FOREWORD

The year 2001 witnessed a number of changes in relation to the management of the affairs of the Agency, namely the appointment of Honourable Professor Dominic Fobih as Minister of Environment and Science, resignation of Dr. Peter C. Acquah from the services of the Agency as Executive Director from October 2001 and the inauguration of a new Management Board for the Agency in November 2001.

Despite the changes, the Agency was unaffected but continued with its planned activities. Significant activities included the strengthening of relationships with stakeholders like District Assemblies, traditional rulers and communities in solving environmental problems.

To deepen and strengthen the Environmental Impact Assessment (EIA) administration the preparation of specific guidelines were initiated to ensure sustainable development of projects and programmes. The agency was able to respond to some daunting environmental challenges in the year especially during the last quarter of the year. This was the occurrence of two cyanide spillages at two gold mines in the Western Region. The incidents tested the resilience of the Agency’s monitoring and regulatory systems to withstand such emergencies.

Addressing the problem of land degradation which is the nation’s critical environmental problem was high on the Agency’s agenda. In the regions, communities and schools were encouraged to plant tree seedlings. EPA offices assisted communities in woodlot establishment and provided technical support to prevent hush burning and encourage the no-burning programmes initiated by communities especially in the Upper West Region.

Other environmental problems including degradation of watersheds, sand winning and stone quarrying and indiscriminate burning received attention.

J.A. Allotey

1st April 2002
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EXECUTIVE SUMMARY

Introduction
An effective system for the management of environmental resources must provide for policy formulation, planning, monitoring, problem solving and implementation. Most environmental concerns are inter-sectoral and decisions involve choices between alternatives, and possibly conflicting causes of action, which carry costs and benefits. The possible options are considered for technical, economic, financial, social and political implications by sectoral agencies in the light of national, district or community development priorities.

At the national level EPA acts as an apex organisation providing an inter-sectoral forum for detailed discussion of environmental issues, prior to making recommendations to Government. Effective environmental management also requires the coordination of sectoral plans most of which affect the environment in several ways. Coordination is one of the important functions of EPA. The inter-sectoral networks bring together the sectoral agencies whose programmes impact on the environment and also create linkages between central agencies.

The role of the networks covers four main aspects of environmental management, namely, planning, monitoring, problem solving, law enforcement and environmental awareness.

NATURAL RESOURCES DEPARTMENT
- Provide initiative and solutions in natural resource management and conservation
- Initiate, promote and facilitate application of sustainable principles and practices in the management and conservation of Ghana’s natural resources.
- Operational concerns cover, forest and wildlife resource management, land resource management, water resource management and energy.

Forestry and Wildlife Resource Management
- Survey to identify and classify the operators of forest and wood industries within the Accra-Tema area as part of measures to operationalise the sector-specific environmental assessment (EIA) guidelines for the forest and wood industries.
- 46 establishments surveyed to date. Surveys would help to develop screening criteria for EIA and form basis for providing guidance in environmental management of existing industries in the sector.
Man and the Biosphere (MAB)

- An environmental research programme of UNESCO, which promotes development, oriented research and application of results for enhanced biodiversity conservation and sustainable development and improvement in peoples livelihood.

- 2000 MAB Young Scientist Award Winner – Mrs. Mary Obodai – Food Research Institute study on “Ethno botanical Survey of Mushroom Germplasm and its Domestication in the Bia Biosphere Reserve”. Study identified 21 species of mushroom in the Bia Biosphere Reserve, 17 used as food by local population and 5 have medicinal value.

- Findings will help improve food security and generate alternative income for the people and reduce over-dependence on the reserve by the population for protein needs and reduce pressure on the resources of the biosphere reserve.

Biodiversity

Collaborated with Environmental Law Department to organise workshops to reach national consensus on legal and institutional framework for internalising all protocols and conventions signed by Ghana. Agreement reached to establish a national commission on biodiversity.

Water Resource Management

- Aquatic Weed Control – National Water Hyacinth Control Committee reviewed progress on implementation of specific activities to control waterweeds in the countries water bodies. Slow down in FAO/GOG Project implementation due to transfer of FAO officer.

- Posters for awareness creation designed, for production in 2002.

- Biological Control - Biological control agents rearing pools mounted at the University of Ghana under FAO sponsored project. Two, pools have been installed for rearing the bio-control agents for water lettuce and water hyacinth.

- Aquatic weed management in Fosu Lagoon – Cape Coast. Task force visited Cape Coast and found lagoon grossly polluted as a result of discharge of municipal wastewater. Team had meeting with officials of Municipal Assembly on solving pollution problem. Two proposals were made:

  - Ventilate lagoon through breaching of the sand bar of the mouth of the lagoon.
  - Manage municipal wastewater within lagoon catchment to reduce the pollution load.

Algal Bloom

Re-occurrence of marine algal bloom in the Jomoro District, Western Region suspected to be caused by discharge of industrial/agricultural effluent from the Republic of La Cote d’Ivoire. Collaboration is being sought with La Cote d’Ivoire officials to solve the perennial algal bloom problem. A draft programme for a proposed meeting between technical personnel
from the two countries to examine a possible technical solution of the problem has been submitted to the Ministry of Environment and Science for consideration and implementation.

**Energy Resources**
The Department is under studying a project on waste to energy co-generation project at Kumasi for recommendation and replication in other sawmills.

**Climate Change**
Ghana’s Initial Communication on Climate Change has been prepared and published as part of Ghana’s obligation under the United Nations Framework Convention on Climate Change (UNFCCC). The Communication reports on the national inventory of greenhouse gas emission, sources and sinks. It also identifies national capacity building needs to deal with climate change adaptation in water resources, agriculture and coastal zone. Vulnerability studies for the coastal zone and water resources have also been undertaken.

**Climate Change Projects**
Assistance to build in-country and industrial capacity to implement Clean Development Mechanism (CDM) Project with sponsorship by UNIDO. Final report highlighted industry CDM capacity needs, banner removal strategies for industry technology transfer and outputs, objectives and activities for Phase III of the programme. Project completed in December 2001.

**Technology Needs Assessment**
- The programme is sponsored by GEF/UNDP to identify Climate Change relevant technology needs in the energy sector.
- Pilot study on synergies between Rio Conventions was undertaken.
- To ensure that Ghana can benefit from the Climate Change Convention, a proposal on institutional framework to establish a national commission on climate change has been submitted to the Ministry of Environment and Science.

**Land Resources Management**
Permits are issued for applications for tree felling to make room for development projects or to avert damage to life and property. Eleven (11) applications received to fell 81 trees.

**Environmental Management Coordination (EMC) Component of Natural Resource Management Project (NRMP)**
The EMC has seven sub-components:
- Human Resource Development
- Regional and District Environmental Information System (REIS) Packaging
- Manuals for Environmental management and District Environmental Management Capacity Building
• National Framework for Geo-Spatial Information Management (NAFGIM)
• Land cover /Land use map Update
• Development of Census Information
• National Action Programme to Combat Drought and Desertification.

ENVIRONMENTAL EDUCATION DEPARTMENT

• Responsible for educating the entire citizenry of Ghana to understand the functioning of the environment, its problems and the need for its maintenance.
• Work with formal and non-formal education stakeholders to protect the environment and change attitudes and behaviour to achieve improvements in environmental quality.
• Operational concerns are formal and non-formal education, public awareness, collaboration with non-governmental organisations (NGOs) and material development.

Public Awareness
Exhibition at INDUTECH 2001 – 5th Ghana Industry and Technology Fair, 1st-12th March 2001: Exhibits included:
• Photographs showing the major environmental issues and attempts to solve them
• Land cover/land use maps
• Land suitability map
• EIA Procedures in Ghana
• Procedures for pesticide registration in Ghana
• EPA publications and handouts

Exhibition at ECO-FEST 2001
First International ECO-Tourism Festival, 14th-25th October 2001 was held under the theme “Impact of Environmental Degradation on Socio-economic Development”. The Festival’s objective was to raise consciousness about effects of environmental degradation on economic development and the need to sustain the environment.

Exhibition at Homecoming Summit
Exhibition mounted to explain to prospective investors the environmental requirements for their business. Environmentally related information was also provided.

Networking
Religious organisations and the Agency organised Arbor Week at Dodowa on 16th August 2001 which coincided with launching of the Greater Accra Region World Environment Day Celebration. Dodowa was chosen because of land degradation due to sand winning. A
follow-up action is the setting up of a committee to work out an afforestation project to reclaim degraded land.

- District Assemblies: A public education in the Ashiedu-Keteke Sub-Metropolitan area. This was part of the local initiative to clean the area under the Accra Metropolitan Environmental Health Initiative (AMEHI) funded by DFID, U.K.
- About 192 NGOs registered with the Agency. A profile analysis undertaken using information received from NGOs. A workshop in environmental management awareness creation is planned to foster effective networking and partnership: 17 registered in 2001.

**Workshops**

Provided resource persons for workshops organised by Ghana Association of Science Teachers in the Greater Accra Region in five (5) schools. One hundred and twenty (120) teachers benefited from orientation in environmental education.

**Littering at Security Checkpoints and Lorry Parks**

In collaboration with Built Environment Department discussions held with GPRTU on checking lettering at security checkpoints and lorry parks.

**Other Programmes**

- National World Environment Day Celebration
- Symposium on Globalization and Social Transformation
- Launching of Okyenman Environmental Foundation as part of World Environment Day celebration

**Publications and Production of Educational Materials**

- Design of logo for CLEIAA
- Full colour cover design Ghana Initial Communication document
- Brochure of EIA Regulations LI 1652
- Publication of EPA Newsletter
- Teachers Source Book on Environmental Education distributed to some schools to pilot test for one school term.

**BUILT ENVIRONMENT DEPARTMENT**

Encourage and facilitate improvements in planning and management of human settlements (rural and urban) and improvement of health and quality of life. Operational concerns cover settlement planning, infrastructure development, public health, population and disaster management.
Manual on District Waste Management Plans

The promulgation of the Local Government Act, 1993 (Act 462) and the adoption of Environmental Sanitation Policy (1999) by Government placed enormous responsibility on the Metropolitan/Municipal/District Assemblies (MMDAS) especially for management of waste. However, with rapid population increase, growing demands for consumer goods, inadequate qualified staff, lack of some basic facilities and equipment; MMDAs are unable to cope with their waste management responsibilities. Most Assemblies have no clearly defined strategies and action plans for waste management. In view of the above problems the department developed this manual to guide MMDAs to prepare their own Waste Management Plans.

Monitoring of Sewage Treatment Plants (STP)

Waste management has become a topical issue of national concern particularly the unprofessional or poor management of sewage and the potential harm and threat to human health and environment. The objectives of this monitoring programme included the following:

- Inventory of all existing STPs in the country and update records
- Create database for these systems
- Identify operational constraints of managing STPs
- Make recommendations for sustainable sewage management

Out of the 48 STPs monitored nationwide it was discovered that only about 10 percent of them were in good working conditions. The remaining were either abandoned or in bad state of disrepair. There is therefore a serious need to rehabilitate the existing sewage treatment facilities in the country.

Inspections, Investigations of Public Complaints

Fifteen (15) investigations and three compliance-monitoring visits were undertaken on air / noise pollution and sanitation.

Review of Technical Reports

Seven (7) Technical Reports reviewed including state of pan latrines in the AMA area.

Monitoring

The department monitored the AMA emergency waste disposal site at Gbawe Djamman on daily basis.

MINING DEPARTMENT

Promote and facilitate the application of best environmental practice in the mining industry. Operational concerns cover prospecting, permitting and pollution control in mining and compliance with environmental requirements.
Environmental Performance Monitoring
Ten (10) large and medium scale mines mainly in Western and Ashanti regions were monitored involving taking of random samples from monitoring stations; interactions with local communities in catchment areas; debriefing management of mining companies on observations and communicating in writing on observations and recommendations from monitoring to respective mining companies. Inspections at each mine covered open pits to assess stability of walls and management of pit water, Ore processing plants, Waste/transitional ore dumps, Tailings dams, Plant mechanical workshops to assess the disposal of disused oil and discharge of vehicular washing bay effluent Chemical storage, Reclaimed sites

Reconnaissance Visits
Nine (9) reconnaissance visits were undertaken in 2001

Investigation of Complaints
Quarries - 2
Sand and stone wining - 5 (all in the Greater Accra Region)
Large-scale mining - 2 (communities protesting against the mines)

Special Events
Tour of 6 mines by Honourable Minister of Environment and Science
Cyanide Spillage: 2 spills at Goldfield (Ghana) Limited and Satellite Goldfields Limited
Public Hearing: 2 held in the Brong Ahafo and Western Regions

Reclamation Bonds
• 2 mines complied fully by posting bonds. Abosso and Resolute Amansie
• 4 mines posted partial bonds

Registration of Exploration and Small Scale Mining Companies
• Processed 55 exploration applications and 92 small-scale mining companies

Review Documents
• 23 Environmental Impact Statements
• 33 Preliminary Environmental Reports and Environmental Management Plans
• 10 Scoping Reports
• Reclamation Plans

Research Activities
The department conducted studies into the level of mercury pollution emanating from gold mining in Dumasi in the Western Region involving local and International institutions.
Monthly Monitoring Returns and Data Management
The monthly monitoring returns from mines cover water quality, solid waste generated, emission to land, environmental enhancement measures and reclamation action ties.

Categorization of Mining Companies
All major mining companies have been categorized based on environmental management practices namely compliance, reporting, reclamation plans and bonds and responsiveness to social corporate activities.

MANUFACTURING INDUSTRIES DEPARTMENT
The primary objective is to promote and facilitate the application of best environmental practice in Ghana's manufacturing industries.

The Manufacturing Industries Department (MID) reviewed a number of reports including
- Environmental Management Plans (EMPs),
- Annual Environmental Reports (AERs),
- Monthly Environmental Quality Returns (MEQMRs),
- Environmental Impact Statements (EISs),
- Preliminary Environmental Reports (PERs) and Scoping Reports.
- Other Activities: Issuance of Compliance and Enforcement Notices,
- Registration of industries under EA Regulations, 1999, (LI 1652)
- Industrial environmental data processing.

ENVIRONMENTAL INSPECTORATE DEPARTMENT
The Department's primary objective is to work with industry, local government and the community to ensure compliance with laws and, for protection of public health and property. The department received 164 complaints.

Classification of the Environmental Complaints Investigated

<table>
<thead>
<tr>
<th>Activity</th>
<th>Nature of Pollution or Environmental problem</th>
<th>Number Investigated</th>
</tr>
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<tbody>
<tr>
<td>Garages and metal repair shops</td>
<td>Noise</td>
<td>3</td>
</tr>
<tr>
<td>Churches and other religious activities</td>
<td>Noise</td>
<td>12</td>
</tr>
<tr>
<td>Spraying, Smoking, Milling of Fish, etc</td>
<td>Fumes</td>
<td>11</td>
</tr>
<tr>
<td>Block moulding/Concrete/Stone products</td>
<td>Noise and dust</td>
<td>9</td>
</tr>
<tr>
<td>Chop bars and night clubs/Music Shops</td>
<td>Noise</td>
<td>4</td>
</tr>
<tr>
<td>Generating sets, burning, etc</td>
<td>Smoke</td>
<td>18</td>
</tr>
<tr>
<td>Quarrying</td>
<td>Noise, dust and land degradation</td>
<td>4</td>
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<tr>
<td>Toilet facilities/solid and liquid waste disposal</td>
<td>Sanitation</td>
<td>32</td>
</tr>
<tr>
<td>Generating Sets</td>
<td>Noise</td>
<td>6</td>
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<tr>
<td>Tree Felling</td>
<td>Deforestation</td>
<td>2</td>
</tr>
<tr>
<td>Flour milling</td>
<td>Noise</td>
<td>1</td>
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ENVIRONMENTAL ASSESSMENT AND AUDIT DEPARTMENT

The primary objective of the department is to facilitate the planning and execution of all development activities in Ghana on sound environmental principles and ensure that such activities are carried out in compliance with the Environment Impact Assessment (EIA) requirements of the Environmental Protection Agency Act, 1994.

A summary of Environmental Assessment (EA) actions taken on proposed undertakings (proposals) submitted to the Agency is given below:

- 77 Environmental Assessment proposals were registered.
- 39 Scoping Reports and EIA Terms of reference were considered and Proponent (Consultants) given the required assistance and guidance to carry out satisfactory impact assessment study.
- 8 Preliminary Environmental Reports were considered.
- 37 Draft Environmental Impact Statements (EISs) were submitted for review.
- 33 Draft Environmental Impact Statements were reviewed.
- 12 Final Environmental Impact Statements were submitted for approval.
- 12 Proposals covered by final EISs were considered satisfactory and granted Environmental Permits.
- 4 Corporate environmental policies were approved.
- 4 Proposals were approved at the registration stage.
- 198 Sets of EIA Public Notices and Advertisements were served on 33 proposals in the National Daily Newspapers as part of public information and review process.
- 5 Public Hearings were held on six (6) proposals.

CONVENTIONS AND PROJECTS IMPLEMENTATION DEPARTMENT

The Department’s primary objectives are to promote, facilitate and, where appropriate, lead action within Government and the broader community to give effect to Ghana’s commitments and obligations under various international conventions, treaties and agreements relating to the environment. It has to assess, review, audit and regularly monitor small and medium scale development projects.

The environmental assessment (EA) actions taken during the year were as follows:

201 Environmental Assessment (EA) Proposals/applications registered
18 Preliminary Environmental Reports (PER) received
15 Preliminary Environmental Reports (PER) reviewed
12 In-house Screening and Review Committee meetings held
67 Proposals Approved by the In-house Committee
114 Environmental Permits Issued
11 Proposals Referred to other departments
2 Permits Refused
53 Site Inspections Conducted by CPID
9 Annual Environmental Reports Received

ENVIRONMENTAL QUALITY DEPARTMENT

The objectives of the EQ Department are to provide overall co-ordination of the Agency's monitoring activities and establish ambient and effluent quality standards.

Achievements in 2001
- Effluents from 32 industries in the Accra-Tema industrial areas were monitored;
- Air quality in representative industrial, commercial and residential areas in Accra-Tema were monitored;
- Undertook a study of the status of the Kpeshie Lagoon;
- Collaborated with other stakeholders to initiate pilot programme to control vehicular emissions;
- Collaborated with other stakeholders to monitor pesticides dealers in Kumasi;
- Investigated a number of complaints, mostly noise.

PUBLIC AFFAIRS DEPARTMENT

The objectives of the department are
- To provide information support services to the Agency
- To promote and facilitate public awareness of EPA’s role in protecting the environment.

Achievements in 2001
- Facilitated press releases, briefing from and press coverage for the Agency;
- Published three (3) editions of the EPA internal bulletin;
- Facilitated EPA’s participation in a radio talk show on the Cyanide Spill at Tarkwa.
- Collaborated with the Environmental Education Department on outreach programmes.

ENVIRONMENTAL LAW DEPARTMENT

The main objective of the department is to provide legal advice and support to the Agency.

Achievements in 2001
- Represented the Agency in 15 court cases.
- Reviewed a number of MOUs, contracts and agreements between EPA and other organisations.
- Participated in a number of training programmes, workshops and conferences.
- Participated in environmental education programmes.
ENVIRONMENTAL INFORMATION AND DATA MANAGEMENT DEPARTMENT

The main objective of the department is to provide comprehensive, high quality information support services to all parts of the Agency to facilitate sound management of the country’s environment.

Achievements in 2001

- Computer repairs and maintenance;
- Installation and updating of anti-virus on all computers;
- Administration of local area network and wide area network;
- Provision of assistance to staff in the use of IT resources;
- Periodic updating of EPA Website;
- Computerisation of library books.

REGIONAL PROGRAMMES DIVISION

The Regional Programmes Division is one of the five (5) main Divisions of the Environmental Protection Agency (EPA), Ghana. The Division has a secretariat at the Head Office headed by a Director and assisted by officers and charged with the co-ordination, supervision and monitoring of the activities of the regional and district offices.

Currently, the Agency has ten (10) regional offices and two district offices at Tarkwa and Tema. The Tarkwa district office was established in 1998 and charged with taking a proactive role in dealing with environmental problems associated with the mining industry especially in the Wassa West District. The Tema office which was established at the beginning of the year 2001, is especially charged with the monitoring of large and medium scale industries in Tema Municipality that are outside the Free Zone enclave. The office is to assist in the generation of data on industries for enhanced environmental management and planning.

Responsibilities of the Regions

To assist the Agency to achieve its goals and vision, the regional offices perform the following functions:

- Pollution prevention and control through: the promotion of cleaner production to avoid waste rather than simply applying ‘end-of-pipe’ approaches to control pollution; the encouragement of sound land use planning; and promoting the enactment of by-laws/legislative instrument to protect water catchment areas and sensitive lands.
- Building partnership with stakeholder institutions as the District/Municipal and Metropolitan Assemblies; Regional Coordinating Councils, and other governmental Agencies; Non-Governmental Organisations (NGOs) and private sector agencies;
• Educational and traditional authorities; industrial and business associations; and the media and donor agencies.
• Ecosystem management through the assessment and addressing of high-risk and high priority environmental problems that are unique to the regions.
• Environmental justice and compliance and enforcement of environmental requirements in the Environmental Protection Agency Act 1994, Act 490, Environmental Assessment Regulation LI 1652 and any other relevant Acts and Regulations in force.

**Ashanti Region**
The office participated in a programme to talk on ‘water’ organised by St. Peter’s Catholic Church, Ahwaa and a talk on ‘The Role of the Adventist Student in the Protection of the Environment organised by the Adventist Students Fellowship KNUST. The office honoured three radio programmes on OTEC FM and discussed on public littering and water pollution. Two other radio discussions on Kapital Radio and Radio GAR discussed pesticides control and management.

Monitoring visits were made to some mining industries in the region to assess the environmental performance and in some cases to ensure compliance enforcement. Mining companies visited were Ashanti Goldfields Company, AGC (Obuasi), AGC (Bibiani), Midras Gold Mines, and Bonte Goldmines. A monitoring visit was paid to the Komfo Anokye Teaching Hospital (KATH) to assess their waste treatment facilities and sewage system. Thirteen (13) complaints were investigated. However, referrals were made to KMA where necessary. Seven (7) of the complaints were on sanitation and two each on noise pollution, water pollution and mining related pollution.

The Minister of Environment and Science paid a familiarization visit to the Region. The Executive Director of EPA, officers from the Regional Programmes Division and the Mining Department, and members of the media formed part of the Minister’s entourage.

The team visited the regional EPA office, Royal Park Hotel/Restaurant, Specialized Timber Products, Guinness Ghana Ltd., Environmental Monitoring Station (EMS) and the site for KMA’s Oxidation pond at Ahinsan. Other areas visited were the Asafo Sewage Treatment (Stabilisation) Plant, the KMA final faecal waste disposal site and a dam constructed by the Crop Research Institute, Fumesua.

The Regional World Environment Day celebration took place at Akumadan in the Offinso District of Ashanti on July 18th, 2001. The Akumadan area was chosen for the activity due to the fact that inhabitants of Akumadan and its environs are mainly vegetable farmers who use a lot of pesticides. There are a number of reports insinuating a precarious situation with pesticides.
A programme to monitor dealers in pesticides was undertaken. It was realised that the majority of the dealers had no licenses and there was also the influx of adulterated pesticides on the market. A programme is being developed with the Kumasi Metropolitan Assembly and the Police to arrest the situation.

**Brong Ahafo Region**

Eleven Senior Secondary Schools (SSS) in Tano and Berekum districts, benefited from the environmental education programme on waste and quiz competition on ozone layer depletion. The office organised a symposium for women fellowship of Calvary Methodist Church in Sunyani under the theme ‘Saving the Environment, Our Social Responsibility’. Over twenty communities in seven districts namely Sene, Wenchi, Asunafo, Techiman, Tano, Asutifi and Sunyani districts were educated on environmental issues including water resource depletion and community role and participation in environmental protection.

The office embarked on proactive inspections of selected industries, health institutions and projects to assess their waste and effluent management as well as general compliance of environmental regulations. Industries visited were Mim Agro-Processing Industry, Tano Clay Product Factory, Ghana Water Company Limited (GWCL) Sunyani, Anum Forest Product Ltd., and Mim Timber Company.

Rivers Tano, Pru, Tain and Subin were monitored for some physical and chemical quality parameters. The pH values remained relatively constant for all rivers sampled. There were high turbidity figures for rivers Tano and Tain, as these rivers naturally have clay beds. Yet the introduction of storm water might have also contributed to the rise in turbidity.

A total of 31 applications for environmental permits were received. Twenty-five (25) of the applications came from the health sector. Others were car washing bay (2), mining (1), agro-processing (1) and forestry (2). Four (4) health related applications, two (2)-fuel/LPG filling station and two (2) from the mines received environmental permit. The others are at various stages of the EIA process.

A total of twenty (20) complaints were received. The complaints included air pollution (3), unauthorised siting of structures (1), degradation of watershed and water pollution (11), land degradation through sand and stone winning (2) and indiscriminate waste disposal (1). Two other complaints were on settlement problems. Twelve (12) of the complaints are still under investigation whilst eight have been resolved.

The year’s regional celebration of World’s Environmental Day (WED) took place at Atebubu. There was a tree planting exercise carried out by volunteers from the local NADMO and local NGOs. In all about five hundred (500) tree seedlings were planted. The Regional Minister unveiled the Regional Co-ordinating Council’s (RCC) plan to replant trees along the Tano river catchment area and the determination of the RCC to reduce bushfire incidence in the region this year by at least 75 per cent.
Central Region

Environmental education is one of the major activities embarked upon by the office. Radio Central FM is used in reaching out effectively to the people. The office participated in radio discussions on environmental issues dubbed ‘Kotokuba Special’ every Thursday afternoon on Radio Central FM. The office delivered lectures and talk in three (3) basic schools, five (5) secondary schools, two (2) tertiary institutional programmes and two (2) community programmes.

The office embarked on a number of monitoring programmes aimed at ensuring compliance with environmental standards by developing undertakings.

Five (5) monitoring visits were paid to the old mining sites of GISHCO Mining Company at Twifo Mampong to assess reclamation works by the company. Eight (8) visits were also paid to the company’s new mining site at Assin Asamang to assess the company’s level of compliance with environmental regulations.

Monitoring visits were undertaken to communities near the operations site of Cape Coast Quarry Ltd. to assess the degree of damage caused by vibrations from the blasting activities of the company.

The office visited wood processing industries in Nyankomasi Ahenkro to find out whether their operation are environmentally friendly. The office also visited two sand and stone winning sites, one hotel and two manufacturing companies to assess their compliance with environmental regulations.

The office received forty-one (41) EIA applications. Nineteen (19) of the applications were from the health sector, six (6) from tourism, nine (9) energy sector, from (4) from the mining sector and three (3) from the manufacturing sector.

The office received seventeen (17) environmental complaints from the public and other agencies. These were investigated and appropriate measures taken to deal with the situation. The complaints centred on noise pollution, sand winning along the beach, nuisance created by sand and stone quarries and unsanitary conditions. Others are sanitation projects, illegal mining and oil spillage on the sea.

The office carried out a number of activities to mark World Environment Day celebration. The office carried out a tree-planting exercise in collaboration with World Vision International at Assin Mesomgor, Assin Tontokor, Assin Abease, Assin Amoabeng and Assin Dossi. A symposium on environmentally related issues was organised at the Assembly Hall of Twifo-Hemang Lower-Denkyira District Assembly.

Eastern Region

Two associations of sand and stone winners made up of about 50 members each benefited on better ways of land reclamation and reafforestation. Three hundred (300) members of
two environmental clubs of SDA Training College-Koforidua (GEO and Nature Club) were educated on deforestation and environmental pollution of water and air. Seventy (70) students of JSS/SSS were educated on similar issues.

Thirty-five (35) dealers in agrochemical products were registered under Act 528 after a day’s seminar with the association. Also over 500 members of Community Environmental Protection Brigade were conscientised on various environmental issues during their induction course in Kibi and Asamankese.

The office made ten (10) visits each to MED Mining Company at Dochi and Akosombo Textiles Limited at Akosombo to collect water samples for analysis. Twenty (20) visits were made to eight (8) mining companies to verify their level of compliance with environmental regulations and laws. These companies are Kibi Goldfields Limited, Kibi, MED Mining Company, Dochi, Ghana Consolidated Diamonds, Akwatia, Sian Goldfields, Essase, Bayat Mining Company, Agyapoma, Karouchi Mining Company Limited, Awaham and Akoko Goldfields, Kibi.

The office received fifty-nine (59) applications on environmental assessment. Twenty-four (24) of the applications received environmental permit and thirty-five others are at their various stages of processing. Sixteen (16) from the health sector, eleven (11) from the hospitality industry; fourteen (14) from the mining sector including sand winning and quarrying; and two (2) each from the manufacturing and agricultural sectors. There were also thirteen (13) LPG/ Fuel applications and one (1) car washing bay application.

A total of twenty-five (25) complaints were received. Seventeen (17) of these complaints were resolved. The complaints centered on such issues as noise, water, odour pollution, land degradation, nuisance generated by mining activities and improper siting of projects.

The World Environment Day celebration was held at Kotoso near Kwahu Tafo in the Kwahu South District. The celebration was to help create environmental awareness in the area of watershed management.

The third year of the implementation of the pilot project (ADRA- GH “Food for Work” programme) saw the addition of 30,000 tree seedlings to the current stock of 428,633 trees. The communities covered were Densuana (3,500), Kentenkren I (2,600) Kentenkren II (8,500) and Dawa (5,400). Total number of seedlings planted currently is 458,633 with a survival rate of about 90%.

**Greater Accra Region**

The office organised environmental education programmes for students of Community Health Nurses School, Amasaman Wildlife Club and La Youth Environmental Club. The office
also hosted the Ga District Assembly Children's Education Fun Club who interacted with staff of the office on a number of issues on the environment.

The regional office has been able through compliance monitoring to make a number of projects within the region register with the Agency for permitting. The office visited seventeen (17) energy services, ten (10) hospitality industries, nine (9) wood processing, thirteen (13) construction and eight (8) manufacturing sites.

A total of forty-six (46) environmental assessment applications were received out of which thirty-three (33) were screened for permit. The rest thirteen (13), are pending submission of various attachments by the proponent.

Twenty-nine (29) environmental complaints were received, out of which, 17 were successfully investigated and appropriate recommendations made to the relevant implementing agencies. The rest would be pursued vigorously during the next quarter.

This year’s World Environment Day was celebrated at Dodowa in the Dangme West District of the Greater Accra Region. The occasion was followed by tree planting activities at degraded land sites in the District. The occasion was the beginning of a concrete programme the office launched to reclaim degraded sites in the District through reafforestation.

**Tema District Office**

The Tema office was established in May 2001 to be responsible for the proactive/routine monitoring of large-scale industries in Tema municipality (industries outside the Free Zones enclave). The office has as one of its initial tasks, the generation of data on industries in its area of jurisdiction.

As part of the office’s environmental quality monitoring, copies of environmental monitoring forms (EM1) were sent to a number of industries for them to submit monthly environmental quality monitoring returns to the Agency.

A joint monitoring exercise was undertaken with the Environmental Quality Department, head office, to sample effluent discharges from the Ghana Agro Food Company Ltd., Pioneer Food Company Ltd., Lever Brothers Ghana Ltd., Tema Lube Oil and Ghana Cocoa Processing Company Ltd. for analysis.

The parameters considered were chemical oxygen demand, total phosphorus, pH, dissolved oxygen, conductivity, nitrate-nitrogen, biochemical oxygen demand and sulphate.
Visits were made to twenty-two industries to verify their environmental management performance. The EPA officials discussed with environmental officers and management of the respective industries their observations and gave necessary recommendations. The industries were advised to submit their monthly return to the Agency. Others were also advised to submit their annual environmental reports and their environmental management plans for the period 2002 – 2004.

Copies of manufacturing industry registration forms were sent to nine (9) companies to be completed and submitted to the Agency. The office assisted in the review of the environmental management plan of two industries and environmental impact statements of two proponents.

The office dealt with five (5) environmental complaints that centered on oil spillage, air pollution and noise pollution.

The office updated the list of active environmental NGOs in the Tema Municipality. This is to enable the Agency to provide technical assistance to the NGOs in the implementation of their programmes.

Under the auspices of the United Nations Environmental Programme (UNEP) questionnaire were administered in connection with 4th International Children’s Conference on the environment, Victoria, Canada, May 21 – 25, 2002 to selected schools within the Tema Municipality. The object of the survey was to assess the perception of the children on environmental issues.

**Northern Region**

The EPA in collaboration with the UNDP Ghana Capacity 21 Programme trained five (5) communities including Jagriguyilli, Apelliyilli, Yagba, Chirifoyilli, Taalli and four NGOs all in the Tolon-Kumbungu District, in various environmental conservation techniques.

In 2001, environmental education in schools was redirected to seven districts including Tamale, Tolon-Kumbungu, West and East Gonja, East and West Mamprusi, and Yendi Districts. Eighteen (18) schools including second cycle, primary, J.S.S., and religious (Arabic/English) schools were educated.

A number of compliance monitoring activities took place within the region. Areas visited included illegal winning of gravel sand and clay in some areas of Tamale Municipality; Nulux plantation/ cotton processing industry, Tamale; Kassadjan - shea butter processing factory, Tamale; and fuel stations Yendi and Tamale.

A number of development projects and undertakings were inspected to ensure compliance with environmental standards. The projects included construction sites, manufacturing
companies, Tamale waste disposal system and municipality roads. A total of thirty-three (33) rehabilitated gravel and sand pits formerly used by Taysec Construction Limited for various roads works, were inspected.

The EPA regional office received five (5) environmental complaints. Whilst three (3) were investigated and resolved, two (2) others needed further action and therefore under investigations. Three (3) of the complaints were on poor environmental sanitation and one (1) each on air pollution and environmental destruction.

The regional celebration of the World Environment Day was held at Yapei in the West Gonja District on Tuesday 11th December 2001. The theme for the local regional celebration of WED was “Water is Life: Protect it”. The regional WED focused on water resources management and the role of civil society in protecting and preserving dwindling environmental resources. The Agency collaborated with the Ghana National Fire Service (GNFS) in training fire volunteers and educating communities and school children on the need for bush fire prevention.

In collaboration with the UNDP/Ghana Capacity 21 Programme six (6) schools and eight (8) communities in the Tolon-Kumbungu District undertook different afforestation programmes. The EPA in collaboration with Ministry of Food and Agriculture and Radio Savannah, Tamale, educated farmers on the correct use of agro-chemicals and pesticides through radio outreach programmes.

The EPA held two regional network meetings. The meetings were basically aimed at collating views from members and addressing certain key recurrent environmental problems within the region.

During the first meeting, certain key papers including the state of the environment in the Northern Region, current update of the Savannah Resource Management Project (SRMP), desertification control and water resource management were presented.

The second meeting focused on the bushfire situation in the region and concrete suggestions on the way forward, siltation and early drying of water bodies in the region and sanitation situation in communities and what can be done. These papers were presented by selected members of the network and discussed in detail. Appropriate recommendations on the way forward were transmitted to the Regional Co-ordinating Council for further action.

**Upper East Region**

The office organised lectures and public awareness talks in twenty (20) schools in the Bolgatanga and Bongo Districts. The lectures/public awareness programmes centred on such issues as ozone layer depletion, environmental pollution and sanitation and the role of
the youth in addressing sanitation. Under the UNDP/ Ghana Capacity 21 Programme, the office inaugurated ten (10) environmental clubs in junior secondary schools and one (1) in Sandema Senior Secondary School.

The office undertook five (5) radio programmes. The programmes discussed such issues as children and the environment; women and development; environmental management; and the role of religious organisation in environmental management. The office held five (5) communities meeting and formed Community Environmental Management Committees (CEMCs) at Sherigu and Pwalugu in the Bolgatanga District.

The office received fifty-nine (59) applications from proponents. Thirty-six (36) of the applications were from the agriculture sector and specifically on irrigation projects. All have been issued with permits. The rest of the applications were eight (8) mining projects, six (6) energy sector projects, five (5) social sector projects and four (4) health sector projects.

The office handled three (3) complaints on environmental issues. These were on the siting of a fuel filling station near a football field, the construction of a drain across an access road, and the alleged destruction of the Tenazuk Hills at Tongo by Granite and Marbles Company Limited.

With the support of the Savannah Resource Management Project (SRMP), the office conducted three (3) quarterly meetings of the Regional Inter-Sectoral Network. Issues discussed included mining activities in the region; relocation of a landfill site; anti-bushfire campaign; and general environmental problems in the region.

The regional celebration of World Environment Day took place at Binaba in the Bawku West District on the 25th of July 2001. Activities included tree planting exercise at Binaba, Zebilla Health Centre and the premises of the Bawku West District Assembly. A durbar at Binaba to mark the day was attended by the chiefs and people of Binaba and surrounding communities, schools children, decentralised departments of the District Assembly, NGOs, the Bawku West District Assembly and the general public.

