ENVIRONMENTAL REVIEW-*An analysis of Ghana's Experience as Reported in Ghana's Major Newspapers for the Period, January-December 1997*

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EXECUTIVE SUMMARY

The changing world environment has drawn into focus the need to actively pursue within and between the inter-linkages of human dimensions resource utilization and management. It has become relevant that environmental reportage is purposefully reviewed in respect of its coverage on environmental issues. These therefore, informed the study on environmental review-Experience of Ghana as reported in Ghana's newspapers for the period January-December 1997.

Selection of the population and sample size was highly dependent on environmental issues of relevance to the case study. This selection was purely purposive and based on the major dailies and weeklies of Ghana for the period, January to December 1997. This included all issues on environment as published in the Daily Graphic, Ghanaian Times, weekly Spectator and Mirror of Ghana therefore making it a 100 % sample. This covered 240 single publications for the period under review.

The outcome of the study showed that environmental issues in Ghana for 1997 were given wide coverage in the newspaper publications. Stakeholders of the environment including but not limited to ministries, departments, private and cooperate bodies gave major prominence to pressing environmental issues in Ghana. Notwithstanding the fact that most of the issues were given coverage, majority of such cases were only given lip service.

Recommendations that evolved from the study included emphasizing the need for institutions such as the Environmental protection Agency (EPA), Local Government Authority, Non governmental Agencies (NGOs) and Community Based Organization (CBOs) to be very active in championing the course of environmental protection and conservation. It was also recommended that the government should ensure that decisions taken on promoting better environment are carried out to the latter.

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Next on my list of appreciation is Dr Akwasi Kumi-Kyereme, supervisor of my Master's thesis, for introducing me to the field of academic research and providing me with the foundation for research work.

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CHAPTER ONE

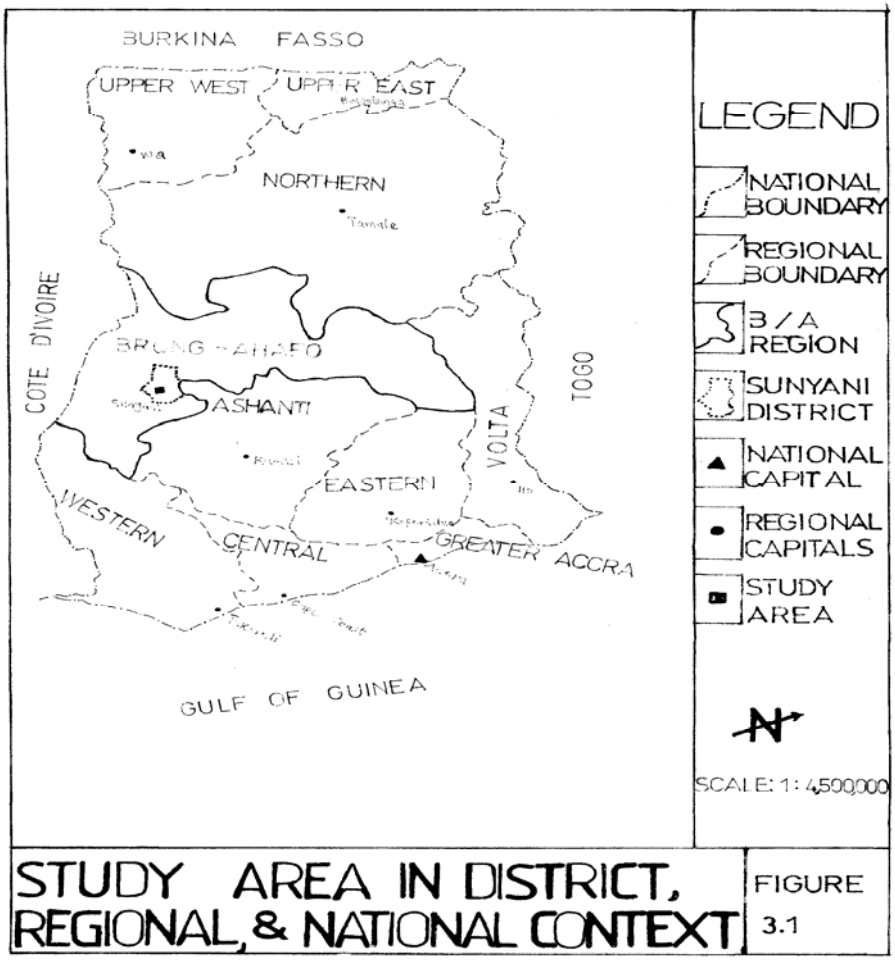
1.0 Introduction

The environment serves as a source of livelihood to biodiversity, sink for waste and habitat for both living and non living things. The environment is therefore a vital resource to life sustenance. This therefore necessitated this review as presented in the national dailies and the weekly newspapers of Ghana for the period, January-December 1997. Ghana, a developing country along the west coast of Africa has been grappling with environmental degradation. Various directives to tackling these issues have met less success. The study was therefore carried out to ascertain the extent to which attention was drawn to environmental issues as well as actions taken for the period in question. It also provided recommendations to ensuring the sustainable use of the environment for the present and future generations.

1.1 Study Area

The study covered Ghana, a country in West Africa and key gateway to many socio-economic activities in the West African sub-region. Ghana has a total land surface area of 238,500 sq km (92,090 sq mi). The distance from north to south is about 670 km (420 mi) whilst 560 km (350 mi) from east the east to the west. The country is bordered on the west by Côte d'Ivoire, Togo to the east and Burkina Faso to the north. The Gulf of Guinea of the Atlantic Ocean washes Ghana's southern shores. Ghana is generally characterized by flat plains and gently rolling hills. Forests cover 28 percent (2000) of the country's area, while 26 percent (2000) of its area is farmed. The country is divided into five distinct geographical regions. Ghana is also divided into 10 regional administrative zones that are also subdivided into many districts (Fig 1).

Fig 1 Political Map of Ghana



Source: Master plan, Sunyani District Assembly

Physically the coastal plains stretch along the southern portion of the country. This stretch of land features low sandy beaches interspersed with saltwater lagoons. A forested plateau region consisting of the Ashanti uplands and the Kwahu Plateau is located inland, in the southwest and south central Ghana. The hilly Akwapim-Togo Ranges run north to south along the country's eastern border. The Volta Basin takes up most of central Ghana. Finally, high plains characterize the northern (a third) of the country. The country's highest point is Mount Afadjato, at 885 m (2,904 ft), in the Akwapim-Togo Ranges. Culturally Ghana is heterogeneous in nature with many ethnic groups that speak varied languages.

1.2 Data Collection

The study covered an in-depth study of all environmental publications as appeared in the Ghanaian times, Daily Graphic, Mirror and The Weekly Spectator for the period January–December 1997. The study covered 240 vital environmental issues reported be for the period. The two hundred and forty issues selected were to provide a larger sample in order to reduce the level of error and increase precision.

1.3 Sample

The issues made up of categories of different environmental reportage did not necessitate the use of the total population in the study. The sample size included relevant environmental issues that were published in the Daily Graphic, Ghanaian Times, Weekly Spectator and Mirror for the period January-December 1997.

1.4 Sampling Procedure

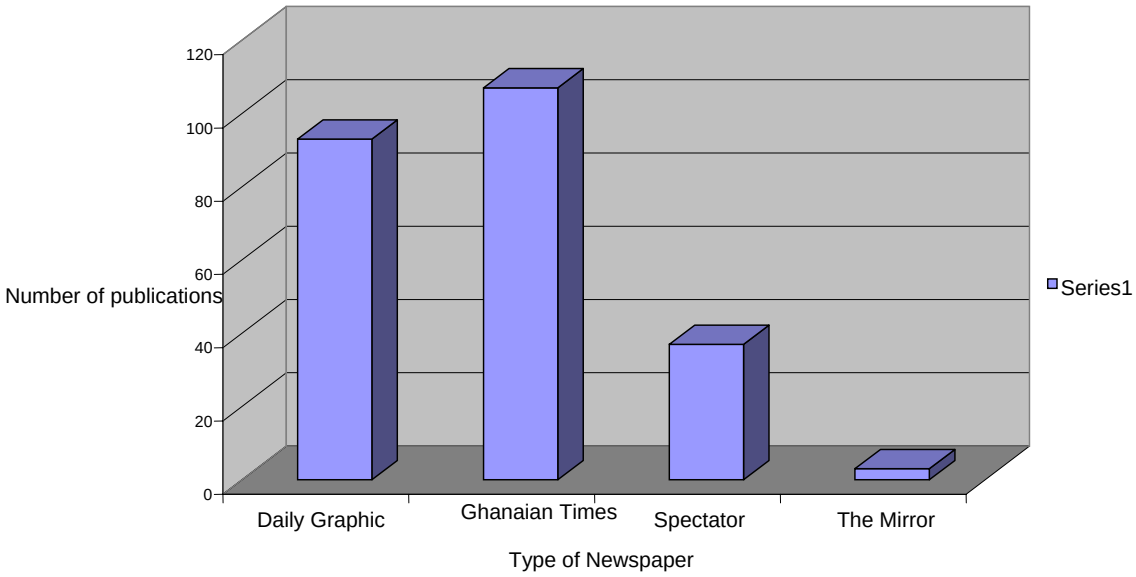
'*Our Common* Future' as published by the 1987 Brundtland Commission emphasised the complexities of the environment both globally and regionally. It was therefore relevant that ten years after this report Ghana is assessed in respect of its environmental outlook. The Brundtland Commission therefore informed the researcher on the choice of 1997 for such a review. More so, 1997 happened to be 40 years after the attainment of Ghana's independence that took place in 1957. The period also represented 14years after an extremely devastating bush fires that took place in Ghana in 1983. It was thus necessary to review environmental issues in respect of the notable indicators of threats to the environment. A purely secondary data was used for this study.

