

WATER RESOURCES COMMISSION



ANNUAL REPORT 2013

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WATER RESOURCES COMMISSION

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ISBN: 978 - 9988 – 8237 – 1 – 9

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ACRONYMS

| | | |
|---------|---|--|
| ABB | - | Ankobra Basin Board |
| AGD | - | Attorney General's Department |
| AMCOW | - | African Ministers' Council on Water |
| AWF | - | Africa Water Facility |
| BVB | - | Black Volta Basin |
| CBO | - | Community Based Organisation |
| CONIWAS | - | Coalition of NGOs in the Water and Sanitation Sector |
| CWSA | - | Community Water and Sanitation Agency |
| DA | | District Assembly |
| DBB | - | Densu Basin Board |
| DGRE | - | Directorate General for Water Resources (Burkina Faso) |
| DRM | - | Disaster Risk Management |
| DST | - | Decision Support Team |
| ECD | - | Environmental Control Dam |
| ECOWAS | - | Economic Community of West African States |
| EiA | - | Environmental Impact Assessment |
| EPA | - | Environmental Protection Agency |
| FC | - | Forestry Commission |
| FDA | - | Food and Drugs Authority |
| FEWS | - | Flood Early Warning System |
| GIDA | - | Ghana Irrigation Development Authority |
| GEF | - | Global Environment Facility |
| GFDRR | - | Global Facility for Disaster Reduction and Recovery |
| GMet | - | Ghana Meteorological Agency |
| GoG | | Government of Ghana |
| GWCL | - | Ghana Water Company Limited |
| HSD | - | Hydrological Services Department |
| IGF | - | Internally Generated Funds |
| ISSER | - | Institute of Statistical, Social and Economic Research |
| IWMI | - | International Water Management Institute |
| IWRM | - | Integrated Water Resources Management |
| JTC | - | Joint Technical Committee |
| LI | - | Legislative Instrument |

| | | |
|--------|---|--|
| MAB | - | Man and Biosphere |
| MC | - | Minerals Commission |
| MDGs | - | Millennium Development Goals |
| MMDAs | - | Metropolitan, Municipal and District Assemblies |
| MWRWH | - | Ministry of Water Resources, Works and Housing |
| NCRC | - | Nature Conservation Research Centre |
| NDSU | - | National Dam Safety Unit |
| NGOs | - | Non-Governmental Organisations |
| NNRI | - | National Nuclear Research Institute |
| NORAD | - | Norwegian Agency for Development Cooperation |
| PFCM | - | Permanent Framework for Coordination and Monitoring |
| PBB | - | Pra Basin Board |
| PWS | - | Payment for Watershed Services |
| TBB | - | Tano Basin Board |
| TSS | - | Total Suspended Solids |
| UNEP | - | United Nations Environment Program |
| UNESCO | - | United Nations Educational Scientific and Cultural Organisation |
| VBA | - | Volta Basin Authority |
| VRA | - | Volta River Authority |
| WACDEP | - | Water, Climate and Development |
| WASCAL | - | West African Science Service Centre on Climate Change & Adapted Land Use |
| WASH | - | Water, Sanitation and Hygiene |
| WIS | - | Water Information System |
| WHO | - | World Health Organisation |
| WLPA | - | Weija Lake Protection Association |
| WQI | - | Water Quality Index |
| WRC | - | Water Resources Commission |
| WRCC | - | Water Resources Coordination Centre |
| WRI | - | Water Research Institute |
| WSF | - | Water Storage Facility |
| WVBB | - | White Volta Basin Board |
| WWD | - | World Water Day |
| WWMD | - | World Water Monitoring Day |
| WWTP | - | Waste Water Treatment Plant |

FOREWORD

This 15th Annual Report of the Water Resources Commission (WRC) paints a growing picture of the Commission in terms of the coverage of its activities and relations within and outside Ghana. Specifically, the Report summarises the significant gains that were made in 2013 in the management of priority river basins; information and education; coordination and collaboration; transboundary water management initiatives; general administration and human resources; and financial management.

However, it should be acknowledged that the WRC continues to face a number of challenges that calls for a fresh future direction and agenda for the WRC towards:

- Strengthening the institution's capacity and water governance at all levels particularly at the decentralised basin level;
- Promoting more knowledge transfer;
- Mobilizing financial resources through enhanced partnerships; and
- Scaling up good practices.

The WRC is enjoined to stay focused and develop concrete actions that would address these issues.

On behalf of my colleagues and the staff of the Secretariat, I would like to extend the Commission's sincere thanks to its collaborative institutions including the water related regulatory agencies, major urban and rural water supply, irrigation and hydropower production institutions, water resources data management institutions, District Assemblies, NGOs, and traditional authorities for their continued support and encouragement to the Commission in carrying out its mandate of regulating and managing the country's water resources.

Agyewodin Adu Gyamfi Ampem
Chairman, Water Resources Commission

EXECUTIVE SUMMARY

INTRODUCTION

The Water Resources Commission (WRC) was established by Act 522 of 1996 with a mandate to regulate and manage Ghana's freshwater resources and to coordinate any policy in relation to them. The 1st Commission was appointed in 1998 and operations started in 1998. The 3rd Commission took office in July 2010.

This 15th Annual Report of the WRC highlights the regulatory and water resources assessment and management activities, administrative matters, manpower, technical assistance, and financial status of the Commission during the year 2013.

ADMINISTRATION OF REGULATIONS

Administration of Water Use Regulations

The processing and approval of water rights under the Water Use Regulations, Legislative Instrument (LI) 1692 of 2001 continued with the issuance of sixty-four (64) water use permits out of which thirty-nine (39) were new permits and twenty-five (25) were renewals.

The 8th Water Use Register that was published at the end of 2013 recorded 203 permit holders. An analysis of the register shows that 54% of the water use permits were for domestic/municipal, 22% for mining, 10% for aquaculture, 6% for industrial, 2% each for dredging, irrigation, and commercial and another 2% each for other uses constituting recreation, construction, and power generation.