**Upper West Region**

A total of 61 communities and a school were visited and various environmental messages delivered. The mass media was used to inform the public on environmental issues. EPA has an airtime on the local FM radio station (Upper West Radio) on its weekly programme on environmental protection of Fridays in the local language “Zei-Veeln quluyele”. A number of development projects were inspected including road works. The office also conducted routine water quality test and surveillance on water bodies for possible siting of aquatic weeds (water hyacinth).
A research on charcoal burning in the Upper West Region was conducted. The survey covered forty (40) communities in the region. It was established that charcoal burners used economic trees especially shea butter trees.

A total of seventeen complaints were received during the year. Fifteen of them have been investigated and resolved. Two have been investigated and referred to the Wa District Assembly and the District Security Council for further action. All the complaints centred on encroachment on protected sites, tree felling, sand winning and mining.

The office conducted screening on seven proposal projects for the purpose of obtaining environmental permit. Three projects being mineral processing, fuel refilling station and a warehouse obtained environmental permit to commence work. One proposed 60-room hotel project registered and preliminary environmental assessment is being conducted by the proponent for consideration by the Agency.

EPA Upper West Region networks at the regional, district, community and institutional levels. At the regional level, the office is a member of regional sub-committees such as the Regional Population advisory Committee, Regional Planning Coordinating Unit, Regional Road Monitoring Team and other sub-committees of the Regional Coordinating Council (RCC).

The office also succeeded in the establishment of District Environmental Desk office in the Lawra and Jirapa Lambussie District Assemblies. The office also succeeded in the establishment of community environmental management committee in one hundred and twenty (120) communities in the region.

Volta Region
The EPA office, the management of Volta Premier FM (a local radio station) and the Ho Polytechnic chapter of Friends of the Earth (FoE) instituted a weekly radio discussion on environmental management.

Two awareness creation programmes were organised for the senior and middle level management of Juapong Textiles Limited. The office participated in the “Thinking Day” celebration of the Girls Guide Movement. The occasion was used to reiterate the importance of the involvement of young people in the environmental management.

The office, engaged in some monitoring activities. These have mainly been in the area of on-going infrastructure development projects such as, the Kpando–Abotoase Road project being undertaken by Messrs Bilfinger and Berger and the Sogakope – Ho – Fume Road Project being undertaken by Messrs FWAL. It was, for instance, observed in both cases that, it is not all the commitments made in their EIS that are being implemented / adhered to.
The office received fifty-one (51) EIA applications. Six (6) of the applications were from the hospitality industry, four (4) in the energy sector, two (2) on infrastructure development and one (1) from the forestry sector. Twenty-eight (28) of the applications were on the registration of maternity homes and other health establishments.

The office was also involved in the review of scoping reports and environmental impact statements of the Keta Sea Defence Project, Diamond Cement Factory at Aflao and Ho township roads project.

The office got involved in the resolution of four (4) environmental complaints. Two (2) of the complaints centred on illegal sand-winning activities in the Sokode-Bagbe in the Ho District and the other on the operations of Diamond Cement Company Ltd. and in-sanitary conditions around residential premises.

The region successfully hosted the southern sector celebration of the International Day for the Preservation of the Ozone layer. The main activity for the day was a quiz contest involving five (5) second-cycle institutions selected from the Volta Region. As part of activities to mark this year’s International Population Day in the region, the office in collaboration with the Regional Population Advisory Committee participated in three (3) radio discussion programmes in Ewe, Twi and English respectively on the theme “Population, Environment and Development”.

The office in the month of December collaborated with the Adventist Development and Relief Agency (ADRA) with regards to a 5-year food security programme that the latter is about to initiate in the southern part of the Volta Region. The programme, which has the promotion of afforestation and agro-forestry as one of its major components, is to cover South Tongu, North Tongu and Akatsi Districts.

Upon a request made to the office by the regional office of Customs Excise and Preventive Service, the office supervised the destruction of 125 cartoons of frozen chicken parts carried out on the 18th of September 2001 at the final disposal site of the Ho District Assembly. The method employed for the disposal was burning.

**Western Region**

The office collaborated with other organisations in organising training programmes for their workers. These organisations included Ricerca e Cooperazione, Takoradi Cement Works and Friends of the Nation. The office also used the local FM Radio Station for environmental education programmes on population, development and environmental management.
As part of the GHANA/UNDP Capacity 21 programme, the office organised training programmes and established environmental clubs in schools at the Juabesobia District.

The Volta River Authority (VRA) Takoradi Thermal Power Project organized oil spill exercise to assist the company to gather enough data to draw up a comprehensive contingency plan for oil spill. At the preparatory meeting for the exercise, the VRA was urged to complete at least a draft oil contingency plan for review and test by the end of the year.

The office carried out sampling and physico-chemical analysis of water from EPA designated sites, being four (4) coastal sites, seven (7) riverine sites, one (1) estuary and one (1) well during the first, second and fourth quarters of the year.

The office received thirty-nine (39) environmental impact assessment applications. The mining sector recorded sixteen (16), the health sector ten (10), the energy sectors recorded four (4), the hospitality industry recorded two (2) with manufacturing, agriculture and the timber/wood processing sub sector recording one (1) each.

Two public hearings were held for Cyanide Processing Plant and Mining at Dead Man’s Hill by Satellite Goldfields Limited.

A public hearing was held in connection with the proposed sodium cyanide repackaging and transportation project at Sofokrom. The reaction from the public to the project was adverse. The project proponent was therefore given three (3) options; to select another site for the project, conduct an environmental assessment for the project or import cyanide in sturdy containers.

The office handled fifteen (15) environmental complaints that centered on nuisance caused by mining companies, odour nuisance, noise pollution, smoke nuisance and land degradation. Two of the complaints concerned the spillage of cyanide by two (2) large-scale mining companies in the region, Goldfields Ghana and Satellite Goldfields.

The year’s World Environment Day was held at Princess Town in the Ahanta West District. The Western Regional Office and the local planning committee of the Ahanta West Assembly together organised the day. The event showcased the success of an environmental project on the restoration of some coastal lagoons and provision of amenities to the Aketekye and Princess Town communities.
**Tarkwa District Office**

During the year the office visited five (5) basic schools and two (2) secondary schools for environmental education and two (2) schools namely Tarkwa Senior Secondary School and Goldfields School Complex had their environmental clubs inaugurated.

The office organised a field trip for two basic schools to the mining site of AGC (Iduapriem) and donated tree seedlings of different species totalling one hundred and fifty (150) to environmental clubs for planting around their schools.

A radio talk show programme on the local FM radio was organised to educate the population in the district on the activities of the Agency. Issues discussed included mining and the environment, environmental impact assessment, Environmental Protection Agency Act 1994, Act 490 and Environmental Assessment Regulations LI 1652.

The office sampled water from eight (8) water bodies made up of rivers, boreholes and streams for physico-chemical analysis. The high volume sampler (PM 10) installed at the Tarkwa Government Hospital is still being used to monitor the extent of particulate matter pollution in the Tarkwa environs. This exercise is done in collaboration with the KNUST–School of Mines making use of their Environmental and Safety Section.

As part of its routine monitoring exercise, the office visited eleven (11) mining companies in the district. The monitoring exercise was in the form of discussions with mine management, field verification and community visits.

EPA Tarkwa carried out a survey on mining communities in conjunction with the regional office on the status and sufficiency of drinking water, availability or otherwise of farmlands and incidence of diseases (water/ airborne) and other issues against the background of reports in the dailies and also activities of NGOs.

The office also paid monitoring visits to four exploration companies that the Agency issued environmental permits during the year. The activities of twelve (12) other establishments in the district were monitored during the period of reporting. They range from laboratories, explosive manufacturing workshop, timber firms and oil extraction. Specific areas of environmental concern during the exercise were liquid waste streams, emissions into the air and solid waste management as well as general house keeping.

Sixteen (16) environmental assessment applications were received during the year. Nine (9) of the application were from the health sector, five (5) from the mining sector and one (1) each from the manufacturing and health sectors. Seven (7) of the applications received environmental permit whilst others are at various stages of the environmental assessment process.
CHEMICALS CONTROL AND MANAGEMENT CENTRE (CCMC)

The main objective of the centre is to protect human health and the environment from the effects of indiscriminate and inappropriate use of chemicals. These are done through evaluating and registering of pesticides and chemicals to ensure they are suitable for designated use and properly handled and labeled; and also licensing of pesticides and chemical dealers to ensure proper distribution, handling and storage of chemicals.

Achievements in 2001

- Chemical and Meat Clearance Permits Issued;
  Annual certificates – 162           Single Imports for Agro-chemicals – 126
  Supplementary certificates – 19 Single Imports for Industrial/Consumer Chemicals – 860

- Routine Monitoring/Inspection
  Samples of imported industrial raw materials, fertilizers and meat products were taken and analysed before issuing clearance permits.

- Pesticides Registration
  Importers or Manufacturers of Pesticides -11
  Distributors or Sellers -71
  Pest control operators-43

GENERAL ADMINISTRATION DEPARTMENT

Staffing

The staff of the Agency increased from 74 in 1991 to 260 in 2001 an almost 300% increase in a decade. Staff are classified into management, senior and junior categories. Management posts are those of Deputy Directors, Directors and the Executive Director. Senior staff positions start from Administrative Assistant and end with Senior Programme Officer post. Junior posts start from Labourer to Senior Clerk.

Members of staff are also classified based on the nature of the job performed. In this classification there are two broad categories - Programme Staff and Non-Programme Staff (Administrative Staff). Programme grade staff are technocrats whose work deals mainly with all aspects of environmental management and education. Administrative staff on the other hand are bureaucrats, dealing with the management of the Agency as a whole, to provide supporting services to the technocrats to do their job.
Total staff strength as at December 31, 2001 is detailed as follows.

<table>
<thead>
<tr>
<th>Location</th>
<th>Programme Grade</th>
<th>Non-Programme Grade</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head Office</td>
<td>71</td>
<td>101</td>
<td>172</td>
</tr>
<tr>
<td>Training School</td>
<td>1</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Regions</td>
<td>33</td>
<td>49</td>
<td>82</td>
</tr>
<tr>
<td>Total</td>
<td>105</td>
<td>155</td>
<td>260</td>
</tr>
</tbody>
</table>

The ratio of regional staff to staff at Headquarters is 1:2. Comparing programme staff to non-programme staff the ration is 1:1.5.

Approved Staff Establishment

In 1991, Price Waterhouse Associates conducted a management study into the capabilities of the Agency. It was then decided that the then Environmental Protection Council should be restructured into an Agency with its present organisational structure. The staff strength needed to perform effectively was then agreed upon. That figure was 400 to be achieved over a five-year period.

In sum total the establishment of the Agency is as follows:

<table>
<thead>
<tr>
<th>Programme Grade</th>
<th>Number</th>
<th>Non-Programme Grade</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Programme Grade Posts</td>
<td>232</td>
<td>Non-Programme Grade Posts</td>
<td>168</td>
</tr>
<tr>
<td>Number at post</td>
<td>105</td>
<td>Number at Post</td>
<td>155</td>
</tr>
<tr>
<td>Vacancies</td>
<td>127</td>
<td>Vacancies</td>
<td>13</td>
</tr>
</tbody>
</table>

Reasons for not Achieving full Establishment

The inability to have a full complement of staff within the Agency since 1991 include: Lack of financial allocation to employ additional staff, High staff turnover, Low level of job satisfaction. Low salary levels. Non-existent incentive packages, and Lack of political will to raise the environmental agenda to the topmost priority.

**FINANCE DEPARTMENT**

The Department’s primary objective is to ensure that the EPA applies acceptable financial management practices to all aspects of its use of and accounting for all funds and also to ensure that the EPA fulfils its fiduciary responsibility to financing institutions.
Sources of Income

The Agency's financial resources come from Government subvention, external funds and internally generated income.

The National Environment Fund was established under Part III Section 16 (1) of the Environmental Protection Agency Act, 1994 Act 490. Under sources of money for the Fund, Section 16 Sub-section (2) (b) states, “levies collected by the Agency in the performance of its functions”. The Agency generates revenue from the following sources:

- Chemical Clearance
- Meat/Fish Clearance
- EIA Permitting
- Mining Exploration
- Small Scale Mining Permitting
- Tree Cutting Permitting

There are two categories of “takings”: Permit Fees and Processing Charges.

The permit fees are paid into the National Environment Fund established under Part III Section 16 (1) of the Environmental Protection Agency Act, 1994 Act 490.

The processing charges are retained by the Agency to meet part of the Agency's functional expenditure outlay e.g. stationery, monitoring and inspection, screening of applications, adverts, printing of certificates.

Fees collected and paid into the National Environment Fund Account since opening the account in July 1995 (Social Security Bank Ltd., Main Branch, Kokomlemle) is as follows:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1995</td>
<td>75,887,000</td>
</tr>
<tr>
<td>1996</td>
<td>168,510,000</td>
</tr>
<tr>
<td>1997</td>
<td>184,631,700</td>
</tr>
<tr>
<td>1998</td>
<td>210,803,000</td>
</tr>
<tr>
<td>1999</td>
<td>298,844,000</td>
</tr>
<tr>
<td>2000</td>
<td>795,912,000</td>
</tr>
<tr>
<td>2001</td>
<td>574,907,000</td>
</tr>
<tr>
<td>Total</td>
<td>¢ 2,309,494,700</td>
</tr>
</tbody>
</table>
Payments out of the Fund

Authorised payments out of the National Environment Fund under Section 17 of the EPA Act, 1994 Act 490 have been:

<table>
<thead>
<tr>
<th>No</th>
<th>Activity</th>
<th>Amount (Cedis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Environmental Education, Studies and Investigations</td>
<td>13,500,000.00</td>
</tr>
<tr>
<td>2</td>
<td>Human Resource Development</td>
<td>701,810,471.00</td>
</tr>
<tr>
<td>3</td>
<td>Incentive package for staff of the EPA approved by the former Management board (1998) to forestall the high turnover of professional staff owing to low levels of pay at the EPA</td>
<td>825,074,834.00</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>1,540,385,305.00</strong></td>
</tr>
</tbody>
</table>

Investment in Treasury Bills

Under Section 19 (2) of the EPA Act, 1994, Act 490, part of the fund is invested in 91-day Government Treasury Bills, on a rolling basis. Balance on the Environment fund account less Interest earned on Investment over the last quarter of year 2001 is ¢1,511,210,973.25.

Processing and Administration Revenue

Monies collected and retained by the Agency to support processing administration is set out below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount (Cedis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>187,483,000.00</td>
</tr>
<tr>
<td>2000</td>
<td>751,265,500.00</td>
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<td>2001</td>
<td>504,325,750.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1,443,074,250.00</strong></td>
</tr>
</tbody>
</table>

Messrs Kufuour and Associates, Chartered Accountants, Accra audited the accounts of the Agency for the two years ended 31st December 2001.

Apart from the non-release of funds to carry out Service, the Finance Department has a record of high turnover of professional staff for the obvious reason of low levels of pay at the EPA.
TRAINING SCHOOL

On the 5th February 2001 the EPA Training School became operational following the appointment of a manager. A bilingual secretary was also employed August 2001.

During the first half of the year essential materials, equipment, and services were acquired for the School to function fully as a conference facility. In the second half of the year, hiring packages and a flyer were developed and an aggressive marketing strategy was pursued to sell the School as widely as possible among both government and private sector organisations.

Acquisitions
During the year the School acquired the following:
- 30 plastic chairs and 15 plastic tables
- Double-door refrigerator
- Mobile phone connected to the Ghana Telecom One Touch service for the Manager
- Computer, Printer and accessories

The school hosted ten events during the year and the marketing of the facilities of the School to external agencies is going to be intensified.

OZONE OFFICE—OZONE DEPLETING SUBSTANCES

The office is responsible for the planning and implementation of programmes for phase-out of ozone depleting Substances in Ghana.

Activities undertaken in the year include data collection on ozone depleting substance, awareness creation at Immanuel Methodist Church, interview with TV3, programmes in Upper East, Upper West, Northern, Volta and Brong Ahafo regions and Customs, Excise and Preventive Services training programmes.

Meetings
- National Committee on Ozone Depleting Substance (NACODs) 4
- National Committee on Improved Refrigeration Practices (NCIRP) 2
- National Committee on Improved Flexible Foam Practices (NCIFFP)
- Select committee of the Mobile Air conditioning (MAC) Project
- Joint Project Review Meeting
- Office participated in 5 meetings at national and international level
Three Workshops were held for commercial and industrial refrigeration users, importers and retailers of Ozone Depleting Substances

National Monitoring Programmes covered cold storage facilities and mobile air-conditioning workshops, selected refrigeration workshops, foam factories and chilling systems

Visiting Consultants were received including 3 missions on Refrigeration Management Plan and Phase-out of Methyl Bromide use in Ghana

Six applications for chemical permit were reviewed and approved

GHANA ENVIRONMENTAL ASSESSMENT CAPACITY DEVELOPMENT PROGRAMMES (GEACAP)

GEACaP is a nation-wide EIA Capacity Building Programmes whose objectives are to

- Improve and structured communication an environmental matters between government bodies and EPA
- Build capacity of regional EPA and Planning officers to inform tasks in EIA
- Basic understanding of compliance with and active collaboration in EIA procedure application by all stakeholders
- Improvement of quality and adequacy of EIA Reports by means of enhancement skills of national EIA consultants

Seven workshops involving 235 participants and one-day seminar involving 148 participants were held.


Sector Specific Guidelines Development. Eight (8) Sector Teams inaugurated in October 2001 – Agriculture, Health, Mining, Transportation, Energy, Manufacturing, General Construction and Service

The drafts reports submitted include Final Institutional Capacity and Training Needs Assessment Report, Draft EIA Needs Assessment Reports on the Judicial Sector

2 officers participated in IAIA 2001 and presented papers
CAPACITY DEVELOPMENT AND LINKAGES FOR EIA IN AFRICA (CLEI AA)

Goal: All African countries have working EIA System by 2010
Objectives:
- Improve provision of information to African countries, donor community and national, sub-regional, regional and international organisations
- Harmonise EIA Capacity Development efforts on the African Continent
- Design the long-term sustainability of the initiative and related structures.

Activities undertaken include Steering Committee inaugurated, Website developed, meetings for African countries and sub-regional nodal meeting and Pan African conference held.

INTEGRATED MANAGEMENT OF THE VOLTA RIVER BASIN PROJECT

The project has a secretariat of Regional Coordinator and Secretary. It was established through collaborative efforts of 6 riparian countries of the basin – Benin, Burkina Faso, Cote d’Ivoire, Ghana, Mali and Togo. The Global Environment Facility (GEF) formulation phase started in March 2001 and ends in July 2002.

The objectives are to establish a mechanism of agreement among the riparian countries towards holistic management of Volta River basin, sustainable socio-economic development and transboundary diagnostic analysis of the basin.

Activities:
- Organised 2 workshops for national coordinators and Steering Committee
- Preparation of country reports
- Strategic Action Programme
- National Conference on Lower Volta Environment Impact Studies
- Inter-Agency Workshop on Implementing Integrated Water Resources Management in Africa
- Promoting Water Resources Development in Africa
- Steering Committee Meeting for International Network Data

Funding obtained from, GEF, UNEP and six (6) countries
1.0 INTRODUCTION

1.1 DECLARATION AND STATUTORY FUNCTIONS OF EPA

EPA’s Vision:
An Agency dedicated to continuously improving and conserving the country’s environment in particular.

A country in which all sections of the community value the environment and strive to attain environmentally sustainable development, with sound and efficient resource management, taking into account social and equity issues.

EPA’s Mission
The Mission of the EPA is to co-manage protect and enhance the country’s environment in particular as well as seek common solutions to global environmental problems.

General Approach
The mission of the Agency is generally to be achieved through an integrated environmental planning and management system established on a broad base of public participation efficient implementation of appropriate programmes and technical services, giving good counsel on environmental management as well as effective and consistent enforcement of environmental laws and regulations. The EPA is an implementing agency, a regulatory body and catalyst for change towards sound environmental stewardship.

EPA’s Objectives:
(i) Create awareness to mainstream environment into development process at national regional district and community levels;
(ii) Ensure tat the implementation of environmental policy and planning are integrated and consistent with the country’s desire for effective, long term maintenance of environmental quality;
(iii) Ensure environmentally sound use of both renewable and nonrenewable resources in the process of national development;
(iv) Guide development to prevent reduce, and as far as possible eliminate toxic pollution and actions that lower the quality of life;
(v) Apply the legal processes in a fair equitable and efficient manner to ensure responsible environmental behaviour in the country
(vi) Continuously improve EPA’s performance to meet changing environmental trends and community aspirations.
Statutory Functions of EPA:

Under the EPA Act 1994(490) the functions of the Agency are-

(a) to advise the Minister on the formulation of policies on all aspects of the environment and in particular make recommendations for the protection of the environment;

(b) to co-ordinate the activities of bodies concerned with technical or practical aspects of the environment and serve as a channel of communication between such bodies and the Ministry.

(c) To co-ordinate the activities of such bodies as it considers appropriate for the purposes of controlling the generation, treatment, storage, transportation and disposal of industrial waste;

(d) To secure in collaboration with such persons as it may determine the control and prevention of discharge of waste into the environment and the protection and improvement of the quality of the environment;

(e) To collaborate with such foreign and international agencies as the Agency considers necessary for the purposes of this Act;

(f) To issue environmental permits and pollution abatement notices for controlling the volume, types, constituents and effects of waste discharges, emissions, deposits or other source of pollutants and of substances which are hazardous or potentially dangerous to the quality of the environment or any segment of the environment;

(g) To issue notice in the form of directives, procedures or warnings to such bodies as it may determine for the purpose of controlling the volume, intensity and quality of noise in the environment;

(h) To prescribe standards and guidelines relating to the pollution of air, water, land and other forms of environmental pollution including the discharge of wastes and the control of toxic substances;

(i) To ensure compliance with any laid down environmental impact assessment procedures in the planning and execution of development projects, including compliance in respect of existing projects;

(j) To act in liaison and co-operation with government agencies, District Assemblies and other bodies and institutions to control pollution and generally protect the environment;

(k) To conduct investigations into environmental issues and advise the Minister thereon;

(l) To promote studies, research, surveys and analyses for the improvement and protection of the environment and the maintenance of sound ecological systems in Ghana;

(m) To initiate and pursue formal and non-formal education programmes for the creation of public awareness of the environment and its importance to the economic and social life of the country;

(n) To promote effective planning in the management of the environment;
(o) To develop a comprehensive database on the environment and environmental protection for information of the public;
(p) To conduct seminars and training programmes and gather and publish reports and information relating to the environment;
(q) To impose and collect environmental protection levies in accordance with this Act or regulations made under this Act;
(r) To co-ordinate with such international agencies as the Agency considers necessary for the purpose of this Act; and
(s) To perform any other functions conferred on it under this Act.
2.0 INTERSECTORAL NETWORKS DIVISION

2.1 NATURAL RESOURCES DEPARTMENT

The Natural Resources Department is mandated to provide initiatives and solutions to problems of Natural Resources Management and Conservation; and to provide leadership in developing responsible environmental stewardship. Issues and operational concerns of the Department include the following.

- Forestry and Wildlife Resources Management
- Water Resources Management
- Energy Resources Management
- Land Resources Management

Activities undertaken by the Department in 2001 are presented below.

2.1.1 Forestry and Wildlife Resources Management.

As part of the measures to operationalize the sector-specific Environmental Impact Assessment guidelines for the forest and wood industries, the department has initiated a survey to identify and classify the operators of forest and wood industries within the Accra-Tema area. Forty-six establishments in the Accra-Tema area have so far been surveyed.

The result of the survey would be used to develop screening criteria for environmental impact assessment and form the basis for providing guidance in environmental management of existing industries within the sector.

2.1.2 The Man and Biosphere (MAB) Programme

The Man and Biosphere (MAB) programme is an environmental research programme of UNESCO to promote development oriented research and application of results for enhanced biodiversity conservation and sustainable development, and improvement in people’s livelihood.

The Young Scientist Award winner for 2000 (Ms. Mary Obodai), from the Food Research Institute carried out the study on ethnobotanical survey of mushroom germplasm and its domestication in the Bia Biosphere Reserve. The study identified 21 species of mushrooms within the Bia Biosphere Reserve, 17 of which was used as food by the local people. Five of the identified mushrooms were of medicinal value.

Domestication experiments with a number of the mushroom species were successful. The findings of the study would help improve food security, generate alternative income for the
people and reduce over-dependence on the reserve by people for their protein needs. This would reduce the pressure on the resources of the biosphere reserve.

2.1.3 Biodiversity Conservation

The Department in collaboration with the Legal Department organised a workshop aimed at developing national consensus on the Legal and Institutional Framework for Internalizing all Protocols and Conventions signed by Ghana relating to biodiversity on the 26th and 27th September, 2001.

Participants agreed on the need to establish a national commission on biodiversity as a matter of urgency to coordinate all activities relating to biodiversity. The Agency will liaise with the parent ministry to formulate a strategy for implementing the recommendations of the workshop.

2.1.4 Water Resources Management

The Department undertook a number of water resources management activities; these were in the area of aquatic weed control, algal bloom management; and river basin management.

2.1.4.1 Aquatic Weed Control

As part of the measures to direct aquatic weed control activities, the National Water Hyacinth Control Committee met on the 18th May 2001 to review progress towards implementation of specific activities to control waterweed in the country's water bodies. The meeting reviewed the status of implementation of FAO/GOG project on Biological Control of water hyacinth and observed that project implementation had slowed down due to the transfer of the FAO officer responsible for project coordination. The committee recommended that further contacts should be made with the FAO to speed up the implementation process. Awareness creation posters are being designed for the control of water hyacinth

(a) Biological Control

Modern biological control agent rearing pools have been mounted at the University of Ghana under the FAO sponsored project TCP/RAF/0066(A). Two of the pools have been installed for rearing the bio-control agents for water lettuce and water hyacinth.

During a field visit by the Department, it became evident that the poly-ethylene pools need to rest on concrete floors to extend their life-span. Arrangements are being made with FAO to provide the necessary logistics for constructing the concrete floors.
(b) Aquatic Weed Management in the Fosu Lagoon
Following reports of the infestation of the Fosu lagoon in Cape Coast by the aquatic weed *Pistia stratiotes*, the Department formed a tasked force comprising of EPA, the Water Research Institute, Water Resources Commission, the Hydrological Services Department and the Zoology Department of the University of Ghana to examine the situation and recommend solutions.

The taskforce visited Cape Coast on the 8th February 2001. The team observed that the pistia had been cleared through the efforts of the EPA Regional Office, the Municipal Assembly and NADMO.

The team however found that new weeds such as sea grass and cara, which were hither to not reported in the lagoon, had shown their appearance. These however do not currently pose any threat to the integrity of the lagoon. It was however found out that the lagoon water was grossly polluted as a result of discharge of municipal wastewater into it.

The team had a meeting with officials of the District Assembly as to how best to resolve the pollution problem. Two approaches are being studied namely (i) Ventilation of the lagoon through breaching of the sand bar at the mouth of the lagoon; (ii) An initiative to manage municipal wastewater within the lagoon catchment to reduce the pollution load.

2.1.4.2 Algal Bloom

There was re-occurrence of marine alga bloom in the Jomoro District during the first quarter of the year. It is suspected that the main cause of the bloom is from industrial/agricultural effluent from the Republic of Cote D’Ivoire.

The Agency is seeking the collaboration of officials of the Republic of Cote D’Ivoire in solving the perennial alga bloom problem in the District. The Department prepared a draft programme for a proposed meeting of the technical personnel from Ghana and Cote D’Ivoire to examine a possible technical solution to the alga problem. The programme has been forwarded to the Agency’s parent Ministry for consideration and further directives.

2.1.4.3 State Of Environment Report: Freshwater Resources

The Department is providing leadership in the preparation of state of environment report on fresh water resources. The report is aimed at providing a rational reference for increasing public awareness and understanding of the anthropogenic conditions, and trends that
determine the state of fresh water resources in Ghana. A draft report has been completed and is currently being reviewed.

The report examines the key drivers of the state of fresh water resources, the extent of pressures they impose on the resource and an evaluation of the current state of the resource.

The report when finalized would also serve as a basis for developing policy and institutional actions to conserve fresh water resources, and to facilitate measurement of progress towards sustainability in fresh water utilisation.

2.1.5 Energy Resources Management

A representative of the Department in the company of the Honourable Minister for Environment Science And Technology paid a visit to the premises of Specialized Timber Products Ltd, Kumasi to examine the waste-to energy co-generation project on the 11th April 2001.

The project represents a cost-saving waste-managing and energy generation project that promises to be friendly to the environment. The department is understudying the project for recommendation for replication in other sawmills.

2.1.6 Climate Change Programme

2.1.6.1 Ghana’s Initial Communication on Climate Change

Ghana’s Initial Communication on Climate Change, prepared as part of Ghana’s obligation under the United Nations Framework Convention on Climate Change (UNFCC) was published. The communication reports on the national inventory of greenhouse gas emission sources and sinks. It also identifies national capacity building needs to deal with climate change adaptation in water resources, agriculture and coastal zone. In all 500 copies of the document were printed with 250 copies submitted to the UNFCC Secretariat in Bonn, Germany.

The Department coordinated the development of a project proposal to UNEP under the collaborative support to extend the climate change vulnerability studies for coastal zone and water resources. The project was intended to cover other relevant representative basins (aside the Pra, Ayensu and White Volta basin), and also to undertake a video-assisted-assessment of the coastal zone to ensure a more comprehensive management of the coastal zone.
2.1.6.2 Climate Change Projects

The Agency received approval of two project proposals under the UNFCCC namely;

- Preparatory assistance to build capacity in-country and in industry, in particular, to implement Clean Development Mechanism Project under the auspices of the United Nations Industrial Development Organisation (UNIDO). The project was completed in December 2001. The final report highlighted industry CDM capacity needs, barriers and barrier removal strategies for industry technology transfer and outputs, objectives and activities for Phase III of the program expected to be implemented in 2002.

- Technology Needs Assessment. This programme is being sponsored by GEF/UNDP and still ongoing. The purpose of the programme is to identify climate change relevant technology needs in the energy sector. They should serve as the basis to solicit funding for the implementation of Article 4.5 of the UNFCCC.

Ghana was selected for a two-week pilot study on the synergies between the Rio conventions. This study was organised by the OECD/DAC Task Force on Global Environmental Conventions and ERCC unit. A mission of two from the Netherlands Ministry of Foreign Affairs and the World Resources Institute was in Ghana for the period of the study.

To ensure that Ghana can benefit from the Climate Change Convention, the Department developed a proposal on the establishment of a national commission on climate change. This proposal has been submitted to the Ministry of Environment and Science (MES) for Cabinet discussion and Parliamentary approval.

A Cabinet memorandum on the ratification of the Kyoto Protocol has also been submitted to MES. This memorandum addressed issues like background and justification for ratification of the Kyoto Protocol.

2.1.7 Land Resources Management

Land Resources Management activities undertaken by the Department involve control of tree felling in cities and formulation of programme of action to combat desertification.

2.1.7.1 Tree Felling Permitting

The Department received eleven (11) applications from individuals, private and government institutions to fell a total of eighty-one (81) trees in various parts of Accra. These requests were
meant to either make room for development projects or to avert imminent damage to life and property.

All the applications were granted. The permitting conditions include the planting of some other flora species within the respective premises.

2.1.7.2 Environmental Management Coordination of the Natural Resources Management Programme (EMC/ NRMP)

The EMC/NRMP is a component of the Natural Resource Management Programme, which is being coordinated by the Ministry of Lands, Forestry and Mines. The EMC component is being implemented by the Environmental Protection Agency within the Natural Resources Department of the Agency. The programme is currently in the first phase, which is expected to end 30th June 2002. The activities undertaken under the programme include, Human Resource Development, Regional and District Environmental Information System packaging, Manuals for Environmental Management and Capacity Building, National Framework for Geo-Spatial Information Management (NAFGIM), Land use/Land cover map update, Development of Census Information and National Action Programme to Combat Drought and Desertification.

2.1.7.3 Human Resources Development

The following training programmes were completed

Table 1: Training Programmes

<table>
<thead>
<tr>
<th>No</th>
<th>Course</th>
<th>Country</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Pollution Control Management and Urban Air Quality</td>
<td>Singapore</td>
<td>2-13 July 2001</td>
</tr>
<tr>
<td>1</td>
<td>Mining and Environment</td>
<td>Lulea, Sweden</td>
<td>17th Sept 12th Oct 2001</td>
</tr>
<tr>
<td>(2)</td>
<td>Environmental Inspectorate and Industrial Waste Management</td>
<td>Melbourne, Australia</td>
<td>12 June 2- July 2001</td>
</tr>
<tr>
<td>1</td>
<td>Master of Law in International Maritime Law</td>
<td>Malta</td>
<td>17 Sept-2001 -May 2002</td>
</tr>
<tr>
<td>26</td>
<td>Spatial Information Management</td>
<td>CERSGIS Legon.</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Senior Management Training</td>
<td>Bradford U K.</td>
<td></td>
</tr>
</tbody>
</table>

2.1.7.4 Regional and District Environmental Information System Packaging

Final products for the above were delivered during the second quarter. The information pressed on CD ROM for the ten regions of Ghana and six pilot districts were finalised and
submitted by the Centre for Remote Sensing and Geographic Information System (CERSGIS) of the University of Ghana.

2.1.7.5 Manuals for Environmental Management and District Environmental Management Capacity Building

Outlines for the manuals have been prepared. Design of the manuals were planned for the third and fourth quarter of the year could not be implemented. This was because the reallocation of funds, which resulted from the mid-term review of June 2001, was not sufficient to cover this activity.

2.1.7.6 Land use/ Land cover Map Update

Satellite imagery for the map update was received during the second quarter of the year. Consultancy contract to execute the map updates was signed in the last quarter and work is in progress.

2.1.7.7 Development of Census Information

This component was meant to develop geo-referenced census information for Ghana. The output from this sub-component will greatly enhance planning and development programme in Ghana. The component had been deferred to phase II of NRMP because funding of the EMC component could not adequately cover this sub-component.

2.1.7.8 National Action Programme (NAP) to combat Drought and Desertification

The Department is leading in activities to combat drought and desertification under the environmental management coordination component of the Natural Resource Management Project.

As part of activities under the NRMP, the Department coordinated series of sensitization and consensus building workshops on the National Action Programme on desertification in 25 districts of five regions of Ghana, namely Brong Ahafo, Ashanti, Greater Accra, Volta and Central Region. The workshops were to address some pertinent desertification issues. Some of the common issues were land degradation resulting from improper farming methods, sand winning, commercial fuel wood harvesting and charcoal burning as well as bush fires.
Financial proposals from prospective consultants to develop the NAP were reviewed during the second quarter. A team of consultants was selected and contract negotiation meeting held. The contract was awarded in August 2001. The draft NAP was expected by the end of December 2001. Some delays were experienced on the part of the consultants. A status report was presented in December 2001 and it is being reviewed and prepared for a national forum by the middle of February 2002.

2.1.7.9 Mid-Term Review of NRMP Phase 1

A Mid-Term Review (MTR) of phase 1 of NRMP was conducted between 4-22 June 2001 by the Government of Ghana, donors and other stakeholders.

It was concluded that re-allocation of funds would be made to help sub-components which were deferred to phase 2 due to lack of funds to be completed in phase 1. The sub-component of the EMC, which benefited from this exercise is the land use/land cover map updates.

2.1.8 Review of Environmental Impact Reports

The Department reviewed three scoping reports and four EIA on proposed agricultural and water related projects

2.1.9 External Meetings, Workshop and Conferences

The Department participated in the following external meetings, workshops, conferences and seminars.

