenging phase apart from ground inconveniencies mostly lies in transforming the principles and guidelines of approaches into practice. ACCRA believes that, it is a challenging task, if a certain method is understood by the practitioner only in its contextual terms but face difficulty when converted into action.

According to the response of climate action and networking officer, the challenge that CCF-E has encountered so far as a general barrier is, a project not being able to be funded. The new civil society law has placed funding restriction on NGOs lately; 30/70, for administrative and project cost funding. The officer pointed out that, this law by itself has come to be a bit of a challenge nowadays, because if a project is consisted of administrative cost than that of project cost, the project is more likely to be declined.

As per the response of the project officer of FfE, there is a prevalence of improper utilization of natural resources. Possible progress is constrained by a substantial gap between the current supply of climate information products and services and the needs of development. Users' needs are not taken into account in the generation and delivery of climate information and tool.

As per the information obtained from the three organizations, the issue of NGOs being replacement of direct financial aid has created a challenge to the organizations. There is no doubt that, it will create some confusion and questions in the minds of the beneficiaries and this will undermine the organizations reputation.

As per the view point of the climate action and networking officer of CCF-E, project officer of FfE and ACCRA's advisor, regarding the issue of NGOs being direct replacement of financial aid, he believes that, underling the false statement given, even if an organization wants to allocate the funds other than the objectives intended for, the binding document wouldn't allow it to, because it is a funding restriction forwarded by the government and doing this is violating law of the country let alone bribing moral as well as asset of the vulnerable community. And this does not mean that if the law hasn't existed, NGOs would have involved in such kinds of activities, the officer thinks that, since each and every NGO has a governing principle, disciplinary mechanism and a sense of responsiveness, would not involve in such kind of act.

Prospects

ACCRA, CCF-E and FfE has succeeded in creating awareness to the community in areas environment protection in general and climate change adaptation and mitigation in particular. As per the information obtained from the organizations communities are better aware of the pros and cons of environmental problems and trained to promptly respond to environmental problems at the grassroot level.

Different areas where identified as climate vulnerable by ACCRA, CCF-E and FfE under different programs and projects. The organizations where able to address and overcome barriers in the climate vulnerable areas. Moreover, the ENGOs are highly involved in giving support to different government led programmes and projects and undertake resources on environment related problems.

Generally, ACCRA, CCF-E and FfE, has succeeded in areas of;

- Creating awareness to the community in areas of climate change adaptation and mitigation;
- Succeeded in overcoming barriers in climate vulnerable areas of Ethiopia under different programs and projects;
- Succeeded in giving capacity building to different programs and projects;
- Succeeded in undertaking researches on climate related problems;

- Highly involved in policy direction setting briefings on climate related topics;
- Involved in the assessment of environmental policies in areas vulnerable to climate change;
- Involved in the undertaking of workshops and training on climate change related issues.

CHAPTER FIVE

5.0. Conclusion and Recommendation

5.1. Introduction

The environment is a place where both living and non-living things reside in; it is a place where communities extract resources for their livelihoods. Through the process of living, the environment is severely affected by the act of human beings and natural process. Ethiopia's environmental resources which had been the main source of the country's economic growth are being destructed constantly; this calls for a need for environmental preservation and conservation.

In Ethiopia, governmental actors as well as environmental organizations are working towards; the protection of the environment and climate change adaptation and mitigation acts. Recently environmental NGOs have been involved in the protection of the environment in general and adapting and mitigating climate change effects in particular. The purpose of this chapter is to round off the study with conclusions and recommendations. The chapter will review and summarize findings from selected case studies, discuss their implications in the study and forward recommendations in areas where the researcher observe possible gaps.

5.2. Conclusion

The roles of ACCRA, CCF-E and FfE are reflections of different setups designed to protect the environment. ACCRA is engaged in providing capacity building, awareness and advocacy as well policy guidance in climate adaptation and mitigation, so are CCF-E and FfE. Towards achieving their objective, the organizations are awakening and advocating the communities about the designs of climate adaptation and set their rules and guidelines in line with the communities' social setting and their willingness to adapt.

Nowadays environmental issues have emerged to be as one of the most severe challenges affecting the overall health and welfare of human beings. ACCRA, CCF-E and FfE has recognized the most important threat of environmental problems and act up on them in respect to finding out where the problem lies and locate solution for the same.