The study was based on a critical review of the national dailies and weekly newspapers. This necessitated the use of publications on the environment as carried reported in the Daily Graphic, the Ghanaian Times, Spectator and Mirror between January and December 1997.

In all 240 articles (Fig 2) were reviewed from all the newspapers as shown:

- The Daily Graphic 38.75 %
- The Times 44.6 %
- Spectator 15.4 %
- The Mirror 1.25 %

Fig 2 Publication on the Environment by Newspaper



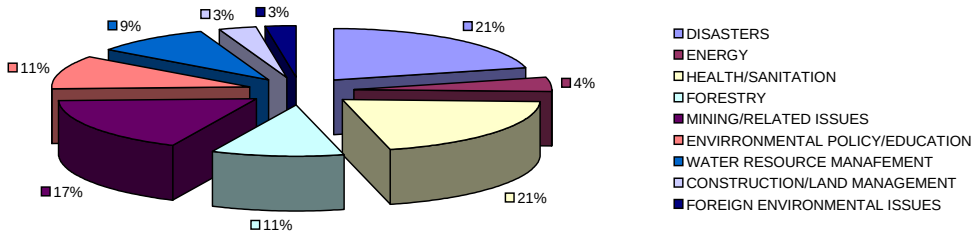
Source: Field Work 2005

The study also spans through the following areas:

- Disasters
  Such as Bush Burning, Storms and Floods 20.8%
- Energy
  Included alternative energy sources and energy conservation practices 4.2%
- Health/Sanitation
  This included pollution of all kinds 20.1%
- Forestry
  Mention was made of Afforestation, Deforestation and Desertification 10.8%
- Mining And Mining Related Issues 17.1%
- Environmental Policy And Education Or Awareness Creation 10.4%
- Water Resource Management 9.2%
- Construction/ Land Management 2.9%
- Foreign Environmental Issues 2.5%

These are represented in figure 3.

Fig 3 Type of Environmental Issue as reported in newspapers in percentages



Source: Field work 2005

1.5 Analysis of Data

Since the researcher used secondary data for most of the research, the analysis was tabulated and based on views, opinions and publications on the environment made by institutions, groups and individuals. Charts are also used where necessary in the analysis of the data. Recommendations were also provided in support of the study.

CHAPTER TWO

DISASTERS

2.0 Bushfire, Such As Bush Burning, Storms, Floods and Earthquakes

Extreme hydrometeorological events such as flooding and drought are common across Africa, while geophysical events such as earthquakes occur predominantly in Northern Africa, along the Atlas mountain range, and in the African Rift Valley, which also experiences volcanic activity. The El Niño Southern Oscillation causes significant climatic disturbances in most parts of Africa, either inducing drought or flooding, or increasing sea temperatures leading to cyclones (GEO Regional Reports 2003).

These natural events become disasters where large numbers of people or infrastructure are affected, as has occurred over the past 30 years due to high population growth rates, especially in urban centres and drought-prone areas. Thirty-four per cent of Africa's population lives in arid areas compared to just 2 per cent of Europe's population (Findlay 1996).

2.1 Bushfires

Forests and woodlands have played a critical role in the survival of human populations. They have been direct providers of shelter and food for people and their livestock, and of water, medicinal plants, building materials and fuel. But forests and woodlands also regulate our environment indirectly by slowing soil erosion, controlling run-off of rainwater and storing it, and regulating its release into our rivers and lakes. Globally, they help to regulate the climate and protect coastlines. Furthermore, forests and woodlands sustain many of our cultural, spiritual and religious values as well as playing an important role in the socio-economic development of industrial countries and being a vital resource for the socio-economic stability of developing countries. Loss of forests and woodlands therefore means loss of a vital resource and disruption of the socioeconomic activities they support (GEO Regional Reports 2000).

Bushfires in Ghana have become a menace to the environment due to the large tracts of arable land and resources that it destroys every year. The forest and its resources have become the major sufferers of bushfires in Ghana. The December 3 edition of the Ghanaian Times writes that Fire as identified has useful benefits but can also become a menace in terms of possible destruction to infrastructure, forest and wildlife. It sited the need for an educational programme to include all stakeholders such as chiefs and opinion leaders. It was also reported that a centenarian farmer was burnt to death from a bushfire that engulfed his farm in his attempt to harvest yams (February 1 Ghanaian Times).

Bushfires that occurred in 1997 also destroyed 22 houses, farm produce, livestock and personal effects worth millions of cedis in certain areas of the northern region of Ghana. The intensity of the fire as reported was fuelled by strong winds as reported in the February 17 issue of the Ghanaian Times. Marylyn Awuah-Asamoah in her write-up on the scourge of bushfires submitted in the February 19 edition of the Ghanaian Times by indicating the need to guard against bushfires to ensure the protection of food crops and prevention of deforestation including others.

The year 1997 also witnessed the inauguration of some bushfire control committees. A case in point was on February 22 when the Ashanti regional bushfire prevention and control committee was officially launched at Menang near New Edubiase. During the occasion, the then minister for environment science and technology expressed concern about the need to protect wildlife, water, timber resources and plants from bushfires. Chiefs of Abura Akyempim division of the Ahanta Traditional area also declared war on setters of bushfires and users of chemicals in fishing (March 15, Ghanaian Times). The action was also to help reduce the spate of bushfires in the Ahanta traditional area. Cases of reported bushfires in 1997 reduced marginally compared to the 1983 figures, an indication of a changed attitude towards the environment and its resources.

2.1 Floods/Rainstorm

Freshwater availability is one of the most critical factors in development, particularly in Africa. Some 71 per cent of the earth's surface is water. However, less than 3 per cent is fresh water, and most of that is either in the form of ice and snow in the Polar Regions, or in underground aquifers. It is thus an incentive to experience rains. Ghana is blessed to be in a geographical region that experiences high rainfall but on the hind side poor factors including but not limited to urban planning has resulted in perennial flooding in most cities.

Flooding in various sections of the metropolis was reported in the national dailies in 1997. The April 3 issue of the Daily Graphic identified that several suburbs lying along river banks in the Kumasi Metropolis were flooded following a heavy downpour.

Some parts of the Accra metropolis also experienced similar flooding after hours of torrential rains. Speaking on the issue of flooding the chairman of the Osu Klottey metro in the Greater Accra Region asked the residents to desist from dumping waste into drains since as he reiterated this happens to be a major cause of choked drains and hence flooding whenever it rains. A rainstorm also hit Boamang Afigya (Afigya Sekyere district, Ashanti region) and ripped off roofs of buildings as reported by Mr. Albert Kan Dapaah, the then MP for the district. He requested NGOs to come to the aid of the community (Daily Graphic, May 31).

The June 11 edition of the Daily Graphic also stated that about 300 houses at Weija Semporem and Tetteh Ogu (Ga District) were submerged by flood waters from the spilling of the Weija dam. This was the result of the opening of the Weija dam spill ways the previous day. The effect was several people being trapped in their homes. The officer-in-charge of the dam stated that it was necessary to open the spill ways of the dam to avoid damaging the dam-hence the only choice they had. He added that buildings in unauthorized places contributed to the flooding that frequently occurs and incidentally those people turned out to be the worst sufferers. Mr. Joshua Alabi (the then Minister for the greater Accra region) assured the people that they were going to be rehabilitated. The District Chief Executive for the area also advised the people to do the 'right' thing and also seek clearance from the assembly and the appropriate agencies before undertaking any constructional activities.

Also in Accra, hours of intermittent downpour for 2 days caused floods that threatened to cut communication in various parts of the Metropolis. The Odaw and Onyasia Rivers as seen appeared to break their banks and this seriously affected flood prone areas such as Odawna, Avenor and Zobga junction. Residents commended the Accra Metropolitan Assembly (AMA) for desilting the major rivers thus preventing a major disaster. The residents rather complained about the failure of AMA to remove filth removed during the desilting exercise. AMA was thereafter advised to regularly collect garbage that pills up in the metropolis (Kwabena Ofosuhene & Millicent Bridget, June 13, Daily Graphic).

In the June 14 and 16 issues of the Daily Graphic it was reported that a body believed to be that of an EPA official had been retrieved from the Odaw River at Avenor in Accra after getting drowned in the stream. Two other persons also got missing and properties worth millions of cedis were lost after the same incidence.

More so, in Alajo a suburb of Accra 2 major bridges and 3 houses collapsed as a result of the floods. Assistance was thereafter organized for the affected parties. In the June 16 issue of the Daily Graphic, 2 more deaths from floods were confirmed at Ashaiman. The heavy downpour left behind a collapsed bridge at Teshie, a death trap for motorists and people who continued to use it. The then Greater Accra Regional Minister assured the affected people of the government's support inclusive of the provision of gravels to resurface the destroyed roads. AMA reported later that about 1000 people at Sukwa, 450 in Soko and other 350 people were affected by the floods.

As a result of heavy downpour in Santa Maria, Accra, residents were seen wading in water to school and office. Property worth millions of cedis also got destroyed (Daily Graphic, June 18). The June 19 edition of the Daily Graphic also reiterated that Torrential rains within the Accra Metropolis had caused the Sakumo lagoon to overflow its banks. This made the Accra-Tema coast road unusable. Rail lines were also submerged as well as large tracts of the sea defence wall. Sections of the Tema Metropolis also got flooded

as a result of torrential rains and this made many people homeless and destroyed property worth millions of cedis. The armed forces were also not left out of the floods in Accra. It was reported in the Daily Graphic issue of June 19 that the 48 engineer regiment of the Ghana Armed Forces had conducted a complete reconnaissance rescue operation at Tema community 5 as a result of the overflowing of the Sakumo lagoon. It was identified that damage attributed to the flood of the Sakumo lagoon that year outstripped that of 1996.