2.1.9.1 Geo-spatial Information Management Training workshop

A two-week Geo-spatial Information Management Training workshop was organised by EPA in collaboration with the University of Ghana, for a section of the programme staff from 15-28 January 2001, at the Centre for Remote Sensing and Geographic Information Systems (CERSGIS) Four officers from the department attended the training programme. The participants were taken through various aspects of GIS and GPS application. The course was intensive and helpful. It has enhanced the ability of the officers in their analytical capabilities and presentations.
2.1.9.2 Other Workshops/Seminars/Meetings

The Department organized and/or participated in the following workshops, and meetings:

- Wildlife Resources Management sub-committee meeting of NRMP, held on 16th May 2001.
- High Forest Resources components (HFRMBC) sub-committee meeting of NRMP held on 18th May 2001.
- Workshop on Building Local Government Capacity for Environmental Management, held at the Institute of Local Government Studies, Madina, from 7th-8th June 2001.
- A one-day seminar on Bamboo and Rattan Industry in Ghana organised by the Forestry Commission in conjunction with the Bamboo and Rattan Network of Ghana at Mensvic Hotel on 29th June 2001.
- Presentation of paper on “Climate Change, Energy and Socio-economic” organized by Green Earth Organization, the Ghana Association of Private Voluntary Organizations in Development and the Society For Ecological Conservation at One Day Seminar on Climate Change within the Parameters of the UN Framework Convention on Climate Change held at FAO Conference Hall on 5th July 2001.
- A Four-Day Training Workshop in Environmental Management For Female Staff of MEST and EPA, held at EPA Training Center, Amasaman, 10-13th July 2001.
- Joint Study Coordinating Unit/Steering Committee meeting on African Development Bank-Agro processing Feasibility Study held at the OPMEA Library on 28 August, 2001.
- Amex International meeting on Producers of Horticultural product held at Osu Ebenezer Methodist Church, Accra on 5th November, 2001.
- Energy Foundation Annual General Meeting held at La Pleasure Beach Hotel, Accra on 3rd December 2001.
- Land and Water Management Project Operation Committee (LWMPOC) 18th committee meeting held on 4th September 2001.
- African Conservation Tillage Study Tour
- An officer from the Department participated in a two-week tour on African Conservation Tillage study, which was organised by the Soil Fertility Initiative team of the World Bank from
Ghana, Cote D'Ivoire and Burkina Faso from 10th to 23rd June 2001. The tour provided an opportunity for discussing the achievements to date of Soil Fertility Initiative for sub-Saharan Africa. It also increased the knowledge of participants of the theory and practice of conservation tillage techniques under different agro-ecological conditions for national agricultural services and natural resources management stakeholders.

- The working group and stocktaking meetings of the Guinea Current Large Marine Ecosystem Project held in April 14th - May 7th 2001 to discuss the development of the Tranboundary Diagnostic Analysis for the region. The project, which is supported by GEF, UNIDO and UNEP, if implemented would seek to develop tangible projects for restoration of the health of the Guinea Current Large Marine Ecosystem.

- In July 2001, the Department participated in Part II of the Sixth Conference of Parties in Bonn, Germany. The major outcome was the agreement reached to ensure smooth implementation of the Buenos Aires Plan of Action and that the Kyoto Protocol becomes rectifiable.

- In November 2001, the Department participated in the Seventh Conference of Parties, in Marrakech, Morocco. Ghana was chosen to serve as the Vice Chair of the expert group on technology transfer under Article 4.5 of the UNFCCC.
2.2 ENVIRONMENTAL EDUCATION DEPARTMENT

The country's policy on environment embodied in the National Environmental Action Plan recognises the fact that any intervention strategy for environmental management requires that all sections of the population understand the functioning of the environment and the opportunities and the problems it presents. This requires education, training and awareness creation with which the Department is tasked.

On the basis of the policy on environmental education in the Environmental Action Plan (EAP), the Agency developed a 10 year Environmental Education Strategy for Ghana. The Department continues to implement the strategy. This report covers the activities of the department under the following headings: Public Awareness, Networking, Meetings, Outreach and other programmes, Problems and the way forward

2.2.1 Public Awareness

2.2.1.1 Indutech 2001

One of the channels of creating environmental awareness in the public is through exhibitions. From 1st to 12th March 2001 the Association of Ghana Industries organised the 5th Ghana Industries and Technological Fair. The Department mounted an exhibition including

i. Photographs showing the major environmental issues in the country
ii. Land use/land cover maps and land suitability map of crop varieties
iii. Environmental impact assessment procedures in Ghana
iv. Procedures for pesticide registration in Ghana
v. EPA publications and handouts about the Agency.

Consequently those who visited the stand were exposed to environmental issues and efforts of the Agency to resolve them. They were also exposed to activities of others to solve their environmental problems and what they can also do to minimise environmental degradation.

2.2.1.2 Eco-Fest 2001

The Department participated in the first ever International Eco Tourism Festival in the country. The event took place from 14th October to 25th October 2001. As part of the programme there was an exhibition and a symposium. The Department mounted an exhibition and organised the symposium. The theme for the symposium was "Impact of Environmental Degradation on
Socio-Economic Development." The main objectives of the Eco-Fest 2001 were to raise consciousness about effects of environmental degradation on economic development and the need to sustain the environment.

### 2.2.1.3 Home Coming Summit

During the period under review, the Government organised a programme dubbed "HOMECOMING SUMMIT". This was an invitation to Ghanaians abroad to come home together with their foreign counterparts to look at the investment potential of the country. As part of the public awareness activity of the Department, an exhibition was mounted to explain to prospective investors the environmental requirements of their business. They were also given environmentally related information that could help them in their business.

### 2.2.1.4 Invitations

During the period under review, the Department honoured invitations by some institutions to deliver talks on various topics.

### 2.2.2 Networking

#### 2.2.2.1 Activities with Religious Organisations

One of the channels of creating sound environmental management awareness identified in the Environmental Education Strategy for Ghana is through religious organisations. This is because in Ghana everybody belongs to one religion or the other. The Agency therefore uses religious organisations to give environmental education to the public. One of the educational programmes for religious organisations is the Arbor Week.

The Department, during the period under review organised Arbor Week in collaboration with religious organisations. The event took place at Dodowa on 16th August 2001. This event coincided with the launching of the Greater Accra Region World Environment Day. Consequently the day was celebrated jointly with the Greater Accra EPA Office.

Dodowa was chosen as the venue because of their degraded land due to sand winning. A tree planting ceremony at Ayikuma to officially launch the Greater Accra World Environment Day and Arbor Week celebrations followed a durbar of chiefs and people of Dodowa.
As a follow-up, a committee to work out a project of afforestation to reclaim the degraded land will be formed. The committee will be made up of representatives from The District Assembly, The Christian Council, The EPA, Land Owners and The Dodowa Traditional Council.

2.2.2.2 Activities With District Assemblies
According to law, District Assemblies are the custodians of the environment in their district. Consequently the strategy of the Agency is to work in collaboration with District Assemblies to manage the environment.

The Department in collaboration with the Inspectorate Department on 22nd June 2001 carried out a public education in the Ashiedu Keteke Sub-Metropolitan. The activity forms part of the implementation of a local initiative to clean the area. The project called Accra Metropolitan Environmental Health Initiative (AMEHI) is being funded by the Department For International Development of United Kingdom (DFID).

2.2.2.3 Activities With NGOs

(a) Compilation of List of Active Environmental NGOs
Environmental NGOs work with the local people in environmental management, because they are in the community and they interact with the people. Therefore the Agency views working with NGOs as very crucial.

About 192 environmental NGOs have registered with the Agency. To keep track of their activities in their areas of operation, it became necessary to compile a list of those found to be active. This list was prepared using available materials received from the NGOs, which had responded to an invitation from the Agency to submit reports on their activities.

A profile analysis has been done and some NGOs have been found to be firmly on the ground. However it was observed that there are other NGOs that are active, but did not respond to the questionnaire while others are still sending their responses even after the deadline. As a way forward a workshop in Environmental Management Awareness Creation will be organised for the active NGOs identified to ensure effective networking and partnership.

(b) Registration of NGOs
As at the close of the year, 13 environmental NGOs have registered with Agency.
2.2.3 Training Workshops

As part of the assistance of the Agency to sector agencies within the context of networking, officers from the Department served as resource persons in series of workshops organised by the Ghana Association of Science Teachers in the Greater Accra Region to enhance environmental education in schools. The theme of the workshop was "Managing the Environment Through Scientific and Technological Literacy". The theme was broken down into pollution and land degradation.

At the workshop teachers were provided with reference materials on the environmental issues to enable them prepare lesson notes. Discussions at the workshop also led the teachers to know how to handle these topics in the classroom.

One hundred and twenty selected teachers from two sub-metros (Ablekuma South, Kpeshie) of the Ghana Education Service were also given orientation in environmental education. The orientation was a prelude to series of environmental education programmes planned for basic schools in the metropolis.

2.2.4 Security and Other Installations

Security posts, checkpoints and lorry parks are badly littered with all sorts of wastes. Since many people use these places they offer channels of environmental education to the public.

The Department, in collaboration with the Built Environment organised a meeting on sanitation for officers at security posts and other installations. As a follow-up of that meeting, the Department had a session with the Greater Accra Regional Executive of the GPRTU during their annual meeting.

The contents of the session included giving of environmental messages on buses/cars before take off, provision of sanitary facilities like litter bins, wash rooms at lorry parks, noise control, vehicular emissions and the need to conserve the environment. Through the interaction the following suggestions were made:

- That GPRTU provide dustbins, at the lorry parks and make sure they are emptied at regular intervals.
- That transport owners provide small plastic bins in buses/cars for use by passengers who drink or eat while on journey
- That the frequency of evacuation of garbage in containers by AMA should be regular
- That people should be encouraged to collect back their litter; especially iced water sellers and send them back to the association of bagged water producers for some incentives.
• That members of GPRTU will avail themselves to be trained in environmental education by EPA so that they in turn will go and educate people at the lorry parks
• That waste could be kept by passengers and disposed of later
• That manufacturers should be involved in the management waste generated by their products
• That hawkers, cassette record sellers etc. who litter and make noise at the lorry parks are not under the GPRTU. Rather they are under the hawkers association and its difficult controlling them.
• GPRTU requested the Agency to organize a workshop for its members on vehicular emission.

2.2.5 Meetings

To ensure effective network the Department organised frequent meetings with relevant sectors. The Department held the first EPA - Religious Organisations Sub-Committee meeting for the year on 28th February 2001. At the meeting the religious organisations agreed to launch the Arbor Week Celebration at Dodowa. At subsequent meetings preparations were made towards the launching of the Arbor week, which finally was held on 16th August 2001.

The Department is also represented on various network committees. There were series of meetings in connection with INDUTECH 2001. The Department was represented at the Award Committee and the Research and the Education Committee of the INDUTECH 2001.

The Department also represents the Agency on the Management of Social Transformation Committee of UNESCO National commission. Two meetings were held on 7th and 15th March 2001. During the meetings a symposium in commemoration of the World Environment Day, 2001 was discussed. The purpose of the symposia was to raise the level of awareness of the public on certain social and environmental issues. The theme of the symposia was "Globalisation and Social Transformation.

The Agency is represented on the Public Awareness Committee of the Water Sector Restructuring Secretariat. The committee held various meetings. These meetings culminated in a seminar for representatives of major stakeholders in the water sector.

The Department also attended the National Steering Committee of the School Health Education Programme. At the meeting, the strategies to harmonise all school health programmes to ensure effective linkage to all stakeholders were identified and discussed. This meeting was followed up with a 3-day workshop at Ajumako in the Central Region. The Department
participated in the workshop and presented a paper on Environmental Education with specific reference to Environmental Sanitation.

The Department held its network meeting on 31st July 2001 and 28th November 2001 where effective ways of more collaboration among the sectoral partnership was discussed. The sectors also presented their reports. It was discussed at the meeting that members do not know strategies of networking and its implication. Consequently it has been decided that a two day workshop be organised for the members of the network. The aim of the workshop is to equip members with skills in networking.

2.2.6 Other Programmes

2.2.6.1 World Environment Day

This year's World Environment Day was launched at Princess Town/Aketekye in the Western Region. The department was involved in the planning and launching of the World Environment Day. As part of the launching, the Department organised a one-day workshop for representatives of various groups at Princess Town/ Aketekye.

(a) Symposium on Globalisation and Social Transformation
In commemoration of the World Environment Day celebration, the Management of Social Transformations, a sub-committee of the Social Science Committee of the Ghana Commission on UNESCO on which the EPA is represented by the Department, organised a symposium on 7th June 2001 at the Teachers' Hall in Accra. The main objective of the symposium was to create awareness in the public, particularly the youth and other stakeholders on the impact of environmental changes on society. The topics treated were:

- Creating Healthy Cities: The Role of Children
- Skills in combating diseases and drugs
- The State of Ghana's Water Bodies and the implications for Socio-economic development.

(b) Launching of Okyeman Environmental Foundation
As part of the celebration of the World Environment, the Okyeman Traditional Council launched its Environmental Foundation. The Foundation was established by Osagyefuo Amoatia Ofori Panyin II to implement measures to manage and develop the environment. The establishment of the foundation falls in line with the implementation of the Environmental Education Strategy for Ghana. The Department planned and facilitated a workshop, which was part of the launching of the foundation.
2.2.6.2  Production of Educational Materials

Department achieved the following in terms of the production of educational materials

• A logo was designed for the Capacity Development and Linkages for Environmental Impact Assessment in Africa (CLEIAA) for use on its website
• Full colour cover design on Ghana's Initial Communication document was designed for the Conventions and Project Implementation Department. A brochure of EIA (L.I 1652) was designed
• The Department co-coordinated and published the January to June 2001 edition of the EPA Newsletter.

During the period the Teachers Source Book in Environmental Education was distributed to some schools in the country to pilot test for one term. Comments from users have been collected and the document will be finalised.

2.2.7 Problems

In the execution of our activities, the major problem encountered was that of funding. Some of our programmes involved large sums of money and therefore could not be funded and was put aside till funding is obtained.

The production of the Newsletter also ran into difficulty, as the Agency does not have page maker and other software for producing the magazine. The Department had to use a private computer for the assignment.

2.2.8 The Way Forward

• The Department has prepared a detailed programme for sanitation awareness creation to be implemented within the Greater Accra Metropolis. To ensure efficiency and effectiveness, the Department is collaborating with the Inspectorate Department in its implementation.
• Simple messages on various themes to protect natural resources are being composed. These messages are intended to be read on the air. The messages are thematic.
• Series of school based environmental education programmes have been planned for basic schools in the metropolis.
2.3 BUILT ENVIRONMENT DEPARTMENT

The main operational concerns of the Built Environment Department cover issues related to settlement planning (including urban/rural settlement problems) infrastructure development, public health, population, gender and disaster management.

2.3.1 Objectives of the Department

The specific objectives of the Department include the following:

- To undertake studies on environmental degradation within built-up areas and recommend strategies and feasible solutions for action.
- To liaise with other organisations in finding solutions to identified problems within the built environment.
- To facilitate the enhancement of the environmental quality in settlements and make them conducive for human habitation.
- To monitor the environment component of government projects in human settlement.
- To investigate complaints on the environment and advise on appropriate solutions to the problems.

2.3.2 Planned Programme Activities for 2001

2. Monitoring of Sewage Treatment Plans.
4. Inspections, Investigations and Reporting on Public complaints.
5. Review of Technical Reports
6. Meetings, Seminars and Workshops
7. Other alignments as directed.

2.3.3 Activities Undertaken

The following activities were undertaken during the period:

2.3.3.1 Preparation of Manual on District Waste Management Plans in Ghana

The promulgation of the Local Government Act, 1993 (Act 462) and the adoption of the Environmental Sanitation Policy (1999) by the Government places enormous responsibility on
the Metropolitan/Municipal/District Assemblies (MMDAs) especially for the management of 
waste. However, due to increased per capita rate of waste resulting from the rapid increase in 
population, growing demands for consumer goods, inadequate qualified and trained staff, lack 
of some basic facilities and equipment, the MMDAs are unable to fully cope with this 
responsibility. In addition, most of the Assemblies have no clearly defined strategies and action 
plans for waste management. It is in this light that the Built Environment Network Committee 
at its last year’s meeting set up a sub-committee to develop a manual to guide the MMDAs to 
prepare their own waste management plans. The preparation of the manual was initiated in 
November 2000 with the following objectives:

(a) To identify solid, liquid and gaseous waste in MMDAs and ensure that specific type of 
waste are segregated into their streams.
(b) To identify source of generation, storage, collection, transportation, treatment and 
disposal.
(c) To identify opportunities for waste minimisation, reuse, recycling and energy recovery.
(d) To evaluate the various waste management options available and plan towards 
implementation of the best options.
(e) To make short, medium, and long-term projections towards waste generation.
(f) To identify sources of financial support and sustainability of waste management plans.
(g) To develop indicators for monitoring and evaluation.

The manual when completed will be used to:

1. Assist MMDAs to prepare comprehensive waste management plan.
2. Organise training-of-trainers programmes on the use of the manual and ensure this 
implementation.
3. Make policy recommendations that will guide MMDAs in improving waste management.

Sub-Committee Meetings

The sub-committee was established with representatives from fourteen (14) 
organisations/including EPA, MES, AMA, MLGRD and Carl Bro. International. The working group 
held eight (8) working sessions to prepare the draft manual. A draft report made up of six (6) 
chapters has been produced. Copies of the draft will be distributed to all relevant stakeholders 
for their review comments early next year prior to a national workshop to finalise the manual.
2.3.3.2 Monitoring of Sewage Treatment Plants (STPs)

Wastewater contains physical, chemical and biological characteristics. These characteristics consist of contaminants such as pathogens, biodegradable organics, nutrients, solids, heavy metals, refractory organics and hazardous pollutants. In Ghana, there is a growing concern over the unprofessional or poor management of sewage. The public is alarmed especially as sewage is potentially harmful and poses threat to human health and the environment.

The volume of sewage generation has increased over the years due to increase in population. However, there has been a corresponding decrease in the provision of storage, treatment and disposal facilities. The situation is more serious in the urban centres. As a result of the imbalance, a situation has arisen whereby the various MMDAs are unable to manage the volume of sewage generated in their respective areas leading to disposal of untreated or raw-sewage into water bodies, public drains etc.

It is in view of the danger that the current practice poses to public health and the environment that the Department in collaboration with the Environmental Quality and Environmental Inspectorate Departments embarked on the monitoring exercise to assess the real situation on the ground and recommend practicable solutions.

(a) Objectives of the Monitoring

The objectives of the monitoring exercise included the following:

- To take inventory of all existing STPS in the country and update the records.
- To create a database for these systems
- To identify operational constraints of managing these STPs.
- To make recommendations on sustainable sewage management.

<table>
<thead>
<tr>
<th>No</th>
<th>Regions</th>
<th>Activated sludge</th>
<th>Trickling Filter</th>
<th>Waste Stabilisation Ponds</th>
<th>Total</th>
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<td>6</td>
<td>7</td>
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<tr>
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<td>4</td>
<td>Volta</td>
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<td>2</td>
</tr>
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<td>-</td>
<td>4</td>
<td>-</td>
<td>4</td>
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<tr>
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<td>-</td>
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<td>15</td>
<td>19</td>
<td>14</td>
<td>48</td>
</tr>
</tbody>
</table>
(b) Recommendations of the Monitoring Programme

The recommendations that emerged from the monitoring programme included the following:

- The EPA, CSIR, GWCL and other related institutions should assess the extent to which ground and surface water resources have been polluted due to the discharge of poorly or untreated sewage into the environment.
- Given adequate land space, the water stabilisation pond constitute an appropriate low-cost option for the biological treatment of larger quantities (>50m3/day) of excreta and separate and can produce effluent capable of meeting EPA standard if properly managed. This may therefore be adopted.
- The EPA should make it mandatory for all plant owners to submit effluent monitoring results every six months.
- All new STPs should be subjected to EIA to determine their efficiency before installation.
- The seriousness of the problem should be brought to the attention of the Government and Policy Makers for immediate redress.

2.3.3.3 Waste Management at Security Checkpoints

The sub-committee on waste management at security checkpoints met three times to discuss issues related to waste generated at these checkpoints.

2.3.3.4 Inspections, Investigation and Reporting on Public Complaints

The Department conducted inspections, investigations and compliance monitoring of public complaints on the environment and offered appropriate technical advice and recommendations for improvement. During the year under review, a total of fifteen (15) complaints and three (3) compliance monitoring were undertaken. The complaint comprised air and noise pollution 6 (40%), sanitation 5 (33%), and sanitation 4 (27%).

2.3.3.5 Task Force on Environmental Assessment (EA)

Two officers from the Department were part of the Task Force formed by the Agency to assist in EA administration for two months at the Regional Programmes Division. The tasks performed include inspections of project sites, attending of in-house screening meetings and Processing of environmental permits.
2.3.3.6 Review of Technical Reports

The following technical reports were reviewed:

- Scoping report on a five-kilometre (5km) Biriwa-Takoradi road expansion.
- Urban Environment Sanitation Project (Odaw Drainage Project lot 2)
- The state of Pan Latrine in the Accra Metropolitan Area.
- Scoping report of the proposed construction of Dimples function, Tetteh Quarshie Motorway Phase II
- Scoping report and draft terms of reference of the proposed reconstruction of last 5km of Biriwa-Takoradi Trunk road.
- Scoping report and draft Terms of Reference of the proposed rehabilitation of Nkrumah Circle to Achimota Neoplan junction.
- Draft final report on Jasikan-Brewaniase road (14km)

2.3.3.7 Meeting, Seminar and Workshop

The Department participated/represented the Agency in the following workshops, meetings and seminars:

- Sustainable Community Based Waste Management
- AMA sub-metro works Department Steering Committee
- Oblogo Landfill task force
- Urban Environmental Sanitation Project
- State of the Kpeshie Lagoon
- Plastic Waste Management
- Aid to Artisans Ghana
- Clean Development Mechanism
- Sub-regional conference on Decentralisation in West Africa.
- Building Local Government capacity for the Environmental Management.
- Community Water and Sanitation (Mole X II)

2.3.3.8 Monitoring of Gbawe-Djaman Waste Dump Site

The Department has been carrying out daily monitoring of the Gbawe-Djaman waste dumpsite.
2.4 MINING DEPARTMENT

The Mining Department is responsible for promoting and facilitating the application of best practices in environmental management throughout Ghana's mining industry. This main objective has been approached through a number of programme activities including the following:

Strict enforcement of all permitting conditions as per the schedule to all environmental permits.

- Regular and effective monitoring of the mining industry including quarries, sand and salt mining.
- Seminars, workshops, lectures, and meetings on the posting of reclamation bond by all mining companies.
- Development of a comprehensive set of practically based regulations and guidelines to give effect to the broad provision of environmental laws in the mining industry.
- Review of all environmental documents.

For the year under review, a series of programme activities aimed at achieving the main objectives of the Department, were undertaken including the following:

2.4.1 Environmental Performance Monitoring

2.4.1.1 Large and Medium Scale Mining Operations

As part of the work plan for the year 2001, the Mining Department monitored most of the major large and medium scale mines in the Western and Ashanti Regions in collaboration with the respective regional offices. The mining companies visited included the following:

- Resolute Amansie Limited
- Midras Mining Company
- Satellite Goldfields Limited
- Abosso Gold Limited
- Goldfields Ghana Limited, Tarkwa
- Ghana Manganese Company, Tarkwa
- AGC Iduapriem, Tarkwa
- Bogoso Gold Limited, Bogoso
- Ghana Bauxite Company, Awaso
- Ghana Consolidated Diamonds, Akwatia

The following facilities were inspected at each of the mines visited:

- Open pits to assess stability of walls and management of pit water.
- Ore processing plants.
- Waste/transitional ore dumps and tailings dam.
- Plant mechanical workshop to assess the disposal of disused oil and discharge of vehicular washing bay effluent.
- Chemical storage and Reclaimed sites.
Random samples from monitoring stations were taken and analysed and interaction with local communities in the catchment areas as well as debriefing of management on the team's field observations were also conducted. The observations and recommendations arising from the monitoring visits were communicated in writing to the respective mining companies for necessary action.

2.4.1.2 Reconnaissance Visits

Reconnaissance visits were undertaken to the following mines:

- AGC (Bibiani) - to assess the condition of the Arsenic Treatment Plant before being issued with a permit.
- Rank Mining Company (Ntotroso) - in connection with the holding of public hearing.
- Abore Mining Company - in connection with the changes in the mining plan to haul ore from Abore Mine for treatment at Resolute Amansie Limited.
- Resolute Amansie - to inspect the tailings facility put in place to accommodate the extra tailings from Abore Mine.
- Satellite Goldfields Limited - in connection with an impending public hearing which was to be held on the operations at Deadman’s Hill and its impact on the Kubekro Community.
- Midras Mining Company - to appraise the extent of operations and reclamation in connection with an impending court case.
- Foso Stone Quarry sites at Gomoa Fetteh, Gomoa Potsin and Gomoa Abonku - in connection with Preliminary Environmental Reports submitted for permit to operate quarries at the named sites.
- Ningo Salt Limited, Prampram, Sege Salt Works Limited, U2 Company Limited, Winneba Salt Industry - to verify some issues raised in the project PERs presented for consideration for the issuance of environmental permits.
- Mpasatia Gold Project by AGC Bibiani Limited - in connection with the proposed gold mining project at Mpasatia and the hauling of ore to Bibiani mine plant for processing.

2.4.2 Investigation of Complaints

2.4.2.1 Quarries

Complaints received from communities and individuals against Bigleb, Sonitra and Peabo Quarries were investigated.
• Bigleb and Peabo Quarries were served with enforcement notice to improve on environmental enhancement measures within 90 days or face permit suspension.
• Sonitra Quarry had already suspended operations.

2.4.2.2 Sand and Stone Winning

Complaints concerning activities of sand and stone winning at the following sites were received by the Department and referred to the Mines Department for the necessary joint action.

• Dadekotopon
• Gbettselli
• Anyaa
• Panbros
• Ofankor

2.4.2.3 Large Scale Mining

Complaints levelled against Abosso Gold Limited by the people of Koduakrom community and against Bogoso Gold Limited by the Dumasi Community were investigated. The companies have been instructed to provide alternative sources of water to these two communities; while the source of water pollution at Dumasi was thoroughly to be researched into and the boreholes at Koduakrom which are in a very bad state are to be repaired.

2.4.3 Special Events

2.4.3.1 Tour of Mines by the Minister for Environment and Science

The Honourable Minister for Environment and Science undertook a familiarisation tour of some mining areas in the Western and Eastern Regions. He was accompanied by staff from the Mining Department. The mining companies visited were;

• Goldfields (Gh) Limited, Tarkwa
• Ghana Manganese Company, Nsuta
• Ghanaian Australian Gold, Tarkwa
• Abosso Goldfields Limited, Abosso
• Bogoso Gold Limited, Bogoso
• Ghana Consolidated Diamonds, Akwatia

The Honourable Minister urged that modalities are put in place to regularise the activities of galamsey operators.
2.4.3.2 Cyanide Spill at Goldfields (Gh) Limited

An incident of cyanide spill occurred at Goldfields (Gh) Limited. This was as a result of a broken joint on a pipeline carrying cyanide solution to the leach pads. The solution eventually entered the Sumang stream affecting aquatic life. Emergency response procedures put in place contained the situation as cyanide levels fell below EPA guidelines level of 0.2 mg/l shortly after the incidence was detected. This included the application of detoxification chemicals such as sodium hypochlorite and hydrogen peroxide and the supply of alternative source of water to the affected communities.

Subsequent investigations revealed constructional failures of bunds to contain the solution within the leach pad area. This has since been reconstructed and areas outside the bounds sloped to the emergency containment pond, to prevent future occurrence of cyanide solution excursion out of the operational area. Aquatic life is back to normal in the Sumang stream.

2.4.3.3 Cyanide Spill at Satellite Goldfields Limited

Another cyanide spill occurred at Satellite Goldfields Limited as a result of a broken T-piece joint in a pipeline carrying cyanide solution, which sprayed into a road adjacent to a nearby wetland close to the containment areas. This was detected very early and emergency response procedures effectively adopted. Investigations later revealed that no aquatic life was affected in the Kubekro stream and that the issue was a minor one.

2.4.3.4 Public Hearing

The following public hearings were held during the year:

- Ntotroso for Rank Mining Company, which had applied for a permit to operate a Gold Mine at Ntotroso in the Brong-Ahafo Region.
- Kubekro for Satellite Goldfields Limited in connection with mining operations at Deadman’s Hill.

Both fora were well attended by the chiefs and people in the catchment area as well as representatives of all government agencies who are stakeholders in the mining industry.
2.4.4 Reclamation Bonds

Negotiations for the posting of reclamation bond by mining companies, which is a legal requirement, were held with most of the mining companies. The following companies have so far fully complied and have posted their bond:

- Abosso Gold Limited
- Resolute Amansie Limited.

Four other companies have posted partial bonds pending final negotiations. These are:

- Ghana Manganese Company
- Ghana Bauxite Company
- Bonte Gold Mines
- Goldfields (Gh) Limited

One problem that is hampering the progress of negotiations is the unwillingness of insurance companies to cover the environmental liabilities of mining companies. Alternative measures are being investigated to enable negotiations to proceed.

2.4.5 Registration of Exploration and Small Scale Mining Companies

The Department received and processed permit applications from 92 small-scale mining companies and 55 exploration companies.

2.4.6 Review of Documents

The Technical Review Committee for Extractive Industry and Energy held 11 meetings at which the following documents were reviewed.

- 23 Environmental Impact Statements.
- 10 Scoping Reports.
- 7 Annual Reports.
- 3 Reclamation Plans.

2.4.7 Workshop/ Lectures/ Conferences

Officers of the Department participated in the following programmes:

- One-day seminar on “Transportation of Dangerous Chemicals” by the Chamber of Mines.
- GEACaP Seminar on Environmental Management for Mining Companies.
- One-day seminar for environmental managers from all mining companies organised by the Chamber of Mines.
2.4.8 Research Activities

The Department in collaboration with local and international institutions completed the first part of the research into mercury pollution emanating from artisanal gold mining in Dumasi in the Western Region. Proposals have been presented for donor funding of the second part of the programme, which includes the dissemination of research results to affected communities and carrying out further research.

2.4.9 Monthly Monitoring Returns and Data Management

The Department received monthly monitoring returns from most of the large and medium scale mining companies. These reported on the following operational areas;

- Water quality
- Solid waste generated
- Emissions to air
- Environmental enhancement measures
- Reclamation activities

These have been developed as a database on water quality and are updated anytime the monthly returns are received.

2.4.10 Categorisation of Mining Companies

All the major mining companies were categorised based on their environmental management practices namely compliance, reporting, reclamation (plans and bond) and responsiveness to social issues. The categories assigned to the various mining companies will be reviewed annually, and are as follows:

Table 5: Mining Companies and their categories

<table>
<thead>
<tr>
<th>No.</th>
<th>Company</th>
<th>Category</th>
</tr>
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<tbody>
<tr>
<td>1.</td>
<td>Aboso Goldfields Limited</td>
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</tr>
<tr>
<td>2.</td>
<td>AGC (Bibiani) Limited</td>
<td>C</td>
</tr>
<tr>
<td>3.</td>
<td>AGC (Obuasi) Limited</td>
<td>C</td>
</tr>
<tr>
<td>4.</td>
<td>Resolute Amansie Limited</td>
<td>C</td>
</tr>
<tr>
<td>5.</td>
<td>Goldfields Ghana Limited</td>
<td>C</td>
</tr>
<tr>
<td>6.</td>
<td>Bogoso Gold Limited</td>
<td>C</td>
</tr>
<tr>
<td>7.</td>
<td>Ghanaian Australian Goldfields</td>
<td>C</td>
</tr>
<tr>
<td>8.</td>
<td>AGC (Ayanfuri) Limited</td>
<td>C</td>
</tr>
<tr>
<td>9.</td>
<td>Ghana Bauxite Limited</td>
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<tr>
<td>10.</td>
<td>Med Mining Company Limited</td>
<td>D</td>
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<tr>
<td>11.</td>
<td>Ghana Manganese Company Limited</td>
<td>D</td>
</tr>
<tr>
<td>12.</td>
<td>Satellite Goldfields Limited</td>
<td>E</td>
</tr>
<tr>
<td>13.</td>
<td>Prestea Sankofa Goldfields Limited</td>
<td>E</td>
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<tr>
<td>14.</td>
<td>Ghana Consolidated Diamond Limited</td>
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</tr>
<tr>
<td>15.</td>
<td>Bonte Goldmines Limited</td>
<td>E</td>
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3.0 OPERATIONS DIVISION

3.1 MANUFACTURING INDUSTRY DEPARTMENT

The Manufacturing Industries Department (MID) undertakes review of Environmental Management Plans (EMPs), Annual Environmental Reports (AERs), Monthly Environmental Quality Monitoring Returns (MEQMRs), Environmental Impact Statements (EISs), Preliminary Environmental Reports (PERs) and Scoping Reports. Other activities include issuance of Compliance and Enforcement Notices, Registration of industries under the Environmental Assessment (EA) Regulations, 1999, (LI 1652), and management of an industrial data base.

3.1.1 Environmental Management Systems

3.1.1.1 Review of Annual Environmental Reports (AERs)

Documents from the following companies were reviewed: Juapong Textiles Ltd, BBC Industrial Company Limited, Takoradi Thermal Plant Ltd, UEE Explosives, The Coca-Cola Bottling Company of Ghana Limited, Centuries Company Limited and Aluminium Enterprise Limited

3.1.1.2 Review of Environmental Management Plans (EMPs)

The Department received and reviewed EMPs from the following establishments:

- Bulk Oil Storage and Transport Company Limited
- Rocksters Limited
- Guiness (Gh) Limited
- Bluesky Products Limited
- Phyto-Ryker Limited
- GAFCO Limited

Other EMPs, which were received but are yet to be reviewed, were from Ferro Fabrik Limited, Tringo Limited, and Naja-Davids Veneer/Plywood Limited.

Three companies (GAFCO, BOST, and Ayiem Oil Mills) have submitted final copies of their EMPs and were subsequently issued with their EMP Permit.

3.1.1.3 Monthly Environmental Quality Monitoring returns

The table below shows the comparison of the number of companies, which have submitted their MEQMRs to the Agency for the year 2000 and 2001.
### Table 6: Submission of Environmental Quality Monitoring Returns (2000-2001)

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<th>Month</th>
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<td>July</td>
<td>21</td>
<td>10</td>
</tr>
<tr>
<td>August</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td>September</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>October</td>
<td>14</td>
<td>12</td>
</tr>
<tr>
<td>November</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>December</td>
<td>8</td>
<td>-</td>
</tr>
</tbody>
</table>

As shown in the figure below, there is a general decrease in the number of MEQMRs submitted to the Agency over the years. There was no difference in the number submitted in the month of June whilst the number submitted in May 2001 is slightly greater than that of May 2000.

![Figure 3.1.1: Submission of MEQMRs by Establishments in 2000 and 2001](image)

Further analysis of the submission on the MEQMRs reveals that most companies were not persistent in the submission of their returns. Volta Aluminium Company (VALCO) is the only company that submits returns regularly to the Agency.
The qualities of discharges into the environment by most companies do not meet EPA guidelines. Three companies, namely VALCO Limited, DANNEX Limited and UEE explosives are however outstanding in their compliance to EPA guidelines.

3.1.1.4 Quarterly Returns

A few companies were requested to submit their environmental quality returns. They include VRA (Aboardze Thermal Plant) and Ghacem Limited (Takoradi) and African Concrete Products.

3.1.2 Registration of Industries

3.1.2.1 Form MI 1 Administration

The Department administered Form MI1 to various companies in Accra-Tema metropolis for the purpose of registering their companies with the Agency. Some companies completed the forms and submitted them to the Agency. The MID office operates within the Accra Metropolis, while the Tema office takes care of the Tema municipality.

3.1.2.2 Verification Visits

Follow-up visits were made to companies who submitted their completed forms (Form MI1) to reconcile the information provided on the form with what pertains on the ground. Twenty-six companies have been visited within the fourth quarter this year. Two companies were found to have folded up.

It has been realized that, with the exception of pharmaceutical companies, most workers in other companies were not properly protected against the hazards of their operational activities.

3.1.2.3 Notice of Registration

Some companies visited have been recommended for registration with the Agency while some have been requested to regularize their establishments with other regulatory organizations such as Town and Country Planning Department. Deserving companies have been requested to pay registration fees varying between $500,000.00 and $3,000,000.00. So far four companies have paid their amounts and have since been issued with their Notice of Registration. Companies that have been issued with Notice of Registration are KGM Industries, Ghana Cartons Manufacturing Company, Hanafi Enterprise, and ACP Limited.
3.1.3 Development of Industrial Database

The Department has compiled database for the processing of MEQMRs, checklist for AERs and EMPs from companies. Database management software has been developed by UNIDO consultants for the Agency. The software was submitted for testing and was found out to be defective. Information has been sent to UNIDO for the necessary redress. A register of manufacturing and service providing industries has been compiled with the assistance of Association of Ghana Industries (AGI), Ministry of Trade and Industries and Ghana Statistical Service.

3.1.4 Investigations

3.1.4.1 World Cool Paper Company

Investigation was made into the operations of World Cool Paper Company at Akosombo to find out whether the company was in production and the type of machinery that was in use. At the time of visit, the company was not in production because their machines had broken down.

3.1.4.2 Plastic Waste Recycling

Investigation was conducted on some plastic companies to find out the extent to which plastic waste recycling was carried out in these companies. Companies visited include Samplastic Products Limited, Gelina Packaging Products Limited, City Wastes, and Creative Plastics.