ACCRA base its work, on exploring the impact of climate change and its instability in exacerbating vulnerable populations, compounding the challenges they face to survive. The reason behind the formation of CCF-E, rests in preserving, conserving and protecting the environment through creating awareness and networking as well advocating vulnerable communities.

The forum undertakes studies focusing on spotting deficiencies, recommending solutions and discovering the state of affairs surrounding climate change issues. FfE serves as a platform for environmental communication and advocacy communities and participate actively in drawing attention of citizens to the severity of environmental challenges concerned with the Ethiopian environment.

Environmental protection is the practice of protecting the environment at individual, organizational and government level. ACCRA, CCF-E and FfE, are working towards the protection, preservation and conservation of environment, on organizational and governmental level.

According to ACCRA's advisor, environmental protection to ACCRA is; is not only simply protecting the environment from anything that could harm and destroy it, but it is about sustaining the outcomes obtained from the act of conserving and preserving the environment. ACCRA in Ethiopia is a consortium made up of Care International, Oxfam, Save the Children, World Vision and key government actors including, DRMFSS, MoA, NMA, MoEPF. ACCRA works at the national, regional and Woreda (district) levels and also with communities through its consortium members.

ACCRA works with key multi-sector stakeholders with an interest in CCA and DRR, such as donors, INGOs, national civil society, research institutions and vulnerable communities. It supports linkages between local, regional and federal government and encourage civil society involvement where possible. CCF-E enjoys strong partnership with key stakeholders whose activities are strongly linked to climate change including government agencies, CSOs and international development organizations.

The climate action and networking officer said, as per the role of CCF-E in preserving and conserving the environment in collaboration with government and environmental organizations, CCF-E is actively collaborating and working with; MoA, EPA, Ministry of Youth & Women, Municipalities Kebeles and Woredas/districts.

As per the response of the project officer, since its establishment FfE has been actively engaged in protecting and preserving the environment in collaboration with government actors, CSOs and the community.

The contribution of ACCRA, CCF-E and FfE are reflections of what constitute environmental NGOs. One of the objectives of ENGOs in the field of environment is creating and strengthening relationships among environmental stakeholders and government in assisting in the conservation and preservation of environmental projects and programmes. To this effect, ACCRA, CCF-E and FfE, creates relationship with government, CSOs and the community in alleviating environmental problems. They offer training and assistance to government and vulnerable communities in areas of environmental issues in general and climate change in particular. They are also actively engaged in undertaking projects and researches on areas of climate change and on possible causes of climate change.

Environmental threats are produced and dealt with by organizations and actors whose aim and objectives are broader than simply protection of the environment. According to the information gathered by the researcher; through insight of ACCRA, CCF-E and FfE, the researcher observed the involvement of governmental actors and CSOs whose operational activities are beyond the protection of the environment.

The environmental organizations selected as a case studies, works with Care International, Save the Children, World Vision and key governmental actors including; DRMFSS, MOA, NMA, MoEPF, EPA, kebeles and woredas/districts. World Vision's mission is pursued through integrated, holistic commitments to transformational development that is sustainable and community-based, focused especially on the needs of children. Similarly, Save the Children's mission is a broad-based coalition that mobilizes and fosters change in communities to meet the needs of children and families.

Care's mission is to serve individuals and families in the poorest communities in the world. Drawing from global diversity, resources and experience, Care promote lasting change by; strengthening capacity for self-help, providing economic opportunity, delivering relief in emergencies, influencing policy decisions at all levels and addressing discrimination in all its forms.

5.3. Recommendation

From the study it is realized that safe and sound environment is of great importance to every nation on earth, though an integral part of the ecosystem, environment protection; its approaches, application, operation, policies and challenges makes its practice quite difficult. These recommendations are therefore made to help make these practices more effective and better secure sustainable environment strategies and measures.

Government, community and environmental NGOs are major contributors to environment development processes. However, environmental challenges are observed to be increasing at an alarming rate. Even though, contribution to environment protection is perceived by the state, the public and NGOs, there still remains much to be done on the aspect of collaboration between actors of environment protection.

The government, the private sector and NGOs, by themselves, are imperfect in that they cannot meet all demands for the protection of the environment. Optimal environment protection requires the harnessing of governments', publics' and NGO's; capital, human and material resources to meet the demand from its population as comprehensively as possible.