The June 21 edition of the same paper stated that rail activities from Accra to Kumasi was halted due to the collapse of the bridge as a result of the Odaw River breaking its bounds. The minister for environment science and technology expressed Concern on the damage caused to travellers on that route.

For more than 9 hours south Odorkor residential area in Accra were prevented from going about their duties as a result of floods. Reasons attributed to the floods are the construction of houses in waterways. Residents also charged Accra Metropolitan Area to control the indiscriminate citing of buildings (Daily Graphic, November 28). The spectator also made reference to July 4th 1995 when severe flooding caused destruction in many places. It reiterated that causal effects of the previous flooding such as choked gutter, etc are still prevailing (Weekly Spectator. April 19). The same issue of the Spectator stated that residents of the Mokuse had identified that Flooding of the Mokuse stream was because a high income developer who had diverted the Mokuse stream channel into an ordinary drain water channel in the north industrial area as reported by Tom Dorkenoo. Tom Dorkenoo wrote in the April 26 edition of the Spectator that Less than 2 hours of rain resulted in flooding in Accra. It was noted that city officials have contributed to it by allowing people to build in water ways. July 4 of the Ghanaian times noted that 108 inmates of SOS children village at Tema have been rendered homeless after a heavy downpour that flooded their home.

Other places in the country were also not left out of the flooding in 1997. The June 19 edition of the Ghanaian times reported that 400 people in Nkwakwaakrom No.4 near Akwatia have been rendered homeless after River Supong, a major river in the area overflowed its banks. The same paper in June 6 stated that Abonko and Mankesim in the Mfansiman district have become flooded as a result of a heavy downpour. The Accra-Cape Coast road also became impassable as a result of the flooding.
The Inchaban dam also flooded its surrounding areas as a result of a persistent downpour. The catchment areas of the Inchaban dam near Takoradi was reported to have become flooded (June 7, Ghanaian Times). 200 People were rendered homeless at Beahu near Takoradi by a severe rainstorm. The rainstorm also caused damage to property worth million of cedis and this was reported in the May 23 edition of the Ghanaian Times.

2.3 Interventions

Steps taken in response to some of these natural disasters for January-December 1997 were capture in the dailies. The then minister in charge of roads and highways, Mr Edward Salia, inspected flooded areas to assess the extent of the damage to roads as well as road construction work at Teshie, Sakumono, Lashibi, Ashaiman, Mallam and Weija as was captured in the June 23 edition of the Daily graphic. Excavation work for the construction of a culvert to collect water from the Sakumo Lagoon into the sea on the Accra-Tema road was also to cater for the flooding of the Sakumo lagoon in Tema (July 5, 15 , Daily Graphic). A temporal bridge was also constructed to help promote rail transport along the Achimota Bridge that was destroyed by flooding. The project costed ¢190milllion (August 23, Daily Graphic).

In a write up in the same paper's issue of August 21 it was noted that an ¢80 billion is needed for restructuring the Accra drainage system. The government stated it would need ¢80-¢190 billion for a comprehensive drainage system for Accra to avert flooding. The money if obtained will be used for the Korle lagoon drain, bridges and the Bubuashie drainage system. Funding for the project was sought from OPEC. It was further indicated that the absence of a base map for Accra was not aiding the survey department and the town and country planning to undertake any meaningful work. It indicated that floods in Accra are man-made and added that dredging of the Korle lagoon alone will not be adequate but rather a change in behaviour is needed.
The statement further called for an improvement of ecology of the Odaw river bridge expansion, drainage of newly developed areas, creation of artificial drains and proper solid waste control management and monitoring and warning systems.

August 23 issue of the Ghanaian Times reported that rehabilitation work on the ¢190million temporary Bailey bridge at Achimota is to be completed next month. The other ¢340million tunnel to link the Sakumo lagoon to the sea is also to be completed. Both projects were necessitated by flooding in the Tema municipality that occurred.

The Achimota rail bridge resumed operation after suspension in June as a result of floods. The project costed ¢222million as the September 20 edition of the Daily graphic enumerated and was reported by Emmanuel Mezikpih.
An agreement was also signed for the construction of the Keta sea defence wall. A $13million was involved in the pact and this was reported by Tim Dzamboe, Anloga in the November 1 issue of the Graphic.

CHAPTER THREE

3.1 Environmental Education/Awareness

It was also reported in the May 17 issue of the Spectator that the bridge across the Nima stream has been choked with garbage. The pillars of the bridge with its garbage calls for the construction of a new bridge with a wider under surface since the current one is too narrow at the under surface and this could easily result in floods along its banks.
The military also made attempts to contribute their quota to the issues of natural disaster. In the April 29 edition of the Graphic As reported by Boniface Ablekpe stated that the commander of the 2nd infantry Brigadier H. K. Anyidoho asked the management of AGC to provide his outfit with their disaster management programme to enable the military know the area to assist the company when the need arises.

The geological survey department also hinted in the May 8 issue of the Daily Graphic that it was to start a nationwide education drive in earthquake preparedness and its aftermath. This was delivered by Mr. Charles Oduro, the acting Managing Director.
Bartels-Kwaku Tsen also reported through the April 3 edition of the Graphic that
funding for control of flooding in Accra is inadequate. This mainly applied to funds for desilting drains and widening them into permanent channels to carry away flood water.
Information gathered in terms of literature and the media showed that the issue of earthquake should be alarming. It was reported that should be prevent now and not think of the future when it may be too late (May 13, Daily Graphic).

Presenting footnotes on what to do at periods of earthquake Tom Dorkenoo reported that a Dutch geologist has called for an extensive national educational programme for the whole population in Ghana towards reducing the effects of earthquakes and other disasters.
January 25 edition of the Weekly spectator also inquired as to how prepared we are towards natural disasters-tremors and hazards. The reporter added that we should educate the populace towards it so as to ensure that people are not taken unawares in the unfortunate period of natural disasters.

Dr. J.E. Jm Van Landewijk also added his voice to the discussions of earthquakes by enumerating that we should educate people to prepare towards such hazards. He added that presently environmental catastrophes are man-causative (February 22, Spectator).
In the April 5, the weekly spectator warns residents of Accra about signs of flood that persists in the country. These signs as identified included choked gutters, water drains filled with water plants and vegetation.
Hon. Nicholas Appiah Kubi (MP for Jaman) also sited his views on the issues of earthquakes to the effect that the southern sector of Ghana including Accra, Tema and Winneba is being plagued by a national phenomenon known as earthquake. Causes as

identified included faulting, gas explosion, eruption of volcanoes, landslide and isostacy (April 4, Daily Graphic)

3.2 Interventions/Comments

It is very pathetic that sometimes whole farms and villages are erased through bush burning with its occasional loss of lives and other properties. It is very important to mention that people need to be prepared both psychologically and with skills to appreciate the need to be prepared and also how to mitigate against disasters.

Floods were noted to have caused various degrees of damage to humans as well as property worth hundredths of millions of Ghanaian cedis but the question is whether most of these aren't human induced. Accra a major area prone to flooding still continues to litter the environment with impunity, construct in waterways and indiscriminately choke the gutters. This behaviour invariably invites disaster and therefore the reasons why floods continue to occur in progression with each passing year. If City authorities and the nation as a whole are to make any strides in flood control then all must assiduously work towards a better environmental management.

It was encouraging that numerous write-ups appeared in relation to earthquake consciousness but the irony is the deaf ear turned to the issues. As reiterated, Kobe in Japan was declared to be earthquake free for at least 25 years but within a year of that declaration Japan experience in Kobe the worst of earthquakes for 50 years.

CHAPTER FOUR
ENERGY

4.1 Sources

Presentations on energy were also a matter of concern in the newspapers for the period under review. The April 3 edition of the Daily Graphic as reported by Adwoa Van-Ess had it that an expert in the oil industry had predicted that any hydrocarbons discovery in the Cape three points area has the potential to make Ghana self sufficient in oil and gas.
In the Weekly Spectator edition of April 24 it was reported that the Kwame Nkrumah University of Science and Technology had manufactured a solar drier at a cost of $500. This obviously is a step towards the promotion of clean energy. The September 13 edition of the same paper also indicated that an oil exploration was on course and this was reported by the Ghana National Petroleum Corporation (GNPC).

4.2 Interventions

The newspapers gave coverage to some actions taken in effect of energy types and their development. April 3 of the Daily Graphic also reported of an oil and gas Africa ’97 conference and trade exhibition organised in Accra. It mentioned of the need to move from “matured’ areas where oil exploration is not viable to new area such as Africa. The May 5 of the same paper as Reported by Francis Eshun-Baidoo reiterated that the ministry of mines and energy is to initiate policies and strategies that would enable the country to build a viable and sustainable natural gas industry. Over 200 operators and shareholders met and shared experiences and also called for co-operation at an African Camp on oil and gas held in Ghana (April 3, Weekly Spectator). February 8 edition of the Weekly Spectator had it that Residents of Aboadze asked that compensation for the citing of the Aboadze plant should go into the provision of a Clinic and cold store for the community instead of individual compensations. Though some form of compensation is being paid for citing a thermal plant the benefit so to be derived would not in any way be directed towards environmental conservation.