3.1.4.3 Ayiem Oil Mills

Ayiem Oil Mills at Mpohor was visited to investigate their activities after their EMP was submitted and reviewed.

3.1.4.4 B.S.M.A Company

Invitation was extended to the Agency to inspect a test run of Aluminum dross processing by the B.S.M.A Company. Officers from EPA head office and Tema office went there but production was not in progress.

3.1.5 The Way Forward

The following are recommended for the efficient operations of the Department:

- Conduct orientation programmes for officers in the regions to enable them administer Form MI1s in their various regions;
- Retain files on industries within the Department for easy accessibility and
- Assign a permanent vehicle to the department to ensure effective monitoring of registered companies.
3.2 ENVIRONMENTAL INSPECTORATE DEPARTMENT

The primary objective of the Department is to work with industry, local government and the community to ensure compliance with EPA Act 490 and, in particular, protection of public health and amenity. This objective is enshrined in the Five Year Strategic Plan 1999 – 2003 of EPA. In order to do this, the Department worked in collaboration with other departments of the Agency.

As a result of management’s decision to be more proactive on environmental issues, the Department experienced a slight change in its mode of operation. The Accra metropolis has been divided into six zones with each sub-metro forming a zone. An officer from the department serves as a focal point for each zone. The officer would have an oversight responsibility of the zone, with support from officers from other departments. An overview of the sub-metros therefore forms part of this report.

3.2.1 Investigation of Complaints

The Environmental Complaint Desk under the Inspectorate Department acts as the focal point where all complaints are processed and referrals made to the appropriate departments within EPA or other collaborating agencies for investigations and redress.

During the year, the Desk received 164 public complaints. This figure shows an increase of about 20% compared to that of last year. A summary of the number of complaints referred to the appropriate departments for investigations are shown in Table 7.

<table>
<thead>
<tr>
<th>Department</th>
<th>Referrals</th>
<th>Department</th>
<th>Referrals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspectorate (EID)</td>
<td>105</td>
<td>Environmental Quality (EQ)</td>
<td>1</td>
</tr>
<tr>
<td>Regional Programmes</td>
<td>43</td>
<td>CPID</td>
<td>1</td>
</tr>
<tr>
<td>Mining (MD)</td>
<td>2</td>
<td>CCMC</td>
<td>2</td>
</tr>
<tr>
<td>Built Environment (BE)</td>
<td>8</td>
<td>AMA Sub-Metro</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>164</strong></td>
<td><strong>Total</strong></td>
<td></td>
</tr>
</tbody>
</table>

Out of the 105 complaints referred to the Inspectorate department, 100 were investigated by the close of the year. The offending activities, which are predominantly sited in built-up areas, can be categorized under one or more of the following:

- Small-scale activities, which have expanded over the years and have become incompatible with current land use.
- Small and medium scale activities, which existed in undeveloped residential areas but have now been “caught up” with development.
- Poor waste management practices.
The trend of environmental complaints which was the same as in the previous years raised serious issues about our city planning and management.

Table 8 shows the classification of the environmental complaints investigated. Noise related complaints again ranked highest among the complaints investigated. Some of these complaints were unfounded, others found to have no element of truth or not an environmental problem.

**Table 8: Classification of the Environmental Complaints Investigated**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Nature of Pollution</th>
<th>Environmental Problem</th>
<th>No Investigated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garages and metal repair shops</td>
<td>Noise</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Churches and other religious activities</td>
<td>Noise</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>Spraying, Smoking, Milling of Fish, etc</td>
<td>Fumes</td>
<td></td>
<td>11</td>
</tr>
<tr>
<td>Block moulding/Concrete/Stone products</td>
<td>Noise and dust</td>
<td></td>
<td>9</td>
</tr>
<tr>
<td>Chop bars and night clubs/Music Shops</td>
<td>Noise</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Generating sets, burning, etc</td>
<td>Smoke</td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Quarrying</td>
<td>Noise, dust and land degradation</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Toilet facilities/waste (Solid &amp; Liquid) disposal</td>
<td>Sanitation</td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>Generating Sets</td>
<td>Noise</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Tree Felling</td>
<td>Deforestation</td>
<td></td>
<td>2</td>
</tr>
<tr>
<td>Flour milling</td>
<td>Noise</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

**3.2.2 Compliance and Enforcement**

The programme of activities under compliance and enforcement include:

Compliance monitoring and enforcement of all directives, notices, and prohibition issued under the EPA Act 1994 (Act 490) and Environmental Assessment Regulation 1999 (LI 1652) to various facility operators.

Collaboration with the Legal Department to ensure appropriate responses to violations namely: issue of notices, directives, prohibition, “erection of stop work order” injunction, prosecution and court orders to violations.

**3.2.2.1 Outputs**

The Department responded to various environmental offences and violations to EPA’s Enforcement Notices and prohibitions. A summary of the Enforcement Notices issued during the year is shown in Table 9. Legal actions would be taken against those who did not comply with the Agency’s directives and in some cases those actions have already been initiated but had yet to go to the court.
Table 9: Summary of Enforcement Notices Issued, 2001

<table>
<thead>
<tr>
<th>Date</th>
<th>Type/Nature of Complaint</th>
<th>Enforcement Directive</th>
<th>Partly Complied</th>
<th>Not Complied</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>4/4/2001</td>
<td>City Express/Auto Services</td>
<td>Cessation</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>9/4/2001</td>
<td>Enyidado Services Ltd.</td>
<td>Mitigation measures</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>9/4/2001</td>
<td>Japan Motors, Graphic Road</td>
<td>Cessation, submission of EMP</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>9/4/2001</td>
<td>STC-Vanef, Ring Road</td>
<td>Cessation and Registration</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>9/4/2001</td>
<td>SSNIT workshop</td>
<td>Mitigation measures Registration with Agency</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9/4/2001</td>
<td>Vodi Motors</td>
<td>Mitigation measures</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>9/4/2001</td>
<td>Silver Star Motors</td>
<td>Cessation and Relocation</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>9/4/2001</td>
<td>Osiandan Concrete product ltd.</td>
<td>Cessation</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>12/4/2001</td>
<td>Everstone Concrete products</td>
<td>Cessation</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>18/4/2001</td>
<td>Up-date Drinking Bar</td>
<td>Cessation and Relocation</td>
<td></td>
<td>X</td>
<td>Legal action</td>
</tr>
<tr>
<td>8/5/2001</td>
<td>Sam’s Cottage Hotel</td>
<td>Cessation and Relocation</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>17/5/2001</td>
<td>Central Faith Evangelistic Ministry</td>
<td>Relocation</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>21/5/2001</td>
<td>Life Transformed Church</td>
<td>Cessation</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>28/05/01</td>
<td>Winter Dreams Company Ltd.</td>
<td>Relocation</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>7/6/2001</td>
<td>Effie’s Jazz Club</td>
<td>Cessation</td>
<td></td>
<td>X</td>
<td>Legal action</td>
</tr>
<tr>
<td>4/08/01</td>
<td>Developers around Weija lake</td>
<td>Cessation</td>
<td></td>
<td>X</td>
<td>Consultation</td>
</tr>
<tr>
<td>24/08/01</td>
<td>Ghana Oil Company Limited</td>
<td>Cessation</td>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

3.2.2.2 Civil Court Cases

The Department in conjunction with the legal officers of the Environmental Law Department made a number of appearances at the court in the following cases.

- EPA vrs Everstone Limited
- EPA vrs Lanquaye Lamptey

Details of the above cases are contained in the report of the Environmental Law Department.

3.2.3 Inspections

The Department in conjunction with Manufacturing Industries Department of the Agency also undertook verification exercises of some factories/enterprises, which have submitted registration forms to the Agency. The companies visited were

1. Fan Milk Ghana Limited
2. Domod Company Limited
3. Ghana Breweries Limited, Achimota
4. African Concrete Products
5. Camelot Ghana Limited
6. Dannex
7. Hanafi Manufacturing Enterprise
8. Starwin Ghana Limited
9. Letap Packaging Limited
3.2.4 Reports From the Zones (Sub-Metropolitan Districts of the AMA)

3.2.4.1 Ayawaso Sub-Metropolitan District

The Sub-metro is predominantly residential with in-house light industries and enterprises, characteristic of residential areas in developing countries. The main activities include the following: Hotels, Fuel stations, Fitting shops/garages, Noise making premises (churches, mosques, etc.) Light industries/enterprise (Tie & dye/batik, concrete products, etc.) Schools/Institutions and Car washing bays.

The environmental problems and concerns include
- Oil waste (dirty oil) from fitting shops and service stations
- Noise pollution predominantly from mosques and churches
- Sanitation predominantly in unplanned settlements
- Pollution of water bodies (Nima creek, Dzorwulu stream, Odaw river)
- Flooding in low-lying areas/settlements on flood plains and water courses

3.2.4.2 Kpeshie Sub-Metropolitan District

The area is predominantly residential interspersed with military institutions (Academy, Camp and Range), small, medium and large industries and enterprises, social amenities – churches, schools, entertainment centers.

The main economic activities are entertainment and hotel services including restaurants, bars and beach resorts; Fuel Service Stations, Garages /Fitting Shops, Light/medium/large scale industries including estate developers, Churches/schools, Waste treatment plant, Sand winning along the beaches and Residences – improper siting of toilet facilities,

The environmental problems/concerns are:
- Chemicals from spraying at mechanic workshops
- Noise from religious activities, bars, cassette sellers, lorry stations, etc.
- Discharge of untreated liquid waste into Kpeshie Lagoon and other water bodies.
- Indiscriminate solid waste disposal
3.2.4.3 Osu Klottey Sub-Metropolitan District

The economic activities in the area include fuel service stations, fitting shops/garages, transport stations (lorry stations) and market centers, industries (concrete/roofing, paper products, etc.), hotels/guest houses, churches/schools and large volume of traffic.

The main environmental problems/concerns are:
- Vehicular fumes
- Noise nuisance from religious activities, lorry stations, markets, etc.
- Sanitation
- Flooding in low lying areas

3.2.4.4 Ashiedu Keteke Sub-Metropolitan District

The sub-metro is partly industrial with in-house light industries and enterprises, characteristic of residential areas. The main economic activities include fuel service stations, fitting shops/garages, transport stations (lorry stations) and market centers, industries (South industrial area), hotels/guest houses, churches/schools, large volume of traffic.

The environmental problems/concerns are:
- Oil waste (dirty oil) from automobile industries
- Sanitation predominantly in unplanned settlement
- Pollution of water bodies (Korle Lagoon and Odaw River)
- Flooding in low-lying areas/settlements on flood plains and water courses

3.2.4.5 Ablekuma Sub-Metropolitan District

The sub-metro is predominantly residential with a few commercial and light industrial activities dotting the frontiers of the major streets.

The economic activities in the area include car washing bays, infrastructure set up (churches, stores, warehouse, medical laboratories), Korle-Bu Teaching Hospital, fuel service stations, beach resort such as Korle-Gonno Beach Hotel, small scale industrial activities (moldings of aluminum sheet, welding, spraying), hotels and schools.

The environmental problems are poor sanitation, noise-making and dust-generation.
3.2.4.6 Okai Koi Sub-Metropolitan District

The main economic activities are fuel stations, fitting shops, industrial activities (textiles, food & beverages, plastics & paints, metal etc.) car washing bays, public places of convenience and hotels.

The environmental problems include:
- Dust nuisance from small-scale activities
- Noise pollution predominantly from churches and industrial activities
- Lack of sanitation in areas such as Apenkwa and Nii Boi Town
- Oil waste predominantly from industrial activities
- Industrial pollution (noise, effluent discharge and air pollution)

3.2.5 Achievements

- Data collection on environmental related activities i.e. data on filling stations, churches, industries, water bodies, car washing bays, garages, hotels and guest houses was initiated by the department.
- The Department (EID) assisted the Legal Department to prosecute violators of the EPA Laws and Regulations.
- The Department played a lead role in declaring the hilly areas around the Weija Lake as ecologically sensitive zone. Public notices were thus erected in and around the area to ward off unauthorized developers in the protected area.
- The Department carried out a study on the state of waste oil management in garages.
- The Department was able to achieve collaboration with the public in noise abatement. Dialogue proved a very effective instrument in this direction.
- Through the Department, EPA was able to establish an enhanced collaboration with other law enforcement institutions such as the Police and AMA.
- The focal point initiative has improved the efficiency with which complaints are handled as well as sensitizing the public on their environmental obligation. This has reflected in the increased number of complaints and public confidence in the Agency.
- The Department in collaboration with AMA conducted a joint water quality assessment of domestic pipe and well water in the Ashiedu Keteke sub-metro under the sponsorship of Accra Metropolitan Environmental Health Initiative (AMEHI).

3.2.6 Constraints

Lack of logistics such as vehicles and means of communication gadgets for field work
Lack of regular refresher courses in environmental management
Lack of motivation such as non-payment of field allowance

3.2.7 The Way Forward

Most of the settlements in the sub-metros are unplanned giving rise to the above-mentioned environmental problems. Lack of education and/or lack of understanding of environmental issues are also factors giving rise to these environmental problems. In the planned settlements (e.g. Airport Residential Area, Ridge etc) these problems are almost non-existent. There should, however, be constant monitoring of hotels, fuel service stations and the other projects in the sub-metros to ensure that they comply with the various mitigation and environmental management practices proposed.

Most of the sanitation problems can be attributed to overcrowding and stretching of the sanitary facilities beyond their carrying capacity. Waste management problems even exist in the environs of Ministries and Government Departments. The culture of littering is becoming intolerable and it would be appropriate if legislation were passed to prohibit it.

Lack of environmental awareness, insufficient skips - containers for collecting refuse, and few operational public KVIPs among others, are the main causes of unsanitary conditions in the sub-metros.

Car washing bays are springing up in the various sub-metros at an alarming rate. In certain areas like Dansoman and Awoshie, there is a lot of silt deposition in the drains due to the activities of the car washing bays. The Agency must therefore endeavour to ensure that the activities of these car-washing bays are regularized.

Collaborative work between the EPA, planning authorities and the Metropolitan authorities would go a long way to help achieve a lasting solution to the above-mentioned problems.
3.3 ENVIRONMENTAL ASSESSMENT AND AUDIT DEPARTMENT

3.3.1 Introduction
The Environmental Assessment and Audit (EAA) Department coordinates and facilitates the Agency’s function of ensuring compliance with laid down environmental impact assessment (EIA) Procedures and the Environmental Assessment Regulations, 1999 LI 1652 in the planning and development of large scale undertakings in Ghana.

The primary objective of the Department’s functions is to facilitate environmentally sound development, as an overall support to the traditional planning system, and also for promotion of “preventive” environment management and sustainable development in Ghana. These functions are discharged by ensuring that:

- The environmental implications of proposed undertakings (developments / investments, etc) are fully understood and that the relevant alternatives and mitigation considerations are considered in order to enable appropriate choices to be made (and presented in the relevant Environmental Assessment Report).
- provision is made for the involvement of the public and all other stakeholders in the various decision-making processes to enhance social acceptability of proposed undertakings.
- relevant environmental management systems (for both planning and operational phases) are considered at the earliest possible stages as part of corporate / investment strategy for sustainable development.

3.3.2 Overview of Environmental Assessment Activities for the year 2001
The environmental assessment proposals (applications) considered were under the following eight main sectoral categories:

- Agriculture
- Energy
- Forestry/Wildlife
- Health
- General Construction and Service
- Manufacturing
- Tourism
- Transportation

3.3.2.1 Summary of Environmental Assessment (EA) actions.
A summary of environmental assessment (EA) actions taken on proposed undertakings (proposals) submitted to the Agency is given below:

77 Environmental assessment proposals were registered.
Scoping reports and EIA terms of reference were considered and proponents (consultants) given the required assistance and guidance to carry out satisfactory impact assessment study.

Preliminary environmental reports were considered.

Draft environmental impact statements (EISs) were submitted for review.

Draft environmental impact statements were reviewed.

Final environmental impact statements were submitted for approval.

Proposals covered by final EISs considered satisfactory and granted permits.

Corporate environmental policies were approved

Proposals were approved at the registration stage.

Sets of EIA Public Notices and advertisements were served on 33 proposals in the national daily newspapers as part of public information and review process.

Public hearings were held on six (6) proposals.

The national EIA Technical Review Committee conducted review of environmental impact statements (EISs or EIA reports), scoping reports and preliminary environmental reports. The Committee held fifteen (15) meetings throughout the year and provided guidance and agreement on 39 scoping reports/terms of reference, as well as made recommendations on 33 draft EISs and 8 PERs submitted on proposed undertakings to the Agency.

3.3.2.2 Sectoral Distribution of EA Proposals Submitted and Actions Taken

The sectoral distribution of EA proposals considered and other actions taken at the various EA stages is given below in Table 10.

Table 10: Summary of EA proposals submitted and acted on according to sectors

<table>
<thead>
<tr>
<th>Sectors</th>
<th>Proposals Registered</th>
<th>Scoping Report</th>
<th>P.E R</th>
<th>Draft EISs</th>
<th>Final EISs</th>
<th>Proposals Approved</th>
<th>Proposals Declined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Energy</td>
<td>10</td>
<td>3</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>-</td>
</tr>
<tr>
<td>Forestry/ Wildlife</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Construction and Services</td>
<td>14</td>
<td>5</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Health</td>
<td>6</td>
<td>-</td>
<td>-</td>
<td>4</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>9</td>
<td>5</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Tourism</td>
<td>18</td>
<td>6</td>
<td>-</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Transportation</td>
<td>14</td>
<td>18</td>
<td>-</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>77</td>
<td>39</td>
<td>8</td>
<td>37</td>
<td>12</td>
<td>20</td>
<td>1</td>
</tr>
</tbody>
</table>
About 25% of all the new proposals registered were in the tourism sector; most of the undertakings (74%) were hotel developments. The transportation sector recorded 18%, general construction and service 17%, energy 13%, manufacturing 12%, health 8%, agriculture 6% and forestry and wildlife 1%.

In terms of impact assessment studies carried out and EISs submission, the transportation sector recorded the highest (32%) followed by manufacturing sector (19%), general construction and service (16%), health and tourism sectors (11%) each, agriculture and energy sectors (5%) each and forestry and wildlife sector (3%).

A total of 19 proposals were approved for environmental permit of which the energy sector accounted for 26%, manufacturing 21%, general construction service and tourism sectors 16% each, health 11% and forestry/wildlife and transportation sectors 5% each.

3.3.2.3 Regional distribution of EA proposals submitted and action taken on them.

The regional distribution of EA proposals considered and action taken on them is presented in Table 11.

**Table 11: Summary of Regional Distribution of EA Proposals Submitted**

<table>
<thead>
<tr>
<th>Region</th>
<th>Proposals Registered</th>
<th>Scoping Reports</th>
<th>PERS</th>
<th>Draft EISs</th>
<th>Final EISs</th>
<th>Proposals Approved</th>
<th>Proposals Declined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ashanti</td>
<td>3</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Brong Ahafo</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Central</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Eastern</td>
<td>1</td>
<td>3</td>
<td>10</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>-</td>
</tr>
<tr>
<td>Greater Accra</td>
<td>52</td>
<td>23</td>
<td>7</td>
<td>18</td>
<td>5</td>
<td>11</td>
<td>-</td>
</tr>
<tr>
<td>Northern</td>
<td>5</td>
<td>5</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Upper East</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Upper West</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Volta</td>
<td>4</td>
<td>3</td>
<td>-</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Western</td>
<td>5</td>
<td>3</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>71</td>
<td>39</td>
<td>8</td>
<td>32</td>
<td>8</td>
<td>16</td>
<td>1</td>
</tr>
</tbody>
</table>

Eight of the proposals considered were linear in nature cutting across more than one region and were therefore not assigned to any particular region. These were (i) Achimota - Apedwa Road Project, (ii) Tema – Aflao Road Project, (iii) Biriwa – Takoradi Road Project, (iv) JICA Bridges in 6 regions, (v) Takoradi – Agona Junction Road Project (vi) Tetteh Quarshie Circle – Mamfe
Road Project, (vii) Rehabilitation of feeder roads in 9 districts and 3 regions and (viii) Oti Damanko - Yendi Road Project.

A large proportion (about 73%) of the EA proposals registered were in the Greater Accra Region. Northern and Western regions followed with 8% each, Volta 7%, Ashanti region 4% Central and Eastern regions (1%) each. EA proposals were not registered in the Brong Ahafo, Upper East and Upper West regions during 2001.

3.3.3 Public Hearings
The Agency in collaboration with the proponents held five public hearing sessions on six proposals. These were

- Proposed Ticor Sodium Cyanide Packaging and Transportation, Sekondi - 15/3/01
- Proposed Berchie Acheamfour Fuel Service Station, Weija - 20/4/2001
- Proposed Ahinsan Sewerage Plants, Kumasi - 14/7/2001
- Proposed Chirapatre Sewerage Plants, Kumasi - 14/7/2001
- Proposed Spintex Road Goil Fuel Service Station, Accra - 19/7/2001
3.4 CONVENTIONS AND PROJECTS IMPLEMENTATION DEPARTMENT

3.4.1 Introduction

The Department's main activities during the year covered the following:

- Assist in assessing or advising on viability or otherwise of proposed projects.
- Serve as focal point for projects and conventions implemented by EPA (Regional /National /International)
- Coordinate the planning, monitoring and appraisal of projects implemented by EPA
- Assist in initiating the necessary process for incorporating regional and international protocols and conventions into Ghana's legal system
- Ensure effective execution, management and follow-up of EPA implemented and coordinated projects
- Ensure proper termination and fold-up of projects handled by EPA
- Liaise with other departments to generally facilitate the co-ordination of Ghana's involvement in preparation, ratification and implementation of protocols and conventions on the environment.

In order to achieve the above-mentioned objectives the Department undertook the following activities during the year 2001

- Administration of EIA for small and medium scale projects
- EPA-UCCEE (RISO) project on Clean Development Mechanism
- Re-orienting and focusing the work of the Department to achieve the objectives for which it was set as stated above.

3.4.2 Administration of EIA

The Environmental assessment activities included the following:

- Administration of environmental assessment application forms.
- Site inspections
- Preparation of screening reports
- Review of Preliminary Environmental Reports
- Technical Review Committee meetings (In-house)
The Department received two hundred and one (201) Environmental Assessment Registrations Forms in the following areas:

   Energy (filling and service stations and LPG Refilling Plants)
   Tourism (hotels, guest houses and restaurants)
   Manufacturing industries
   Infrastructure and services (warehouses, churches and schools)
   Health (hospitals, clinics)
   Agriculture (irrigation dams)

Eighteen (18) Preliminary Environmental Reports (PERs) were received and fifteen (15) of them were reviewed at six (6) in-house screening and review committee meetings. One hundred and sixteen (116) permits were issued for proposed undertakings in the energy, tourism, manufacturing and infrastructure, agriculture and health sectors while two proposals were refused permit on grounds of inappropriate siting (see Tables 12 to 15).

Table 12: Environmental Assessment (EA) actions taken in 2001

<table>
<thead>
<tr>
<th>Item</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Assessment (EA) Proposals/applications registered</td>
<td>201</td>
</tr>
<tr>
<td>Preliminary Environmental Reports (PER) received</td>
<td>18</td>
</tr>
<tr>
<td>Preliminary Environmental Reports (PER) reviewed</td>
<td>15</td>
</tr>
<tr>
<td>In-house Screening and Review Committee meetings held</td>
<td>12</td>
</tr>
<tr>
<td>Proposals Approved by the In-house Committee</td>
<td>67</td>
</tr>
<tr>
<td>Environmental Permits Issued</td>
<td>114</td>
</tr>
<tr>
<td>Proposals Referred to other departments</td>
<td>11</td>
</tr>
<tr>
<td>Permits Refused</td>
<td>2</td>
</tr>
<tr>
<td>Site Inspections Conducted by CPID</td>
<td>53</td>
</tr>
<tr>
<td>Annual Environmental Reports Received</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 13: Sectoral Distribution of EA Applications received and processed in 2001

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of EA Applications Registered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>30</td>
</tr>
<tr>
<td>Tourism</td>
<td>25</td>
</tr>
<tr>
<td>Infrastructure &amp; Services</td>
<td>56</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>-</td>
</tr>
<tr>
<td>Transportation</td>
<td>-</td>
</tr>
<tr>
<td>Health</td>
<td>-</td>
</tr>
<tr>
<td>Agriculture</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>111</td>
</tr>
</tbody>
</table>
Table 14: Regional Distribution of PERs received during the year

<table>
<thead>
<tr>
<th>Region</th>
<th>Number of PERs Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Greater Accra</td>
<td>9</td>
</tr>
<tr>
<td>Ashanti</td>
<td>1</td>
</tr>
<tr>
<td>Brong Ahafo</td>
<td>1</td>
</tr>
<tr>
<td>Eastern</td>
<td>5</td>
</tr>
<tr>
<td>Volta</td>
<td>1</td>
</tr>
<tr>
<td>Central</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>12</td>
</tr>
</tbody>
</table>

Table 15: Sectoral Distribution Of PERs received during the year

<table>
<thead>
<tr>
<th>Sector</th>
<th>Number of PERs Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>5</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>9</td>
</tr>
<tr>
<td>Tourism</td>
<td>2</td>
</tr>
<tr>
<td>Infrastructure &amp; Services</td>
<td>1</td>
</tr>
<tr>
<td>Agriculture</td>
<td>1</td>
</tr>
<tr>
<td>TOTAL</td>
<td>18</td>
</tr>
</tbody>
</table>

3.4.3 EPA-UCCEE-RISO Project

The Agency through the Department initiated a joint project on Clean Development Mechanism (CDM) with UNEP\RISO of Denmark. This $50,000 project, sponsored by the Government of Denmark aims at strengthening and establishing endogenous expertise and capacity for designing and managing possible projects on the Clean Development Mechanism within the EPA, other government agencies, NGO’s and private sector entities.

The Committee on Clean Development Mechanism met four times to finalize a project on a 5 MW Biomass Plant at Kaase in the Ashanti Region and to discuss issues related to the role that major stakeholders would play in the implementation of CDM in Ghana. A draft report on the 5 MW Biomass Plant project at Kaase in the Ashanti Region will be submitted to UCCEE for consideration.

3.4.4 Coordination of UN Framework on Climate Change (UNFCC) Activities

At the very inception of the implementation of the UNFCC the EPA realised the intersectoral and multidisciplinary nature of the climate change problem and formed a National Climate Change Committee (NCCC) headed by the Chief Director of the Ministry of Environment and Science.
The NCCC comprises government institutions, research and academia and non-governmental organizations. A climate change desk was created at EPA under the Conventions and Projects Implementation Department to facilitate and coordinate climate change activities.

The main technical studies that have been undertaken since 1997 to date include the inventory of greenhouse gases, greenhouse gas mitigation and climate change vulnerability assessment.

As part of the programme the Department collaborated with the Secretariat of the United Nations Intergovernmental Panel on Climate Change (IPCC) to organize the Sixth Session of the Working Group III at the Accra International Conference Centre from 26th February to 5th March 2001. The session approved a document on climate change for Policy makers.

During the last quarter of the year the Department was restructured to fulfill its goal. The following activities were conducted during the year:

- A register of international treaties and other agreements in the field of the environment, which have been signed, ratified, acceded to or entered into force by Ghana.
- A compilation of conventions in the field of the environment which have not been ratified by Ghana
- A memorandum on all conventions in the field of the environment which have not been ratified by Ghana have been prepared and submitted to the Ministry of Environment Science (MES) for onward submission to cabinet
- The Department has also evaluated the biannual report to the Governing Council of the United Nations Environment Programme (UNEP): Sources of funding and Ghana’s outstanding commitments to UNEP was extracted and presented to the Ministry of Environment and Science
- A monitoring programme has also been set up to find out what projects are being carried out by the Agency and how far the projects have met their objectives and goals.

3.4.5 The Way Forward

During the last quarter the Department was left with one officer and one national service personnel. The Department has no computer Nonetheless the thin staff considered it a challenge to work under such difficult conditions. It is however recommended that the staff position be strengthened and a computer acquired to ensure that the Department functions fully as envisaged.
4.0 TECHNICAL SUPPORT SERVICES DIVISION

4.1 ENVIRONMENTAL QUALITY DEPARTMENT

During the year, the Environmental Quality Department (EQD) continued with its mainstream activities of environmental quality monitoring and co-coordinating other activities in respect of air, soil and water quality with a view to assessing the levels of various pollutants generated as a result of human activities.

The above activities are consistent with the overall goal of the National Environmental Policy (NEP) of Ghana; the NEP recognises the fundamental fact, that the economic prosperity of the nation depends on maintenance of a high quality environment.

4.1.1 Objectives of the Department

The broad objectives of the Department are as follows:

- To establish the basis for compliance and enforcement with EPA guidelines through monitoring of ambient air quality, noise levels and industrial effluent discharges.
- To help create awareness of the harmful effects of noise pollution or nuisance on communities.
- To verify data integrity of Environmental Quality Monitoring Returns (EQMR) which are submitted monthly or quarterly by various undertakings.
- To investigate complaints referred to the Department as well as participate in other special environmental quality investigations and or programmes.

4.1.2 Activities Conducted in 2001

The following activities were carried out during the year:

(i) Industrial effluent monitoring;
(ii) Ambient air quality surveillance;
(iii) Special research/Collaborative programmes;
(iv) Complaints investigations;
(v) Meetings /Committee Assignments.
4.1.2.1 Industrial Effluent Quality Monitoring

During the year, staff from the Department visited various industrial establishments in Accra North, Accra South and Tema industrial areas. The under listed thirty-two industries were visited at least once in each quarter. The industries visited included the following:

<table>
<thead>
<tr>
<th>Accra South</th>
<th>Accra North</th>
<th>Tema</th>
</tr>
</thead>
<tbody>
<tr>
<td>Letap Pharmaceuticals</td>
<td>Assene Households</td>
<td>Volta Aluminium Company limited</td>
</tr>
<tr>
<td>Accra Brewey Limited</td>
<td>Ghana Breweries Limited</td>
<td>Tema Oil Refinery</td>
</tr>
<tr>
<td>Beverage Investments Ghana limited</td>
<td>Freedom Textiles</td>
<td>Ghana Textile Printing Company</td>
</tr>
<tr>
<td>Starwin Products Ghana limited</td>
<td>Fan Milk Ghana</td>
<td>Cocoa Processing Company</td>
</tr>
<tr>
<td>Azar Chemicals Industries limited</td>
<td>DANNEX Pharmaceuticals</td>
<td>Ghana Agro-Food Company</td>
</tr>
<tr>
<td></td>
<td>Najim Industries</td>
<td>Pioneer Food Cannery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unilever Ghana limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tema Lube Oil</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bridal Trust International Paints</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Printex Ghana limited</td>
</tr>
<tr>
<td></td>
<td></td>
<td>The Coca-Cola Bottling Company Limited</td>
</tr>
</tbody>
</table>

During the working visits, effluent samples were collected for on-site and laboratory analysis. In addition, discussions were held with the respective environmental officers to appreciate their efforts and difficulties in complying with National Environmental Quality Guidelines.

The industries listed above varied greatly in their levels of compliance with EPA Sector Specific Effluent Guidelines. The current practice is that monitoring data are forwarded to the Manufacturing Industry Department and the Tema Office for auditing and enforcement.

4.1.2.2 Ambient Air Quality Surveillance

The Department continues to collect and analyse data from the Agency's Air Monitoring Stations located in representative industrial, commercial, and residential zones in Accra and Tema. The pollutants monitored are either gases (sulphur dioxide, nitrogen dioxide) smoke or particulate matter (PM 10). Particulates are either large or small. Large sized particulates with effective size less or equal to ten microns (PM 10) are characteristic respiratory particles that are capable of reaching the lower respiratory tracts. It is known that PM$_{10}$ particles can remain in air stream for 6 – 14 days in the absence of precipitation. Figures 1, 2 and 3 respectively show trends in the level of particulate matter, smoke and sulphur dioxide in ambient air for representative residential, industrial and commercial areas from January to August 2001.
Figure 1: Concentration of Particulate Matter (Respiratory Particles - PM10) in the Ambient Air from January to August 2001 in Accra/Tema

Figure 2: Concentration of Sulphur Dioxide (SO₂) in the Ambient Air from January to August 2001 in Accra/Tema
Air quality data has been processed for the months of January to August 2001 only. This is because of a series of equipment breakdown from September to December 2001. Although some essential components have been replaced and under going trials, data collected thereafter is still not credible enough to be reported. The Department hopes that all replacements would be made as soon as possible to put the ambient air quality monitoring programme back on track at all designated locations.

4.1.3 Special Research/Collaborative Programmes

4.1.3.1 Status of Kpeshie Lagoon
In April and May, 2001 the Department undertook a preliminary study of the Environmental and Ecological Status of Kpeshie lagoon. The six to ten-week programme revealed that the problems of the lagoon are two fold: heavy sediment build-up and pollution.

The research identified point and diffuse sources of wastewater input into the lagoon from the non-functional Burma Camp sewage treatment facility, La Palm Royal and La Beach Hotel wastewater treatment plants, Trade Fair Company sewage plant and other domestic and industrial sources around the Accra-Tema motorway industrial area and beyond. In addition to these waste sources, the lagoon receives enormous volumes of domestic wastewater from La
Community, which is a high-density indigenous community. Considerable amounts of solid wastes also enter the lagoon from La community drains and La Pleasure Beach, a Ghana Tourist Development Company resort located behind the La Beach Hotel.

The most organic-based wastewater inputs into the lagoon come from the La community. These sources were found to be extremely high in faecal pollution (11,000 – 63,200 CFU/100ml); lacked dissolved oxygen; had very high levels of suspended solids (113 – 248mg/l); ammonical nitrogen (27 – 210mg/l); chemical oxygen demand (COD) (44mg/l – 239mg/l) and 5-day biological oxygen demand, (BOD) (24 – 46mg/l).

The quality of effluent from La Beach/La Palm Royal Hotels wastewater treatment plants were generally good, except for the levels of phosphate and ammonia which exceeded EPA effluent quality guideline limits.

Following publication of the report, the Agency advised the institutions which discharge effluent into the lagoon to take appropriate steps required to improve the quality of pollutants reaching the lagoon.

The Kpeshie sub-metro, which is responsible for the management of domestic solid and liquid wastes in the La community has been asked to develop schemes to improve sanitation in the community. Poor sanitary practices in the La community, such as open defaecation, poor solid wastes disposal/littering, discharges of domestic wastewater into open drains, etc were found to be the greatest sources of pollution and sedimentation of the lagoon.

In August 2001, the Agency constituted a consultative committee for remediation of Kpeshie lagoon pollution. Members of the committee include the Directors of Technical Support Services, Operations, Regional Programmes, Deputy Directors of Environmental Quality, Inspectorate, Education and Built Environment, the Head, Public Relations Department and the Metro Chairman, Kpeshie Sub-Metro. The committee has since identified the following as requisite steps in drawing an Action Plan for the lagoon:

- Stakeholder identification;
- Composition of teams with specific tasks;
- Collection and collation of existing studies on the lagoon;
- Preparation of a video documentary on social impacts;
- Environmental education programme for the La community;
- Provision of adequate and appropriate solid and liquid waste infrastructure;
- Monitoring;
- Enforcement.
It was generally emphasised that all factors that encourage pollution of the lagoon should be dealt with as a first step in remedial efforts. The urgent need for toilets in households, adequate solid wastes infrastructure, and responsible behaviour of the community were cited.

### 4.1.3.2 Mallam Landfill Site

In July 2001, the Department sampled and analysed the quality of leachate from the Mallam landfill site. This formed part of EPA’s enforcement action against AMA to close the dumpsite in view of potential widespread environmental/public health hazards and poor aesthetics for an urban settlement.

Leachate analysis results indicated very high levels of nitrate, 5-day biological oxygen demand, phosphate, turbidity and ammonia.

### 4.1.3.3 Samples from Mining Communities

The Department continues to analyse water samples from a variety of sources from the Western Region. The sources of such samples, which were forwarded by the Western Regional EPA office, include boreholes in mining communities and surface water, which possibly receive mining effluent or discharges from ‘gallamsay’ operations. Polluted water samples of accidental cyanide spillage from Goldfield Ghana Limited was also analysed.

### 4.1.3.4 Analysis of Industrial Raw Materials

The Department has conducted trial analyses of industrial polymers; polystyrene, polypropylene, high-density polyethylene, low-density polyethylene and polyvinyl chloride. The polymers were analysed for their heavy metal contamination, specific gravities, volatile organic matter content, melting ranges and specific gravities.