In relation to water use compliance, eleven (11) companies continued to comply with their permit conditions of which eight (8) are mining companies; two (2) are industrial companies; and one is an aquaculture company.

Drilling Licence and Groundwater Development Regulations

The administration of the Drilling Licence and Groundwater Development Regulations LI 1827 of 2006 also continued. Thirty-eight (38) well drilling licence holders consisting of twenty-eight (28) new and ten (10) renewed were issued in 2013, bringing the total to one hundred and fourteen (114). The number of licences issued in 2013 was eleven (11) more than the number in year 2012. The analysis of the 2013 register indicates that 2% of the drilling licence holders were in Category A, while the Categories B and C holders were 24% and 74% respectively.

MANAGEMENT OF PRIORITY RIVER BASINS

Densu Basin

The Densu Basin Board undertook two (2) ecological monitoring programmes in the Birim Basin, which confirmed the rapid deterioration of the Birim River. The regulatory activities include the issuance of notices to churches to stop them from operating in the area of the Weija Lake; enforcement of notices to fish farmers to remove fish cages from the Weija Lake; refurbishment of an aluminium boat for monitoring activities on the Weija Lake by the Weija Lake Protection Association.

Three (3) projects were initiated that extended the collaboration and co-ordination within and beyond the Basin. These were the Buffer Zone 4 Water and People (BZ4WP) and the Nsawam Prisons Wastewater Facility projects under the Ghana Water, Sanitation and Hygiene (WASH) – Window Programme and the Payment for Watershed Services (PWS) project.

White Volta Basin

The 17-member White Volta Basin Board (WVBB) undertook a dry season ecological monitoring in sections of the main White Volta, the Anayeri, and the Red Volta rivers. Awareness creation and education activities were geared towards enhancing the public's knowledge and appreciation of IWRM-related issues at the basin level.

Collaborative and coordination activities were carried out with the WASCAL on climate change research and capacity building; CILSS on capacity building of communities; MMDAs on the enforcement of community initiated by-laws on buffer zones; and other regulatory institutions such as the EPA on the implementation of the Sustainable Land and Water Management and the Ghana Environmental Resource Management projects.

Ankobra Basin

The Ankobra Basin Board (ABB) undertook ecological monitoring of the downstream portion of the Ankobra Basin. The areas visited included the confluence between the Bonsa, a tributary of the Ankobra, and the Ankobra River; Adamus Resources Ltd, a gold mining company, to familiarize with the company's use of water in its operative extraction processes; Dominase; and Saoma.

The Ankobra Basin Office also undertook ecological monitoring of the upstream portions of the Ankobra Basin and its tributaries. Among the findings of the ecological monitoring include severe flooding (two days of inundation) at Kutukrom; extremely turbid water due to unregulated artisanal mining in and around the river banks; extensive use of agrochemicals such as weedicides, fertilizers and pesticides; and the presence of water-related diseases including bilharzias in the communities.

Pra Basin

The Pra Basin Board (PBB) met three times during the year. The secretariat carried out ecological monitoring exercises to the mid-stream sections of the Offin Sub-basin including River Mankran at Mankranso; River Offin at the Barekese Headworks, Mfensi, Manso Nkran, and Adiembra; River Agogo at Agogoso; River Nyinahin at Nyinahin; and River Oda at the Odaso Headworks, Ejisu, Emena/Deduako, Donaso, and Anwiankwanta. . Most of these water bodies were polluted through improper waste disposal, encroachment and illegal mining.

A visit to Ankaase to verify reports of a new cage aquaculture on the Lake Bosomtwe and another to Mpeasem, in the Central Region confirmed reports that Romex Mining Ghana Limited did not adhere to the water use permit condition to diver a stream, but had rather undertaken activities that had deteriorated the water quality of the stream. An enforcement notice was issued to the company to conform to the permit conditions.

With regards to public awareness and education, the activities included radio programs to clarify issues on the cage culture on the Lake Bosomtwe; educate participants on water resources related issues and the operations of the WRC; and the Man and Biosphere (MAB) program on the Lake Bosomtwe.

Tano Basin

The Tano Basin Board (TBB) held two meetings during the year. The first board meeting adopted the Operational Guidelines, elected the vice chairman and formed the committees of the TBB.

Ecological monitoring was conducted along the Tano River and some of its tributaries to ascertain the impacts of anthropogenic activities on the water resources. Monitoring was also carried out on the discharge of water from the Water Storage Facility (WSF) of Newmont Ahafo Mine through the Awonsu stream into the company's Environmental Control Dam 2 (ECD 2) and finally into the Tano River.

Awareness creation, education and training activities included radio programs at Dormaa Ahenkro, Sunyani and Techiman to sensitize the people about the Commission; a community forum in Techiman; two educational workshops for the Small Scale Miners Association on the importance of

water resources; and a community forum with Minerals Commission at Atuna to sensitize the community on the impact of small scale mining activities on water resources.

PUBLIC AWARENESS AND EDUCATION

WRC continued implementing the WRC Communication Strategy and Action Plan 2012-2016 by delivering structured and professional communication interventions to facilitate a wider reach to the intended targets. A number of nationwide radio and television discussions were organized on the state of water resources in the country, particularly on the issue of 'galamsey' and its impact on water resources.

Furthermore, a number of awareness creation and education workshops were organized for target groups to promote and facilitate IWRM awareness at all levels. Extensive media coverage was provided on the launch of the White Volta Basin Flood Hazard and Assessment report in July and the validation workshop on the National Dam Safety Unit and Dam Safety Regulations in December 2013.

As part of promoting and increasing awareness on IWRM 5,000 copies each of flyers for the White Volta, Ankobra and Tano Basins were printed for distribution. Another 5,000 copies of the reviewed Water Use Regulations flyer were also printed for distribution.

The theme for the 2013 World Water Day celebrations was '*International Year of Water Cooperation*'. The celebration in Ghana drew national attention to promote transboundary water management through dialogue and cooperation. Activities undertaken included a symposium at the Trade Fair Centre Auditorium in Accra; a tree planting competition for four selected schools in Accra; a health/water awareness walk in Accra; twenty-five (25) radio interviews and five (5) television talk show programs; and publication of feature articles in the two national dailies on the theme.