4.3 Awareness on Energy

Recommendations were made in the April 4 issue of the Daily Graphic as reported by Adwoa Van-Ess that we should involve the private sector in Hydro-carbon projects. The weekly Spectator edition of November 22 reported that a meeting on energy crises at the instance of energy experts have concluded that, emphasis should go to solar energy, biomass, etc so as to reduce energy shortages in Ghana. Tom Dorkenoo also wrote on energy crises and emphasized that with the volumes of refuse generated it would be prudent to channel it into Biomass. This idea was promoted by the meeting of the energy experts’ meeting in Ghana (Spectator November 29). After that Africa oil congress as

reported earlier, British participants expressed interest in investing in Ghana's oil industry (Spectator April 7).

4.3 Recommendations

The use of Solar and Liquefied Petroleum Gas (LPG) as an alternative source of energy can go a long way to improve upon the vegetation cover of Ghana.

The irony of the situation is the source of acquiring the initial and maintenance cost of such equipment in the country which looks very frustrating.

Meg Huby, in his book Social Policy and the Environment (http://www.openup.co.uk) encourages the use of other sources of energy such as tidal waves wind, the sun and the earth's internal heat. He indicated that such energy sources can be used to generate electricity without environmental risks. The energy sector in Ghana should therefore endeavour to make the use of such energy sources a reality as it is very environmentally friendly.

It was a generated fact after the African Oil and gas camp that Africa and Ghana for that matter possess oil and gas potentials that could be tapped but to date we have not reached such levels and the question therefore is why the gab?

CHAPTER FIVE

HEALTH/SANITATION

5.1 Pollution, Health Related Issues

Our health is definitely our concern since health; environment and development are actively integrated. Ignoring environmental indicators is therefore a prime catalyst for poor health. It was therefore instrumental that health and sanitation in Ghana took a centre stage of all environmental reportage for January-December 1997.

The Daily Graphic issue of May 29 as reported by Kinsley N Osei noted that Bolgatanga, one of the major towns has not been spared of the menace of filth. The writer employs the Ministries of Local Government, Health and Environment to make adequate preparation to avoid cholera outbreak. The December 9 issue of the Weekly Spectator also reported that the Sekondi-Takoradi metropolis has reported that a suburb of Sekondi has all kinds of communicable diseases due to unsanitary environmental conditions.

The December 6 edition of the Graphic as reported by Adwoa Van-Ess states that mounting refuse are the results of indiscipline at Nima. Residents throw garbage into streets to attract attention to poor sanitary condditions in the area. The case as she reported was not different in Kumasi, Tamale and Sekondi-Takoradi. The Graphic again in its December 16 Issue reported that refuse was gradually pilling up in portions of streets (Makola) in Accra. The graphic reporter was by this edging AMA to intensify its work in garbage management. The Mirror also published a write-up by Dr Felix Kwaku Anyan in its April 12 issue that Cerebro Spinal Meningitis (CSM) also called Sankara locally is noted to have killed a student. The cause of such death is normally attributed to superstition. Meanwhile studies show that it is caused by dirt, heat and overcrowding.

The Spectator also reported in its April 9 edition that the Selling of iced water in polythene bags was back on the streets of Accra. In its August 5 issue it was also identified that people have been burying their corpse in shallow graves with pigs digging and devouring these corpses. A school nearby as well as residents in the area also use the site as refuse dump and place of convenience as well. AMA has expressed surprise since it has closed down the cemetery years ago. It further added in the August 8 edition of a surprise visit by the public health department of AMA that identified that 8 fresh bodies have been buried at the said 'cemetery' at Gyegyeyise in Accra. The August 8 edition added that People should be properly buried to avoid nuisance and ensure respect for the dead. This is to avoid an outbreak of an epidemic as well. AMA was therefore charged to sit up to its duties to prevent the reoccurrence of such a situation.

The August 8 issue of the Weekly Spectator further enumerated that concerned citizens Association of Ghana (CCAG) in conjunction with the NCCE has embarked on a 6 week environmental and sanitation campaign in the 13 districts of the Brong Ahafo region. April 3, edition of the Daily Graphic as reported by Festus N.B. Boye stated that a recent epidemic of CSM in the northern sector of Ghana had claimed many lives.

5.2 Causal Effects

Some causes of certain health problems as faced by people were given space in the publications. April 3 edition of the Daily Graphic as reported by Festus N.B. Boye indicated that the causes of a recent epidemic of CSM in the Northern sector of Ghana that claimed many lives as including overcrowding since the disease is contagious. It was also reported in the April 14 edition of the Daily Graphic by Ofoe Rich, Accra that soiled currency notes harbour bacteria. This was reported in the FAO bulletin No. 21, March 1969. A single note as reported could harbour up to 60,000 bacteria and The Bank of Ghana should therefore assist in withdrawing them from the system.

5.3 Resultant effects

The August 27 issue of the Ghanaian Times states that a refuse container placed near the La police station has been abandoned with its contents not emptied for a long time. The Kheshie district assembly in Accra placed it there during a clean up exercise and it has since not been collected with children seen playing on it. This is a fertile ground for diseases contraction. The November 1 issues of the Times added that threatening 'mountains' of refuse at Nima has forced residents of the area to go on rampage thereby forcing the regional minister, Inspector General of Police (IGP), AMA chief executive to visit the spot to assess the situation on the ground. The Ghanaian times edition of April 8 also mentioned that the vice President, Prof Mills said that the outbreak of CSM in the northern sector of Ghana is affecting government's plan of providing infrastructure and services for national development.

5.4 Interventions

The April 4 publication of the Daily Graphic came out with a write-up by Albert K. Salia that the Ministry of health (MOH) has warned travellers to take CSM injections before travelling up north of the country. The April 14 issue of the Graphic (Reported by Janet Quaino) further added that The ministry of health (MOH) is to establish a health centre at Subin in the Upper Denkyira of the central region of Ghana to stem the incidence of buruli ulcer and other epidemics that plague the area.

The 5th May issue of the paper also mentioned that an $8 million Abattoir designed to ensure the slaughtering of animals in the most hygienic way and the supply of good quality meat to the public has started operation (Albert V. Salia, Daily graphic). In the same issue a report was made by Iddrisu Seini Zebilla to the fact that the MOH with the International Fund for Agriculture (IFAD) in the Upper East Region of Ghana had started a 3yr pilot programme to eradicate Bilharzia from the Bawku west District. The disease had become rampant as a result of new dams and dug-out constructed in the region. Some pragmatic measures to curd environmental catastrophes were also highlighted by the dailies and weeklies within the period of study.

The June 9 edition of the Daily Graphic had it that Desilting of gutters along the Weija junction on the Accra-Winneba highway had started. This attempt was to help solve drainage problems and the washing off of parts of the road hence reducing the unnecessary traffic along the route. The Accra Metropolitan Assembly (AMA) also arrested about 7,000 people over sanitary offences. 2,377 people who were prosecuted represented an increase of over 300% of the 1995(855 people) figure. Their offences included the accumulation of refuse and human excreta, choked gutters and dirty bathrooms (Weekly Spectator February 22). It was also reported that some clubs had cleaned up Teshie Township by desilting gutters including other (Spectator, November 15). The January 6 issue of the Ghanaian Times also stated that for the 2nd time in 2 days residents of Abossey Okai had prevented a private developer from building stores at a place earmarked for refuse dump. Certain Groups of people also joined hands to tidy Accra. This involved a massive clean up by AMA, Ghana Union of traders and members of Accra central National Democratic Congress (NDC). The chief executive of AMA promised to detail tractors as mobile refuse collectors in order to prevent the pilling up of garbage in the metropolis (Ghanaian Times, January 27). The same day's publication added that a keep fit club in Prampram had organised a clean up to desilt gutters in Prampram. The Accra metropolitan Assembly also in the period under study banned the sale of iced water on ceremonial streets in Accra except for lorry stations. A special tribunal was therefore to be set to prosecute such offenders (Times February 25). Some residents of Abossey Okai electoral area in Accra also organized a 6 hour clean up exercise to desilt gutters to improve environmental sanitation and this was reported in the Times issue of March 15. A Zongo youth club called the Gentility youth club in Sabon Zongo also tidied up their surroundings. The youth desilted gutters, etc in commemoration of their 40th anniversary as presented in the March 18 issue of the Ghanaian times. Members of the Ghana scholarships beneficiaries association desilted gutters at Bauku in the Upper East region. The exercise was to provide sanitation in the area and was given space in the March 1 issue of the Ghanaian Times. The Former President of the Republic of Ghana, Jerry John Rawlings also joined residents of Ashiaman near Tema in a clean up exercise. He used the opportunity to comment on people's apathy to sanitation issue since it is not helpful enough (Ghanaian Times, March 3). In the April 19 edition of the Ghanaian Times, it was identified that a spot fine had

been proposed for sanitation offenders. This was in view of a sector directive of the greater Accra region. The minister then in charge of the Greater Accra region announced that they have also outlined the proposed sanitation policy for the residence. Gbawe youth also tidied their surroundings as part of the celebration of its founder's day. They desilted gutters and this was captured in the May 2 edition of the Ghanaian Times.
AMA also closed down the Gbegbeyise cemetery with the reason that the process and state of the 'said cemetery' was not in conformity with AMA bye-laws (August 20, Ghanaian Times). The April 2 edition of the Daily Graphic reported in a statement that the hydrological services department of the ministry of works and housing has started desilting drains in Accra prior to the appearance of perennial Accra flooding. In the same publication a 5 member environment and sanitation task force was set up in New Juabeng to bring to book those who deliberately flout sanitation and building regulations in the municipality. The Taifa S.D.A. church members also organized an exercise to clean up the airport junction. The exercise took 5 hours and involved 200 men who desilted choked gutters in the area and this was mentioned in the April 26 issue of the Weekly spectator. The European Union also banned the importation if use goods such as used clothes. These comprised items classifies as "green waste" from EU countries to Ghana as from Jan 1998. Items listed in this category included Iron and steel waste and scrap, aluminium waste and scrap, leather waste, tin waste and scrap, synthetic fibre waste, waster paper and paper boards and used iron and steel railway track (Daily graphic, December 31).