These polymers constitute major imports for the various plastic moulding industries. The current regime is that EPA forward samples to the Ghana Standards Board (GSB) for verification analysis prior to the issuance of a Clearance Permit to importers. This practice is quite laborious, as officers from the Chemicals Control and Management Centre have to shuffle between the Tema Port, GSB and Head Office. It is also time consuming and expensive, especially when results delay. EPA’s participation in content analysis will to a large extent facilitate prompt clearance of the polymers.

The Department was able to undertake these experiments with the help of other laboratories and borrowed equipment. The analytical work can be done if needed equipment and consumables are purchased for the Department.
4.1.3.5 Acceptance Trial Report Verification: Accra Waste Project

In March 2001, the Department paid a follow-up visit to Accra Waste Project/Korle Lagoon Sewage Treatment Works. This visit was after the Project submitted a copy of their Acceptance Trial Report to the Agency for review. At the time of the visit, the Anaerobic Reactors had developed a fault due to (as was explained by the Project Manager and Chemist) excess loading of night soil. The plant’s effluent quality design targets are 20mg/l for a 5-day biological oxygen demand (BOD$_5$) and 30mg/l total suspended solids (TSS). These levels are expected so long as influent quality does not exceed 27,500 kg BOD/day at a flow rate of 208 L per second among other conditions.

After the visit, the Department designed a 15-day sampling and analysis regime for BOD$_5$ and TSS to be carried out once EPA was notified about completion of remediation works and normal functioning of the plant. Quality assurance of the plant’s treatment efficiency has since been conducted. The summary of the 15-day sampling and analysis are as shown in Table 15.

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>BOD-5</th>
<th>TSS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compliance limit</td>
<td>20 mg/l</td>
<td>30 mg/l</td>
</tr>
<tr>
<td>Number of tests</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Number of pass</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>Number of failure</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

The Korle Lagoon Sewage Treatment Works has complied with its design limits of 20mg/l BOD$_5$ and 30mg/l TSS.

4.1.3.6 Monitoring of Pesticides Dealers in Kumasi

Following a number of complaints lodged with the Agency by individuals, pesticide dealers, farmers and the membership of the Chemical Sellers’ Association (Kumasi Branch) about adulteration of agrochemicals in Kumasi, a Taskforce made up of personnel from the Environmental Protection Agency (Environmental Quality, Inspectorate and the EPA Ashanti Regional Office), Plant Protection and Regulatory Service (PPRS), Chemical Sellers’ Association (CSA) and the Ghana Police Service (GPS) was set up to monitor dealers in Kumasi and its environs.

The two-day programme revealed among others that:

- Many dealers were operating with expired licenses;
• Chemicals were handled without appropriate protective clothing;
• Dealers do not keep proper records on their sales;
• Many dealers interviewed confirmed reports of sale of adulterated pesticides;
• Some dealers obtain license renewals by proxy through an agent;
• Some of the chemicals on the market had labels in foreign languages only.

The team concluded that
• There was the need to decentralise the process of registration and licensing of pesticide dealers. For instance, registration of dealers, inspection of their premises, storage facilities, equipment and mode of disposal of used pesticides containers can be carried out by EPA regional staff. This would ensure effective monitoring of licensed and unlicensed dealers pursuant to existing legislation. Consequently, forty pesticides application forms, Form A1 and an official receipt book were dispatched to the Ashanti Regional office for the registration of unlicensed dealers
• Unlicensed pesticides dealers be arrested and prosecuted. Prior to this a series of announcements will be carried out at the Kajetia market and on local FM stations warning unauthorized dealers to cease their operations forthwith and regularise their activities with the Agency. An advertisement to that effect will also be made in a national newspaper. There will also be a number of radio discussions to educate the public on existing pesticides legislations and health/environmental effects of improper handling of pesticides.
• To ensure effective monitoring and enforcement of Act 528, the team recommended that EPA should remove all administrative bottlenecks, which delay the issuance and/or renewal of licenses for dealers. Licenses could be issued for 3 years instead of a year. Existing processing fees can therefore be tripled. Nevertheless the Agency should reserve the right to withdraw the License of any dealer(s) whose operation(s) is/are inconsistent with applicable laws.
• Any impact made should be sustained to ensure sanity in the import, storage, distribution, sale and use of agrochemicals.

4.1.3.7 Vehicular Exhaust Emissions Control Programme

In June 2001, the Head of Department of EQ participated in a Regional Conference on the phase-out of leaded gasoline in sub-Saharan Africa. The conference was held in Dakar. The main objective of the conference is to raise awareness on the health impacts of leaded gasoline. The meeting also built consensus among main stakeholders (governments) on the technical, regulatory and other issues that should be prioritised in the phase-out programme of lead in gasoline.
Following this conference, the Ministry of Environment, Science and Technology, the EPA (EQ/Inspectorate Departments), the Ministry of Transport and Communication, Driver and Vehicle Licensing Authority, DENG Limited and other private stakeholders have initiated a pilot programmes consistent with the World Bank Clean Air Initiative for Sub-Saharan African cities which was launched in 1998.

One key aspect of this initiative is the control of vehicular exhaust emissions in the country. Mandatory vehicle emissions testing centres will be established throughout Ghana starting from next year 2002. About 100 centres are expected to be established. Thereafter, all vehicles would be required to pass a mandatory smoke test to remain on the road.

When ultimately lead in gasoline is phased-out, vehicles that use catalytic converters to enhance fuel combustion could be used. The phase-out of lead is expected to become effective by the year 2005. The Department will continue to support and participate in all programmes aimed at ensuring that ambient air in Ghana is clean.

4.1.4 Complaints Investigated

The Department participated in the investigation of the under-listed complaints that were lodged with the Agency during the year 2001.

- Noise pollution investigation near the Christian Methodist Secondary School;
- Oil spillage at the Anomabo Beach Resort;
- Investigation of noise pollution by a block-moulding factory at Gbawe;
- Investigation of dust and noise at Achimota;
- Noise investigation at Dovehill estates near the Spintex Road.

4.1.5 Meetings/Committee Assignments

Staff from the Department participated in, or serve on the under-listed committees:

- Water Sector Restructuring Committee;
- Workshop on the Management and Control of Persistent Organic Pollutants (POPs) International Conference Centre; September 2001;
- UNIDO/EPA Cleaner Production Seminar – La Beach Hotel; September 2001;
4.2 PUBLIC AFFAIRS DEPARTMENT

4.2.1 Objectives of the Department

The primary objective of the Public Affairs Department is to promote and facilitate public awareness of environmental issues and understanding of EPA’s role and activities in protecting the environment.

4.2.2 Activities Planned for 2001

The planned activities of the Department for year 2001 are:

- Developing range of materials to inform the public about environmental issues and to publicise the Agency’s activities in the media and elsewhere.
- Facilitating the work of the Environmental Education Department through the provision of publications and display materials to be loaned to schools/institutions for limited periods or displayed at the Agency’s seminars and workshops.
- Working with the media at both national and grassroots levels to ensure a proper understanding of EPA’s function and priorities.
- Helping to keep EPA staff fully informed about developments within the Agency and country.
- Supporting the capacity of regional officers to raise community awareness of EPA’s role and activities.

4.2.3 Outputs

- Substantially improved regional capacity to implement a broad range of public awareness programmes at the local level and to facilitate community-based action to deal with pressing environmental problems such as deforestation and land and surface/ground water degradation due to poor agricultural and mining practices.
- Improved co-operation amongst government agencies at regional level to co-ordinate public awareness and community-based action programmes.

4.2.5 Achievements

The achievements of the Department for the year includes the following:
4.2.5.1 Media Relations

- The Department organised press briefing on the Fosu Lagoon Water Lettuce Invasion in the Central Region and joined a group of experts to tour the Fosu Lagoon Catchment area on 20th January 2001.
- News clips on the environment for January - December in both the state-owned and private newspapers were cut and filed for references.
- As part of our inter-departmental collaboration, the Department facilitated the IPCC Workshop held from 28th February - 6th March 2001 at the Accra Conference Centre.
- Facilitated the press coverage on the Minister's Familiarisation Tour to Coca-Cola, Shangri-La, Golden Tulip, Korle Bu and Mallam on 8th March 2001.
- The Department successfully participated in the Homecoming Summit for Ghanaians living abroad by mounting and exhibiting on EPA activities. We had over 200 visitors to our stand, which included expatriates, parliamentarians and ministers of state, which started from 23rd - 25th July 2001.
- The Department hosted a 16-man environmental delegation from Benin on a working visit to the Agency for 3-days. They were taken round places of interest such as GAFCO, G.T.P., The Free Zone Enclave, Accra Waste Project site and the Kwabenya Land fill site.
- The Department organized workshops for the Ozone Unit for the Importers and Formulators of CFCs at the Accra Technical Training Centre. There were favourable press coverage.
- It also organised the press to cover the Sub-Regional Workshop on Pesticides Policy and Legislation at the Accra International Conference Centre.
- The Department sent an invitation to the press houses to cover a workshop on Policy makers Workshop on EPA-UCCEE Project on Clean Development Mechanism on September 11, 2001.
- The Department issued a press release on the Cyanide Spillage at Tarkwa on 26th October, and interfaced with Joy FM to clear issues.
- A write-up on the Cyanide Spillage in Tarkwa was prepared for United Nations Environment Programme (UNEP) on 30th October 2001.
- The Department featured a programme on Unique FM to interface with the issue on Cyanide Spillage at Tarkwa on 15 November 2001.
- Facilitated a Press Conference for Environmental NGO’s at Ministry of Environment and Science Conference Room on 23rd November 2001.
4.2.5.2 Public Awareness

- Three editions of the Environet a quarterly bulletin of the Agency was completed, and distributed amongst staff locally and in the regions. They have been put on the website to promote awareness creation.
- Flyer dubbed “Dates 2001” was introduced into the system to aid staff to be aware of movements of colleagues and their departmental activities for the month.
- During the period, the Department placed the following advertisements:
  ⇒ A Public Notice on “Compliance and Enforcement” was placed on 10th March 2001.
  ⇒ A Public Notice on the Agency’s effort to control solid waste into the Kpeshie Lagoon was placed on 9th April 2001.
- The Department successfully distributed about 2,000 copies of the EPA Newsletter to over 100 recipients and to all the regional offices. The recipients include embassies, schools, libraries, ministries and government agencies.
- The Department placed 17 adverts in both the private and state-owned newspapers. These public notices were mainly on EIA Public Hearing in different parts of the country.
- The Department with the aid of Environmental Quality and Inspectorate Department have issued various press releases on the encroachment of Weija lakeside and the Kpeshie Lagoon to various media houses. This led to detailed briefing by the Agency on GTV and TV 3 respectively.

4.2.6 Other Programme Activities

- Presented the Department’s 2000 annual report to management on 9th January 2001.
- Attended a meeting between the Agency and Ghana Bauxite Company on the issue of “Reclamation Plans and Bonds” on 12th February 2001.
- The Department collaborated with Environmental Education Department to mount an exhibition for the Minister’s (Prof. Fobih’s) first visit to the Agency on 14th March 2001.
• The Department facilitated the travel of Dr. H. Owodo of the Environmental Quality Department to attend the Cleaner Air Initiative Conference in Dakar, Senegal.
• The Department offered assistance to CLEIAA workshop at Bayview Hotel on 5\textsuperscript{th} - 8\textsuperscript{th} November 2001.
• The Department assisted one Rev. Asare on how to mount an educational programme on “how to keep the water bodies clean” on 18\textsuperscript{th} December 2001.
• Drafted a Communication Strategy for Ministry of Environment and Science and Environmental Protection Agency on 16\textsuperscript{th} December 2001.

4.2.7 Constraints

• The absence of a printer delays the production of work.
• Inter-departmental collaboration.
• The difficulty in responding to short notices from media houses for interviews of EPA personnel.
• The bureaucratic tendencies in seeking clearance from the authorities for an interview.

4.2.8 Way Forward

• Work on content analysis of the newspapers, and the social survey on the environment should be undertaken. We hope to undertake interviews and analyze the results and produce reports for this year.
• The Department needs to institute a mechanism to monitor especially the electronic media on environmental reportage.
• The Department requires the needed logistics to meet the demands of the Agency.
• Materials production such as video, brochures, posters etc. will be made to aid in awareness creation.
4.3 ENVIRONMENTAL LAW DEPARTMENT

The role of law as an indispensable tool for social engineering for development is important. In the field of environmental law, it becomes more crucial, having regard to the need for proper management and sustainable use of environmental resources.

4.3.1 Objectives of the Department

The main objectives of the Department are to provide legal support to and advise EPA on all legal matters. The following are its broad objectives:

- To provide legal services to all sections of the Agency;
- To maintain an up-to-date database on all regional and international conventions and protocols on the environment;
- To study regional and international treaties and protocols on the environment to which Ghana is a party and advise on implementation at national level;
- To represent the Agency in legal matters relating to compliance and enforcement and in civil proceedings brought by or against the Agency;
- To assemble, compile, keep and maintain an up-to-date record of all existing laws and proposed laws dealing either directly or indirectly with the environment at national level;

4.3.2 Achievements

In the performance of its functions, the Department was able to achieve the following:

4.3.2.1 Preparation and Review of Documents

The Department prepared and/or reviewed the following documents during the year:

- Report from the Ozone Office to the French Development Agency (AFD) on how to address the problem of the use of equipment that contain or depend on ozone depleting substances.
- Environmental Assessment Administration Systems Manual under the Ghana Environmental Assessment Capacity Development Programme (GEACaP).
- Agreement between the Agency and the National Remote Sensing Centre Ltd (U.K.)
- Memorandum of Understanding between the Agency and the UNEP Division of Technical, Industry and Economics: Training Programme for Customs Officers.
• Environmental Quality Standards and Monitoring requirements for industrial facilities, liquid effluents, air quality and noise levels.
• Memorandum of Understanding between UNEP Chemical and the Agency on Sub-Regional Workshop on Chemical Legislation with special reference to reduction and elimination of Persistent Organic Pollutants (POPs).
• Memorandum of Understanding between the Volta River Authority and participating institutions on Volta Gorge Afforestation Programme: Community education and anti-bush fire campaign.
• Contract between EPA and Ghana Post
• Reclamation bond for Resolute Amansie Limited.
• Contract between EPA and Gateway Project Consultants.
• Abosso Goldfields reclamation bond.
• Minerals Commission Consultants’ Matrix and Environmental Law Regarding Mining Industries.
• Reclamation Bond for Ghana Manganese Company Limited.
• Fourth draft of the Ghana Poverty Alleviation Strategy 2002 – 2004. The Department was tasked with reviewing chapter 9 which dealt with Governance, to determine the role of EPA as far as governance is concerned.

4.3.2.2 Served on the following committees

The Department served on the following committees:
• Committee on Reclamation Bonds for Extractive Industries;
• National Committee on Ozone Depleting Substances (NACODS).
• The Clean Development Mechanism (CDM) committee. A presentation on the Ghanaian legal and policy needs regarding the implementation of CDM was also made.

4.3.2.3 Prosecution and Court Cases

The Department prosecuted, defended or represented the Agency in the following court cases:

(a) Republic vrs Najim Textiles Limited
The above company, prior to prosecution, refused to submit an Environmental Management Plan. They were therefore charged with failure to submit an Environmental Management Plan (EMP). While the court action was pending, they submitted the EMP. The case ended with the court cautioning and warning the accused.
(b) Republic vrs Felix Asare (Greater Accra Regional Tribunal)
The accused person was granted an environmental permit to put up a filling station at Weija. The Agency subsequently revoked the permit and served the accused person with an enforcement notice to stop work on the project. The accused was subsequently charged with failure to comply with the directives of EPA.

The Greater Accra Regional Tribunal presided over by his Lordship Mr Justice Quist, acquitted and discharged the accused person. As part of his consequential orders, he asked the accused to meet with the Agency to put in place the necessary mechanisms to mitigate possible impacts that his projects will have on the environment.

(c) EPA vrs Midras Company Limited & Others (High Court, Accra)
The defendants have been sued for refusing to post a reclamation bond for the company. The defendant company has still not posted its bond. The court is convinced that attempts at settlement out of court have broken down and has therefore fixed a firm date for the hearing to begin in January next year.

(d) Republic vrs Lanquaye Lamptey (Circuit Tribunal)
The accused person operates an auto mechanic workshop in a residential area. The activities of the accused have had adverse effects on the environment and human health. The accused was therefore issued with an enforcement notice, which required him to relocate his workshop. He was subsequently charged with refusing to comply with an enforcement notice. EPA has closed its case and the accused is to open his defence next year.(2002)

(e) Republic vrs EPA, Ex Parte Lanquaye Lamptey (High Court, Accra)
The applicant brought his application against EPA to test the validity of the enforcement notice issued by the Agency. The court dismissed the application on the grounds that EPA acted within its power. As part of its consequential orders, the court ordered that proceedings involving both parties in the Circuit Tribunal should resume.

The applicant has since filed a notice of appeal against the ruling. The applicant also filed a motion for stay of execution of the court's orders pending appeal. The motion was dismissed in favour of EPA.

(f) Republic vrs. Robert Akuoku and Everstone Concrete Products (Circuit Tribunal)
The accused person operates a block-manufacturing factory at North Dzorwulu without an environmental permit. An enforcement notice was issued by the Agency to get the accused to
stop his activities and relocate his factory. He was subsequently charged with refusing to comply with EPA’s enforcement notice.

The court made an interim order for the accused to stop operating his factory while the case is pending. This order was over-turned on appeal at the Regional Tribunal.

The lawyer for the accused person is currently under investigation by the General Legal Council. The case has therefore been adjourned at his instance to January next year to enable the General Legal Council dispose of the matter.

(g) Republic vrs. Anthony Saoud and Cindrilla Shopping Mall and Apartments (Circuit Tribunal)
The accused was advised by the Agency to acquire an environmental permit for his undertaking. Due to his recalcitrance, he was issued with an enforcement notice to stop work and obtain an environmental permit. He was subsequently charged with failure to comply with the Agency’s enforcement notice. The prosecution has closed its case. The accused has opened his case and will continue next year.

(h) Republic vrs. Mohammed Nii Ayi and 14 others (Circuit Tribunal)
This is a case involving illegal sand winning. The 2nd witness, Mr. Oduro of the Mining Department, EPA is still under cross-examination. This has been delayed due to a motion filed by counsel for some of the accused persons to expunge a portion of the evidence adduced by Mr. Oduro. The court heard arguments from both parties and dismissed the application in favour of EPA. The case will therefore take its normal course next year.

(i) Republic vrs. Justice Ametsikor and others (Greater Accra Regional Tribunal)
This is a fresh case involving illegal sand winning. Court proceedings will begin in January 2002.

(j) T.A. Nelson-Cofie Esq. vrs. 1. Millicom Ghana Ltd; 2. EPA (Circuit Court, Accra)
This is a fresh case in which EPA has been jointly sued. It was initiated because the Agency did not respond to a letter written to it by the Plaintiff, seeking information on the 1st Defendant’s undertaking. The plaintiff has sued the defendants jointly and severally for an order directed at both defendants to disclose to the court, inter alia the effects the first defendant’s building at Teshie Nungua, will have on the environment. The plaintiff also wants the court to order the defendants to file a full environmental impact assessment and clearance report for the 1st defendant’s project.
(k) Emmanuel Anang Mensah vrs 1. Harena Auto Ltd. 2. Mr. Ashley 3. Mr. Harena 4. Environmental Protection Agency (High Court, Tema)

This is a fresh case in which the plaintiff has sued the 1st three (3) defendants for the nuisance caused by the operation of the above company. EPA has been joined because it has not adequately addressed the plaintiff’s complaint.

(l) Republic vrs Kwaku Nnuro and Nnuro Kente Limited (Ashanti Regional Tribunal)

The accused person is the owner of the above company. The company is located close to a stream into which effluents from the company are discharge directly. The accused was advised to relocate his factory. His recalcitrance resulted in the issuance of an enforcement notice by the Agency. He was subsequently charged with failure to comply with the enforcement notice and commencing an undertaking without an environmental permit.

Due to the intervention of the Ashanti Regional Minister, it was agreed that the accused would put an effluent treatment plant in place by 31st December 2001. Officers of EPA are yet to go and inspect whether the facility is in place.

(m) Republic vrs Alex Baah & Sona Gas (Ashanti Regional Tribunal)

This case was presented to the Tribunal on 20th December 2001. The accused persons were charged with commencement of undertaking without environmental permit, failure to comply with directives of the EPA, and failure to comply with enforcement notice.

Although the accused has begun environmental impact assessment procedures, he began operation without an environmental permit. At the court, the accused pleaded guilty with explanation citing their submitted forms as the explanation.

The court ordered the EPA to undertake a preliminary inspection by the next adjourned date i.e. (8/01/02) for the court to determine whether or not the operation should be stopped pending the determination of the case as was submitted by the EPA.

(n) Republic vrs Oliver Epis (Ashanti Regional Tribunal)

The accused has begun the construction of a petroleum service station without an environmental permit. Even after receiving letters etc. from the EPA, Ashanti Region, he disregarded all these and continued with his project. He was ordered to stop the construction immediately. Meanwhile the case was adjourned to 31 January 2002 for evidence to be called.
4.3.3 Workshops/ Training Programmes

The Department was involved in the following training programmes as facilitator, organizer, and/or participant:

- Training workshops organised under GEACaP during which the Department made presentations on the Environmental Assessment Regulations.
- Intensive Training Programme on Key Economic and Legal Instruments for Environmental Management in West Africa from 26th to 30th March 2001 organised by the International Centre for Enterprise and Sustainable Development – a local NGO.
- Conference on “Legal Service Delivery, Social Justice and the Poor: Strategic Policy and Legal Options for Ghana” organized by the Center for Public Interest Law (CEPIL).
- Seminar on Environmental Management organized by the Ghana Employers Association.
- Seminar organized by Minerals Commission to enable stakeholders including members of the legal profession to review the matrix to its proposed minerals law and regulations.
- Workshop on Legal Needs Assessment-Following on M.O.U between GEACaP and the Department, the Department submitted a draft report on a baseline study it had undertaken for GEACaP. A workshop was organised based on this report. Lawyers and judges in various institutions as well as officers of GEACaP participated in the workshop.
- Workshop to Review Consultant’s Draft Report on the Domestication of the Biodiversity Convention in Ghana - This was organised by the Department in collaboration with the Natural Resources Department.
- UNEP Training Programme on Environmental Law and Policy - An officer of the Department participated in a three-week intensive programme at Nairobi with other lawyers from 51 countries.

4.3.4 Recruitment of staff

The department welcomed into its fold two energetic ladies on national service. Their presence improved the output of the Department and one was retained after the service period as an Assistant Programme Officer. Another lady from the Attorney General's Department was also employed as a Programme Officer in the Ashanti Regional Office. As part of her duties, she is to handle cases in the Northern sector.

4.3.5 Miscellaneous

4.3.5.1 Settlement with Goldfields Ghana Limited

The Department, in collaboration with other departments, was involved in a series of meetings with a representative of the above company. These were in connection with the cyanide spillage that occurred in the Western Region. In compliance with ‘the polluter pays principle’ of
international environmental law, the company agreed to pay for the cost involved in cleaning up the mess it caused and also to pay compensation to the affected communities.

### 4.3.5.2 Establishment of a Library for the Department

This was deemed necessary to facilitate legal research for giving advice and drafting legal documents.

### 4.3.6 Constraints

The constraints of the Department include the following:

1. The Department’s main problem was with transportation to and from court. Sometimes delays in providing vehicles resulted in the Agency’s cases being adjourned to its disadvantage.
2. Another fundamental problem was some judges’ lack of enthusiasm for environmental matters and inadequate awareness about environmental laws.
3. Inadequate research material is a major constraint. Even though a library has been set up in the Department, the books are inadequate for thorough legal research.
4. None of the lawyers in the department has enough training in environmental law. The Department will thus perform more efficaciously with adequate training in environmental law.
5. Lack of coordination between the Department and other departments. This sometimes results in legal problems that are usually preventive. Examples are court cases in which EPA has been sued.

It is hoped that these problems will be adequately addressed for the Department to serve the Agency better.
4.4 ENVIRONMENTAL INFORMATION AND DATA MANAGEMENT DEPARTMENT

The Environmental Information and Data Management Department (EIDM) is made up of the Computer Unit and the Library.

4.4.1 Computer Unit

Activities undertaken during the period were:

- Local/Wide Area Network Administration
- Computer Repairs/Maintenance
- Participating in the IICD project
- Installation of Anti-virus
- Update of the Website (www.epa.gov.gh)

4.4.1.1 Local Area Network Administration

The unit undertook the administration of the local/wide area network in the Agency. Visits were made to Volta and Eastern Regional offices to re-install the Internet and E-mail facilities with a technician from Africa-Online, our Internet Service Provider.

4.4.1.2 Computer Repairs/Maintenance

The Computer unit repaired and maintained the computer resources in the Agency, thereby ensuring the proper functioning of all the computers in the Agency. The unit also took delivery of new nine (9) APC UPS, two Dell computers and one (1) unit HP LaserJet printer (4050).

4.4.1.3 Participation in the IICD Project

Staff at the unit participated in the Environmental Information Network (EIN) Project, organized by the International Institute for Communication and Development (IICD) project and funded by The Netherlands. The project has two institutions as partners; these are Forestry Research Institute of Ghana (FORIG) and Building and Road Research Institute (BRRI) all in Kumasi.

4.4.1.4 Installation of Anti-Virus

There was virus alert nation and world wide hence the Agency invited Comsys (Ghana) Limited who came to scan all computers as well as the Server and installed latest version of McAfee Anti-Virus from Network Associate.

4.4.1.5 Update of the Website (www.epa.gov.gh)

The Computer Unit also sees to the updating of EPA Web site.
4.4.2 Library Unit

The Library’s mandate includes the provision of information to our staff and other stakeholders on the environment and the presentation of processed information in various forms for easy reference. The Library has also incorporated ideas from the Human Resource Development Plan of EPA in an effort to promote efficiency and cost effectiveness in its operations. The activities undertaken during the year were:

- Computerization of books
- Acquisition of new materials
- Attendance at the Library
- Lending
- Networking with CSIR Library
- Supervision of Risograph
- Cataloging and Classification of Materials

4.4.2.1 Computerization of Books

A database was created in access. Materials fed into this database include Environmental Impact Statements (EISs), Agriculture, Chemistry, Environmental Science, Nature and Conservation, Economics among others. The benefit of this project is that we are now in a position to send our materials to computer on the Local Area Network. New materials will be added to this database in the following years.

4.4.2.2 Acquisition of New Materials

Books and magazines have been received within the period. In all a total of 347 new materials were received. These include EIA’s, books and technical materials. Others are annual reports from National Population Council and Water Research Institute.

4.4.2.3 Attendance in the Library

Many students, teachers, consultants, researchers and NGO’s continue to use the resources in the Library. In the first quarter 715 people signed the Library’s register. This increased with the peak of 1087 visitors in the third quarter. EPA Staff have increasingly used materials especially the new members and the National Service Personnel.

4.4.2.4 Lending Facilities

Lending to members of staff has increased considerably. Even our regional offices in Koforidua and Cape Coast have enjoyed the facility. There was an urgent appeal to all borrowers to return
overdue books. This was highly successful. Those people who had some problems came to renew their material. Nonetheless a few recalcitrant staff did not respond positively to rules.

4.4.2.5 Networking With CSIR Library (INSTI)

The Library pursued vigorously the collaborative effort with other libraries. INSTI has supplied about 17 technical articles demanded by staff. In the coming years, this work would be stepped up with other libraries.

4.4.2.6 Cataloguing and Classification

Every Librarian has to catalogue and classify all materials received before shelving. All the newly acquired materials were classified. Working sheets have been prepared on all of them. Most of them have been shelved. We are yet to type the catalogue cards.

4.4.2.7 Risograph

The use of the risograph is under strict supervision. Any user must sign for the number of copies to be made. Of late, however, people come to make 20 or 50 copies of their materials. This is against the norm that at least 100 copies should be reproduced. This under utilization has created wastage of the master sheet produced, ink and led to faults. We recommend that in future not less than 100 copies should be made.

4.4.2.8 Problems

Some people have used the library to charge their mobile phones and laptop computers fixed into our sockets. To eliminate the unauthorized use of our electric power a set of library rules designed in consultation with the Director for Technical Support Services (TSS) is posted on the library door.

4.4.2.9 Conclusion

We wish to appeal to management that the library is provided with an electric typewriter. This is used for typing catalogue cards. The absence of this machine has halted the creation of these cards, which are important for manual retrieval of shelved materials.
5.0 REGIONAL PROGRAMMES DIVISION

The Regional Programmes Division of the Agency is responsible for overseeing the operations of the offices of the Agency located in the ten regional capitals and two district offices at Tarkwa and Tema. Each of these regional offices functions as a discrete department. The Regional Programme Secretariat located in the head office co-ordinates the operations of the regional offices. The Regional Programme Secretariat also supervises and evaluates the programmes that are executed in the regions.

The regional offices are the operational wings of the Agency in the regions. However unlike the other departments at the head office, which undertake specific activities in specialised fields, the regional offices undertake diverse activities that relate to and are relevant for the effective management of the environment in the regions.

The regional offices undertake activities such as providing technical and logistic support to collaborating agencies and District Assemblies in environmental management. They also offer advice on environmental issues and implement environmental education programmes aimed at addressing specific issues relating to the local environment in collaboration with other partners like non-governmental organisations (NGO).

The secretariat of the Regional Programmes Division was strengthened with an additional unit (during the year) charged with overseeing environmental assessment administration involving small and medium scale establishments from the regions (excluding projects from the Accra Metropolitan Assembly). The Regional Programmes Secretariat worked on four hundred and sixty-two (462) environmental assessment applications received from the regional and district offices of the Agency.

Table 16: The sectoral distribution of environmental assessment applications from regions

<table>
<thead>
<tr>
<th>Sectors</th>
<th>No of applications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>79</td>
</tr>
<tr>
<td>Health</td>
<td>131</td>
</tr>
<tr>
<td>Tourism</td>
<td>66</td>
</tr>
<tr>
<td>Infrastructure/Services</td>
<td>120</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>40</td>
</tr>
<tr>
<td>Agriculture</td>
<td>36</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>472</strong></td>
</tr>
</tbody>
</table>
The Regional Programmes Secretariat undertook monitoring and evaluation exercise to six (6) regions of the country. The regions visited included Central, Ashanti, Brong-Ahafo, Northern, Upper East and Upper West.

The Director of the Division and his team interacted with staff of the Agency in the regions and administered questionnaire to assist in knowing the situation on the ground and evaluate progress and impact of programmes and projects.

The year also saw the establishment of the Tema District office charged with proactive monitoring and registration of industrial establishments in the Tema municipality that are outside the Free Zone enclave.

There was an improvement in the performance of the regional offices in environmental management.

Activities undertaken in all the ten regions include the following:

- Environmental education in schools, communities, for specific target groups, women’s group, the youth, churches, fishermen and market women.
- Environmental Impact Assessment (EIA) – The regional offices handled about 480 applications for various development activities.
- Monitoring and Evaluation – Most regional offices were able to carry out some monitoring activities in the areas of water and noise; and compliance monitoring of mining activities.
- Investigation of complaints and finding appropriate solutions to them – The regional offices investigated over 153 complaints into various environmental problems.
- Networking with other departments continued as in previous years with partnership of churches and NGOs increasing.
- Working with district assemblies achieved some improvement with EPA Officers participating in Statutory Planning Committees, ordinary sessions and sub-sector committees of some District Assemblies.
5.1 ASHANTI REGION

5.1.1 Education and Awareness Creation

The office participated in a programme to talk on ‘Water’ organised by St. Peter’s Catholic Church, Ahwiaa, and ‘The Role of the Adventist Student in the Protection of the Environment’ organised by the Adventist Students Fellowship, Kwame Nkrumah University of Science and Technology (KUNST), Kumasi.

The office honoured three radio programmes on Otec FM and discussed on public littering and water pollution. Two other radio discussions on Kapital Radio and Radio GCR discussed pesticides control and management.

5.1.2 Monitoring Activities

A number of monitoring visits were made to some selected industries to encourage them to expedite action on the preparation of their Environmental Improvement Plans and Environmental Management Plans. Companies visited included Guinness Ghana Limited, Specialized Timber Products Ltd., the Kumasi Abattoir and Amefa Wood Processing Limited.

Monitoring visits were made to some mining industries in the region to assess the environmental performance and in some cases to ensure compliance enforcement. Mining companies visited were Ashanti Goldfields Company, AGC (Obuasi), AGC (Bibiani), Midras Gold Mines, and Bonte Goldmines. The office also made investigative monitoring visit to Abore Mines in conjunction with the Mining Department at the head office to assess the haulage route of ore from Abore to the Resolute Goldmines for processing.

A monitoring visit was paid to the Komfo Anokye Teaching Hospital (KATH) to assess waste treatment facilities and sewage system. It was realised that the system of waste collection and sewage left more to be desired. A meeting was arranged for KATH and other users of the KATH sewage system ie. the 4th Battalion of Infantry (Ouadara barracks) and City Hotel, Kumasi. An agreement has been struck between the parties for the rehabilitation and maintenance of the facility.

The office paid a visit to the KNUST sewage system where it was realised that the system had collapsed and raw sewage being dumped into a wetland. The institution was served with compliance notice to rectify the situation.
Upon a report made by the Sekyere West District Assembly, EPA inspected a piece of land earmarked for garages. A visit was made to one of Kumasi Metropolitan Assembly, (KMA) refuse disposal sites at Kwapra and issued compliance and enforcement notice on the siting of faecal treatment facility and compost plant by KMA at Buabai.

### 5.1.3 Environmental Impact Assessment (EIA)/ Environmental Management Plan

Table 17: Summary of Environmental Assessment (EIA) Applications Processed According to Sectors, EPA-Ashanti Region in 2001

<table>
<thead>
<tr>
<th>Sectors</th>
<th>EIA/EMP Application</th>
<th>PERs</th>
<th>Screening Reports</th>
<th>EISs</th>
<th>Permit Issued</th>
<th>Permit refused</th>
<th>Permit Pending</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>10</td>
<td>-</td>
<td>8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Social</td>
<td>10</td>
<td>8</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>10</td>
<td>-</td>
<td>3</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Mining</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Maternity/ Clinic</td>
<td>80</td>
<td>-</td>
<td>80</td>
<td>-</td>
<td>26</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Chemical</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>113</strong></td>
<td><strong>0</strong></td>
<td><strong>100</strong></td>
<td><strong>0</strong></td>
<td><strong>27</strong></td>
<td><strong>0</strong></td>
<td><strong>0</strong></td>
</tr>
</tbody>
</table>

### 5.1.4 Compliant Investigations

The office received thirteen (13) complaints. These complaints were investigated and the appropriate actions taken. However, referrals were made to KMA where necessary. Seven (7) of the complaints were on sanitation-related issues and two each on noise pollution, water pollution and mining related pollution.

The office issued compliance enforcement notices on the construction of petroleum service station without permit by Oliver Epis; operation of petroleum service station without a permit by Sona and currently prosecuting Nnuro Kente for polluting a water body.

### 5.1.5 National Action Programmes to Combat Drought and Desertification

Three district level workshops towards the formation of the national action programme to combat drought and desertification were undertaken. The workshops were organised for the Sekyere East, Ejura Sekyeredumasi and Sekyere West Districts.
5.1.6 Familiarisation Visit by Minister for Environment and Science to Kumasi

The Minister of Environment and Science paid a familiarisation visit to the Region during the year. The Executive Director of EPA, officers from the Regional Programmes Division and the Mining Department, and members of the media formed part of the ministers’ entourage.

The team visited the regional EPA office, Royal Park Hotel/Restaurant, Specialised Timber Products, Guinness Ghana Ltd., Environmental Monitoring Station (EMS) and the site for KMA’s oxidation pond at Ahinsan.

The sector minister embarked on a monitoring visit to the region. Areas visited were the Asafo Sewage Treatment (Stabilisation) Plant, the KMA final faecal waste disposal site and a dam constructed by the Crop Research Institute, Fumesua.

5.1.7 Celebration of World Environment Day

The regional World Environment Day celebration took place at Akomadan in the Offinso District of Ashanti on July 18th, 2001. The Akomadan area was chosen for the activity due to the fact that inhabitants of Akomadan and its environs are mainly vegetable farmers who use a lot of pesticides. There are a number of reports suggesting a precarious situation resulting from pesticides misuse.

5.1.8 Rio + 10 Workshop

A zonal workshop on sustainable development towards Rio+10 was organised in Kumasi. The programme was hosted by EPA, Ashanti and held for three regions comprising Ashanti, Brong Ahafo and Eastern Regions.