WATER GOVERNANCE ACTIVITIES

Implementation of the main policy adopted by the WRC, the harmonized Riparian Buffer Zone Policy, started partially in 2013 with relevant sections stated as conditions in water use permits issued. Also pilot buffer zones were initiated to protect water bodies in the Black and White Volta basins under donor funded projects.

The Commission continued with the development of the 3rd Regulations, which is on dam safety. The Regulations was validated at a workshop organised for the technical committees, the Dam Safety Working Group, and the Commission. The AG's Department completed drafting the Legislative Instrument to be submitted to parliament in 2014.

WRC continued with the process of establishing new governance institutions in the form of river basin offices and their functional Boards as well as a National Dam Safety Unit (NDSU).

The Birim and Black Volta River Basins are the new priority basins that require decentralised secretariats and basin boards to assist in the management of the water resources. A basin survey and stakeholder identification exercise was conducted in the Black Volta Basin for the set up of the basin board. The Dayi Basin Board was inaugurated and a basin tour was organised for the board members to familiarise themselves with the water management issues in the basin.

During 2013, an assessment of the staff requirement for the NDSU was completed and office space was made available. A dam safety manual was also developed to serve as a guide in the management of dams.

WATER RESOURCES ASSESSMENT AND PLANNING PROGRAMS

Water Quality Assessment

The Commission has since 2012 been involving staff in the basin offices directly in water quality monitoring exercises with the assistance of the Water Research Institute. It is aimed at building the

capacities of the Assistant Basin Officers and sustainability of the monitoring. The water quality monitoring program covered 41 monitoring stations over the country. Lawra was included in the monitoring in 2013 to provide water quality information on the upper reaches of the Black Volta Basin within Ghana. In all, thirty-two (32) river stations and nine (9) reservoir/lake stations were monitored.

Assessment of the physico-chemical parameters showed that the highest pH value of 9.09 occurred at Lake Bosomtwe, and the lowest value of 6.39 at Brimso and Dominase. The highest turbidity level of 770 NTU was recorded at Daboase (R. Pra) and could be due to 'galamsey'.

The minimum WQI score was 32.3 at Lake Bosomtwe, and the maximum was 62.2 at Ajena in the Main Volta Lake. The Weija Lake showed improvement in its quality from a WQI value of 49 in 2012 to 58.2 in 2013, while the quality declined at Nsawam from 47.6 to 37.5 for 2012 and 2013 respectively.

The continued and unregulated activities of small-scale miners (galamsey) was almost entirely responsible for the apparent deterioration of some water bodies such as the Tano, Birim, Offin and Ankobra as evidenced by the elevation of parameters such as Total Suspended Solids (TSS).

Hydrogeological Assessment

Most of the hydrogeological assessment activities were on improving the knowledge base and comprehension of the hydro-geological make-up of the three (3) regions in Northern Ghana. Field data collected include groundwater levels and in situ groundwater quality measurement such as temperature, pH and conductivity. Groundwater samples were also collected for laboratory analysis. The major challenge was data gaps usually due to the low frequency of field visits and untimely availability of spare measuring devices to deal with frequent failures of the measuring devices.

National and River Basin IWRM Plans

At the end of 2013, Terms of Reference for the engagement of a consultant to undertake baseline studies as inputs into the Black Volta Basin was developed. The development of the IWRM plan for the Black Volta will commence in 2014.

Review of the Densu basin IWRM plan commenced with two stakeholders workshops to assess and evaluate the status of implementation of the IWRM plan, and review aspects of the plan that do not reflect the current situation in the basin. A third workshop will be organised in 2014 to complete the stakeholder aspect of the review.

Climate Variability and Change Initiatives

The Water, Climate and Development Programme (WACDEP) is a 5- year programme (2011 - 2016) initiated by the Global Water Partnership. It is aimed at integrating water security and climate resilience in the development planning processes, building climate resilience and support countries to adapt to a new climate regime through increased investments in water security. On a pilot basis, WACDEP is being implemented in eight countries including Ghana and Burkina Faso and four river basins including the Volta Basin. WRC is the host institution and the Country Water Partnership is the implementer.

The expected outcomes of the programme are:

- Water security and climate resilience integrated in development planning and decision-making processes; and
- Capacities of partnerships, institutions and stakeholders enhanced to integrate water security and climate resilience in development planning and decision-making processes.

Flood Hazard Assessment - White Volta Basin

The World Bank supported project that was initiated in 2011 to perform a Flood Hazard Assessment

study for the White Volta River ended in 2013. The study investigated the scale and severity of flood hazards, assessed the effectiveness of structural and non-structural measures to mitigate flood damages in the future, and developed a Flood Early Warning System (FEWS) for flood forecasting, flood warning, and flood crisis management.

The outcomes of the project that were presented at high-level stakeholder dissemination workshop in July 2013 included a Water Information System (WIS Volta), GIS database (GIS Volta), and Flood Assessment models namely, flood genesis, flood mitigation, flood maps and flood early warning system (FEWS Volta).

TRANSBOUNDARY WATER MANAGEMENT

The WRC continued with its role as the national focal institution charged with coordinating international cooperation and initiatives to improve water governance at the transboundary level.

The Volta Basin Authority

The Volta Basin Authority (VBA), which was formally established in August 2009, seeks to ensure international cooperation for the rational and sustainable management of the water resources of the Volta basin shared by six (6) countries: Burkina Faso, Ghana, Togo, Benin, Mali, and Ivory Coast.