Spotting environmental threats is a challenging task and requires the design and formulation of strong institutional framework. NGOs may be better placed to articulate, identify and redress threats to the environment. Environmental NGOs must be given a greater proportion of share of contribution in creating relationships with the government and other environmental stakeholders, offering training and assistance in areas of environment protection, proposing environmental solutions, and implementing as well as managing projects designed to address issues affecting a particular area.

Adaptation and mitigation to climate change is increasingly misperceived by communities. To reduce the extent of misconception of the public towards the risk and consequences of climate change, environmental actors should strongly work on educating communities about environmental behaviors that could enhance their knowledge about effects of climate change. Education has the power to influence the communities about their climate system.

More training should be given to make vulnerable societies aware of risks, uncertainty and change, and the organization should promptly works towards developing resilience and the capacity to mitigate and adapt to the impact of climate change.

People should be empowered to learn the way how to live with risk, change and uncertainty and develop resilience and the capacity to mitigate and adapt to the impact of climate change. Enhanced trainings on the social and cultural consequences of climate change will help overcome the problem of communities understanding the anthropogenic causes of climate change. A strong resilience program that would help communities develop mitigation and adaptive capacity to prepare for the uncertain changes arising from climate change should be initiated.

Changes in the environment do not affect society in a homogenous way, costs and benefits associated with environmental change are distributed unequally and political, social and economic differences account for uneven distribution of costs and benefits. Unequal distribution of costs and benefits and the reinforcing or reducing of pre-existing inequalities holds political, social and economical implications. Thus, environmental actors should develop effective, well-funded adaptation for those people least capable of coping with climate change impacts, and a common but differentiated mitigation strategy that is needed to protect the poor and most vulnerable.

There is a strong need to efficiently implement development plans of the country without disturbing the environment. The importation of labor saving industrial technologies are adopted often without accompanying adequate investment in environmental management control techniques resulting in horrible environmental problem. Most of the development programmes are pursued without including environmental aspects and this had led to the emergency of serious environmental impacts. Thus, development plans should be pursued taking into account the social, economical and political setup of the environment.

Environmental policies and measures should rely on national programmes aimed at reducing emissions. Policies should focus on; increased use of renewable energy like; wind, solar, biomass and combined heat and power installations, initiation of improved energy efficiency in buildings, industry, household appliances, reduction of CO2 emissions from cars and abatement measures in the manufacturing industry.

There is a need for the initiation of approaches that promote coordination and sustainability. The approaches and measures should clearly be designed taking into account economical, behavioral, technological and managerial attitudes.

Moreover, sustained and effective environment management systems based on coordinated local, regional and national action is required from environmental stakeholders. Generally, activities of environmental NGOs should strongly enhance the overall capacity of the country in withstanding effects of environmental disasters.

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APPENDICES

Annex I: Interview Questions

1. What is the view of your organization concerning the issues of environmental protection, conservation and preservation?
2. How do u define ENGOs; in terms of their role in protecting and conserving the environment?
3. Human activities are responsible for most of loss of biodiversity and destruction of the environment, so are natural activities. What is your view in this context, where does the possibility of managing the impacts lie?
4. What does it mean to say that something is bad for the environment and how do you see the distribution of environmental harm in relation to social, economical and political influences?
5. What basic roles is your organization playing in protecting the environment?
6. Global warming being the pressing issue of the present time, is the cause of other environmental challenges. How is your organization coping with the issue of climate change at the same time dealing with other environmental problems which are caused by climate change?
7. What kinds of methods and approaches is your organization referring in combating environmental problems, and which method do you think is more effective and efficient?
8. On what issues is your organization working in collaborating with government as well and environmental organizations?
9. There is an argument over the issue of ENGOs being replacement of direct financial aid from developed nations, questioning their contribution towards alleviating environmental problems. What is your view on this issue?
10. What prospects and challenges has your organization encountered while operating in the activities of environmental protection?

Annex II: Questionnaire

ON THE

ASSESSEMENT OF THE ROLE OF ENVIRONMENTAL NGO's IN ENVIRONMENTAL PROTECTION: CHALLENGES & PROSPECTS

(A CASE STUDY OF ACCRA, CCF-E & FfE)

The questionnaire is designed in such a way that allows the assessment of the role that is being played by environmental NGO's in the fight against climate change taking place in Ethiopia. Accordingly, respondents of the questions are expected to respond to the issues posed in a form of a five point *likert*-scale and open ended formats. Respondents are expected to put a √ mark to the points that correspond to their judgment and fill their response on the space provided.