Residents of Mpoase near Dansoman threatened mayhem over the proposed burial at the church premises of the late Reverend of the Apostolic church. Commenting, AMA said it had not given permit for that burial and this was confirmed by the resident Reverend of the church (Ghanaian Times August 9). It was also reported in the June 19 edition of the Ghanaian Times that a combined team of environmental health officers and labourers from the shama Ahanta East Metropolitan Assembly (SAEMA) had rid the Takoradi market of 43 mice including a cat. They said the exercise has been successful since the mice's population has been drastically reduced.

The November 4 issue of the Ghanaian Times further reports of the Ghana United Nations Association (GUNA) having organised a 3hr clean-up exercise at Alajo in Accra to desilt gutters, sweep roads and pavements in the municipality. The Tarkwa District Methodist church added its voice by requesting for environmental pollution in the country to be checked. They urged the government to control surface mining losses per year in order to control land degradation and environmental pollution (May 2, Ghanaian Times). About 100 members of the 31st December youth movement undertook an environmental campaign to educate people on the need to ensure environmental sanitation. The exercise took place around Winneba road (near Korle Lagoon) and this captured in the August 4 publication of the Ghanaian Times.

5.5 Awareness Creation/Interventions

Various writers presented write-ups to educate the populace on various relevant environmental concerns. The April 8 subject of the Daily Graphic as presented by Rosemary Ardaifio had it that the worldwide threat of the Ebola-type haemorrhagia, fever, HIV/AIDS and hepatitis is the result of poor attitude towards environmental conservation. More so, she identified that according to WHO in the last 20years 30 new and highly infectious diseases have been identified. Rosemary Adaifio further wrote in the Daily Graphic in the April 8 that CSM was bound to strike in the Northern half of Ghana due to the dry and hot weather condition prevailing there.

The Daily Graphic edition of April 30 as reported by Emmanuel Modey, Ho, stated that Mr. Charles Babe, Volta regional plants protection officer has deployed the excessive use of pesticides by some farmers, as it can pose many health problems. The National Patriotic Party (NPP) Member of Parliament (MP) for Asante Akyem North, Mr. Kwadwo Baah Wiredu dispatched an SOS message to the MOH to send a team of health experts to control the outbreak of CSM (*Graphic reporter*- May 1 Daily Graphic. Salome Donlor, Duhum also reported in the May 1 issue of the Daily Graphic that the world health organization is to provide Ghana with over $450,000 to help strengthen her capacity to control severe and complicated malaria especially at the district level.

A water and environment consultant, S.B. Akuffo took a look at the Pesticide control and management Act 1996(Act 528). He stated that some amount of risk is always encountered with the use of pesticides. However with judicious application of these chemical based on knowledge and sound management principles a nation always reaps considerable benefit from its use (Daily Graphic, April 3). In the December 10 issue of the Weekly Spectator the writer writes that after 100 years of Accra city administration, their services have not still lived up to expectation. These include transport, existing drainage, etc. This it directed that it need to be active at the planning process to ensure marginal achievements in the future.

Bob Aryeh writing in the June 10 edition of the Daily Graphic made reference to the fact that people must be ashamed that the unhealthy habits of people in Mamprobi-Accra should result in Accra Metropolitan Authority (AMA) incurring cost of ¢300million to remove 14,740 metre tonnes of garbage. We must all try to change our unpleasant habits and help AMA to manage waste. Emmanuel Kojo Kwarteng also reports in the Daily Graphic issue of June 10 that the president of the Methodist church of Ghana Prof K.A. Dickson had expressed concern about unsanitary conditions and environmental degradation in the country in especially Accra. He added that Christians are to be at the head of the crusade against environmental abuse since it would help promote good health for the people and thus exemplify Christ quest for people to live better lives.

L.A. Gyane reported that filthy situation in Accra calls for alarm. He therefore called on AMA to perform its duties efficiently to lead the way for a clean Accra (The Mirror, April 19). Writing on ways with waste- challenges for 1997, Tom Dorkenoo wrote on the change in outlook of the Korle Lagoon after the removal of commercial and domestic waste from its banks. This was attributed to the December 24 1996 edition of the Weekly spectator and reported in the January 4 1997 edition of the same paper. In the same edition it was reported by *Tom Dorkenoo* that current refuse "hills" at public toilet sites near the banks of River Densu in Djankrom a suburb of Nsawam is alarming and therefore advocated for the need for a national policy to address the problem.

Writing on environmental issues Kwaku Addo expressed his comments on the fact that sanitation seemed to have become issues for city authority alone but which need not be the case (Ghanaian Times, March 1). In the Ghanaian Times edition of April 8 the MOH cautioned people on possible outbreak of cholera and typhoid during the rainy season. They therefore encouraged personal hygiene, sanitation including others. In the same paper, the August 21 edition stated that Friends of the nation, an NGO on the environment had suggested to district and metropolitan authorities especially the Shama-Ahanta-West Metropolitan Assembly to adopt modern concepts of recycling as an effective tool to waste management.

The April 2 edition of Daily Graphic as reported by Samuel kyei Boateng-Lawra stated that Alhaji Amidu Sulemana, Upper West Regional minister had called for the suspension of funerals and other social activities in the wake of CSM outbreak in the north of Ghana until response on mass vaccination exercise is achieved. He asked the people to observe personal hygiene and environmental cleanliness by preventing overcrowding.

The April 4 edition of the Daily Graphic as reported by Joe Okyere Nadowli stated that then President, J. J. Rawlings had edged people in the CSM prone (endemic) areas to practice good sanitation to check the outbreak of disease. In the paper's publication of April 8 the Ministry of Health warned Ghanaians against the possible outbreak of Cholera and Typhoid with the onset of the rains. It encouraged all to ensure environmental hygiene, sanitation and desilt their drains. In the Daily Graphic issue of April 14 as presented by Emmanuel Kojo Kwarteng it was stated that the then Greater Accra Regional Minister, Joshua Alabi has called for the review of legislation and bye-laws on sanitation to make it more relevant with modern trends of development in the country. In the April 14 edition of the Daily graphic as reported by Emmanuel Kojo it was indicated that the NPP MP for Ablekuma central M. C. S. Crabbe has called for a concerted effort at creating environmental awareness among the people by encouraging the keeping the environment clean and tidy.

5.6 Recommendations

The Ghanaian as can be inferred from the publications is not adopting any pragmatic measures to ensure reduction in pollution hence improvements in sanitation. Measures as adopted such as punishments-court fines, etc are not deterrent enough as they in effect do not lead to a reduction in the problem. Environmental education in especially the educational institutions was totally absent indicating that we have a long way to go in ensuring long term sustainability in environmental conservation.

With the influx of more refined products including polythene products together with the poor state of Ghanaians approach to sanitation shows that the nation is bound to experience serious health effects as a result of poor management of waste. As indicated from one of the newspaper write-ups was the need to have a national waste management framework that emphasis sanitation and health.

On the other hand, our engineers, scientists and sociologists should endeavour to come out with appropriate technologies so that we can derive some utility from our wastes. Besides, all and sundry should put in their maximum effort so that problems of sanitation may one day be a thing of the past in Ghana.

CHAPTER SIX

FORESTRY

6.0 Degradation, Desertification, Poaching and Resultant Effects

Forests cover one third of the earth's surface and constitute one of the richest ecosystems. They provide for many people's everyday needs, including food, fuel, building materials and clean water. Yet, in the last decade alone, 940,000 square kilometres of forests — an area the size of Venezuela —were converted into farmland, logged or lost to other uses. Efforts to combat deforestation are ongoing. Sustainable forest management practices are reducing pressure on the land and improving the livelihoods of communities living in and around forests. Still, it is a race against time (Millennium Development Goals 2005).

The review of publications in the national dailies as were reported between Jan-Dec 1997 revealed a lot for consideration. The Mirror issue of January 17 had Francis Acheampong advising Suvinil and other companies to stop nailing their sign posts on tree. The May 28 issue of the Daily Graphic also enumerated on the comments made that group hunting is illegal –*Moses Sam* (Chief Wildlife Officer), Ghana Wildlife Department, Accra. He stated that a by-law should be enacted to check group hunting in the Akwapim-North District. The September 23 edition of the Ghanaian times also reports that 31 forestry workers were interdicted for condoning and conniving illegal tree felling as well as the illegal demarcation of forest reserves for farming purposes. The October 11, Ghanaian times also reports of an illegal logger killed by a Tree he fell.

6.1.1 Afforestation

Tree planting activities were also prominent throughout the year. On February 22, Weekly spectator, Alfred Tamakloe reported of a Non governmental organization currently nursing 12,000 tree seedlings to be planted along the banks of the Densu River at Weija. A new landscape plan was also developed by the Ministry of Environment Science and Technology (MEST) as was indicated in the September 18 issue of the Daily Graphic and reported by Paul Awortwi-Mensah. He reported that the Ministry of Environment, Science and Technology (MEST) is to launch a new landscape plan for Accra which will involve the planting of 400 trees to replace trees uprooted during the construction in Accra of the three-tier Sankara circle interchange road. This was to help safeguard the road.