During the year 2013, VBA undertook activities towards its strategic outcomes:

- A delegation comprising representatives from the VBA Executive Directorate and Experts Committee visited the Seine Normandie Water Agency in Paris and Adour Garonne Water Agency in Toulouse;
- The Forum of Parties finalised its by-laws and the Terms of Reference for the VBA Master Plan;
- As part of strengthening the knowledge base of the Volta Basin, a VBA Observatory is being set up involving the establishment of a communication, information and decision-support tool. DHI was selected to develop the tool. A training workshop on the Decision Support Team (DST) was held followed by the validation workshop on the Action Plan;
- The FAO supported Tilapia Volta Project aims at providing the countries of the Volta Basin with recommendations for the future use of genetically improved strains of tilapia. A validation workshop was held in Accra and the final documents were submitted to FAO. Other partners involved in the project included CIRDES, Burkina Faso; CSIR WRI, Ghana; and Wageningen University;
- The project on Support for Implementing IWRM on the Nakambé /White Volta Basin is being executed by VBA with l'Agence de l'Eau du Nakambé (Burkina Faso) and White Volta Basin Board (Ghana), in partnership with Agence de l'Eau Loire Bretagne and the International Office for Water. The project aims at standardizing and coordinating the IWRM approaches of the national management bodies on the Nakanbe/White Volta basin. A launching seminar was held in Bolgatanga, Ghana, which was followed by a Joint Planning Workshop in Ziniaré, Burkina Faso.

Ghana/Burkina Faso Joint-Technical Committee on IWRM

The Ghana-Burkina Faso Joint Technical Committee on IWRM (JTC-IWRM) was set up in 2005 to strengthen the consultation mechanism for the joint management of the natural resources of the Volta Basin and to advise the Ministers in charge of water of the two countries. The WRC is the focal institution for Ghana while the DGRE acts for and on behalf of Burkina Faso.

The main activity was the exchange of hydrological information between the two countries especially with respect to the water levels of the Bagre and Kompienga Dams during the wet season.

ECOWAS Water Resources Coordination Centre

The ECOWAS Water Resources Coordination Centre (WRCC) is one of the four organs of the Permanent Framework for Coordination and Monitoring (PFCM) of IWRM in West Africa. ECOWAS Heads of State and Government established the WRCC in December 2001 to promote, co-ordinate, and implement IWRM in West Africa in compliance with ECOWAS mission and policies.

During the year, WRCC focused mainly on advancing the manual on 'Guidelines for the Development of Water Infrastructure in West Africa', which was adopted in 2012. The guidelines presented in the manual are intended to help the actors involved in large water infrastructure projects to meet the challenge of conflicts by focusing on six key priority areas. Pursuit to the implementation of priorities (2) and (5) a multi-stakeholder technical workshop was organized to develop consensual tools and approaches for implementing these ECOWAS recommendations. The two key priorities (2 and 5) were:

- Involving affected populations in projects as actors, partners and beneficiaries; and
- Capitalising and sharing existing experiences within the framework of ECOWAS.

WRCC also initiated steps towards the development of methodological tools and approaches to support the practical guide for implementing the recommendations on large water sector infrastructure projects in West Africa.

Transboundary UNEP/GEF Volta Project

The transboundary UNEP/GEF Volta project, which was hosted by WRC, commenced in January 2008 and ended in December 2013. The project was a regional initiative of the six riparian countries sharing the Volta basin and sought to integrate environmental concerns into development plans of the basin and reduce human activities that lead to water scarcity.

In 2013, activities were carried out at two levels namely coordination of activities at the national level and implementation of the Demonstration 3 project in the Black Volta basin. The interventions undertaken under the Demonstration 3 Project were:

- The four (4) sets of awareness raising campaign materials were used at community fora organized at Bale, Chache and Senyeri in July 2013.
- A third batch of 7,500 seedlings were purchased and replanted at Bale and Senyeri sites. In all, three (3) hectares were replanted. A hectare was replanted at Bale with 2,500 seedlings and two (2) hectares at Senyeri with 5,000 seedlings.
- The 10m wild fire belts were repeated around the plantation established at the various hot spots to prevent wide fires from burning the young trees.
- Dredging of sediments from identified spots of riverbeds and the restoration of river embankment along the tributaries.
- Developed relevant monitoring and evaluation tools for monitoring hydrological parameters of selected tributaries on sediments yield, forest management and overall project progress.

Some of the major challenges during the execution of the project include the rampant and severe fires that destroyed sections of the plantations; and flooding of some areas in the rainy season made roads unmotorable, hence reducing accessibility of the communities. The untimely release of funds was also a major setback since some specific activities like dredging and planting of seedlings had to be carried out at specific times of the year.

Hosting of International Delegation

Sierra Leone is undergoing reforms in the water sector that involves learning from the experiences of other countries. The WRC hosted a 4-member delegation from Sierra Leone from 2-6 December 2013 to learn from the Ghanaian experiences on the administration of water rights.

ADMINISTRATIVE AND HUMAN RESOURCES

Targeted staff training programs were undertaken both at the national and international levels. The main focus was on competency-based training mainly in water resources management. WRC also organized or was represented at several meetings, workshops, and conferences; and further hosted and served on a number of committees.

The Commission had 31 staff members (19 male and 12 female) at post. The number of senior staff was 19 with the remaining 12 as junior staff. One staff retired from the Commission.

Library

The library in the year 2013, continued to collect/receive materials/information both in soft copies and hard copies (printed paper documents). A total number of (31) books, newsletters, journals and compact disks were received and logged into the library database, which brought all items in the library to a total of one thousand, one hundred and forty three (1143).

The library database was fully operational and able to address activities such as, capturing of data (items being received into the library) and querying/searching for specific information as may be required.

TECHNICAL ASSISTANCE

Norwegian Agency for Development Cooperation

The Norwegian Agency for Development Cooperation (NORAD) is providing a 3-year assistance for the establishment of a National Dam Safety Unit and the development of Dam Safety Regulations. The project formally started in 2010 and technically ended in 2013.

Africa Water Facility

WRC is the executing agency for two (2) projects supported by the African Development Bank through the Africa Water Facility (AWF):

The Re-optimization of Operations of Akosombo and Kpong Dams on the Volta River Project seeks to explore how the two dams could be reoperated to achieve among others the simultaneous outcomes of restoring downstream ecosystems and human livelihoods; and increasing the total electric power output. It is being implemented with other local and external partners (Volta River Authority, Water Research Institute, Institute of Environment and Sanitation Studies, Centre for African Wetlands, International Water Management Institute (IWMI), and National Heritage Institute of California).