5.1.9 Pesticide Control Programme

A programme to monitor dealers in pesticides was undertaken with an EPA Head office Inspectorate team (Accra) in Kumasi. It was realised that the majority of the dealers had no licenses and there were adulterated pesticides on the market. A programme is being developed with the Kumasi Metropolitan Assembly and the Police to arrest the situation in the region.
5.1.10 Administrative Issues

The office was strengthened by the appointment of two officers and three National Service Personnel with their background in BSc Resource Management - forestry option, BSc Natural Resource Management- Wildlife option and BSc Metallurgical Engineering.

Fourteen (14) students from the tertiary institutions solicited for information to assist in the dissertations/ class exercises. Students from KNUST Medical School undertook an educational trip to the office during the last quarter of the year.

5.1.11 Meetings, Seminars and Workshops

EPA-Ashanti participated in 31 meetings/ workshops/ seminars that centred on environmentally related issues.
5.2 BRONG AHAFO REGION

5.2.1 Environmental Education and Awareness Creation

Eleven (11) Senior Secondary Schools (SSS) in two districts, Tano and Berekum, benefited from environmental education programme on waste and quiz competition on ozone layer depletion organised in collaboration with the Ozone Secretariat, head office for eleven SSS and one tertiary institution in the region.

The office organised a symposium for women fellowship of Calvary Methodist Church in Sunyani under the broad theme ‘Saving the Environment, Our Social Responsibility’.

Over twenty (20) communities in seven districts of the region namely Sene, Wenchi, Asunafo, Techiman, Tano, Asutifi and Sunyani districts were educated on a wide range of environmental issues such as water resource depletion and community role and participation in environmental protection.

Three (3) FM radio phone-in programmes were undertaken. Topics discussed were on EIA requirement and procedures in Ghana, the problem of polythene products and the youth and the significance of World Environment Day celebration.

The office delivered lectures on regulatory requirements for the establishment of business, and investment policy and the mining sector at workshops organised by the Empretex Ghana Foundation and civil society groups, in Sunyani respectively. Another lecture was delivered on environmental problems facing the region and how they can be solved to the Ghana Armed Forces Officers cadet Corp on visit to the region.

5.2.2 Inspections

The office embarked on proactive inspections of some selected industries, health institutions and projects of some District Assemblies to assess mainly their waste and effluent management as well as general compliance with environmental regulations. Industries visited were Mim Agro-Processing Industry, Tano Clay Product Factory, Ghana Water Company Limited (GWCL) head works at Abesim, Sunyani, Anum Forest Product Ltd., and Mim Timber Company.

Inspections were also carried out on sewage treatment plants, incinerators and waste disposal sites in some district assemblies and institutions in the region. These were Sunyani and Techiman District Assemblies, Sunyani Military Barracks, Berekum Catholic Hospital, Sunyani
Regional Hospital and an incinerator at the Sunyani Regional Hospital.

A nursery site to raise seedlings free of charge for prospective tree planters established by Normandy Gold Mining Company was inspected.

### 5.2.3 Environmental Quality Monitoring

#### 5.2.3.1 Water Quality Monitoring

Rivers Tano, Pru, Tain and Subin were monitored for some physical and chemical quality parameters. Table 18 provides details of parameters measured and results obtained.

**Table 18: Water Quality Monitoring Results, 2001, EPA-Brong Ahafo Region**

<table>
<thead>
<tr>
<th>River</th>
<th>Time (pm)</th>
<th>Temp (°C)</th>
<th>pH</th>
<th>Conductivity (uS/cm)</th>
<th>Turbidity (NTU)</th>
<th>NO₃-N (mg/l)</th>
<th>NO₂-N (mg/l)</th>
<th>NH₃-N (mg/l)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tain</td>
<td>12.30</td>
<td>26.1</td>
<td>6.96</td>
<td>117.1</td>
<td>116</td>
<td>1.50</td>
<td>0.18</td>
<td>0.04</td>
</tr>
<tr>
<td>Subin</td>
<td>1.20</td>
<td>24.8</td>
<td>6.42</td>
<td>44.8</td>
<td>65</td>
<td>0.88</td>
<td>0.17</td>
<td>0.00</td>
</tr>
<tr>
<td>Tano</td>
<td>2.20</td>
<td>24.9</td>
<td>6.40</td>
<td>47.6</td>
<td>142</td>
<td>0.44</td>
<td>0.18</td>
<td>0.01</td>
</tr>
<tr>
<td>Pru</td>
<td>3.30</td>
<td>27.3</td>
<td>6.76</td>
<td>101.1</td>
<td>31.11</td>
<td>1.10</td>
<td>0.08</td>
<td>0.00</td>
</tr>
</tbody>
</table>

#### 5.2.3.2 Comments on Results of Water Quality Monitoring

From monitoring pH values seemed to have remained relatively constant for all rivers sampled and compared to last year figures, there has not been any marked shift in pH values. The high turbidity figures were also expected especially for rivers Tano and Tain, as these rivers naturally have clay beds. Yet the introduction of storm water might have also contributed to the rise in turbidity. Consequently the high conductivity figures were also expected in view of the influx of storm water received from the urban settlement. However, it could be mentioned that physical qualities of the sampled rivers have not shown any significant variations this year when compared to last year values.

Figures obtained for the chemical parameters measured indicated that all parameters measured fell within the maximum acceptable concentration. It may therefore be concluded that the four rivers sampled at the various sampling sites gave indications of good water quality for the parameters measured in these rivers as at the close of the year.
5.2.4 EIA Administration

A total of 31 applications for environmental permits to operate various undertakings were received during the year. Inspections and subsequent screening were done and report submitted to head office with recommendations for further action. Twenty-five (25) of the applications came from the health sector comprising 21 maternity homes and 4 clinics. Others were car washing bay (2), mining (1), agro-processing (1) and forestry (2).

Four (4) health related applications, two (2) fuel/LPG filling station and two (2) from the mines received environmental permit. The others are at various stages of the EIA process.

The regional office participated in a public hearing organised by the EAA and Mining Departments, of EPA head office at Ntrotroso (Rank Camp) in connection with the Environmental Impact Statement (EIS) submitted by Normandy Gold Mining Limited.

5.2.5 Complaints on the Environment

A total of twenty (20) complaints on various abuses of the environment were received during the year. The complaints bordered on almost all segments of the environment. They included air pollution (3), unauthorised siting of structures (1), degradation of watershed and water pollution (11), land degradation through sand and stone winning (2) and indiscriminate waste disposal (1). Two other complaints were on settlement problems. Twelve (12) of the complaints are still under investigation whilst eight have been resolved.

5.2.6 Regional Celebration of World Environment Day

The year’s regional celebration of World’s Environmental Day (WED) in Brong Ahafo Region took place at Atebubu, the district capital of Atebubu district. The celebration of the day begun with a tree planting exercise carried out by volunteers from the local NADMO and local NGOs. In all about five hundred (500) tree seedlings were planted.

Speakers at the ceremony were the Acting Regional Programme Officer, EPA, the Acting District Chief Executive of Atebubu District and the Regional Minister who delivered the keynote address. The Regional Minister used the opportunity to unveil the Regional Co-ordinating Council’s (RCC) plan to replant trees along the Tano river catchment area and the determination of the RCC to reduce bushfire incidence in the region this year by at least 75 per cent.
5.2.7 Survey on Environmental Consciousness

A survey was conducted to determine the environmental consciousness of senior secondary school students in the region and to identify the level of skill of the youth in dealing with environmental problems.

5.2.8 Launching of National Forest Plantation Development Programme (NFPDP)

The EPA participated in the launch of the NFPDP at Ayigbe, a village in the Wenchi District of the region by the President, John A. Kufour. The NFPDP aims at planting about 20,000ha of degraded forest per year throughout the high forest zone of the country and forms part of the government’s strategy to alleviate poverty among the populace.

5.2.9 Visits

The Executive Director, Dr. P. C. Acquah and the Acting Head, Regional Programmes, Mr Samuel Anku and two staff members from the Regional Programme Secretariat paid a working visit to the regional office. The visit was to familiarise themselves with activities at the regional level and to find ways to improve on performance of regional activities. A wide range of issues was discussed. Some of them bordered on the following:

(i) Administration and finance    (iv) Complaint handling
(ii) Regional networking            (v) Environmental monitoring and inspections
(iii) EIA administration              (vi) Environmental awareness creation

Among other prominent guests to the regional office were visitors from National Agriculture Research project (NARP) of CSIR, researchers from Overseas Development Institute (ODI), the Catholic Secretariat and Paramount Chief of Mim traditional area.

5.2.10 Meetings/ Workshops/ Seminars

The regional office participated in a total of five (5) workshops during the year and organised eight (8) workshops in eight districts of the region. Additionally the office attended five Statutory Planning Committee and two other sub-sector committees of District Assemblies.
5.3 CENTRAL REGION

5.3.1 Environmental Education and Awareness Creation

Awareness creation in the form of environmental education is one of the major activities embarked upon by the office. The office used Radio Central FM in reaching out effectively to the people. The office participated in radio discussions on environmental issues dubbed ‘Kotokuba Special’ every Thursday afternoon on Radio Central FM. The office also honoured interview segments on Central Monitoring show of Radio Central FM, which focused on issues as sand winning, degradation of Fosu Lagoon, sanitation and EIA application.

As part of its educational programmes for educational institutions, the office delivered lectures in three (3) basic schools, five (5) secondary schools, two (2) tertiary institutional programmes and two (2) community programmes.

5.3.2 Environmental Monitoring

During the year the office embarked on a number of monitoring programmes aimed at ensuring compliance with environmental standards by developing undertakings.

Five (5) monitoring visits were paid to the old mining sites of GISHCO Mining Company at Twifo Mampong to assess reclamation works by the company. Eight (8) visits were also paid to the company’s new mining site at Assin Asamang to assess the company’s level of compliance with environmental regulations.

Monitoring visits were undertaken to communities near the operations site of Cape Coast Quarry Ltd. to assess the degree of damage caused by vibrations from the blasting activities of the company.

The office visited wood processing industries in Nyankomasi Ahenkro to find out whether their operation are environmentally friendly. The office also visited two sand and stone winning sites, one hotel and two manufacturing companies to assess their compliance with environmental regulations.

5.3.3 Environmental Impact Assessment

The office received forty-one (41) EIA applications during the year under review. Nineteen (19) of the applications were from the health sector, mainly maternity homes, six (6) from Tourism,
nine (9) energy sector, from (4) from the mining sector and three (3) from the manufacturing sector.

5.3.4 Complaints Investigation

The office received seventeen (17) environmental complaints from the public and other agencies. These were investigated and appropriate measures taken to deal with the situation. The complaints centred on such issues as noise pollution, sand winning along the beach, nuisance created by sand and stone quarries and unsanitary conditions. Others are sanitation projects, illegal mining and oil spillage on the sea.

5.3.5 World Environment Day Celebration

The office carried out a number of activities to mark World Environment Day celebration such as a tree-planting exercise in collaboration with World Vision International at Assin Mesomgor, Assin Tontokor, Assin Abease, Assin Amoabeng and Assin Dossi.

A symposium on environmentally related issues was organised at the Assembly Hall of Twifo-Hemang Lower-Denkyira District Assembly, film show on environmental issues at Dutch Komenda; and a clean-up exercise and a grand durbar at Twifo-Praso.

5.3.6 Networking

The office worked closely with its collaborators to ensure sound environmental management in the region. In some cases, EPA is given representation in the committees of MDAs. The Agency visited all the twelve (12) District Assemblies in the region and organised specific programmes with some of the District Assemblies.

5.3.7 Meetings/ Seminars/ Workshops

The office attended thirty-nine (39) meetings and workshops on environmental issues.
5.4 EASTERN REGION

5.4.1 Environmental Education and Awareness Creation

Under this programme two associations of sand and stone winners made up of about 50 members each benefited on better ways of land reclamation and reafforestation. Three hundred (300) members of two environmental clubs of SDA Training College-Koforidua (GEO and Nature Club) were educated on deforestation and environmental pollution of water and air. Seventy (70) students of JSS/SSS were educated on similar issues.

Thirty-five (35) dealers in agrochemical products were registered under Act 528 after a day’s seminar with the association. Also over 500 members of Community Environmental Protection Brigade were conscientised on various environmental issues during their induction course in Kibi and Asamankese.

In all about one thousand and five (1,005) people were educated and sensitised on environmental issues during the period under review.

5.4.2 Environmental Quality Monitoring

The office made ten (10) visits each to MED Mining Company at Dochi and Akosombo Textiles Limited at Akosombo to collect water samples for analysis. Twenty (20) visits were made to eight (8) mining companies to verify their level of compliance with environmental regulations and laws. These companies are:

- Kibi Goldfields Limited, Kibi
- MED Mining Company, Dochi
- Ghana Consolidated Diamonds, Akwatia
- Sian Goldfields, Essase
- Bayat Mining Company, Agyapoma
- Karouchi Mining Company Limited, Awaham
- Akoko Goldfields, Kibi
- Narawa Mining Company
5.4.3 Environmental Impact Assessment (EIA)

The office received fifty-nine (59) applications on environmental assessment. Twenty-four (24) of the applications received environmental permit and thirty-five others are at their various stages of the environmental assessment process. Sixteen (16) of the applications were from the health sector, mainly maternity homes and clinics; eleven (11) applications from the hospitality industry; fourteen (14) applications from the mining sector including sand winning and quarrying; and two (2) applications each from the manufacturing and agricultural sectors. There were also thirteen (13) LPG/Fuel applications and one (1) car washing bay application.

5.4.4 Investigation of Complaints

A total of twenty-five (25) complaints were received. This was nearly double the previous year’s number of thirteen (13) and represents increased public confidence in the Agency in resolving environmental problems. Seventeen (17) of these complaints were resolved. The complaints centered on such issues as noise, water, odour pollution, land degradation, nuisance generated by mining activities and improper siting of projects.

5.4.5 World Environment Day Celebration

The World Environment Day celebration was held at Kotoso near Kwahu Tafo in the Kwahu South District. The celebration was to help create environmental awareness in the area of watershed management. The GWCL water intake point is at Kotoso.

5.4.6 Densu River Basin Project

The third year of the implementation of the pilot project (ADRA- GH “Food for Work” programme) saw the addition of 30,000 tree seedlings to the current stock of 428,633 trees. The communities covered were Densuana (3,500), Kentenkren I (2,600) Kentenkren II (8,500) and Dawa (5,400). Total number of seedlings planted currently is 458,633 with a survival rate of about 90%.

The “Food for Work” programme is summarised in Table 19. The Water Resources Commission has begun interventions to give the Densu River Basin Project a national character and attention.
5.4.7 Meetings/ Seminars/ Workshops

The office attended seven (7) workshops and twenty-eight (28) meetings that included Statutory Planning Committee meetings and ordinary sessions of District Assemblies.

Table 19: Updated data on Densu Reafforestation Programme, Eastern Region, 2001

<table>
<thead>
<tr>
<th>No.</th>
<th>Community</th>
<th>District</th>
<th>Food Ration</th>
<th>Area</th>
<th>Number of Seedlings Planted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Old</td>
<td>New</td>
<td>Area</td>
<td>1999</td>
</tr>
<tr>
<td>1.</td>
<td>Densuano</td>
<td>NJM</td>
<td>8</td>
<td>4</td>
<td>40</td>
<td>13,000</td>
</tr>
<tr>
<td>2.</td>
<td>Kentenkren I</td>
<td>“</td>
<td>8</td>
<td>4</td>
<td>144</td>
<td>89,600</td>
</tr>
<tr>
<td>3.</td>
<td>Nyamekrom</td>
<td>“</td>
<td>8</td>
<td>4</td>
<td>60</td>
<td>38,200</td>
</tr>
<tr>
<td>4.</td>
<td>Akwadum</td>
<td>“</td>
<td>8</td>
<td>4</td>
<td>60</td>
<td>44,583</td>
</tr>
<tr>
<td>5.</td>
<td>Mpaem</td>
<td>“</td>
<td>8</td>
<td>4</td>
<td>20</td>
<td>15,100</td>
</tr>
<tr>
<td>6.</td>
<td>Kentenkren II SKCD</td>
<td>5</td>
<td>4</td>
<td>40</td>
<td>36,150</td>
<td>24,466</td>
</tr>
<tr>
<td>7.</td>
<td>Brong Densuso</td>
<td>“</td>
<td>5</td>
<td>4</td>
<td>40</td>
<td>39,210</td>
</tr>
<tr>
<td>8.</td>
<td>Sepanya</td>
<td>“</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9.</td>
<td>Dawa</td>
<td>“</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10.</td>
<td>Mmiretiam Aborediam</td>
<td>“</td>
<td>-</td>
<td>4</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11.</td>
<td>Obuatumpan</td>
<td>“</td>
<td>-</td>
<td>4</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>50</td>
<td>44</td>
<td>324</td>
<td>275,843</td>
<td>166,382</td>
</tr>
</tbody>
</table>

Legend: NJM: New Juaben Municipal Assembly
        SKC: Suhum Kraboa Coaltar District Assembly
5.5 GREATER ACCRA REGION

5.5.1 Environmental Education and Awareness

The regional office was mainly involved in environmental education and awareness creation in schools, churches, NGOs and communities to achieve its set programmes for the year. The office organised environmental education programmes for students of Community Health Nurses School, Amasaman Wildlife Club and La Youth Environmental Club. The office also hosted the Ga District Assembly Children’s Education Fun Club who interacted with staff of the office on a number of issues on the environment.

5.5.2 Compliance Monitoring

The regional office has been able through compliance monitoring to make a number of projects within the region register with the Agency for permitting. The office visited seventeen (17) energy services, ten (10) hospitality industries, nine (9) wood processing, thirteen (13) construction and eight (8) manufacturing sites.

5.5.3 Environmental Impact Assessment (EIA) Administration

A total of forty-six (46) environmental assessment applications were received out of which thirty-three (33) were screened and submitted to the Head office for permit. The rest thirteen (13), are pending submission of various attachments by the proponent. The projects were from such sectors as energy, hospitality industry, manufacturing, health facilities, agriculture and general construction.

5.5.4 Complaints Investigation

Twenty-nine (29) environmental complaints were received during the year. Out of which, 17 were successfully investigated and appropriate recommendations made to the relevant implementing agencies. The rest would be pursued vigorously during the next quarter.

5.5.5 World Environment Day

This year’s World Environment Day was celebrated at Dodowa in the Dangme West District of the Greater Accra Region. The occasion was followed by the initiation of tree planting activities at degraded land sites in the District. The occasion was the beginning of a concrete programme the office launched to reclaim degraded sites in the District through reafforestation.
The occasion also witnessed the coming together of all religious bodies in the region with a common objective, environmental management.

5.5.6 Meetings/ Workshops/ Seminars
The office attended twenty (20) technical sub-committee and seven (7) Statutory Planning Committee meetings of the Tema Municipal Assembly. A total of nine (9) technical sub committees and one (1) Statutory Planning Committee meeting were attended at the Ga District Assembly. The office also participated in twelve (12) seminars/ workshops on environmentally related issues.

5.5.7 TEM A DI STRICT OFFICE

The Tema office was established in May 2001 to be responsible for the proactive/routine monitoring of large-scale industries in Tema municipality (industries outside the Free Zones enclave). The office has as one of its initial tasks, the generation of data on industries in its area of jurisdiction.

5.5.7.1 Industrial Monitoring

As part of the office's environmental quality monitoring, copies of environmental monitoring forms (EM1) were sent to a number of industries for them to submit monthly environmental quality monitoring returns to the Agency.

A joint monitoring exercise was undertaken with the Environmental Quality Department, head office, to sample effluent discharges from the Ghana Agro Food Company Ltd., Pioneer Food Company Ltd., Lever Brothers Ghana Ltd., Tema Lube Oil and Ghana Cocoa Processing Company Ltd. for analysis.

The parameters considered were chemical oxygen demand, total phosphorus, pH, dissolved oxygen, conductivity, nitrate-nitrogen, biochemical oxygen demand and sulphate. Generally, COD and total phosphorus levels exceeded EPA limits.

5.5.7.2 Factory Inspection

Visits were made to twenty-two industries to verify their environmental management performance. The EPA officials discussed with environmental officers and management of the
respective industries their observations and gave necessary recommendations. The industries were advised to submit their monthly return to the Agency. Others were also advised to submit their annual environmental reports and their environmental management plans for the period 2002 – 2004.

5.5.7.3 Registration of Existing Industries

Copies of manufacturing industry registration forms were sent to nine (9) companies to be completed and submitted to the Agency. The office assisted in the review of the environmental management plan of two industries and environmental impact statements of two proponents.

5.5.7.4 Investigation of Complaints

The office dealt with five (5) environmental complaints that centred on oil spillage, air pollution and noise pollution.

5.5.7.5 Data Collection

The office updated the list of active environmental NGOs in the Tema Municipality. This is to enable the Agency to provide technical assistance to the NGOs in the implementation of their programmes.

Under the auspices of the United Nations Environmental Programme (UNEP) questionnaire were administered in connection with 4th International Children’s Conference on the environment, Victoria, Canada, May 21 – 25, 2002 to selected schools within the Tema Municipality. The object of the survey was to assess the perception of the children on environmental issues.
5.6 NORTHERN REGION

5.6.1 Environmental Management and Awareness Creation

The EPA in collaboration with the UNDP Ghana Capacity 21 Programme trained five (5) communities including Jagriguyilli, Apelliyilli, Yagba, Chirifoyilli, Taalli and four NGOs all in the Tolon-Kumbungu District, in various environmental conservation techniques.

In 2001, environmental education in schools was redirected to seven districts including Tamale, Tolon-Kumbungu, West and East Gonja, East and West Mamprusi, and Yendi Districts. Eighteen (18) schools including second cycle, primary, J.S.S., and religious (Arabic/English) schools were educated.

5.6.2 Environmental Monitoring/Inspection

A number of compliance monitoring activities took place within the region. Areas visited included illegal winning of gravel sand and clay in some areas of Tamale Municipality; Nulux plantation/cotton processing industry, Tamale; Kassadjan - shea butter processing factory, Tamale; and fuel stations Yendi and Tamale.

A number of development projects and undertakings were inspected to ensure compliance with environmental standards. The projects included construction sites, manufacturing companies, Tamale waste disposal system and municipality roads. A total of thirty-three (33) rehabilitated gravel and sand pits formerly used by Taysec Construction Limited for various roads works, were inspected.

5.6.3 Environmental Impact Assessment (EIA)

Table 20 summarises environmental assessment (EA) applications received and processed.

<table>
<thead>
<tr>
<th>No.</th>
<th>Activity</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>EIA Applications</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>EIA Permits issued</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>PER Required</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>EIS Required</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>EIA Required</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>EIA unattended to</td>
<td>Nil</td>
</tr>
</tbody>
</table>
5.6.4 Complaints Investigation

The EPA regional office received five (5) environmental complaints. Whilst three (3) were investigated and resolved, two (2) others needed further action and therefore under investigations. Three (3) of the complaints were on poor environmental sanitation and one (1) each on air pollution and environmental destruction.

5.6.5 World Environment Day Celebration

The Northern regional celebration of the World Environment Day was held at Yapei in the West Gonja District on Tuesday 11th December 2001. The theme for the local regional celebration of WED was “Water is Life: Protect it”. The regional WED focused on water resources management and the role of civil society in protecting and preserving dwindling environmental resources. The programme organised by the regional EPA for the people of the Northern Region invited a number of stakeholders, including DCEs, chiefs, opinion leaders, fishermen, farmers, school children, religious leaders, assembly members and market women and men. During the one-day programme, a number of papers including an address by the Regional Director of EPA Tamale on the purpose of the World Environment Day celebration and the choice of Yapei as a focus area were presented. A short address by the Regional Fire Officer on bush fire control and management was also delivered.

5.6.6 Natural Resource Management

The region is prone to bush fires due to the intensity of harmattan experienced during the dry season. Natural resource management programmes therefore concentrated on bush/wildfire control/management, sustainable application of agro-based chemicals and pesticides and afforestation programmes. The Agency collaborated with the Ghana National Fire Service (GNFS) in training fire volunteers and educating communities and school children on the need for bush fire prevention.

In collaboration with the UNDP/Ghana Capacity 21 Programme six (6) schools and eight (8) communities in the Tolon-Kumbungu District undertook different afforestation programmes. The EPA in collaboration with Ministry of Food and Agriculture and Radio Savannah, Tamale, educated farmers on the correct use of agro-chemicals and pesticides through radio outreach programmes.
5.6.7 Networking

The EPA held two regional network meetings. The meetings were basically aimed at collating views from members and addressing certain key recurrent environmental problems within the region.

During the first meeting, certain key papers including the state of the environment in the Northern Region, current update of the Savannah Resource Management Project (SRMP), desertification control and water resource management were presented.

The second meeting focused on the bush fire situation in the region and concrete suggestion on the way forward, siltation and early drying of water bodies in the region and sanitation situation in communities and what can be done. These papers were presented by selected members of the network and discussed in detail. Appropriate recommendations on the way forward were transmitted to the Regional Co-ordinating Council for further action.

5.6.8 Visit from the EPA Head Office

The acting Director of Regional Programmes Division and two other senior staff of the Agency visited the region. Their visit was important, timely and encouraging since officers of the Tamale office were updated on various internal issues important for cordial work.

5.6.9 Meeting/ Workshops/ Seminars

The regional office participated in ten (10) workshops and four (4) seminars. Twenty-four (24) sectoral, line, public and inter departmental meetings were attended. The office also attended six (6) ordinary sessions and five (5) District Environmental Management Committee (DEMC) meetings of District Assemblies.
5.7 UPPER EAST REGION

5.7.1 Environmental Education and Awareness Creation

As part of its activities to create awareness on environmental issues, the office organised lectures and public awareness talks in twenty (20) schools in the Bolgatanga and Bongo Districts. The lectures/ public awareness programmes centred on such issues as ozone layer depletion, environmental pollution and sanitation and the role of the youth in addressing sanitation.

Under the UNDP/ Ghana Capacity 21 Programme, the office inaugurated ten (10) environmental clubs in junior secondary schools and one (1) in Sandema Senior Secondary School.

As a way of sensitising the general public, the office undertook five (5) radio programmes. The programmes discussed issues such as children and the environment; women and development; environmental management; and the role of religious organisation in environmental management in the Upper East Region. The office held five (5) communities meeting and formed Community Environmental Management Committees (CEMCs) at Sherigu and Pwalugu in the Bolgatanga District.

5.7.2 Environmental Monitoring

In February 2001, a team of EPA officers from the regional office visited some mining communities to monitor the activities of small-scale miners, advise them on proper land management and to educate them on HIV/ AIDS. In April 2001, an officer from the office joined a team of officers from the Minerals Commission on monitoring visit to mining communities.

Prompted by reports from Forestry Services Division about illegal mining activities in the forest reserves, the Regional Co-ordinating Council organised a visit to mining sites for the EPA, Forest Services Division, Minerals Commission, Ghana Police Services, Ghana National Fire Services, Bureau of National Investigations and other MDAs in the region.

5.7.3 Environmental Impact Assessment

The office received fifty-nine (59) applications from proponents. Thirty-six (36) of the applications were from the agriculture sector and specifically on irrigation projects. All have been issued with permits. The rest of the applications were eight (8) mining projects, six (6) energy sector projects, five (5) social sector projects and four (4) health sector projects.
5.7.4 Complaints Investigations

The office handled three (3) complaints on environmental issues. These were on the siting of a fuel filling station near a football field and the construction of a drain across an access road.

The other issue involved the alleged destruction of the Tenazuk Hills at Tongo by Granite and Marbles Company Limited. In view of the sensitive nature of the problem, the Regional Minister constituted a seven-member committee of which the Deputy Director of EPA, UER was a member. The committee recommended among others the need for the company to renew its mining licence and adequately document the agreements with the communities on their social obligations.

5.7.5 Regional Inter-Sectoral Network Meeting

With the support of the Savannah Resource Management Project (SRMP), the office conducted three (3) quarterly meetings of the Regional Inter-Sectoral Network. Issues discussed at the meeting included mining activities in the region; relocation of a land fill site; World Environment Day celebration; anti bushfire campaign; and general environmental problems in the region.

5.7.6 Regional World Environmental Day Celebration

The regional celebration of World Environment Day took place at Binaba in the Bawku West District on the 25th of July 2001. Activities included tree planting exercise at Binaba, Zebilla Health Centre and the premises of the Bawku West District Assembly. A durbar at Binaba to mark the day was attended by the chiefs and people of Binaba and surrounding communities, schools children, decentralised departments of the District Assembly, NGOs, the Bawku West District Assembly and the general public.

5.7.7 Meetings / Seminars / Workshops

The office attended twenty-nine (29) meetings/seminars/workshops on environmental issues. The office also attended a series of meetings of the technical sub-committee of the Bolgatanga Statutory Planning Committee.

The Deputy Director, EPA Upper East regional office attended two international conferences on the Integration of Priority Activities into the ACP/EU Partnership Agreements in Benin, Coutonou and Fifth African Regional Preparatory Conference toward the Fifth UN Conference of the parties (COP - 5) in Maputo, Mozambique.
5.8 UPPER WEST REGION

5.8.1 Environmental Education and Awareness Creation

The target group for environmental education is the total population of the region. At the school level, educational programmes placed emphasis on the role of the youth in sound environmental management and the idea of forming or reactivating environmental clubs. The communities were encouraged to form environmental management committees that would lead the communities to take practical actions to protect their environment.

A total of 61 communities and (9) schools were visited and various environmental messages delivered. The mass media was used to inform the public on issues relating to the environment (such as desertification, water conservation, bushfire, agrochemical use, energy and tree growing among others). EPA Upper West Region has an airtime on the local FM radio station (Upper West Radio) on its weekly programme on environmental protection on Fridays in the local language “Zei-Veelun quluyele”.

The Agency in consultation with Suntaa Nuntaa (a local NGO) is producing simple printed materials and audio-visuals for environmental education and public awareness creation.

5.8.2 Environmental Monitoring and Inspection

A number of development projects were inspected. These include road works and other development projects of District Assemblies. The office also conducted routine water quality test and surveillance on water bodies/ water courses on possible siting of aquatic weeds (water hyacinth).

A research on charcoal burning in the Upper West Region was conducted. The survey covered forty (40) communities in the region. It was established that charcoal burners used economic trees especially shea butter trees.

5.8.3 Investigation of Complaints

A total of seventeen (17) complaints were received during the year. Fifteen (15) of them have been investigated and resolved. Two have been investigated and referred to the Wa District Assembly and the District Security Council for further action. All the complaints centred on encroachment on protected sites, tree felling, sand winning and mining.
5.8.4 Environmental Impact Assessment (EIA) Administration
The office conducted screening on seven (7) proposed projects for the purpose of obtaining environmental permit. Three projects being mineral processing, fuel refilling station and a warehouse obtained environmental permit to commence work. One proposed 60-room hotel project registered and preliminary environmental report (PER) is being prepared by the proponent.

5.8.5 Partnership and Networking
Networking is employed at all levels. The office is a member of the Regional Population Advisory Committee, Regional Planning Co-ordinating Unit, Regional Road Monitoring Team and other sub-committees of the Regional Co-ordinating Council (RCC). The Regional Environmental Management Committee held its regular quarterly meetings in the year. The office also collaborated with other ministries; departments and agencies (MDAs) in organising environmentally related programmes.

The office participated in the ordinary and sub-committee meetings of district assemblies and officers acted as resource persons at workshops organised by district assemblies.

The office succeeded in the establishment of District Environmental Desk office (using District Development Planning Officers) in the Lawra and Jirapa-Lambussie District Assemblies and the establishment of Community Environmental Management Committees (CEMCs) in one hundred and twenty (120) communities in the region.

5.8.6 Natural Resource Management
The activities of the office under natural resource management focused on the establishment of agro forestry and woodlots and formation of environmental protection groups and clubs; campaign and bushfires control and prevention and assisting the Savannah Resource Management Centre with the implementation of component activities.

Communities and schools transplanted a total of 5000 seedlings. The office assisted communities with reserves by providing technical know-how in collaboration with other stakeholders to prevent burning and encourage the non-burning experiment initiated by the communities.

5.8.7 Meetings/ Seminars /Workshops
The office attended thirteen (13) workshops and seminars that centred on environmental issues.
5.9 VOLTA REGION

5.9.1 Environmental Education and Awareness Creation

Through the instrumentality of the office, the management of Volta Premier FM (a local radio station) working in collaboration with the Ho Polytechnic chapter of Friends of the Earth (FoE) has instituted a weekly radio discussion on environmental management.

Two awareness creation programmes were organised for the senior and middle level management of Juapong Textiles Limited. This was at the instance of the management of the company in order to explain issues in the company's environmental management plan (EMP) and its implications as far as workers role was concerned.

The office participated in the “Thinking Day” celebration of the Girls Guide Movement. The occasion was used to reiterate the importance of the involvement of young people in environmental management.

5.9.2 Environmental Monitoring

The office had been engaged in some monitoring activities. These have mainly been in the area of on-going infrastructure development projects such as, the Kpando–Abotoase Road project being undertaken by Messrs Bilfinger and Berger and the Sogakope – Ho – Fume Road Project being undertaken by Messrs FWAL. It was, observed in both cases that, it is not all the commitments made in their EIS that are being implemented or adhered to. These are mostly in the area of re-vegetation of exposed surfaces, re-instatement of borrow-pits and observance of occupational health and safety (OH&S) rules. This has been brought to the attention of both the client and the contractors for rectification.

5.9.3 Environmental Impact Assessment

The office worked on fifty-one (51) EIA applications. Six (6) of the applications were from the hospitality industry, four (4) in the energy sector, two (2) on infrastructure development and one (1) from the forestry sector. Twenty-eight (28) of the applications were on the registration of maternity homes and other health establishments.

The office was also involved in the review of scoping reports and environmental impact statements of the Keta Sea Defence Project, Diamond Cement Factory at Aflao and Ho township roads project.
5.9.4 Complaints Investigation

The office got involved in the resolution of four (4) environmental complaints. Two (2) of the complaints centred on illegal sand-winning activities in the Sokode-Bagbe in the Ho District and the other on the operations of Diamond Cement Company Ltd. and in-sanitary conditions around residential premises.

5.9.5 Celebrations

The region successfully hosted the southern sector celebration of the International Day for the Preservation of the Ozone layer. The main activity for the day was a quiz contest involving five (5) second-cycle institutions selected from the Volta Region. As part of activities to mark this year’s International Population Day in the region, the office in collaboration with the Regional Population Advisory Committee participated in three (3) radio discussion programmes in Ewe, Twi, and English respectively on the theme “Population, Environment and Development”.

5.9.6 ADRA Food Security Project

The office in the month of December collaborated with the Adventist Development and Relief Agency (ADRA) with regards to a 5-year food security programme that the latter is about to initiate in the southern part of the Volta Region. The programme, which has the promotion of afforestation and agro-forestry as one of its major components, is to cover South Tongu, North Tongu and Akatsi Districts.

5.9.8 Destruction of Unwholesome Products

Upon a request made to the office by the regional office of Customs Excise and Preventive Service, the office supervised the destruction of 125 cartoons of frozen chicken parts. The destruction was carried out on the 18th of September 2001 at the final disposal site of the Ho District Assembly. The method employed for the disposal was burning.

It is the wish of the office that bodies such as CEPS will develop or install required facilities that will ensure that these destruction exercises are carried out in a more environmentally friendly manner. The office carried out an extensive survey in the region to collect views on children’s perception about environmental management.

5.9.9 Meetings/ Seminars/ Workshops

The office attended thirteen (13) workshops/meetings/seminars on environmental issues.
5.10 WESTERN REGION

5.10.1 Environmental Education and Awareness Creation

During the year, the office collaborated with other organisations in organising training programmes for their workers. These organisations included Ricerca e Cooperazione, Takoradi Cement Works and Friends of the Nation.

The office also used the local FM Radio Station for environmental education programmes on population, development and environmental management.

As part of the GHANA/UNDP Capacity 21 programme, the office organised training programmes and established environmental clubs in schools at the Juabesobia District.

5.10.2 Environmental Monitoring/Inspection

Business was generally low and most companies were not operating at full capacity. Aerial and effluent discharge in some cases was a public health concern. Some of the industrial establishments were run down.

The Volta River Authority (VRA) Takoradi Thermal Power Project organized oil spill exercise to assist the company to gather enough data to draw up a comprehensive contingency plan for oil spill. At the preparatory meeting for the exercise, the VRA was urged to complete at least a draft oil contingency plan for review and test by the end of the year.

5.10.3 Environmental Quality Monitoring

The office carried out sampling and physio-chemical analysis of water from EPA designated sites, being four (4) coastal sites, seven (7) riverine sites, one (1) estuary and one (1) well during the first, second and fourth quarters of the year.