The Birim south members of the 31st December Women's Movement (DWM) as reported in Ghanaian times, May 26, planted 4000 seedlings to mark their 15th anniversary. They took the opportunity to appeal to rural communities to take afforestation programmes seriously. In commemoration of the world day to combat

desertification and drought Spectator June 23 reported that trees have been planted at Appolonia near Tema. The comment added was that land management should be recognized in view of the growing demand for land use.

Churches were also seen in the area of tree planting. Weekly Spectator, July 17 indicated that members of the church of Jesus Christ of latter day saints at the weekend planted trees to mark their 150th anniversary at Kibi. September 12 issue of the Weekly Spectator published that a 110 acre woodlot and kiln for charcoal production was commissioned at Appolonia. It was funded by Accra west Rotary club to the tune of $10,000 and this attitude is to help restore degraded forest. It is ironic to mention that the project was to have a positive influence on the environment since the raw material for the facility would be wood.

In Asakae, school pupils planted 3,000 trees on a 4 hectare plantation. This development was reported in the November 21 issue of the Spectator upon the visit of the then Western Regional Minister. The July 30 edition of the same paper indicated that 3 national parks were to be developed in western region. It was reported that the government was to develop a resource reserve management plan for 3 national parks in the western region from a $4.8million fund. These areas were Nini-Suhein national park, Ankasu game reserve and Bia national park over and above resource reserve in high forest zone of western region.

The June 21 edition of the Daily Graphic illustrated that as part of activities to mark world desertification and drought, a tree planting exercise was held at Apollonian in Greater Accra Region. Dr Farouk Braimah, minister of environment science and technology in his speech at the function indicated that the exercise was part of the 4th phase of tree planting on a 200 acre of land.

6.2 Interventions

Environmental education, recommendations and ways to promoting sustainable forest resource use were given coverage in the dailies for the period under review. An assistant district forestry Officer in charge of the Kwaebibirem in Eastern region cautioned charcoal burners against felling economic trees for charcoal production (January 1, Spectator). April 25 edition of the Daily Graphic reported that wood residue has the tendency of causing the silting of ponds and rivers as well as destroying natural environments for aquatic life.
Nov 1 of the Spectator indicated that domestication of wild species of trees had provided an effective and continued access of farmers to natural forest. The then Minister of Environment Science and Technology (MEST) in a launch on protection of the environment reiterated his ministry's mandate to help identify and find solutions to the passing environmental problems affecting the country (May 5, Daily Graphic). Some

environmental experts also made some forms of submition in Daily Graphic of May 28 by stating the need for an urgent need to harness the experience of local communities to achieving sustainable management of forestry resources world wide.

Paul Awortwi-Mensah also opined in the Graphic issue of November 14 that Ghana has been adjudged the only African country likely to attain a sustainable forest management by the year 2000. November 29, Graphic, also reported that the GTMO and GTA would soon launch the forestry initiative in respect of the principles of the Brundtland commission on sustainable development adopted at the 1st earth summit in 1992 in Rio. The July 12 publication of the Ghanaian Times also had it that the then President of Ghana had given the assurance that the country will support with incentives any large scale commercial tree-planting undertaken in the country.

The June 24 issue of the same paper indicated that two timber firms were to be prosecuted for non payment of royalties. It was established that the leases of such firms have been terminated since September 1995. As a component of the year's environment day, attention was drawn to the depleting quantities of Ghana trees (July 17, Ghanaian Times).

The geological sub-committee of the National Disaster Management Organization has called for urgent measures to forestall any future disaster since the area is prone to landslides. People in the area were also advised to plant more trees as was reported in the August 7 edition of the Ghanaian Times. On September 23, the Ghanaian Times published information to the effect that the Ministry of Lands and Forestry is to initiate a new forest management approach to involve local people in the protection of forestry resources. This was made known by the Akim Oda Forestry Officer. In the 8th Arbor and tree planting campaign of the Pioneer Tobacco Company (PTC) held at Pramposo Kintampo, individual bodies were rewarded for their commitment to reforestation (October 6, Ghanaian Times). An advice was also offered in the October 11 issue of the Ghanaian Times in the context that Coastal erosion is identified to result in the depletion of some 600ft of coastal and accompanying rapid and periodic flooding of lagoons and surrounding lands.

Mangroves with its special qualities are known to be of importance to forestry in Ghana. September 9 edition of the Ghanaian Times stated that the Forest resources of Ghana have been reduced from 15.7mil hectares from the turn of the century to the present 8.2mil hectares. The writer adds that we should have policies and adopt behaviour that will preserve such resources. The writer further writes on desertification that we should prevent the Sahara from reaching us by adopting prudent measures like forest management and utilising a golden opportunity (September 10, Ghanaian Times). It was further reported in the August 23 issue of the Ghanaian Times that recently up to 90% of

once extensive belt of coastal rainforest has been cleared. This has caused a decrease in rainfall over the past 20 years, hence drought. In the July 3 edition of the Ghanaian Times it was reported that erosion has become a major problem as a result of poor vegetation cover because of the removal of vegetation for fuel wood, bushfires, grazing by farm animals, etc. The forest commission and district assemblies were asked to help in this dimension.

6.3 Recommendations

The situation is very detrimental and makes the future very gloomy for the nation. The efforts of the government towards afforestation should be given all the attention it deserves. As much as practicable, the timber companies that are not ready for afforestation should be banned since "when the last tree dies the last man dies". It was identified that MEST and for that matter the nation is adamant of the indiscriminate destruction of the forest resources even in the phase of staring future consequences. Fines and confiscation of assets should be frequent in treating issues of non sustenance in forest resource use. In the period under review large tracts of land were planted with trees but mention was not made as to whether there was any monitoring to ensure that the sustenance of such tree planting exercises. The nation does not possess and market any plan towards sustainable forest use and this should be taken on if Ghana wants to ensure that future generation are not denied the ability to meet their needs.

CHAPTER SEVEN

MINING AND MINING RELATED ISSUES

7.1 Degradation & Disasters

Various forms of mining in Ghana were identified and reported on within the period Jan-Dec 1997. These included the mining of gold, diamond and sand. In George Sydney Abugri's report in the graphic edition of April 8 it was identified that deaths have occurred in the Prestia mine. He rather questioned the existence of any safety measures at the mines in the phase of such accidents. It was also resolved in the November 14 issue of the Ghanaian times that the attempt of the police to arrest some illegal diamonds miners at Akwatia has resulted in 1 dead and 9 policemen wounded. The June 20 of the weekly spectator made mention of Sand winners at Korle-Gonno, Dogo, Chorkor and Mpoase beaches in South Ablekuma district currently using sacks for rice, salt and maize to bag sand as well as taxis and push carts to outwit security personnel. Their activity as identified had led to the degrading of the coast. The graphic issue of April 18 also made mention of Mr. J E A Afful, the then Minister of environment science and technology visiting sand wining sites at Appolonia to assess the extent of damage to the environment and farm lands in the area. As a result of damages caused by these miners, 120 sand and gravel winners were driven away from the kokoben Ateitu gravel mining ventures in the Awutu Effutu-Senya district. An official of the department of mines in Accra ordered them out when he visited the area and saw abut 1,000 heaps of sand along the beach mining sand (September 13, Ghanaian Times). November 5 issue of the Ghanaian times also stated that Sand winners at the beach are now into block making at the beach to outwit the authorities.

In the February 18 issue of the Ghanaian times it was reported that Sand winning has been banned in 2 Dangbe west areas. This directive was given by the Greater Accra regional minister as a result of a conflict on ownership of the portion of land used for the sand winning activity.

7.2 Interventions

Various directives were given in respect of mining in Ghana. Adwoa Van Ess(Ghana News Agency) reported in the Daily Graphic , May 17 issue that Mr. Anthony Boakye-Yiadom, MP for Amansie West, has stressed the need for mining companies to comply fully with the country's environmental policy. This in effect attracted comments from Randy Barnes, the operations Manager of the company. He in effect assured the MP that the company has taken precaution to ensure that their operations does not negatively impart on the environment.

Graphic December 29 as reported by George Folley, Sekondi noted that the western regional minister had asked DCEs in the region to take responsibility for the processing of minerals rites/permits. Apraku Ampratwum Mensah of Obuasi also wrote that mining is contributing extensively to the Ghanaian economy. He sited the case of the Ahanta Goldfields company limited that is to pay a total of ¢7.8 Billion in 1997 as compensation to people whose properties were destroyed in the course of the company's mining operations (Daily Graphic April 9).

The then Minster of finance Mr. Kwame Peprah was also reported in the Ghanaian times issue of April 15 to have said that Mining companies have been requested to set up funds for environmental control to collaborate efforts of the Environmental Protection Agency (EPA) and various Universities towards environmental management. As a milieu to the mining activities of illegal miners in Akwatia over 1000 people were arrested by a combined team of police and the military at Akwatia as indicated in the November 17 edition of the Ghanaian times.

The Ga district assembly in their attempt to reduce the degradation of the coastal resources gave the ultimatum to sand winners to reclaim the lands in their areas of operation within the 2 weeks of publication or be forced out of work. This was after a visit of the Ga District Chief Executive to the area and given prominence in the October 14 issue of the Ghanaian Times. The ministry of mines in their attempt to regularise activities in the mining sector halted the transfer of mines to foreigners in the Ghanaian Times of October 14. It also identified that mining companies have been flouting regulations that require them to submit reports on its concessions three months before acquiring the license.