The Design For Reuse – Harvesting the Value of Effluent and Nutrients for Sustaining the Operation of Sanitation Facilities Project, aims at improving the public health and environmental integrity in urban and peri-urban Ghana through the provision of reliable and complete sanitation by increasing the reuse of treated effluent and nutrients. IWMI is the main implementing partner.

At the end of 2013, the rehabilitation of the Waste Treatment Plant at Presec, Legon was completed to allow for the flow of waste to meet irrigation (quality) requirements, and reuse needs; activities related to the feasibility of incorporating aquaculture, market analysis of demand for different farmed fish species, etc. for incorporation of aquaculture at WWTPs were completed; and water quality monitoring, assessment of yield efficiency towards biogas generation and recovery at WWTP were also initiated.

World Bank

The WRC hosted the World Bank supported 2-year White Volta Flood Hazard Assessment project, which ended in 2013. Based on the outcomes of the project, the Government of Ghana requested further assistance for strengthening flood management through the Disaster Risk Management (DRM) country plan.

The main objective of the 2nd phase is to strengthen the institutional capacity of the agencies responsible for flood and disaster risk management in support of Ghana's efforts to achieve the Hyogo Framework for Action for disaster reduction.

FINANCIAL STATUS

The audited financial statements indicate that total income for 2013 was GH¢5,902,469. On the other hand, details of expenditure show that general administrative expenditure for the period amounted to GH¢4,054,412 showing a net gain of GH¢1,848,057. The accumulated balance as at 1 January 2013 was GH¢2,573,684 and the recorded accumulated balance as at 31 December 2013 was GH¢4,438,008.

CHAPTER 1 - COMMISSION PROFILE AND INFORMATION

1.1 Mandate

The Water Resources Commission (WRC) was established by an Act of Parliament (ACT 522 of 1996) as the institution generally responsible for the management of Ghana's fresh water resources. It is specifically mandated to regulate and manage the water resources and to co-ordinate related government policies. Thus, the responsibilities of WRC, which are spelt out in Section 2 (2) of Act 522, can be categorized as:

- Developing and administering of Regulations on water utilisation and management;
- Planning for water resources development and management at the local, national and transboundary levels;
- Collecting, collating, storing and disseminating data and information on water resources;
- Monitoring and assessing activities and programmes for the sustainable utilisation and conservation of water resources.

1.2 Vision

The vision of the WRC is "Sustainable water management by all for all".

1.3 Mission Statement

WRC has the mission to 'regulate and manage the sustainable utilization of water resources and to coordinate related policies by combining our core competencies and hard work through effective participation, monitoring and awareness creation for socio-economic development of Ghana'.

1.4 The Commission

As a public sector organisation the WRC is governed by a Commission, which represents a forum for the integration, cooperation and coordination of diverse interests and comprises the major stakeholders in the water sector. The Commission consists of 15 members including the Chairman, the Executive Secretary, and a representative each for women, traditional authorities, and NGOs in the water sector. The major stakeholder institutions represented on the Commission are the Hydrological Services Department (HSD), Ghana Meteorological Agency (GMet), Water Research Institute (WRI), Ghana Water Company Limited (GWCL), Ghana Irrigation Development Authority (GIDA), Volta River Authority (VRA), Environmental Protection Agency (EPA), Forestry Commission (FC) and Minerals Commission (MC). Community Water and Sanitation Agency (CWSA) represents other organisations that produce potable water.

The list of members of the 3rd Commission is presented in Appendix 1 of this Report.

1.5 Focus Areas for 2013

This 15th Annual Report of the WRC underscores the following for the year 2013:

- Administration of Regulations;
- Management of priority River Basins;
- Public awareness and education;
- Water governance initiatives;
- Water resources assessment and planning programs;
- Transboundary water management initiatives;
- Administration and human resources; and
- Financial status of the Commission.

CHAPTER 2 - ADMINISTRATION OF REGULATIONS

2.1 Administration of Water Use Regulations

In 2013, sixty-four (64) water use permits were issued out of which thirty-nine (39) were new permits and twenty-five (25) were renewals. The total permits issued were for different types of water use; 11 were for aquaculture, 3 for commercial purposes, 14 for domestic/municipal, 4 for dredging, 8 for industrial, 21 for mining, and 1 each for irrigation, construction and power generation. The 39 new permits issued was an increase of 20 over the 19 new permits issued in the year 2012.

2.2 Water Use Register

The WRC, in fulfilment of the provisions of section 11 (5) of the Water Use Regulations LI 1692 of 2001, published the 8th Water Use Register at the end of 2013. A summary of the water use register is presented in Appendix 2.

The total number of registered water users in 2012 was 153 of which fourteen (14) permits expired in 2013. The removal of the expired permits and addition of new and renewed permits resulted in 203 permit holders in the 2013 Water Register. Figure 1 shows the distribution of the registered water uses for 2013 of which 54% were for domestic/municipal, 22% for mining, 10% for aquaculture, 6% for industrial, 2% each for dredging, irrigation, and commercial and another 2% for other uses constituting recreation, construction, and power generation.