5.10.4 Environmental Impact Assessment

During the year under review, the office received thirty-nine (39) environmental impact assessment applications. The mining sector recorded the highest number of applications - sixteen (16) followed by the health sector with ten (10). Information and the energy sectors recorded four (4) each, the hospitality industry recorded two (2) with manufacturing, agriculture and the timber/wood processing sub sector recording one (1) each.
Two public hearings were held for Cyanide Processing Plant and Mining at Dead Man’s Hill by Satellite Goldfields Limited. A public hearing was held in connection with the proposed sodium cyanide repackaging and transportation project at Sofokrom. The reaction from the public to the project was adverse. The project proponent was therefore given three (3) options; to select another site for the project, conduct an environmental assessment for the project or import cyanide in sturdy containers.

5.10.5 Complaints Investigation

During the year under review, the office handled fifteen (15) environmental complaints that centred on nuisance caused by mining companies, odour nuisance, noise pollution, smoke nuisance and land degradation.

Two of the complaints concerned the spillage of cyanide by two (2) large-scale mining companies in the region, Goldfields Ghana and Satellite Goldfields.

The attention of the steering committee from new Atuabo was drawn to a discrepancy in the resettlement package for the remnant group known popularly as ‘Lawyer group’ and the earlier group who had already been resettled.

Goldfields Ghana Limited agreed to repair some broken down facilities in the new settlement and intimated that in real monetary terms there has been no discrepancy. However, the company explained that it had to give the latter group money to rent premises for their families whilst their houses were being built. The company did not accept the discrepancy in the resettlement package.

5.10.6 World Environment Day Celebration

The year’s World Environment Day was held at Princess Town in the Ahanta West District. The Western Regional Office and the local planning committee of the Ahanta West Assembly together organised the day. The event showcased the success of an environmental project on the restoration of some coastal lagoons and provision of amenities to the Aketekye and Princess Town communities.

5.10.7 Meetings / Workshops

The regional office participated in thirteen (13) meetings and workshops during the year under review.
5.10.8 TARKWA DISTRICT OFFICE

The main purpose of setting up the office is to monitor specifically all mining companies as a result of their concentration in Tarkwa and its environs.

5.10.8.1 Environmental Education and Awareness Creation

During the year 2001, the office visited five (5) basic schools and two (2) secondary schools for environmental education and awareness creation exercise. Two (2) schools namely Tarkwa Senior Secondary School and Goldfields School Complex had their environmental clubs inaugurated.

The office organised a field trip for two basic schools to the mining site of AGC (Iduapriem) and donated tree seedlings of different species totalling one hundred and fifty (150) to environmental clubs for planting around their schools.

A radio talk show programme on the local FM radio was organised to educate the population in the district on the activities of the Agency. Issues discussed included mining and the environment, environmental impact assessment, Environmental Protection Agency Act 1994, Act 490 and Environmental Assessment Regulations LI 1652.

5.10.8.2 Environmental Quality Monitoring

During the period under review, the office sampled water from eight (8) water bodies made up of rivers, boreholes and streams for physico-chemical analysis.

The high volume sampler (PM 10) installed at the Tarkwa Government Hospital is still being used to monitor the extent of particulate matter pollution in the Tarkwa environs. This exercise is done in collaboration with the Kwame Nkrumah University of Science and Technology - School of Mines making use of their Environmental and Safety Section.

5.10.8.3 Environmental Performance Monitoring

As part of its routine monitoring exercise, the office visited eleven (11) mining companies in the district. The monitoring exercise was in the form of discussions with mine management, field verification and community visits.

EPA Tarkwa carried out a survey on mining communities in conjunction with the regional office on the status and sufficiency of drinking water, availability or otherwise of farmlands and
incidence of diseases (water/ airborne) and other issues against the background of reports in
the dailies and also activities of NGOs.

The office also paid monitoring visits to four exploration companies that the Agency issued
environmental permits during the year.

The activities of twelve (12) other establishments in the district were monitored during the
period of reporting. They range from laboratories, explosive manufacturing workshop, timber
firms and oil extraction. Specific areas of environmental concern during the exercise were liquid
waste streams, emissions into the air and solid waste management as well as general house
keeping.

5.10.8.4 Environmental Assessment Administration

Sixteen (16) environmental assessment applications were received during the year. Nine (9) of
the application were from the health sector, five (5) from the mining sector and one (1) each
from the manufacturing and health sectors. Seven (7) of the applications received
environmental permit whilst others are at various stages of the environmental assessment
process.

5.10.8.5 Workshops/ Seminars/ Conferences

The office participated in six (6) workshops/ seminars during the cause of the year with the aim
of building the capacity of the office in environmental management and sustainability.
6.0 CHEMICALS CONTROL AND MANAGEMENT CENTRE

The Centre's primary objective is to protect human health and the environment from the effects of indiscriminate and inappropriate use and improper management of chemicals. This is expected to ensure the co-existence of the general population with chemical substances through the maximization of their benefits whilst minimizing adverse health and environmental impacts. Activities conducted during the year under review include the following.

6.1 Chemicals and Meat Clearance/Permitting Activities

The overall objective of this exercise has been to keep track of all chemicals, namely industrial/consumer chemicals (including industrial raw materials such as granules and clinker) and agricultural chemicals (pesticides, fertilizer etc) as well as meat product imports into the country. Annual clearance certificates/permits were issued for the importation of industrial chemicals and industrial raw materials before clearance at the ports and customs entry points. For agro chemicals (pesticides, fertilizers) and selected industrial/consumer chemicals, only single import permits were issued (see tables below).

A total of 162 annual clearance and 19 supplementary certificates were issued for industrial/consumer chemicals; 860 single import permits for selected industrial/consumer chemicals and 126 single import permits for agro chemicals (pesticides and fertilizer). Also 82 meat permits were issued during the year.

Table 21: Chemical Permits Issued in 2001

<table>
<thead>
<tr>
<th>Month</th>
<th>Annual Certificates</th>
<th>Supplementary Certificates</th>
<th>Single Import Permits</th>
<th>Agro-Chemicals</th>
<th>Industrial and Consumer Chemicals</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>50</td>
<td></td>
</tr>
<tr>
<td>February</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>82</td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>54</td>
<td>0</td>
<td>8</td>
<td>125</td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>67</td>
<td>0</td>
<td>14</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>16</td>
<td>1</td>
<td>12</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>June</td>
<td>10</td>
<td>2</td>
<td>14</td>
<td>49</td>
<td></td>
</tr>
<tr>
<td>July</td>
<td>11</td>
<td>5</td>
<td>13</td>
<td>46</td>
<td></td>
</tr>
<tr>
<td>August</td>
<td>2</td>
<td>5</td>
<td>16</td>
<td>133</td>
<td></td>
</tr>
<tr>
<td>September</td>
<td>2</td>
<td>5</td>
<td>10</td>
<td>71</td>
<td></td>
</tr>
<tr>
<td>October</td>
<td>2</td>
<td>1</td>
<td>15</td>
<td>96</td>
<td></td>
</tr>
<tr>
<td>November</td>
<td>0</td>
<td>0</td>
<td>10</td>
<td>85</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>51</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>162</td>
<td>19</td>
<td>126</td>
<td>860</td>
<td></td>
</tr>
</tbody>
</table>
6.2 Hazardous Waste Management

6.2.1 Routine Inspection and Monitoring

This exercise, aimed at keeping track of imported industrial raw materials, which include plastic granules and clinker, various fertilizer types and meat products, was undertaken regularly. Samples were sent to the Ghana Standards Board for analysis to determine levels of heavy metals like Lead, Cadmium, Copper and Zinc (in case of industrial raw materials and fertilizer). In the case of meat products, the Ghana Atomic Energy Commission determined the levels of radioactive contamination before clearance permits were issued.

6.2.2 Disposal/Destruction of Wastes

This exercise involved

i. Investigations and inspections of obsolete or damaged/expired chemicals and hazardous wastes.

ii. Supervision of disposal/destruction of obsolete or damaged/expired chemicals and hazardous wastes in an environmentally sound manner.

A number of disposal/destruction cases were handled including the following:

i. Destruction of damaged Swan dry cell batteries and expired cigarettes imported by Lewadis Enterprise

ii. Destruction of damaged gelatine capsules at Ogbolo, Germann, belonging to Phyto-Riker Pharmac. Ltd

iii. Disposal of liquid waste belonging to ECES Specialties Ltd

6.3 Pesticides Registration and Management

Evaluation meetings for the assessment of pesticides dossier submitted to the Agency were held. Table 22 summarizes the list of registered pesticides
Table 22: List of Pesticides Registered

<table>
<thead>
<tr>
<th>No</th>
<th>Trade Name of Pesticide</th>
<th>Active Ingredient</th>
<th>Formulation Type</th>
<th>End Use</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Confidor</td>
<td>Imidacloprid</td>
<td>Soluble Concentrate</td>
<td>Insecticide on Cocoa</td>
<td>Full registration for use on cocoa only</td>
</tr>
<tr>
<td>2</td>
<td>Ridomil Gold Plus 66WP</td>
<td>Metalaxyl and Copper (I) Oxide</td>
<td>Wettable Powder</td>
<td>Fungicide</td>
<td>Full registration for use on cocoa only</td>
</tr>
<tr>
<td>3</td>
<td>Decis 25 EC</td>
<td>Deltamethrin</td>
<td>Emulsifiable Concentrate</td>
<td>Insecticide</td>
<td>Full registration for general use</td>
</tr>
<tr>
<td>4</td>
<td>Cocostar 210EC</td>
<td>Primiphos-Methyl</td>
<td>Emulsifiable Concentrate</td>
<td>Insecticide on Cocoa</td>
<td>Provisional clearance for general use</td>
</tr>
<tr>
<td>5</td>
<td>Benlate 50WP</td>
<td>Benomyl</td>
<td>Wettable Powder</td>
<td>Fungicide on Crops, Vegetables, Pulses and Cereals</td>
<td>Provisional clearance for general use</td>
</tr>
<tr>
<td>6</td>
<td>Londax 60 DF</td>
<td>Bensulforon Methyl</td>
<td>Dry Flow</td>
<td>Herbicide on rice paddy fields</td>
<td>Full registration, for general use</td>
</tr>
</tbody>
</table>

The breakdown of the number of licenses issued in 2001 were as follows:

Importers, Formulators or Manufacturers of Pesticides 11
Distributors or sellers of pesticides (Retailers & Wholesalers) 71
Pest Control Operators 43
Total 125

6.4 Workshops, Seminars and Meetings

- Workshop on the Establishment of Poison Control and Information Centre
- Sub-Regional Workshop on Chemicals Policy and Legislation with Special Emphasis on Persistent Organic Pollutants (POPs)
- Sub-regional Workshop on the Stockholm Convention on POPs and Alternative Approaches to POPs Pesticides, Dakar, Senegal, 22-26 October 2001
- Course/Interactive Workshop on Training and Technology Transfer in Hazardous Waste Management: The Role of Focal Points and Linkage Institutions, Pretoria, South Africa, 19-22 November 2001
6.5 **UNEP Global Treaty On Persistent Organic Pollutants (POPs)**

The Stockholm Convention on Persistent Organic Pollutants (POPs) was opened for signature and adoption at a Diplomatic Conference in Stockholm, Sweden on 22nd May 2001. Ghana has signed and adopted the Convention.

One of the Articles of the Convention requires that Parties prepare National Implementation Plans to assess the country capacity to implement the Stockholm Convention. This will also form the basis for the Phase Out/Reduction Programme and ultimately elimination of POPs at the county and global levels. Ghana has chosen the United Nations Industrial Development Organization (UNIDO) as the Implementing Agency for the POPs Enabling Activities in Ghana.

A project proposal entitled “Enabling activities to facilitate early action on the implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) in Ghana” has been prepared jointly by the POPs Focal Point and UNIDO. This proposal, which was endorsed by the Global Environment Facility (GEF) Operational Focal Point in Ghana, has been approved by GEF. It is expected that initial work will start early in 2002.

6.6. **Project on Strengthening Decision-making for Pesticides Registration and Priority Chemicals**

This is a UNITAR/IOMC Training and Capacity Building Project in Ghana with funding from the Government of the Netherlands. The project consists of three phases over two years. Objectives to be met by the end of the project include the following:

(i) A pesticides registration process is operational;
(ii) Decisions regarding a number of PIC chemicals are made;
(iii) Human resource skills for pesticides/chemicals decision-making are in place; and
(iv) Ghana’s country ratification process for the Rotterdam Convention is accelerated.
7.0 FINANCE AND ADMINISTRATION DIVISION

7.1 Human Resources Development Department

The Department is responsible for facilitating, the 5-year Human Resources Development Plan (HRDP) that was drawn up under the Ghana Environmental Resources Management Project (GERMP). The Department is also responsible, amongst others, for the following:

- Developing and maintaining an update of a Human Resource data base on staff
- Undertaking periodic training needs assessment.
- Coordinating the update/implementation of the HRDP
- Organizing induction, orientation and job rotation for various categories of staff.
- Coordinating in-house seminars for knowledge sharing
- Arranging for external training, attachments, study tours and study leave
- Facilitating departmental workshops/seminars.

7.1.1 In-house Training

7.1.1.1 Induction Training

The Department organized induction training for fourteen (14) newly recruited programme grade staff of the Agency from Monday, 6 to Friday, 10 August 2001. The objective was to enable the new staff acquaint themselves with the nature of work of the Agency so as to be able to make effective and meaningful contributions to the work.

7.1.1.2 Training in Environmental Management

The training was organized at the Agency’s Training School at Amasaman for female staff of the Agency, our sector-Ministry (Ministry of Environment and Science) and newly recruited employees of the Agency. Sixty-six (66) participants attended the training, which was organized in two batches, with a batch taking two (2) days. It lasted from Tuesday, 10 to Friday, 13 July, 2001. Forty-four (44) of the participants came from the Agency and twenty-two came from our Sector-Ministry. The objective of the course was to provide participants with an overview and understanding of environmental management issues.

The environmental management training was demand driven because the female staff from our sector-ministry requested for it. All the female staff, except the newly recruited employees of the Agency, were non-programme staff. From the feedback it became very clear that the
7.1.2 Training Under The Natural Resources Management Programme Sponsorship

7.1.2.1 Local Training

As part of the implementation of the Agency’s proposed programmes under the Natural Resources Management Programme (NRMP)/World Bank (WB) sponsorship, the Department liaised with the Ghana Institute of Management and Public Administration (GIMPA) for management training for senior staff of the Agency. The management courses to be covered are the following:

- Basic Administrative Skills for Technocrats
- Communication skills/Report writing, and
- Public Relations.

Detailed proposals from GIMPA were forwarded to the NRMP for further action. However, the NRMP requested the Agency to contact other management training institutions for their quotations. This would be carried out in year 2002 for approval and implementation of the programme.

7.1.2.2 International Training

During the year, the Agency received a number of training offers from a number of countries through our sector-ministry, Ministries of Finance and Foreign Affairs. The Natural Resources Management Programme (NRMP)/World Bank (WB) either sponsored the training programmes partially or fully. The training courses attended by staff of the Agency are indicated below:

(a) Singapore Cooperation Training Programme Award: Pollution Control Management and Urban Air Quality, 2-13 July 2001.

Three officers were sponsored for this programme. The objective of the training programme was to provide the participants with an understanding of principles and strategies of pollution control and management, including vehicular emissions control, ambient and roadside air, etc.
(b) Swedish International Development Corporation Agency (SIDA), LULEA, Sweden: Mining and the Environment, 2001 from 17 September to 12 October 2001
A programme officer responsible for the Agency’s Tarkwa Mining District Office, attended the course. The objective of the course was to expose him to licensing, permitting, mine site closure, environmental risk analysis, solid mine waste handling, tailings dam management etc.

(c) Training Course in Institutional Strengthening Activities Related to Environmental Management, Melbourne, Australia, 13 May – 4 June 2001. The training course was under the Agency’s Training Agreement with Environment Protection Authority, Victoria, Australia
The NRMP/WB sponsored three (3) senior officers, for study tour to Australia. The objective of the course was to equip the participants with knowledge and techniques in environmental inspectorate activities.

(d) Twenty-first Annual ESRI International User Conference, San Diego, California, 9-13 July 2001. The Director of the Intersectoral Networks Division of the Agency was sponsored for the conference. The objective of the conference was to build capacity for work in Geo-spatial Information Management.

(e) Fifth Africa GIS 2001 Conference in Kenya, 5 –10 November 2001
Two (2) officers, one each from the Agency and the Ghana Statistical Service were sponsored for the conference. The objective of the conference was to enable participating countries showcase exhibiting software products from the environment as well as mapping out surveying capabilities.

It is noteworthy that while the first two programmes were partially sponsored by the NRMP/WB, the rest of the programmes were fully sponsored by the NRMP/WB. In the case of the first two programmes NRMP/WB bore the cost of return air tickets and traveling and out-of-pocket allowances of the participants.

7.1.3 Study Leave

7.1.3.1 Staff on Study Leave During the year 2001

The Department prepared a detailed updated list of officers on study leave. The purpose was for monitoring by the Department and for the attention of management. The details are indicated in table 23:
### Table 23: List of EPA Staff on Study Leave during the year 2001

<table>
<thead>
<tr>
<th>Name of Officer</th>
<th>Institute</th>
<th>Course Title</th>
<th>Duration</th>
<th>Expected Date of Return</th>
</tr>
</thead>
<tbody>
<tr>
<td>Francis M. Zakari</td>
<td>University of Ghana</td>
<td>Master of Philosophy in Agricultural Administration</td>
<td>1999-2001 (with 1 year extension)</td>
<td>September 2002</td>
</tr>
<tr>
<td>Agnes Adjabeng</td>
<td>University of Ghana</td>
<td>MA in Library Studies</td>
<td>2000-2001</td>
<td>October 2001</td>
</tr>
<tr>
<td>Philip Acquah</td>
<td>RMIT University, Australia</td>
<td>M.Sc in Cleaner Production</td>
<td>2000-2001</td>
<td>December 2001</td>
</tr>
<tr>
<td>Christiana A. Azera</td>
<td>Vrije Universiteit, Belgium</td>
<td>M. Sc in Human Ecology</td>
<td>2002-2001</td>
<td>October 2002</td>
</tr>
</tbody>
</table>

#### 7.1.3.2 Nominations for Second Degree Programmes for the 2001/2002 Academic Year

A total of twelve (12) Officers were nominated to apply to various institutions of higher learning to undertake courses leading to the award of postgraduate degrees during the 2001/2002 academic year. This figure is far beyond the maximum of seven (7) officers who are normally nominated each year. The figure rose this year to twelve (12) because some of last year’s nominees could not gain admission into universities they applied to. As part of its plan to reduce this, the Department will come out with a programme, which will enable it to hold discussions/share ideas with the heads of relevant faculties/departments of the various universities for reservation of places for the Agency's nominees in subsequent years.

The Agency has also made it clear that it cannot sponsor officers who gain admission to overseas universities. However, permission may be given to those who may find their own sponsorship.
7.1.3.3 Short Courses for 2002

The Department compiled a list of staff who have never attended short courses outside of Ghana to guide management in the selection of officers for future programmes. The Department also compiled a list of both short and long relevant courses under the Netherlands Fellowship Programme, 2000/2002. The purpose was to assist management in its decision-making regarding the nomination of officers for short training programs.

7.1.4 Conclusion

The Department did not enjoy the needed closer collaboration with most of the departments of the Agency in areas of workshop/seminar organization. The departments planned their workshops/seminars without reference to the Human Resources Development Department to coordinate. The Department, however, enjoyed closer collaboration with its sister departments in the Finance and General Administration.
7.2 GENERAL ADMINISTRATION DEPARTMENT

The Department is one of the three departments making up the Finance and Administration Division. It is mainly responsible for the general day-to-day administration of the Agency. It oversees the functioning of the following activities of the Agency including:

- Transport
- Staff Attendance
- Estate
- Recruitment and Promotion of Staff
- Security
- Trade Union and Collective Bargaining
- Telephone Exchange and Reception
- Officer Records
- Welfare Issues
- Disciplinary Issues

In these regard the Department accomplished the following duties over the period under consideration.

7.2.1 Staffing and Recruitment Situation

The Department, carried out an analysis on the current state of professional staff in the Agency. Based on the analysis, a few new employees were recruited from an interview held in the later part of year (2000) to strengthen some departments in dire need of more personnel.

The analysis revealed that the professional staff strength of the Agency as at the end of December 2001 stood as follows:

<table>
<thead>
<tr>
<th>Staff Category</th>
<th>Head Office</th>
<th>Regions</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Staff</td>
<td>90</td>
<td>33</td>
<td>123</td>
</tr>
<tr>
<td>General Staff strength</td>
<td>188</td>
<td>80</td>
<td>268</td>
</tr>
</tbody>
</table>

Some regions and some key departments at the Head Office still lack the requisite personnel to carry out departmental tasks effectively and efficiently. Two categories of interviews comprising candidates who did their national service with the Agency and the other comprising external applicants were held during the year. These interviews were mainly for the professional programme grade staff. However, a decision is yet to be taken as to when to appoint them to fill vacancies in the Agency.

7.2.2 Promotions

Twenty-two senior officers and twelve junior officers were promoted to higher grades.
7.2.3 Resignations
The Department recorded eight (8) resignations in the year made up of seven (7) senior staff and one (1) junior staff.

7.2.4 Compilation of Staff Records
The Department undertook a compilation of a number of staff records. These included staff leave history and dependants of staff. There was also an inventory of office space/accommodation at the head office. These exercises were done to provide data for effective management planning.

7.2.5 Rotation of Staff
The Department organised monthly departmental seminars through which the various departments learn from each other and peculiar grievances affecting various staff are made known. One important suggestion that came up for management’s attention was the rotation of staff in the departments. General Administration was tasked to prepare a plan for the exercise. A draft plan was prepared. This plan was discussed at a general staff meeting and is yet to be implemented.

7.2.6 Repair Works
- The Department in collaboration with its estate section undertook major repair works on all the three aluminium water tanks, which were badly leaking. The repairs included mending, cleaning and repainting of the tanks.
- They also re-fixed the blown off roof sign at the Headquarters and the blown-off wooden signpost at the Training School at Amasaman
- The section also undertook the laundering of over three hundred pieces of curtains in all the offices at the headquarters and work has also started on the servicing, repairs of all air conditioners and photocopiers in the Agency.

All service lines i.e. water and electric ducts which used to run through one opening are now being separated in the switch rooms. This will prevent water leakages that affect electrical cables.

7.2.7 Auction of Unserviceable Materials
The Department also took inventory of all unserviceable furniture and equipment of the Agency and applied for permission to auction them. After all the due processes were satisfied an auction was organised in August 2001 for both the Agency staff and the general public.

7.2.8 Long Service Award
At the end of the year 2001 twelve officers who have done meritorious service for ten years were given awards.
7.3 FINANCE DEPARTMENT

The Department’s primary objective is to ensure that the EPA applies acceptable financial management practices to all aspects of its use of and accounting for all funds (public and donor) and also to ensure that the EPA fulfils its fiduciary responsibility to financing institutions. The Department seeks to achieve its objective by:

- Applying recognized national accounting standards.
- Maintaining appropriate records of all financial transactions affecting the assets and liabilities and capital of the Agency.
- Preparing the annual and other periodic accounts and balance sheet for audit.
- Preparing and submitting all statutory reports to Government Agencies.
- Ensuring compliance to all statutory requirements pertaining to finance.
- Ensuring that donor requirements pertaining to procurement, disbursement and reporting are fully met.
- Ensuring that budget controls and accounting controls are met.
- Facilitating the development of the Agency’s Medium Term Expenditure Framework Budget.
- Providing financial reports to management.

This report of the Department’s activities in the year 2001 covers the following areas:

- Sources of Income.
- Internally Generated Income.
- Audit.
- Constraints.

7.3.1 Sources of Income

The Agency’s financial resources include Government subvention, external funds and internally generated income.
7.3.1.1 Government Subvention

The Agency's budget allocations from 2000 to 2001 under the Medium Term Expenditure Framework and actual releases made by the Ministry of Finance for the same period are indicated in the tables 25 and 26 below.

Table 25: Government of Ghana Allocations and Releases to the EPA in 2000

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Amount Allocated (A)</th>
<th>Amount Released (B)</th>
<th>Percentage of A/B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Personal Emoluments</td>
<td>¢ 1,169,933,000</td>
<td>¢ 1,555,792,255</td>
<td>132.98</td>
</tr>
<tr>
<td>2</td>
<td>Administration Activity Expenses</td>
<td>¢ 816,141,000</td>
<td>¢ 595,900,912</td>
<td>73.01</td>
</tr>
<tr>
<td>3</td>
<td>Service Activity Expenses</td>
<td>¢ 772,868,000</td>
<td>¢ 210,028,250</td>
<td>27.17</td>
</tr>
<tr>
<td>4</td>
<td>Investment Activity Expenses</td>
<td>¢ 1,039,958,000</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>¢ 3,798,900,000</td>
<td>¢ 2,361,721,417</td>
<td></td>
</tr>
</tbody>
</table>

Table 26: Government of Ghana Allocations and Releases to the EPA 2001

<table>
<thead>
<tr>
<th>No</th>
<th>Item</th>
<th>Amount Allocated (A)</th>
<th>Amount Released (B)</th>
<th>Percentage of A/B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Personal Emoluments</td>
<td>¢ 2,365,957,623</td>
<td>¢ 2,628,646,339</td>
<td>111.10</td>
</tr>
<tr>
<td>2</td>
<td>Administration Activity Expenses</td>
<td>¢ 738,695,570 (1,390,421,084)</td>
<td>¢ 629,274,761</td>
<td>85.18</td>
</tr>
<tr>
<td>3</td>
<td>Service Activity Expenses</td>
<td>¢ 271,147,558 (93,506,130)</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>Investment Activity Expenses</td>
<td>¢ 141,000,000 (63,304,233)</td>
<td>-</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td>¢ 3,257,92,100</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

7.3.1.2 External Funds

External funds to the Agency for the period 2000 to 2001 were from various projects being implemented by the Agency. Details of these inflows are summarized in tables 27 and 28.

Table 27: External Inflows to the EPA in 2000

<table>
<thead>
<tr>
<th>Budget Allocation</th>
<th>Donor Institution</th>
<th>Project/Programme</th>
<th>Donor Inflows</th>
</tr>
</thead>
<tbody>
<tr>
<td>¢ 2,581,953,343</td>
<td>Netherlands Government</td>
<td>GEACaP</td>
<td>¢ 1,831,836,240</td>
</tr>
<tr>
<td></td>
<td>World Bank</td>
<td>NRMP</td>
<td>¢ 412,468,550</td>
</tr>
<tr>
<td></td>
<td>World Bank</td>
<td>Gateway</td>
<td>¢ 5,064,500</td>
</tr>
<tr>
<td></td>
<td>Netherlands Government</td>
<td>Climate Change Assistance</td>
<td>¢ 260,945,355</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td></td>
<td>¢ 2,510,314,645</td>
</tr>
</tbody>
</table>
Table 28: External Inflows to the EPA in 2001

<table>
<thead>
<tr>
<th>Budget Allocation</th>
<th>Donor Institution</th>
<th>Project/Programme</th>
<th>Donor Inflows</th>
</tr>
</thead>
<tbody>
<tr>
<td>₦ 3,062,286,760</td>
<td>Netherlands Government</td>
<td>GEACaP</td>
<td>₦ 1,604,050,000</td>
</tr>
<tr>
<td></td>
<td>World Bank</td>
<td>NRMP</td>
<td>₦ 117,486,954</td>
</tr>
<tr>
<td></td>
<td>The Netherlands Government</td>
<td>Climate Change Assistance</td>
<td>₦ 98,349,020</td>
</tr>
<tr>
<td></td>
<td>UNEP</td>
<td>CLEIAA, IICD, RISO and Volta Basin Project</td>
<td>₦ 2,898,074,970</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>₦ 4,717,960,944</td>
</tr>
</tbody>
</table>

7.3.1.3 Internally Generated Income and the National Environment Fund

The National Environment Fund was established under Part III Section 16 (1) of the Environmental Protection Agency Act, 1994 Act 490.

Under sources of money for the Fund, Section 16 Sub-section (2) (b) states, “levies collected by the Agency in the performance of its functions”. The Agency generates revenue from the following sources:

(i) Chemicals Clearance
(ii) Meat/Fish Clearance
(iii) EIA Permitting
(iv) Mining Exploration
(v) Small Scale Mining Permitting
(vi) Tree Cutting Permitting

There are two categories of “takings”: Permit fees and processing charges. The fees are paid into the National Environment Fund established under Part III Section 16 (1) of the Environmental Protection Agency Act, 1994 Act 490 while the charges are retained to meet part of the Agency’s functional expenditure outlay e.g. stationery, monitoring and inspection, screening of applications, adverts, printing of certificates.

Fees collected and paid into the National Environment Fund Account since opening the account in July 1995 (Social Security Bank Ltd., Main Branch, Kokomlemle) is as follows:
1995       75,887,000  
1996       168,510,000  
1997       184,631,700  
1998       210,803,000  
1999       298,844,000  
2000       795,912,000  
2001       574,907,000  
Total       2,309,494,700

7.3.2 Payments out of the Fund

Authorised payments out of the National Environment Fund under Section 17 of the EPA Act, 1994 (Act 490) are summarized in below.

Table 29: Payments out of the Fund

<table>
<thead>
<tr>
<th>No</th>
<th>Activity</th>
<th>Amount (Cedis)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Environmental Education, Studies and Investigations</td>
<td>¢ 13,500,000.00</td>
</tr>
<tr>
<td>2</td>
<td>Human Resource Development</td>
<td>¢ 701,810,471.00</td>
</tr>
<tr>
<td>3</td>
<td>Incentive package for staff of the EPA approved by the former</td>
<td>¢ 825,074,834.00</td>
</tr>
<tr>
<td></td>
<td>Management board (1998) to forestall the high turnover of</td>
<td></td>
</tr>
<tr>
<td></td>
<td>professional staff owing to low levels of pay at the EPA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>¢ 1,540,385,305.00</td>
</tr>
</tbody>
</table>

7.3.3 Investment in Treasury Bills

Under Section 19 (2) of the EPA Act, 1994, Act 490, part of the fund has been invested in 91-day Government Treasury Bills, on a rolling basis. The balance on the Environment fund account less interest earned on investment over the last quarter of year 2001 is ¢1,511,210,973.25.
7.3.4 Signatories to the Account

Section 19 (3) empowers the Chairman of the Board, the Executive Director of the EPA and one other member of the Board to sign all payments issued from the Fund. Usually two of the above would sign at a time.

7.3.5 Revenue from Processing and Administration Charges

Monies collected and retained by the Agency to support processing and administration expenses is set out below:

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>187,483,000.00</td>
</tr>
<tr>
<td>2000</td>
<td>751,265,500.00</td>
</tr>
<tr>
<td>2001</td>
<td>504,325,750.00</td>
</tr>
<tr>
<td>Total</td>
<td>1,443,074,250.00</td>
</tr>
</tbody>
</table>

7.3.6 Audit of Accounts

Messrs Kufuour and Associates, Chartered Accountants, Accra, conducted the audit of the accounts of the Agency for the two years ended 31st December 2001.

7.3.7 Constraints

Apart from the non-release of funds to carry out service activities for which the EPA exists and by which its relevance is judged by the informed public, the Finance Department has a record of high turnover of professional staff for the obvious reason of low levels of pay at the EPA.
8.0 TRAINING SCHOOL

The EPA Training School became operational following the appointment of a manager. A bilingual secretary was also employed August 2001.

During the first half of the year essential materials, equipment, and services were acquired for the School to function fully as a conference facility. In the second half of the year, hiring packages and a flyer were developed and an aggressive marketing strategy was pursued to sell the School as widely as possible among both government and private sector organisations.

8.1 Acquisitions

During the year the School acquired the following:

- 30 plastic chairs and 15 plastic tables
- 1 double-door refrigerator
- 1 mobile phone connected to the Ghana Telecom One Touch service for the Manager
- 1 Computer, 1 Printer and accessories

8.2 Events Hosted

The School hosted the following events during the year 2001:

A 2-day seminars (February 12–15, 2001) organised for two groups of EPA Security staff.
A 5-day seminar (February 26 - March 2, 2001) organised by the Ghana Environment Assessment Capacity Development Programme.
A 1-day workshop (May 9th, 2001) organised by the Environmental Assessment Capacity Development Programme for financial Institutions.
A 1-day workshop (September 19th, 2001) organised by EPA – UCCEE Project on CDM.
A 2-day workshop (September 27-28, 2001) organised by the Legal Department of EPA.
A 3-day meeting (October 10–12, 2001) by the National Commission on Civic Education.
A half-day meeting (November 3, 2001) by the Association of Ghana Industries.
A 3-day workshop (October 31 – November 2, 2001) organised by the Ghana Environmental Assessment Capacity Development Programme.
A 1-day meeting (7th December 2001) by JHPIEGO Corporation.
A 1-day exhibition (December 16, 2001) held by Tabitha Vocational School, Amasaman.

8.3 The Way Forward

In the coming year, the marketing of the facilities of the School to external agencies is going to be intensified and the School will develop its own environmental management and development courses to be advertised both within and outside the country.
9.0 PROJECTS

9.1 OZONE OFFICE

The Ozone Office is responsible for the planning and implementation of programmes to phase-out Ozone Depleting Substances (ODSs) in Ghana. During the year 2001, the following activities were undertaken:

9.1.2 Data Collection

In compliance with Article 7 of the Montreal Protocol (Data Reporting) the Office embarked on a data collection exercise on ozone depleting substances in the country. The information obtained was forwarded to the Multilateral Fund and Ozone Secretariats to enable them monitor the National ODS consumption trends.

9.1.3 Awareness Creation

The office conducted the following awareness creation activities during the year under review:

- Presentation on “The Future of CFC Appliances in Ghana” at the Immanuel Methodist Church, Airport.
- Granted interview on the secretariat’s activities to TV3, which was telecast on the national television.
- Awareness creation programmes were organised in the Upper East, Upper West, Northern, Volta and Brong-Ahafo Regions.
- The Office participated, as resource persons, at a one-day Customs, Excise and Preventive Services training programme at Kpetoe in the Volta Region.

9.1.4 Meetings

During the period under review the following meetings were held:

- 4 Meetings of the National Committee on Ozone Depleting Substances (NACODS).
- 2 Meetings of the National Committee on Improved Refrigeration Practices (NCIRP).
- Meeting of the National Committee on Improved Flexible Foam Practices (NCIFFP).
- Meeting of the Select Committee of the Mobile Air-Conditioning (MAC) Project.
- Joint Project Review Meeting.
The Office also participated in the under-listed meetings:

- Made presentations at the ODSONET/AF Meeting in Windhoek, Namibia.
- 7th African Network Meeting for ODS Officers in Lusaka, Zambia.
- Country Co-operation Framework (CCF) Meeting at UNDP.
- 13th Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer at Colombo, Sri Lanka.
- Terminal Tripartite Review Meeting of RESPRO Project at Tamale in the Northern Region.

9.1.5 Seminars/Workshops

- The office organised a one-day workshop at the Accra Technical Training Centre for the Commercial and Industrial Refrigeration End-User Sector.
- The office hosted a UNDP Consultant for a week in preparation for the End-User workshop.
- The workshop brought together about seventy participants who were either owners or technicians of cold storage facilities in the country.
- The objective of the workshop was to take participants through the procedures for consideration of an incentive payment to retrofit their equipment to run on ozone friendly alternative.
- The Office also organised a one-day seminar at the Accra Technical Training Centre for importers and retailers of ozone depleting substances in the country.
- The purpose of the seminar was to inform importers/retailers about Ghana’s obligation under the Montreal Protocol and the need for Ghana to reduce its consumption of CFCs to 17.05 ODP tonnes by the year 2005 with a complete phase out by 2010. They were also introduced to Ghana’s commitment under the Protocol and code of good handling of refrigerants.
- The Office participated and made presentation at a UNDP organised 3-day retreat at Akosombo to discuss with other project managers the next Country Cooperation Framework (CCF-II) for Ghana.

9.1.6 National Monitoring Programme

- The Office embarked on a monitoring programme of cold storage facilities and mobile air-conditioning workshops to inform/educate owners of such facilities on impending projects and the need to take advantage of them.
- Selected refrigeration workshops throughout the nation were monitored to ensure adherence to code of good practices. This programme helped the office to identify
workshops, which have not participated in any of our training programmes for their inclusion in 2002 training.

- The Office also undertook a monitoring exercise to five foam factories in Accra and Kumasi and visited industries using chilling systems.

9.1.7 Visit by UNDP Consultants

Two representatives from the UNDP and UNOPS, New York visited the country to have discussions with the office on the three approved sub-projects under the Refrigeration Management Plan (RMP) and also approve the terms of reference for the project.

Another UNDP Consultant from Canada also visited the country in October to discuss a project to phase-out Methyl Bromide use in Ghana. During her stay, she visited a farm in the Volta Region (Naktan Farms), which currently has Methyl Bromide in stock.