7.3 Recommendations

Mining activities leave much to be desired as most mining communities are rather poor and wretched. The environmental implication of mining activities is also another serious problem as the air; water and land are sometimes degraded without measure.
Some attempt at edging some sand miners to reclaim their degraded areas of operation was also not proactive enough since such damages would be difficult to reverse and therefore the probable remedy is to stop their operation as well ensure a sustainable collection of such resources.

The Government of Ghana must as a matter of urgency revisit the laws on mining in the country so that such a lucrative enterprise would not continue to impoverish the communities within such areas. Illegal miners arrested for their illegal activities would not marginally solve the problem of land degradation since their contribution in that wise is minimal compared to the bigger mining companies. It would be prudent therefore if attention is rather drawn to the massive degradation caused by such bigger mining

companies who employ just a few of the Ghanaian human resources and also transfer most of their capital returns out of the country. If mining is to yield the best result and ensure sustainable environment then environmental protection should be actively integrated in its corporate strategies.

CHAPTER EIGHT

ENVIRONMENTAL POLICY AND EDUCATION OR AWARENESS CREATION

8.1 Sustainable Living

Various arguments were presented in support of environments policy and education or awareness creation. The Daily Graphic issue of April 14 as echoed by Philip Gorni Attipoe was to the effect that a re-examination of the World Bank's operative directive on environment; assessment of 1991 would be appropriate. He indicated that most of the cases stressed in the literature on sustainable development have been covered by the World Bank.

The February 8 and May 3 issues of the Weekly Spectator as written by Albin Korem emphasised the various ways that we can maintain sustainable living (1-9) to ensure sustainability. The February 8 issue stated that to pursue sustainable development we have to embrace sustainable lifestyles and build sustainable societies. He further called for new ethics for sustainable development. On his write-up of February 15 he made mention of the fact that for the nation to be able to pursue sustainable development we have to embrace sustainable lifestyles and build sustainable societies. He further called for new ethics for sustainable development. February 22 edition of the spectator as presented by the same writer espoused that we should ensure proper land use to maintain land. This will apparently promote agriculture as population increases so as to protect fertility of our small land size. He further enumerated on the promotion of sustainable water resource use in the April 5 and 12 issues of the spectator. Albin Koren concluded his write-ups on sustainable living (9) in the spectator by submitting that we can conserve life support systems by living sustainably through co-operation instead of competition and sharing instead of grabbing environmental resources.

8.2 Sustainable Development

Weekly spectator of January 25 indicated that 3rd world countries face social, economic and ecological problems as a result of developmental projects. This leads to problems such as fish losses and degradation of the environment. The February 1 issue of the same paper emphasised Ghana's inability to sustainably develop due to its mounting environmental problems. The meteorological department also wrote on current developments in term of changes to weather. It identified that reported current weather is normal for March- April and abnormal for December and also they do not know when the harmattan will come. These were identified as the results of man's inability to live in harmony with the environment in terms of our quest for development.

Albin Koren's writing on Sustainable Development (SD) in the weekly spectator emphasised in its October 6 issue that for Ghana to succeed in S.D. we must desist from blind imitation of the foreign affluent lifestyles, and rather embrace simple and more natural lifestyles.

Weekly spectator, October 6 issue as identified with Tom Dorkenoo outlined that for the nation to reach its development goals the links between water, sanitation, energy, education and industry should be effective. Ghanaians have to control erosion and ensure proper livestock integration and crop diversification as well as improving our approach to managing our farms. Brian Walter (Weekly Spectator October 11) analysed the deadly cycle of drought and famine. He resolved that the deadly cycle of drought and famine in the horn of Africa is to ensure a worldwide recovery of insights into sustainable economic development. The long term could be catastrophic since population numbers increase at the same time as our science driven civilization escalates resource demand. May 20, Daily Graphic as enumerated by Adwoa Van-Ess reiterated that the exploitation of the natural resources to meet socio-economic needs has led to natural resource depletion. She further added that there is the need to involve pragmatic measures to control environmental degradation.

8.3 Interventions

Various awareness strategies were identified by various writers in our newspapers. The April 28 edition of the weekly spectator touched on whether there is any need to be always prepared for any natural disaster such as earthquakes. The writer posed the question as to whether the earthquake threat to Accra and its environs is real. It was added that Kobe has been declared an earthquake free zone for the next 25years but ended up experiencing the worst earthquake in Japanese history for 50 years. This called for the Preparedness of Accra towards such eventuality. The commission on human rights and administrative justice also urged action against noise making and also towards the education of the populace on the need to observe the protection of people's rights in relation to noise making. This further urged action against noisy church activities as they infringe on rights to peaceful co-existence of people.

In the February 3 & 10 issue of the same paper the EPA provides the threshold levels for industrial activities in the country. The Weekly spectator editions of June 19, September 23 also touched on air pollution, ozone depletion, urbanization including others. In its June 19 issues it identified that researches have identified that heavy metals and magnesium inhaled as a result of air pollution can make people behave violently and engage in social misbehaviour. September 12 of the said paper also identifies that many countries especially poor ones continue to suffer the adverse effects of greenhouse gas emissions that affect the global systems. It was further identified that the coast of Ghana is showing as increasing hazard potential.

The September 20's issue of the same paper touched on the fact that growth of towns has produced concentrations of population making it difficult for government to properly manage the environment as well as social services. The writer identified that the risk of protecting the ozone layer was not yet over as was been portrayed by certain quarters. This was made known at the commemoration of the year's international day for the preservation of the ozone layer in the September 13 issue of the spectator. Finally September 23 of the same paper identified that the planet's renewable fresh water resources are infinite and about 41,000 cubic kilometres worth is available on average each year. There has been a constraint on its availability and usage.

8.4 Recommendations

The Environmental Protection Council had now become an Agency, yet its impact is less felt major areas of environmental stewardship. The suggestion is that there should be an active regional or sub-regional capacity just like the (WAEC) so that they can freely work as independent bodies and adequately tackle issues as may apply within space and time.

There is the need for Environmental Education at our basic, secondary and tertiary levels of education. This component was emphatically absent in the review of the year's environmental issues indicating a major omission. People cultivate behaviour and for we as a nation to make strides in environmental protection and sustainability we must actively incorporate environmental education in schools so as to ensure an early cultivation of good habits for use.

Such form of education should be well structured and be examinable so that it reaches the cognitive, affective and psychomotor domains in the recipients.
It is also clear that, attempt at inculcating S.D. in our development is yielding less impact since such omissions as enumerated are still in practise therefore calling for an evaluation of our development in relation to environmental resources.

CHAPTER NINE

WATER RESOURCE MANAGEMENT

9.0 Pollution

Water is not only one of the most essential elements of living, but also a spiritual symbol in prayers, customs and rituals for people from all over the world with different cultural, religious and spiritual backgrounds. Water is a resource that occurs in abundance at the middle belts of the country. A movement further north result in a depletion of the resource.

The review identified various forms of water pollution that occurred in most of our water resources for the period January- December 1997. The Jan 2 issue of the Times mentioned of the pollution of the Odaw River. There was also the report of the encroachment induced pollution of the Weija dam by residents living near the dam. The fishermen used various poisonous chemicals in fishing that ended up polluting the Weija dam reserves. 3 fishing vessels were also arrested and fined sums of ¢300,000, ¢300,000 and ¢1million respectively for illegally fishing in the Takoradi waters. The graphic reporter also showed that the people of Fanteakwa are facing water shortage therefore making life uncomfortable for them since most of them have to take unwholesome water for drinking and cooking. Various forms of pollution of the Keta lagoon were also given mention in the October 11 issue of the Ghanaian times. Another area of water pollution was that of the Owabi dam as reported by Ghanaian times August 15 issue.

The December 6 issue of the Daily Graphic as enumerated by Charles Arson-Lawson stated that Weija is threatened with massive pollution as a result of inappropriate fishing practices and farming along the river. This has resulted in algae bloom thus destroying the taste of the water. It has also resulted in a drop in the water level. The Daily graphic edition of April 8 as written by *Emmanuel* Mezikpih-Machigeni indicated that some fishermen at Weija (Michigeni and surrounding villages) in the Ga district continued to use unorthodox methods in fishing in the Densu River in spite of warnings from the Ministry of Environment Science and Technology (MEST).

9.1 Causal Effects

The graphic publication of April 26 indicated that the result of not properly protecting our water sources had left residents of Fanteakwa without water. Residents in areas who receive water from the Kpong Dam blamed the Ghana water and Sewerage Corporation (GWSC) for the pollution of the Kpong dam. This was rather refuted by the GWSC with the reason that the farmers along the river are to blame for the various harmful chemicals they use in either farming along the banks of the river or fishing in the stream. Winston

Tamakloe's write-up in the 23 issue of the times reiterated that the cause of the pollution was identified as coming from residents around the river who carry out farming and fishing activities. In another dimension the Ghanaian times, August 15 blamed the GWSC for the pollution of the Owabi dam since it has failed to prevent encroachment of its headwaters by residents along the streams. The December 24 issue of the Weekly spectator also identified the use of streams for washing vehicles, doing laundry and bathing in rivers, as well as dumping liquid and solid waste in streams as some of the causes of the pollution of streams.

Certain effects were enumerated by both The Ghanaian times and the Graphic issues. It identifies that many water sources had dried up, sources polluted thus denying the people of portable water (Ghanaian Times Aug 15, October 15). More so, some species of fishes were killed as a result of the pollution of some of these water resources.