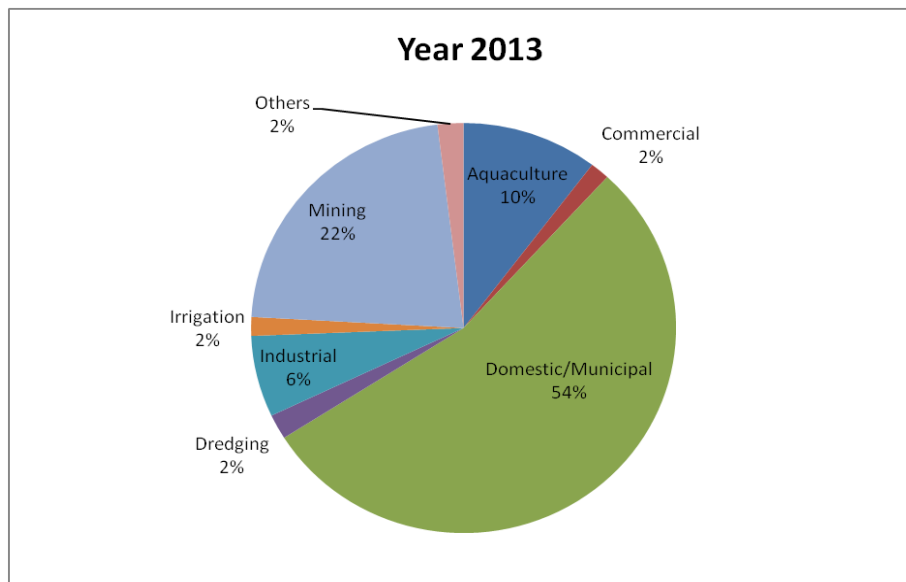


Figure 1: Pie chart of the various water uses for the year 2013

Figure 2 on the other hand shows the comparison of the 2012 and 2013 water use registers. Generally, there was an increase in permit holders for aquaculture, domestic/municipal, industrial, irrigation, mining and power generation. Dredging and construction emerged as new areas that water use permits were issued.

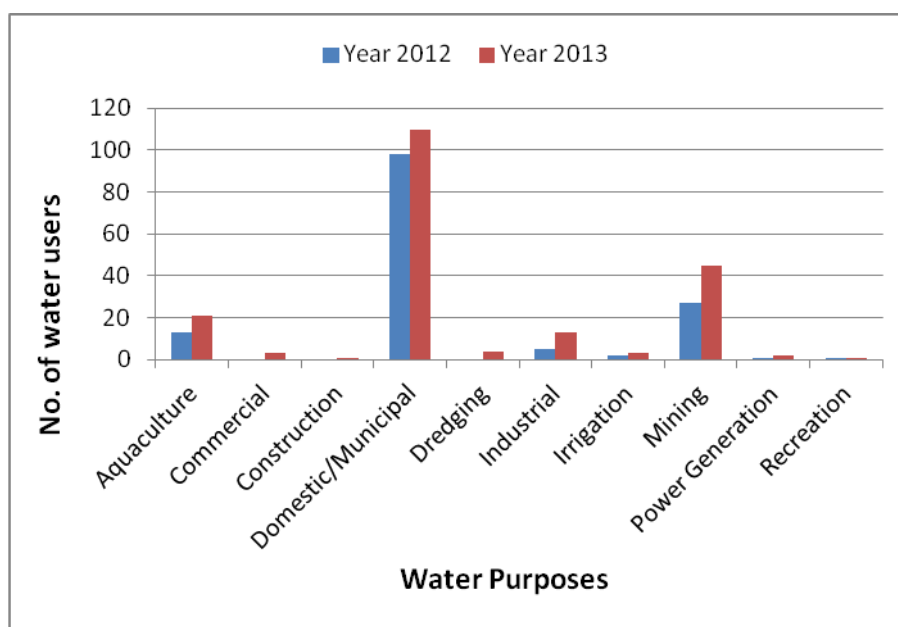


Figure 2: Water use register for the years 2012 and 2013.

2.3 Compliance Monitoring

Compliance monitoring is used by WRC to protect human and environmental health by ensuring that permitted water users observe environmental laws and regulations. It is carried out through field monitoring exercises and assessment of information/data reports submitted to WRC.

WRC also sensitised the permit holders to better appreciate their roles with respect to conditions stated in their permits and also to reduce the incidences of violations.

Monthly/quarterly compliance monitoring information/data were submitted on the following:

- Water quality of surface and groundwater abstraction sources
- Groundwater and surface water abstraction volumes
- Effluent quality and discharge volumes into the environment
- Groundwater levels
- Rainfall measurements and
- Harvested rainwater volumes

Eleven (11) companies continued to submit environmental reports. Eight (8) are mining companies; two (2) are industrial companies; and one is an aquaculture company. The list of compliant permit holders is presented in Table 1.

Table 1: Compliant Permit Holders for 2013

| No | Company | Water Use Activity |
|----|--|--------------------|
| 1. | Adamus Resources Limited | Mining |
| 2. | Akosombo Textiles Limited | Industrial |
| 3. | Cargill Ghana Limited | Industrial |
| 4. | Chirano Gold | Mining |
| 5. | Golden Star (Wassa) Limited | Mining |
| 6. | Golden Star Bogoso Prestea Limited (GSBPL) | Mining |
| 7. | Laveroff Farms Limited | Aquaculture |
| 8. | Newmont Ghana Gold Limited | Mining |
| 9. | Newmont Golden Ridge – Akyem | Mining |

| No | Company | Water Use Activity |
|-----|------------------------------|--------------------|
| 10. | Noble Gold Bibiani Limited | Mining |
| 11. | Perseus Mining Ghana Limited | Mining |

Forty (40) site verification visits, listed in Table 2 were carried out during the year as part of the permitting process. Fifteen (15) were carried out in the Eastern Region, thirteen (13) in the Volta, nine (9) in Greater Accra, and one (1) each in the Ashanti, Central and Northern Regions. Nineteen (19) out of the 40 visits were to companies proposing to carry out aquaculture activities.