9.1.8 Chemical Permits

The office reviewed and approved six applications for chemical permit.

9.1.9 Auditing of UNDP Implemented Projects

The office participated in a meeting organized by the UNDP to introduce an auditing firm selected by UNDP to audit the various projects implemented by UNDP.

9.1.10 UNDP Retreat Programme

The Office participated in a retreat programme (harmonising and building synergies in activities under Agenda 21) organized by UNDP for the Environmental Cluster of Projects under UNDP.
9.2 CAPACITY DEVELOPMENT AND LINKAGES FOR EIA IN AFRICA (CLEIAA)

Capacity Development and Linkages for EIA in Africa (CLEIAA) commenced in November 2000, and it is to last for an interim phase of 18 months. The goal of the CLEIAA initiative is that “In 2010 all African Countries have a working EIA system in place, adapted to the needs and capacities of each country”. The objectives of the interim phase are as follows:

- Improve provision of information to the African countries, the donor community, and relevant national sub-regional, regional and international organisations;
- Harmonise EIA Capacity Development efforts on the African continent and
- Design the long-term sustainability of the initiative and related structures.

Expected outputs for the interim phase include

- A focal point for CLEIAA created
- Reports to relevant international fora prepared
- Contact between African countries and donors established whilst stimulating south-south collaborations through sub-regional initiatives etc.
- Pan African meeting of nodal links organised
- Pilot countries self assessment initiated
- Preliminary organisation structure for CLEIAA developed

9.2.1 Activities

The following activities were undertaken between January and December 2001.

9.2.1.1 Establishment of Office

CLEIAA obtained office accommodation, equipment, office staff and has its own email facility (cleiaa@epaghana.org) and website (www.cleiaa.org).

Fifty-two (52) introductory letters were sent to all African countries on the launching of CLEIAA.

9.2.1.2 Inaugural Steering Committee Meeting

The CLEIAA interim desk organised the first steering group committee meeting in February 7-8, 2001. Donors, international organisations as well as representatives of the various African countries were represented at the meeting. The meeting discussed the draft pre-needs assessment questionnaire and the way forward for the CLEIAA initiative. The CLEIAA office also
briefed participants on CLEIAA’s activities and responses from initial communication with some African countries. A draft report on the CLEIAA meeting in Accra was sent to participants who attended the meeting for their comments.

9.2.1.3 Pre-Needs Assessment

Fifty-two (52) pre-needs assessment questionnaires were sent to all African countries. In addition donors, African countries and sub-regional organisations were requested to submit information on their EIA activities in Africa. Eight countries have responded to CLEIAA’s initial introductory letters and information submitted on their brief account of their EIA process have been summarized and posted on CLEIAA website. CLEIAA also agreed to host AJEAM/RAGEE journal on its website.

9.2.1.4 Training of CLEIAA Staff

Staff of CLEIAA’s interim desk went through a week long training programme on website updating.

9.2.1.5 Preparation of Draft Terms of Reference

Draft terms of reference for preparation of a national needs assessment document was prepared for CLEIAA by Geoplan International.

9.2.1.6 Presentation at IAIA’01 Annual Conference

A poster presentation was made at the annual IAIA’01 Conference held in Cartagena - Columbia. The poster covered areas such as, historical background, goal and objectives of CLEIAA, proposed African Network Links, brief workplan of CLEIAA, Environmental Assessment Evolution Trends in Ghana (case study), expected outputs and outputs of CLEIAA etc.

9.2.1.7 Organisation of Special Meeting for African Participants at IAIA’01 Annual Conference

CLEIAA office organised an extraordinary meeting of African participants at the annual IAIA’01 conference in Cartagena-Columbia. Participants were briefed on CLEIAA activities and there were presentation on internship programs training initiatives and Capacity Enhancement for EIA (CEEIA) in Eastern Africa.
9.2.1.8 Sub-Regional Nodes for CLEIAA

Twelve (12) countries were selected as sub-regional nodes for CLEIAA in their respective sub-regions and letters sent to them to this effect. As part of CLEIAA’s activities to establish an African Network with existing organisations in Africa involved in EIA capacity development activities, CLEIAA office contacted all African countries and sub-regional organisations that were selected as nodes through mails and faxes. Some of the countries responded and accepted to be nodes for CLEIAA. Invitation letters were sent to all of them on the upcoming Nodal meeting and Pan African Conference.

9.2.1.9 Benin Delegation in Ghana

The CLEIAA Office assisted in the hosting of a Benin delegation by the Ghana Environmental Protection Agency from 28-30 August 2001. The 19-member delegation from Agence Beninoise pour l’Environnement (ABE) was made up of 14 advisory committee members and five staff of ABE. A presentation on CLEIAA and its activities so far was made to the delegation. CLEIAA flyers were made available to the delegation as part of its awareness creation programme. The visit was successful due to the active role played by CLEIAA.

9.2.1.10 Francophone IAIA

Francophone IAIA submitted to the CLEIAA Office the final report in French on the study of the Needs in Capacity Building in the field of environmental impact assessment in Africa and Indian Ocean. This has been translated into English and posted on the CLEIAA website.

9.2.1.11 CLEIAA Sub-regional Nodal Meeting and Pan African Conference

CLEIAA held its Sub-regional Nodal Meeting and Pan African Meeting from November 5-8, 2001. Some objectives of the meeting were to provide a forum for EIA practitioners in Africa to exchange ideas and to discuss some emerging paradigms as well as harmonise EIA Capacity Development activities in Africa. The donor community, international organisations, sub-regional organisations as well as African countries representatives participated in the meeting.

9.2.1.12 EIA Commission—Netherlands

The Netherlands EIA Commission has submitted its database on EIA activities in some African countries to the CLEIAA Office.
9.3 GHANA ENVIRONMENTAL ASSESSMENT CAPACITY DEVELOPMENT PROGRAMME (GEACaP)

The Ghana Environmental Assessment Capacity Development Programme (GEACaP) is a nationwide Environmental Impact Assessment Capacity Building Programme. The programme is based on five broad objectives:

- Improved and structured communication on environmental matters between relevant governmental bodies and EPA
- Adequacy and capacity of regional EPA and planning officers to perform their tasks in Environmental Assessment (EA)
- Basic understanding of compliance with and active collaboration in EA procedures and application by all stakeholders
- Improvement of the quality and adequacy of environmental assessment reports by means of enhancement of skills of national EA consultants.
- Improvement of the jurisdiction on environmental issues

The overall long-term goal of the programme is to make effective use of the existing EA legislation and procedures as a national instrument for sustainable development.

9.3.1 Programme Activities

9.3.1.1 Training Workshops/ Seminars

During the period under review a number of Environmental Impact Assessment (EIA) training workshops and seminars were organised. These are summarized in Table 30.
### Table 30:  
Training Programmes organised by GEACaP during 2001

<table>
<thead>
<tr>
<th>No.</th>
<th>Type of Workshop</th>
<th>Number of Participants</th>
<th>Period</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Training Workshops</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>EPA &amp; T&amp;CPD</td>
<td>26</td>
<td>Jan 29 – 2 Feb., 2001</td>
<td>Amasaman</td>
</tr>
<tr>
<td>2</td>
<td>Ministries &amp; Government Dept.</td>
<td>15</td>
<td>Feb. 26 – March 2, 2001</td>
<td>Amasaman</td>
</tr>
<tr>
<td>3</td>
<td>Consultants</td>
<td>31</td>
<td>April 30 – May 8, 2001</td>
<td>Amasaman</td>
</tr>
<tr>
<td>4</td>
<td>Wassa West District</td>
<td>66</td>
<td>Aug. 27 – Sept. 7, 2001</td>
<td>Tarkwa</td>
</tr>
<tr>
<td>5</td>
<td>EIS Review Workshop</td>
<td>18</td>
<td>Aug. 1 – 4, 2001</td>
<td>Prampram</td>
</tr>
<tr>
<td>6</td>
<td>TMA Training Workshop</td>
<td>64</td>
<td>Nov. 12 – 20, 2001</td>
<td>Tema</td>
</tr>
<tr>
<td>7</td>
<td>Preparatory Workshop for EIA Guidelines Team</td>
<td>35</td>
<td>Oct. 31 – Nov. 2, 2001</td>
<td>Amasaman</td>
</tr>
</tbody>
</table>

|     | **One-day Seminars**                                  |                        |                         |              |
| 1   | Wassa West District Assembly                          | 36                     | Feb. 21, 2001           | Tarkwa       |
| 2   | District Assembly DIA Candidates for Professional Practice Exam of Ghana Institute of Architects | 25                     | Oct. 4, 2001            | Accra (Ridge) |
| 3   | TMA                                                   | 23                     | March 8, 2001           | Tema         |
| 4   | Financial Institutions                                | 8                      | May 9, 2001             | Amasaman     |
| 5   | Judicial Service Personnel                            | 22                     | Nov. 16, 2001           | Accra        |
| 6   | Preparatory Seminar for TMA                           | 10                     | Aug. 15, 2001           | Tema         |
| 7   | Preparatory Seminar for Wassa West District Assembly  | 24                     | July 16 – 20, 2001      | Tarkwa       |
9.3.1.2 Material Development

Actions on the following materials were taken

- Guidance notes on “Carrying out EIA in Ghana” (Draft)
- EA Administration System Manual (Finalized)
- Flyer on Environmental Assessment Regulations LI 1652 (Re-printing)
- EA Requirements in Ghana (Reprinting)

9.3.1.3 Sector Specific Guidelines Development

The teams preparing the sector specific guidelines for eight sectors such as agriculture, health, mining, transportation, energy, manufacturing, general construction and services were inaugurated on October 11, 2001 by the Acting Executive Director of EPA. Draft screening criteria for the various sectors have been submitted for review.

9.3.1.4 Needs Assessments

The draft report on the following were submitted:

- Final Institutional Capacity and Training Needs Assessment Report
- Draft EIA Needs Assessment Reports on the Judicial Sector

9.3.1.5 Study Tour

In May 2001, two (2) officers, participated in the IAIA 2001 conference in Catagena, Colombia. A paper on Integrating EIA System and Planning Process in Ghana was presented as part of an international study on Integration of Planning and EIA System by IAIA.

9.3.1.6 GEACaP Evaluation

Terms of Reference (TOR) for the evaluation of GEACaP was prepared. The next step is to procure the services of a consultant for the task.
9.4 GHANA TRADE AND INVESTMENT GATEWAY PROJECT

The report covers 2001 and the issues/outputs reported on are reflected in the EPA blueprint in the Gateway Project Implementation and the approved Procurement and Disbursement plan for 2002. The items in the 2001 plan reported on include the following:

- Construction of off-site infrastructure and monitoring activities at the Tema Export Processing Zone
- Solid waste management: New engineered Landfill for Tema and Kpone
- Effluent management for existing Stand-alone Free Zone Industries and new Stand-alone Enterprise Applications Tema Export Processing Zone Enclave
- Procurement issues involving field and laboratory equipment and chemicals, EPA/Gateway office furnishing and furniture.
- Preparation of on-site environmental impact assessment by developers
- Project mid-term review
- Utility bills - electricity, water and telephone

9.4.1 Construction of Off-site Infrastructure

The components of this include water supply ring and underground reservoir, access and peripheral road, drainage, wastewater treatment plant and sea outfall. The contracts have been awarded and work is progressing earnestly except the sea outfall, which is being re-designed.

9.4.2 New Engineered Landfill for Tema and the Tema Export Processing Zone (TEPZ)

Evaluation was carried out in 2000 on the firms that submitted documents expressing interest in the work leading to the short-listing of six (6) companies being pre-qualified to submit both financial and technical proposals. However, the evaluation report was submitted to the Minister of Trade and Industry in March 2001 for study and subsequently to the Office of the Vice President in July 2001 for the same purpose for advice in line with government policy.

At a meeting between EPA, GFZB, Gateway Secretariat, TDC and the TMA following the visit of the Vice President to the TEPZ and the announcement by the Minister of Works and Housing on the decommissioning of the old landfill, EPA followed up on TDC and 35 acres of land was secured and all the drawings and title transfer has been effected to TMA for the development of the new landfill.
For the other alternative sites that are located in the Dangbe West District Assembly, actions on the TMA Chief Executive's suggestion that the Greater Accra Regional Minister be involved to appeal to the Dangbe West District Chief Executive are yet to be confirmed.

9.4.3 Kpone Landfill Management

The EPA has supported the TMA to prepare a bid document (with recommended firms and supervisors) for the decommissioning of the old landfill for financing by the World Bank following from the announcement by the Minister of Works and Housing when the Vice President visited the TEPZ to compliment EPA's efforts to resolve the issues raised by the World Bank team during the second Gateway Project review mission. However, the World Bank office is yet to respond to the proposal or release funds for the work to be carried out.

9.4.4 Industrial effluent/ Liquid Waste Management in Tema

9.4.4.1 The Problem of Existing Industries

EPA held meetings with some selected industries separately and the TMA to see the way forward for managing industrial effluent in Tema in view of the impending Chemu Lagoon Restoration Project pointed to the construction and management of a central effluent treatment plant that all industries should connect onto and have their waste treated to acceptable levels before discharge.

In a follow-up discussion, TMA accepted in principle its willingness to the provision of a Regional Wastewater Treatment Plant for existing industries in the Tema Municipality but the only constraint is funding. The EPA concept paper intended to facilitate discussions between the TMA on one hand and industry as well as the private sector on the other hand for financing the development and management of such a project.

As a follow up, letters of intent for a stakeholder workshop on the development and management of the treatment plant have been sent out to all major industries with effluent management problems in Tema and all stakeholders alerting them about the workshop and the proposed date (April 2001).

9.4.4.2 Treatment Plant for the TEPZ Enclave

This particular component of the off-site infrastructure requirement is nearing completion and would be delivered in March 2002 to start treating industrial effluent of firms located in the
TEPZ. The only outstanding issue is with the sea outfall whose design is being re-visited to meet the length of 1.0km instead of 600m.

9.4.5 Procurement

The PIU has taken delivery of a fax machine, a photocopier and a comb binder. What remains to completely set up the office are the items being procured jointly with other implementing agencies under Ghana Investment Promotion Council (GIPC).

The World Bank gave no objection to the signing of the contract for the execution of the consultancy on the preparation of guidelines for the transport; storage and safe disposal of hazardous industrial wastes and obsoletes chemicals. However, the firm Royal Haskoning, because of the long time lapse, lost two of the key personnel whose CVs won the contract and is also proposing a 10% price adjustment. The Agency is studying the changes in consultation with the Gateway Secretariat and will take a decision soon.

With regards to the consultancy services on the preparation and operation of the Environmental Action Plan (EAP) for the Tema Export Processing Zone Enclave, the Bank requested for the minutes of the financial proposal opening but nothing was heard from them yet. It is hoped both services will be carried out in 2002.

9.4.5.1 Laboratory and Field Monitoring Equipment

Contract has been awarded to winning suppliers of lots 1 and 4 whilst a decision is awaited for the supplier of lots 2 and 3 items.

9.4.5.2 Human Resource Development

The four-week training trip to Australia for Mr. Lambert Faabeluon of PIU in waste management was accomplished in July 2001.

9.4.6 Environmental Works Permit

For the year 2001, thirty-six (36) applications were received for environmental permitting for stand-alone and enclave-type free zone enterprises. Twenty-three (63.9%) firms received their permits to operate whilst the rest are in the review stages with their EIS/PER.
9.4.6.1 On-site Environmental Impact Assessment (EIA)

In March 2001, a meeting between EPA and GFZB on one hand and Business Focus (GH) and International Land Developers Ltd on the other agreed the developers contract one firm to produce the EIS.

9.4.6.2 Utilities

Utility facilities used in the PIU office include water, electricity and two telephone lines. An agreement was reached between the Department of Urban Roads (the Landlord) and the PIU (the tenant) that since the PIU occupies a quarter of the building, the project should pay a quarter of every water and electricity bill or the Agency should pay for one (1) quarter of the annual water and electricity bills. This was accomplished in December 2001 and the Gateway Secretariat paid all the telephone bills up to the latest, November 2001.

9.4.7 Project Review Mission

The project mid-term review planned for September 2001 could not come on but EPA has submitted to the Gateway Secretariat all its input to this review mission

9.4.8 Activities Planned for the year 2002

These will entail following up on the uncompleted assignments from the previous year.

- Execution of contract on hazardous wastes and the EAP.
- Establish letters of credits for the supply of lots 1, 2, 3 and 4 of laboratory equipment
- Follow up on the amalgamated procurement from GIPC
- Follow up and monitor the release of funds from the World Bank for the decommissioning of the Kpone Landfill, preparation of the temporary dumpsite and the conduct of the EIA on the new landfill.
- Continue monitoring of the construction activities on the off-site infrastructure of the TEPZ.
9.5 INTEGRATED MANAGEMENT OF THE VOLTA RIVER BASIN

This project was established through the collaborative efforts of the 6 riparian countries of the basin, i.e. Benin, Burkina Faso, Côte d'Ivoire, Ghana, Mali and Togo. The Project is in the GEF (Global Environmental Facility) PDF B that is a project formulation phase. The phase started in March 2001 and hopes to end in July 2002 with the preparation of the GEF Project Brief.

9.5.1 Objectives

Management of an international basin depends on consensus building and one of the key objectives is to establish a mechanism of agreement among the riparian countries towards a holistic management of the basin. The long-term objective is for sustainable socio-economic development without damage to the environment.

The objectives of this phase of the project, which are rather short-term, include specifically the preparation of country reports by each of the six countries, the carrying out of a transboundary diagnostic analysis as inputs to the preparation of a Strategic Action Programme and then the Project Brief.

9.5.2 Activities Conducted in 2001

During the year, the Project organized two workshops in June and November 2001 for the National Coordinators and also Steering Committee Meeting at the end of each of the workshops.

The first workshop was devoted to the preparation of Outlines of Country Reports and preliminary exercises on Causal Chain Analysis. After the first workshop, the country reports were drafted and reviewed by the Regional Coordinator. The inputs of the Country Reports were used in the preparation of a preliminary Transboundary Diagnostic Analysis. The reports were submitted to the second workshop for discussion and further review with the aim to improving the reports. An outline for the preparation of the Strategic Action Programme was also considered. A composite map of environmental hot spots was also developed through the collaborative efforts of the riparian countries.

Other activities carried out include linkages with other initiatives through correspondence and meetings. The meetings attended include:

- Steering Committee Meeting of Flow Regime for International Network Data Sets, 7 December 2001.

9.5.3 Outputs

The outputs are map of environmental hot spots, six country reports, preliminary draft of Transboundary Diagnostic Analysis, two workshop proceedings and two proceedings of Steering Committee Meetings.
9.6 NATIONAL FRAMEWORK FOR GEO-SPATIAL INFORMATION MANAGEMENT (NAFGIM)

The Government of Ghana obtained an adaptable credit from the IDA to support the implementation of the first phase of the Natural Resources Management Programme (NRMP) with the development objective to protect, rehabilitate and sustainable manage national land, forest and wildlife resources and to increase the income of the rural communities who own the resources.

The Co-ordinator of the NAFGIM project will oversee the establishment of the NAFGIM and manage the Secretariat, which will be the primary contact of the geo-spatial community members and facilitate the development of guidelines and procedures to ensure the harmonization of geo-spatial datasets.

The task of the co-ordinator would involve:

- Development, distribution and maintenance of metadata catalogue
- Establishment of electronic connectivity among all the key geo-spatial data centres.
- Development and maintenance of NAFGIM Metadata Service and,
- The organization of workshops and demonstration sessions to promote the work of NAFGIM.

The NAFGIM Project has been implemented over the past eighteen months as part of the Natural Resources Management Program of the Ministry of Lands and Forestry. Implementation has involved the development of an infrastructure comprising metadata, geospatial standards, supportive policy environment, institutional partnerships and capacity development that will enhance the discovery, delivery and use of information through a Clearinghouse and other linkages to global spatial databases.

Two phases have been envisaged for the implementation of NAFGIM as follows:

(i) The establishment phase ended on 31 December 2001 and during which the basic administrative and technical infrastructure was established.
(ii) The development phase will start in January 2002 to develop technical and institutional capacity for sustainable metadata service.
9.6.1 The Establishment Phase
This phase began in April 2000, involved the establishment of the institutional administrative and technical structures necessary for the operation of a metadata discovery and distribution service.

9.6.2 Implemented Activities

9.6.2.1 Institution Development

The development of institutional structures including the establishment of the NAFGIM Secretariat and the Steering Committee. The establishment of an institutional network including the nomination of institutional contact persons and the exchange of institutional electronic addresses among some 30 participating institutions. Conduct of questionnaire survey of existing institutional data and information.

9.6.2.2 Capacity Development
- Conduct of a metadata training workshop with facilitation from the US FGDC
- The conduct of on-site training at the institutions and at the EPA.

9.6.2.3 Awareness Creation
- Creation of awareness and the building of consensus through consultation meetings and workshops.
- The conduct of field visits to the institutions for onsite training and for discussions of institutional problems.

9.6.2.4 Data Preparation
- Identification of NAFGIM framework and core data themes (Posted at NAFGIM Website)
- Preparation of initial metadata for selected framework and core data sets (Posted at NAFGIM Website)
- Consultations on the development of collaborative strategies for the improvement of the existing framework data.

9.6.2.5 Operational Policy Framework
- Preparation of guidelines for the NAFGIM Standards and Policy Working Groups.

9.6.2.6 Website Development
- Development of NAFGIM website
- Participation in the UNEP.Net Africa Portal initiative of UNEP, UNITAR and EIS-Africa.
9.6.3 Unfinished Activities

- The acquisition and installation of a server for the development of a metadata catalogue. Access to a metadata clearinghouse Gateway.

9.6.4 Notes on the Implemented Activities

The administrative and technical structure that has been envisaged comprises the responsible Ministry, the Steering Committee and the Secretariat, the Data Custodian institutions, the technical Working Groups and the FORUM.

9.6.4.1 Institution Development

The Secretariat was established in April 2000 within the EPA as part of the Environmental Management component of the Natural Resources Management Program of the Ministry of Lands and Forestry. The staff consists of a full-time consultant/coordinator, administrative facilitator, IT officer and a secretary. All staff other than the Consultant/ co-ordinator work through a secondment arrangement with the EPA.

9.6.4.2 The Steering Committee

The first NAFGIM Steering Committee has thirteen members selected from the following organizations:


Present membership is selected from nominations at a training and sensitization workshop in August 2000. Membership is for a term of 2 years subject to re-election.

9.6.4.3 The Working Groups

The NAFGIM Standards and the Policy Working Groups have been established and the institutional membership of the two working groups is drawn from the thirteen-member Steering Committee indicated above.
Working Guidelines for the two groups have been discussed and adopted. The mode of work for the Standards Group will involve small institutional sub-groups working on specific areas of Standards as inputs for agreed NAFGIM standards. A draft Policy document has been prepared using the guidelines. The document is at the stage of circulation online and in paper format for comments.

9.6.5 The Data Producers/ Custodians and Data Users

The data producers/custodians are public, private, and NGO institutions that have official mandates and business objectives to produce, use and or distribute spatial data and information, and who have opted to participate in NAFGIM. About 30 of such institutions have participated in the activities of NAFGIM. These institutions will sign a Memorandum of Understanding with NAFGIM to participate in and benefit from the activities of the Framework.

9.6.5.1 Capacity Development

The first metadata training took place in August 2000 at the training laboratories of the Centre for Remote Sensing and Geographic Information Services (CERSGIS) at the University of Ghana, Legon as part of awareness creation and sensitisation workshop. Two staff from the US Federal Geographic Data Committee facilitated the workshop. It involved some 30 participants from the participating agencies. Training was later extended to 20 more individuals on-site at the respective institutions or at the NAFGIM Secretariat.

9.6.5.2 Framework and Core Data

Some 21 Framework/Core data themes have been identified and tasked to the mandate institutions for organization and metadata creation. Some twenty metadata records have been created and included at the NAFGIM website.

9.6.5.3 The NAFGIM Website

The NAFGIM website is posted at: (http://www.epa.gov.gh/Nafgim/NAFGIM_Home.htm)

The site is designed:

- To present to the participating institutions and the wider information community both the concept and form of NAFGIM and its role in the process of producing and harnessing spatial information for development in Ghana.
To provide a rendezvous through the numerous internal and external linkages at the site for members of the information community to work and discuss issues of common interest.
To provide an interim location for metadata records pending the acquisition of a NAFGIM server and the full development of a metadata clearinghouse node and service.

9.6.6 Unfinished Activities
- The installation of the metadata server has not been done due to delays in the purchase of the server.
- Launching cannot be done until the server is installed and the metadata catalogue is hosted at a gateway.

The financial cost involved is the acquisition and installation of an appropriate metadata server and software. The specifications for the hardware have been submitted to the Ministry of Lands and Forestry. Non-proprietary free software is available at the Internet for downloading.

Entry into the Clearinghouse gateway. The options available to NAFGIM include:
- Hosting NAFGIM metadata server with a local service provider.
- Creating a Virtual Clearinghouse Node on an external Gateway.
- Creating a Virtual Clearinghouse Node on the Africa portal of the UNEP.net
- Acquiring and installing both the metadata server and the Gateway.

NAFGIM (Ghana) is participating in the implementation of the Pilot phase of the UNEP.Net/Africa Portal initiative of UNEP, UNITAR, EIS-Africa and OSS. This facility will be explored to provide a Gateway.

The Africa Portal of UNEP.net is to serve as the authoritative single entry point for relevant environmental applications and services to support the integrated assessment and reporting on the environment in the African region. It is designed to provide country information spaces.

Ghana has the opportunity to participate in the implementation of the Pilot Phase of the UNEP.Net/Africa. NAFGIM will benefit from the training and infrastructure development.

Implementation is programmed over the period November 2001- September 2002

9.6.7 Implementation Challenges

Several challenges have been indicated during the establishment phase of NAFGIM. The successful implementation of the development phase and the sustainability of the Framework are likely to depend on the resolution of those challenges that relate especially to such things as
perceptions, attitudes, the approach to institutional mandates and the organization of data, the development of policy and availability of resources.

9.6.7.1 Attitudes, Habits and Practices

The institutions appreciate the fact that the opportunity to present the data they produce will enhance their public image, increase the opportunity to sell data and serve the user community better. They may not be able to change the ways they go about the collection and organization of data. The chances of achieving the objectives of NAFGIM will be considerably enhanced if metadata creation can be made mandatory for the public institutions.

9.6.7.2 Availability of Data

It is commonly believed that considerable amounts of data exist in Ghana. This belief constituted an important assumption in the design and implementation of NAFGIM. The experience now however is that the existing data formats, quality and coverage are often inadequate for capture and processing using modern spatial information technologies, without expensive transformations. NAFGIM is accepting all the available data.

9.6.7.3 Digital Data

The operational stage in the development of the metadata service will be achieved when metadata has been created for the identified framework and core data themes. Of the 21 frameworks and core data themes and 50 datasets envisaged, metadata has been created for 21 datasets excluding the jurisdictional boundaries data contained in the Ghana Country-at-a-Glance database. Though widely used in and outside the country the boundaries information can hardly be described as standard. They are not so acknowledged by the Survey of Ghana.

The other constraint is that only a few of the framework and core datasets for which metadata have been created, apart from those produced by the GERMP institutions, are available in digital format and may be readily deliverable on request to clients.

Standardised framework information requires that jurisdictional and other operational area units for the country should nest accurately, from the smaller sub-unit areas to the larger areas, within the national boundaries at all map scales. This is an urgent requirement that should receive the attention of the government and the mandate institutions particularly the Survey Department.
9.6.8 Ensuring Data Delivery

9.6.8.1 Collaborative Initiatives
The NAFGIM Steering Committee has led the discussion for a collaborative initiative to assist the mandate organizations to produce improved District Assembly area boundary maps and a Geocoded locality Gazetteer for Ghana. These are issues that will require the increased understanding and initiative from the data institutions themselves as well as funding from government.

9.6.8.2 Data Projects Review and Co-ordination

To avoid duplication of data collection effort it is recommended that reviews and co-ordination be undertaken and provision made for:

- All donor-funded projects involving data collection to ensure that data will be collected with respect to appropriate geo-referencing and the names of populated places as in an official gazetteer when this is available.
- The review of such projects should not unduly delay project implementation.
- NAFGIM contact persons at the institutions to keep NAFGIM informed about new data collection activities
- Metadata to be created for all new data and that the metadata should be made available to NAFGIM for inclusion in national metadata catalogue.

9.6.9 Commercial Considerations

Public institutions may have difficulty in adopting the commercial attitude towards the job of producing and distributing data even though government directives expect most of them to generate part of their annual budgets. This requires the identification and the organization of the data products in forms and formats that meet the known or anticipated needs of the data and information using community.

9.6.10 Internet Access

The position now is that a large number of the institutions participating in NAFGIM do not have access to the Internet. Those that have access do not have reliable service in terms of power supply and adequate bandwidth. Any policy that enhances access to Internet resources for information producers and users is an essential element of the infrastructure for spatial information management.
9.6.11 Recommendations for the Way Forward

That mandated spatial data and information producing institutions in the public sector be required to package and describe data and information products in standardised formats for distribution as part of spatial information policy and as a necessary part of their mandates.

9.6.11.1 Providing for Data Integration

It is necessary that spatial data be collected in ways that make them easily integrated with data from other sources with minimum expense in terms of effort and financial outlay. The challenge remains to ensure the availability of standardised framework and core data that allow easy integration for the purposes of analysis without unnecessary costs.

It is recommended as a way forward:

(i) That Digital Data and Information Processing and Co-ordinating Units (DPCUS), manned by responsible senior officers and technician level staff be established in mandated public spatial data institutions, where such units do not exist already, through the conversion of existing analogue cartographic and other units.

(ii) The staff of the DPCUs will be given focussed training in GIS techniques with carefully determined levels of equipment to be able to organise and describe data products and assist data collection planning at the institution level.

9.6.11.2 Access to Internet Resources

It is recommended that Internet access be procured for the key participating institutions in NAFGIM where they do not already have access. Some of these institutions in Ghana have access to the Internet and may be able to share in regional and global information resources. Sustainability of the services poses serious problems because of budget constraints.

9.6.11.3 The Responsible Ministry

The way forward for the development of NAFGIM includes the clarification of its position with regard to the responsible Ministry. NAFGIM is implemented under the Natural Resources Management Program of the Ministry of Lands and Forestry. The choice of Ministry is clearly the Ministry of Environment and Science. It is recommended that NAFGIM continues to be developed as a Unit within the EPA. Whatever Ministry adopts the NAFGIM should be able to provide the additional budgetary and other resources that will be needed for development beyond the NRMP project.
9.6.11.4 Participation by the District Assemblies

NAFGIM membership should include the District Assemblies through their respective Planning Departments. The Planning Departments are expected increasingly to become producers and major users of information.

9.6.11.5 Directory of Public Funded Data Collection and Co-ordinating Projects

To ensure that data will be collected in formats that will facilitate integration with other national datasets, it is recommended that

- Public funded projects that have significant components for data collection should be reviewed by NAFGIM for relevance and for co-ordination;
- The review process for such projects to be organised by NAFGIM in collaboration with staff of the DPCUs should not unduly delay and impede project implementation.
- NAFGIM contact persons at the institutions will request such reviews of new data collection projects.
- NAFGIM should seek an understanding with the participating institutions that metadata be created for all new data and that the metadata should be made available to NAFGIM for inclusion in the national metadata catalogue.

9.6.11.6 National Policy Frame

The development of a national information technology policy will provide the necessary framework for the effective development of NAFGIM. Ghana is currently developing an Information and Communications Technology (ICT) policy. The NAFGIM should seek, in the future, to play a significant role in the development of spatial information technologies as part of the proposed Ghana ICT policy, and should also be concerned with the management of the information.

9.6.11.7 The Development Phase for NAFGIM

The development phase will make NAFGIM operational and sustainable. It will develop institutional capacities and seek closer integration into the regional and international spatial information community efforts. This objective defines the importance of NAFGIM’s participation in the UNEP.Net initiative. In this regard the EPA should continue to support and encourage NAFGIM’s involvement in the relevant regional and global programmes.
9.7 CLEANER PRODUCTION DEMONSTRATION PROJECT

The Environmental Protection Agency with technical support from the United Nations Industrial Development Organisation (UNIDO) and financial assistance from Norway is implementing a Cleaner Production Demonstration Project targeted at small and medium scale enterprises located within the Chemu Lagoon and Korle Lagoon catchment areas in Tema and Accra respectively.

The main objective of the project is to encourage and support the adoption by Ghana’s small and medium scale enterprises of cleaner production strategies (technologies, techniques and practices that consume less material and energy resources and discharge less waste and pollution into the environment).

The project implementation strategy involves awareness raising with in-plant demonstrations; in-plant Cleaner Production assessments; training on Cleaner Production assessments and related issues; assistance to enterprises in obtaining investment funds for cleaner technologies; dissemination of technical information on Cleaner Production; and advice to decision-makers on policies to encourage Cleaner Production.

9.7.1 Project Inception Seminar

The project was launched at an inception seminar held on Wednesday 26th September 2001 at the Labadi Beach Hotel in Accra. Forty seven (47) participants drawn from selected industries, trade associations, Ministries/Agencies/Departments, selected local consultants and the media, attended the project inception seminar, which was facilitated by a two-man team of international consultants.

The Director of Operations of the Environmental Protection Agency chaired the opening ceremony and the Executive Director opened the inception seminar. A representative of UNIDO also made a statement at the opening ceremony.

The technical sessions of the inception seminar commenced with a presentation by the Local Project Coordinator on Environment and Industry in Ghana followed by presentations by the international consultants (IVAM Environmental Research of the University of Amsterdam) on the following topics:

- Objectives of the Cleaner Production Demonstration Project/Global Programme and Networks on Cleaner Production
The project inception seminar was successful and was widely publicised by the media. Participating industries made firm decisions on registering in the demonstration project.

### 9.7.2 Project Implementation

The activities conducted after the inception seminar were geared towards the next project activity (Training in Cleaner Production Assessment). In line with the above, some industries were targeted for follow-up visits to encourage them to participate fully in the demonstration project.

**9.7.2.1 Preparation of Project Brief for Industries**

The industries that participated in the project inception seminar requested for detailed information on project implementation arrangements and in particular the time inputs required of their staff to enable them take decisions on full participation. The international consultants prepared a project brief that was finalized by the local Project Coordinator and distributed to selected industries. Registration forms for industries accompanied the project brief.

**9.7.2.2 Visits to Selected Industries**

During the period October to November 2001 visits were made to selected industries to provide further information on the project implementation arrangements indicated above and to further explain the benefits of the project. There were frequent contacts by telephone and electronic mail between local project coordination unit, UNIDO (Ghana and abroad), industries and collaborating local consultants.

**9.7.2.3 Selection of Local Consultants**

The project implementation requires the participation of local Ghanaian consultants to be attached to CP Assessment Teams of the participating industries. In line with this, selected local consulting firms were requested to submit company profiles and curriculum vitae of principal personnel for evaluation. Copies of the company profiles were forwarded to the Project Management Unit of UNIDO, Vienna for evaluation and eight (8) consulting firms were eventually selected to participate in the project.
9.7.2.4 Cleaner Production (CP) Audit Training Workshop and Factory Visits

The training workshop took place as scheduled from 19\textsuperscript{th} to 22\textsuperscript{nd} November 2001 followed by factory visits during the week 26\textsuperscript{th} to 29\textsuperscript{th} November 2001. In addition a one-day compressed training workshop was held on Monday 26\textsuperscript{th} November 2001 for representatives of companies who could not attend the four-day programme due to pressure of work in their respective factories. A total of thirty-one (31) persons participated in the training workshop.

A meeting of the international consultants, the Local Project Coordinator and the local consultants was held on Friday 30\textsuperscript{th} November 2001 to wrap up the two-week long programme. At this wrap-up meeting the initial industries selected to join the CP project were assessed to determine their suitability for meeting the project objectives and eleven (11) of them were accepted into the project. There was therefore the need to get additional five companies to bring the total to sixteen (16).

9.7.2.5 Additional Five Companies

The period December 2001 and January 2002 would be devoted to getting the additional five companies on the project. These are Accra Brewery Limited, Accra; Cocoa Processing Company Limited, Tema; Freedom Textiles Limited, Accra; Ghana Textile Printing Company Limited, Tema and Pioneer Food Cannery Limited, Tema.

9.7.3 Conclusions

- A total of sixteen (16) companies and eight (8) local consultants have been accepted into the project and the first phase of the CP Audit is in progress.
- The timing of the CP audit training programme was inappropriate and this accounted for the low participation by the industries.
- The local project-coordinating unit requires strengthening in the form office equipment (computer and printer) to enable it perform more efficiently.