9.2 Interventions

Various actions for ensuring the sustainable use and maintainance good water sources were narrated by the various newspapers. The June 21 issue of the spectator suggested that to ensure enough water for all then it must be used on a sustainable basis and if depleted groundwater resources are to be restored, it follows that agriculture the prime consumer, must take prime responsibility for more efficient use. It was also added in the same daily of its December 24 issue that to reduce the pollution of our water resources we must desist from using stream sites for bathing, laundry , washing cars as well as dumping sites fro both liquid and solid waste. This was further enumerated by the December 20 publication of the Spectator in the dimension that to ensure sustainable use of water resources we must adopt new irrigation methods such as the Ultra low rate irrigation since it will ensure minimal volume of water for maximum benefits.

Pollutions at our beaches was also given attention by the April 26 issue of the graphic in the dimension of intensifying efforts to rid their beaches of wretched ships to enhance tourism and fishing activities. As a long term measure to reduce water pollution, the May 21 issue of the Graphic specified the use of Environmental protection Agency (EPA) guidelines to ensure that industries do not pollute water bodies. It pointed out that some of the envisaged guidelines are going to be difficult to meet since they are too stringent. This as specified was the result of the EPA's study conducted from 1994-1996. The March 27 publication of the spectator edged the Ghana Water and Sewerage Corporation to ensure that its water sources are adequately protected to ensure its supply of portable water to homes. In the Graphic (May 21-by Ransford Tetteh) a 15 member community environmental committee was inaugurated to oversee Densu pollutions along all communities it passes. As a way of maintaining fresh water supply of fish by the fishing communities, the Ministry of Food and Agriculture tasked the Ghana Navy to assist in

the protection of Ghana's territorial waters from the activities of foreign fishing vessels as was reported in the January 25 issue of the Ghanaian times.

9.3 Recommendations

"Water is Life" as the adage goes. The management of water resources in the country leaves nothing to write home about.

There are incidents of individuals performing some household chores within the streams and even catchment areas. Farming activities are carried out very close to rivers as was indicated at the Kpong and Densu headwaters; especially the vegetable farmers use chemicals in the form of herbicides and pesticides and dump them into the waters.

In short, the water bodies are exposed and polluted immensely through bad agricultural practices and dumping of solid and liquid wastes from both domestic and industrial activities.

The Ministry of Local Government (District Assemblies), Kwame Nkumah University of Science and Technology (KNUST), Kumasi, University of Cape Coast, Minister of Science and Environment, Field Engineers regiment of Ghana Armed Forces, CSIR-Water Research Institute including others should actively help in the pursuance of policies directed towards an effective water resources management.

CHAPER TEN

CONSTRUCTION/ LAND MANAGEMENT

10. The Issues

The year also saw the Daily Graphic and Times reports on Constructional and land use activities that had some perceived adverse environmental effects. Daily graphic issues of April 3, 7 and 8 reported on protests by residents of Abossey Okai on the substitution of a site for sanitation for the development of stores. It was also sited in the Graphic issue of April 7 by Vance Azu that Regimanuel estates is to construct 20,000 houses to aid the accommodation challenges of Ghanaians. The Ghanaian Times (April 12) also reported that residents previously mentioned had armed themselves in preparedness for the supposed developer. Its April 12 issue also reported of the demolishing of illegal structures built in public places as well as waterways in the Metropolis.

10.1 Recommendations

It is very important that a country such as Ghana should be very active in promoting development of infrastructure but this should not override the need for environmental conservation and protection of natural resources. People can be pragmatic enough to ensure that certain places demarcated for specific purposes such as coastal lands, wetlands and similar places are observed as such. It is also commendable enough that structures in such unauthorized places are demolished however; more should be required of such culprits in terms of restoring such affected sites to better state. This is important since demolishing alone does not ensure the reversal of the damages done.

CHAPTER ELEVEN

FOREIGN COMPONENTS

11.0 The Issues

On a worldwide scale 3 reports were made of disasters such as famine, earthquake and maltreatment of environmentalist who stood against Shell Nigeria for environmental pollution. Moreover, 3 recommendations were made in favour of the need for protecting environmental resources. Niger reported of a possible famine as a result of reduction in food harvest from 394,700 tonnes to 1,896,000 tonnes which in effect threatened the lives of 2million-9million people (Graphic Nov 13).

An earthquake was also reported to have claimed about 2,000 lives and injured 6,000 in Iran (Daily graphic, May 12 issue). 19 youths of Ogoniland in Nigeria, charged with Ken Sarowiwa for standing against the environmental policies of Shell, Nigeria were also reported to be under torture as a result of their stance (April 5, Graphic). The April 3 issue of the Daily Graphic as reported by Reuters stated of an Earthquake in Chile that further caused a landslide. November 5 edition of the Daily Graphic stated that according to a U.N. World Food Programme (WFP), 10 days of torrential rains had left most parts of Somalia, Ethiopia and Kenya flooded. The effect was flooding that occurred along river Juba thus affecting 200,000 people and halting relief operations in southern Somalia-UN (WFP).

11.1 Interventions

The spectator issue of December 24 advised World economies to emulate Zimbabwe's strides at expanding its use of solar energy. An example of Singapore's fishing activities was also used as standards to motivate the world to practice sustainable fishing to ensure the protection of the fishing industry (Times, May 13).

Chernobyl disaster was remembered in the Graphic issue of April 28. Thousands in former Soviet Republic met to remember the accident in Chernobyl that emitted radiation 200 times more than the atomic bomb dropped in Japan. The hope was that such episode would not recur.

11.2 Recommendations

It is quite pathetic to hear of such catastrophes in the world. People should be psychologically prepared to accept such occurrences as and when they occur. It is also gainsaying the fact that humans should be proactive in our activities so that the human

induced causes of such disasters are avoided. The world have increased development and its use of nuclear waste with evolving threats from nations including Iran, Pakistan, India and South Korea. This indicated that though the world may remember Chernobyl there is still no attempt towards preventing its re-occurrence.

CHAPTER TWELVE

SUMMARY AND RECOMMENDATIONS

12.1 Summary

Today's is the first generation with the resources and technology to make the right to development a reality for everyone and to free the entire human race from want. There is a shared vision of development. It is therefore relevant on the part of opinion leaders as well as policy makers to actively pursue environmental conservation and preservation in the nexus of publicizing environmental issues. The Millennium Development Goals, which range from halving extreme poverty to putting all children into primary school and stemming the spread of infectious diseases such as HIV/AIDS, all by 2015, have become globally accepted benchmarks of broader progress, embraced by donors, developing countries, civil society and major development institutions alike. It is rather ironical to mention these without a focus on the environment and its resources since achieving the former largely depends on achieving a sustainable environment.

The study resolved that environmental issues were given an appreciable reportage in the major newspapers of Ghana for the period January-December 1997. These covered thematic areas such as environmental education, mining, sanitation, forest resources, construction and natural disaster.

The outcome of the research also indicated that though mention was made of environmental issues the actions taken in respect of such leaves a lot to be desired. Policy makers were quick to make promises in dealing with such issues but making it a reality was always left untouched.

More so, addressing environmental problems were identified to be basically on the short term measures as against dealing with the core causal effects. Ministers and directors of state apparatus were very dynamic in offering material assistance such as blankets and consumables to people affected by disaster. However dealing with preventive measures of such catastrophes was relegated to the past.

The study also showed that most people are aware of the dire implications of degrading the environment but due to indiscipline and laxity of the legal system they continue to degrade the environment with impunity. This actually showed that the laws of Ghana are not very stringent on dealing with offences related to the environment.

In addition, it was identified in the research that, Ghanaians do not actively pursue actions geared towards environmental protection. Most people become aware of the

negative effects of failing to protect the environment only when their actions result into environmental degradation and its consequent hazards.

2.2 Recommendations

The adoption of the Millennium Development Goals, drawn from the United Nations Millennium Declaration, was a seminal event in the history of the United Nations. It constituted an unprecedented promise by world leaders to address, as a single package, peace, security, development, human rights and fundamental freedoms. It is such dimension that actions directed towards ensuring the provision of a better environment for habitation is ripe.

The study resulted in various recommendations in ensuring a better environment including its resources. It was recommended that policy makers and stakeholders of the environment should actively pursue policies towards environmental protection and conservation. Both the public and private sectors should be seen championing such a course.

It was also recommended that government officials should ensure that promises made towards environmental conservation and restructuring are carried out to the core. Statement made by such people must be backed by its implementation. It was also realized that writers, editors and publishers should not only lay bare these issues of concern but should further institute policies that would be directed towards ensuring sustainable use of the environment and its resources.

It is also important to emphasize that research institutions should be motivated to periodically review the environment. This will ensure that the nation stays focused on the drives to ensuring an environment that performs effectively as a sink for waste, source of habitat and life support systems.

The policies articulated in documents such as the Stockholm *Declaration and Programme of Action*, the *World Conservation Strategy*, *Our Common Future*, the *Rio Declaration* and *Agenda 21*, have driven the environmental agenda in the period 1972-2002. Binding legal regimes — some from before 1972 — now form the body of international environmental law, providing the appropriate muscle necessary to encourage compliance. Along with the policies and legal frameworks, the past three decades have also seen a proliferation of environmental institutions across public and private sectors, and civil society in general. Ministries or Departments of environment are now common in all regions. Sustainable development and environmental standards have become part of the *lingua franca* of major corporations, with many now making annual environmental reporting part of the corporate agenda. Civil society has come of age, recording many successes at different levels. It is therefore relevant that all stakeholders

of the environment pursue an all inclusive approach with an interdisciplinary focus to ensuring that the environment becomes safer for habitation and performance of its life support functions.

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