Table 2: Site Verification Visits for 2013

| No | Name | Region | Type of Water Use |
|----|---|---------------|--|
| 1 | A&O Scale Limited | Greater Accra | Dredging (Alluvial mining) |
| 2 | Adom Bio Fuels Limited | Central | Industrial |
| 3 | Adom Lakes Company Limited | Eastern | Aquaculture |
| 4 | African Golden Tilapia Farms | Eastern | Aquaculture |
| 5 | Akoduro Company Limited | Volta | Dredging (Alluvial mining) |
| 6 | Amur Farms Limited | Eastern | Aquaculture |
| 7 | Aquaprima Limited | Volta | Aquaculture |
| 8 | Aurum Surya Limited | Eastern | Aquaculture |
| 9 | Battor Sand Winners Association | Volta | Dredging (Alluvial mining) |
| 10 | Concord Landscaping Ghana Limited | Volta | Dredging (Alluvial mining) |
| 11 | Concord Landscaping Ghana Limited | Volta | Dredging (Alluvial mining) |
| 12 | Decon Farms | Volta | Aquaculture |
| 13 | ENCOL Limited | Greater Accra | Commercial |
| 14 | Everpure Ghana Limited | Greater Accra | Commercial |
| 15 | Fayce Limited | Volta | Aquaculture |
| 16 | Ghana Oil Palm Development Co. Limited | Eastern | Industrial, Irrigation, Recreation, Domestic |
| 17 | Golden Exotics Limited | Eastern | Industrial |
| 18 | Hambroque Limited | Volta | Aquaculture |
| 19 | Integrated Tamale Fruit Company (ITFC) | Northern | Industrial & Irrigation |
| 20 | Juabeng Oil Mills Limited | Ashanti | Industrial |
| 21 | Kwenos Farms Limited | Eastern | Aquaculture |
| 22 | MPlaza Limited | Greater Accra | Industrial |
| 23 | New Image Transfer Technologies Limited | Eastern | Aquaculture |
| 24 | Obelemany Company Limited | Eastern | Aquaculture |

| | | | |
|----|-----------------------------------|---------------|--------------------|
| 25 | Otu Fish Company Limited | Volta | Aquaculture |
| 26 | Power Eagle Investment Limited. | Volta | Aquaculture |
| 27 | SG Sustainable Oils Ghana Limited | Volta | Irrigation |
| 28 | Special Tasty Tilapia Limited | Eastern | Aquaculture |
| 29 | Star Resources Company Limited | Eastern | Aquaculture |
| 30 | Sun Woo Culturing Systems | Eastern | Aquaculture |
| 31 | Sweetwater Fishing Enterprise | Volta | Aquaculture |
| 32 | Universal Tilapia | Volta | Aquaculture |
| 33 | US Group of Companies Limited | Eastern | Aquaculture |
| 34 | Water Health Ghana Limited | Eastern | Domestic/municipal |
| 35 | Water Health Ghana Limited | Eastern | Domestic/municipal |
| 36 | Water Health Ghana Limited | Greater Accra | Domestic/municipal |
| 37 | Water Health Ghana Limited | Greater Accra | Domestic/municipal |
| 38 | Water Health Ghana Limited | Greater Accra | Domestic/municipal |
| 39 | Water Health Ghana Limited | Greater Accra | Domestic/municipal |
| 40 | WBHO Ghana Limited | Greater Accra | Construction |

Conflict Resolution

Two (2) aquaculture-related conflicts were successfully resolved. These include:

- a. Conflict between Clark Sustainable Resource Development and Tokorozawa Enterprise. Both companies are holders of Water Rights Permits; and
- b. Conflict amongst Special Tasty Tilapia Farms, Aurum Surya Company Limited and Kwenos Farms Company Limited. All the three companies are still in the process of acquiring Water Use Permits.

In both cases, water users acquired water concessions, which either overlapped or were too close to each other i.e. less than or approximately 200m away from each other. Further to the resolution of the conflicts, the WRC set up a technical committee that developed “Guidelines for Sustainable Cage Aquaculture”. The guidelines provide technical and practical steps for both regulators and proponents to facilitate the issuance of permits and avoid potential conflicts, whilst protecting the environment, human health, and investments.

2.4 Administration of Drillers Licence and Groundwater Development Regulations

Thirty-eight (38) drilling licence holders consisting of twenty-eight (28) new and ten (10) renewed drilling licences were issued in 2013. The total number of licences issued in 2013 was eleven (11) more than the previous year (2012).

The WRC also published the 5th Drilling Licence Register at the end of 2013, which showed a total of 114 registered drilling licence holders as against the 108 registered in 2012. Details of the Drillers’ Licence register are presented in Appendix 3.

The 2013 register indicates that 2% of the drilling licence holders were in Category A, while the Categories B and C license holders were 24% and 74% respectively. Figure 3 represents the comparison of the drilling licence categories for the years 2012 and 2013.

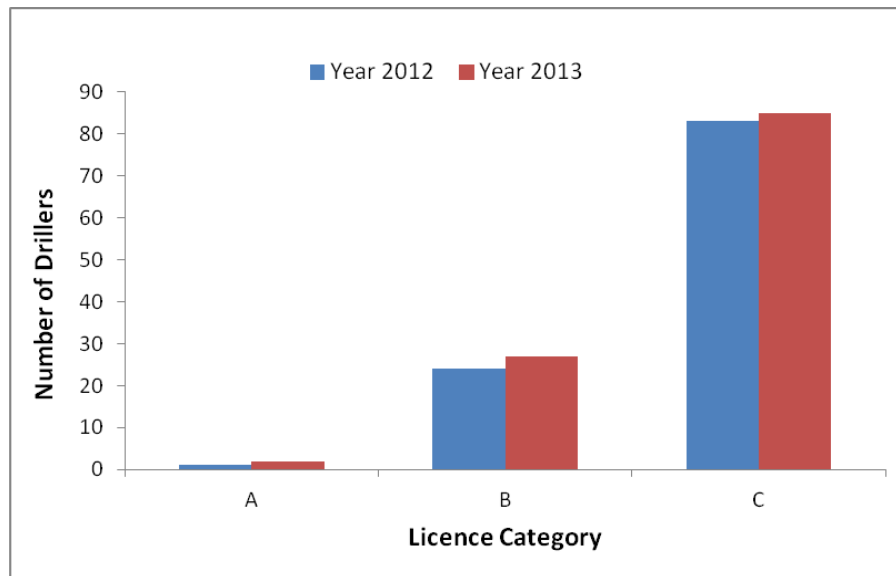


Figure 3: Comparison of licence categories for the year 2012 and 2013

An internal process was initiated to update the database on the water use and drilling licence regulations in order to improve the processing and issuance of permits and licences as well as monitoring compliance.