A. The Department

1. It is true that like any nation on earth, environmental protection and climate change are one of the direst challenges that Ethiopia as country is facing. Accordingly, the country needs the support of NGOs which specialize in mitigating such risks as the government could not overcome the challenges by itself.

☐	Strongly Agree	☐	Undecided	☐	Strongly Disagree
☐	Agree	☐	Disagree		

2. The Government of Ethiopia has recognized the threat posed by climate change and has devised policies to streamline activities to mitigate the risks. On which areas of risks does your organization have been providing assistance? List below

……

……

……

……

……

3. If you agree with the above question, how do you rate the policy framework in terms of areas it covers and approaches it outlines to be followed and its enforceability?

	Very Good	**Good**	**Undecided**	**Somewhat Satisfactory**	**Unsatisfactory**
Deforestation					
Availability of Fresh Water					
Renewable Energy					
Pollution					
Climate Change					

4. To what extent is your organization concerned about environmental problems listed below?

	Not at all	**Only a little**	**An average amount**	**More than average**	**A great deal**
Deforestation					
Availability of Fresh Water					
Renewable Energy					
Pollution					
Climate Change					

5. Environmental NGO's are set up in the country to fill the gap observed in fighting climate change by the Government.

☐ Strongly Agree ☐ Undecided ☐ Strongly Disagree
☐ Agree ☐ Disagree

If you agree with the above statement, what roles do they play to perform their task?

……..

……..

……..

6. What approach does your organization employ to manage the risk posed by climate change? What are the reasons behind choosing this particular approach?

……..

……..

……..

7. What kind of roles does your organization play in the fight against climate change in Ethiopia?

……..

……..

……..

8. The NGOs engaged in the fight against climate change are properly discharging their responsibilities as prescribed in their roles.

☐ Strongly Agree ☐ Undecided ☐ Strongly Disagree
☐ Agree ☐ Disagree

9. Environmental NGO's activities can be regarded as supplementary to what the Government is doing in the same sector.

☐ Strongly Agree ☐ Undecided ☐ Strongly Disagree
☐ Agree ☐ Disagree

10. Which of the following climate change adaptation approach is your organization using in combating challenges of climate change?

Type of Approach	**Not at all**	**Only a little**	**An average amount**	**More than average**	**A great deal**
Short-term adaptation measures					
Medium-and long term adaptation measures					
Cross-sectoral adaptation measures					
Integrated adaptation measures					
Awareness-raising adaptation measures					
Information consolidation					
Research & technological development measures					

Please briefly state your justifications below for choosing the approaches.

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11. Which of the following Climate change adaptation approach is more suitable to the Ethiopian context of facing the challenge.

Type of Approach	**Strongly Agree**	**Agree**	**Undecided**	**Disagree**	**Strongly Disagree**
Short-term adaptation measures					
Medium-and long term adaptation measures					
Cross-sectoral adaptation measures					
Integrated adaptation measures					
Awareness-raising adaptation measures					
Information consolidation					
Research & technological development measures					

Please briefly state your justifications below for choosing the approaches.

……..

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……..

12. Since Ethiopia is a developing nation, it should not be put in to a rigorous environmental protection regime.

☐ Strongly Agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly Disagree

13. To what degree has the support received from the government been helpful to your organization carry out its activities?

☐ Very High ☐ High ☐ Medium ☐ Low

14. In Ethiopia, is there a platform on which different stakeholders in the fight against climate change can synergize their activities? If yes, how do you rate the degree of synergization in terms of specific activities?

☐ Very High ☐ High ☐ Medium ☐ Low

15. Environmental NGOs existence and the progress that is being seen in the fight against climate change are directly related.

☐ Strongly Agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly Disagree

16. The role being played by the NGO's has helped the Government in policy formulation and other activities in an un-substitutable way. Therefore the presence of NGO's in this sector is a matter of necessity.

☐ Strongly Agree ☐ Agree ☐ Undecided ☐ Disagree ☐ Strongly Disagree

17. How familiar is your organization regarding arguments over climate change listed below?

	Not at all	**Only a little**	**An average amount**	**More than average**	**A great deal**
Human activities cause climate change					
Greenhouse gas emissions cause climate change					

18. What major challenge has your NGO faced in the course of its activities? Please list them out below.

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19. What major prospect has your NGO experienced in the course of its activities? Please list them out below.

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