CHAPTER 3 - MANAGEMENT OF PRIORITY RIVER BASINS

Programs and activities such as the administration of regulations, public awareness creation and education, and monitoring continued in the functional priority river basins of the Densu, White Volta, Ankobra, Pra (Offin) and Tano. These were towards improving the processes of implementing IWRM in Ghana.

3.1 Densu Basin

3.1.1 Densu Basin Board

The Densu Basin Board (DBB) held two (2) meetings and also undertook two (2) ecological monitoring programmes to assess ecological trends within and around the Birim Basin that has assumed serious dimensions. The monitoring exercises confirmed the rapid deterioration of the Birim River, which calls for urgent attention.

3.1.2 Regulatory Activities

The Densu Basin Secretariat carried out the following regulatory activities:

- Issuance of notices to churches to stop operating in the acquisition area of the Weiija Lake;
- Enforcement of notices to fish farmers to remove fish cages from the Weiija Lake (See Figure 4);
- Refurbishment of an aluminium boat for use by the Weiija Lake Protection Association (a local non-governmental organization) in monitoring activities on the Weiija Lake;
- Surveys to prohibit indiscriminate dumping of solid and liquid waste, sand winning and quarrying in the Basin;
- Surveys to identify major water users to regularize their water use. The major water users identified included Special Ice Company Ltd., Major Jet Save Enterprise, Daily Water Company Ltd., and fifteen (15) groundwater supply points.

These regulatory activities were carried out in collaboration with district assemblies within the Basin, EPA, FC, MC, National Security Council, NGOs and CBOs among others. Such efforts have led to the reduction in illegal activities on the Weiija Lake and an improvement in the raw water quality of the Basin.

3.1.3 Awareness Creation, Education and Training

Activities held were generally geared towards enhancing the public's knowledge and appreciation of IWRM-related issues at the basin level:

- Three (3) radio and one (1) television programmes were carried out in connection with the World Wetlands and World Water Days;
- Community durbars were organised under the WRC supported micro projects in Adoagyiri, Densuano, Pakro, Asuoya, Mangoase, Babianiha, Obuotumpan, Kentenkre, Oparekrom, Ntoaso, Kyebi and Sakyekrom (see Figures 5 and 6);
- Took the opportunity to educate stakeholders during workshops and meetings such as the monthly meetings of the National Security Council's Committee on Lands and Natural Resources, and the summit on the Atewa Forest Reserve.

3.1.4 Collaborative and Coordinative Activities

A number of collaborative and coordination activities were organised with DAs, the general public and stakeholder organizations to deal with issues such as encroachment, inappropriate water use practices, stone quarry, and sand winning. The activities included:

- The on-going Payment for Watershed Services (PWS) Project, which extends collaboration and co-ordination within and beyond the basin. WRC leads the Technical Working Group (TWG) of the PWS Project, which is coordinated by the Nature Conservation Research Centre (NCRC) and funded by the Swiss government. The ‘Business as Usual’ study was completed and the ‘Desired State’ study was initiated during the year in the Kakum and Pra Basins. The ‘Business as Usual Study’ gives an indication of the ecological and socio-economic status of the two basins, whilst the ‘Desired State Study’ considers a business case for the sustainable management of the two basins;
- Consultations with the Accra Metropolitan Assembly, and Ga Central, Ga South and Ga West Municipal Assemblies to control the leachate from garbage heaps located around Anyaa, Oblogo and Weija;
- Participation in the matchmaking mission to the Netherlands that was organised under the Ghana WASH-Window Programme in September 2013. Subsequently, partnerships were struck with Dutch and local companies and districts to develop proposals to address two key concerns:
 - (i) To develop, expand and operate the waste management facility of the Nsawam Medium Term Prisons as a business case. It is to adequately serve and sustain the solid and liquid waste management needs of the prison and four municipalities.
 - (ii) The Buffer Zone 4 Water and People (BZ4WP) which is to contribute to the sustainable provision of water to five districts including the Ga South and Ga West Municipal Assemblies, through the establishment and management of functional buffer zones along water bodies and courses.

3.1.5 Implementation of the Densu Basin IWRM Plan

The Densu Basin IWRM Plan, which was developed in 2007, has a list of prioritised actions and measures that attempts to address a broad spectrum of water management issues identified for the Densu Basin.

The Densu IWRM Plan was scheduled for review after five years. In this regard, a review process was initiated during the 4th quarter of 2013 with two (2) workshops that brought together all DBB members and other relevant stakeholders. The final workshop to complete the review was scheduled for the 1st quarter of 2014. In the meantime, the routine prioritised actions and measures were undertaken as part of the Secretariat’s activities.

3.2 White Volta Basin

3.2.1 White Volta Basin Board

The 17-member White Volta Basin Board (WVBB) did not meet during the reporting year. However, the WVBB undertook a dry season ecological monitoring in October 2013 that covered three different segments of the main White Volta, the Anayeri, and the Red Volta rivers.

3.2.2 Regulatory Activities

The White Volta Basin Secretariat identified six (6) new water users within the basin. They include JONAFS Washing Bay, KALABASH Foundation Ghana, YABCO Focus, GOOSE Bay, NEAT Water and

DINKO Water. The water use applications of Integrated Tamale Food Company (ITFC), DCEP Results Project and Libga Farms Ltd were being processed.

The secretariat also facilitated the granting of drilling licenses to DOAYINE Services Limited, Waale Construction Limited, Alhaji Akugri Construction Works Limited, and Benta Enterprises Limited.

3.2.3 Awareness Creation, Education and Training

Awareness creation and education activities were generally geared towards enhancing the public's knowledge and appreciation of IWRM-related issues at the basin level.

One (1) radio programme was carried out at the Guruni Style FM in connection with mining and pollution of water resources. This was done in collaboration with the Food and Drugs Authority and EPA.

A water user forum was organized at the conference room of the White Volta Basin secretariat in July 2013 to sensitize the identified water users on the permit acquisition procedure.

3.2.4 Collaborative and Coordinative Activities

A number of collaborative and coordination activities were organised with DAs, the general public and stakeholder organizations to deal with persisting environmental issues such as pollution, and farming along river banks. The activities included:

- Collaboration with WASCAL on climate change research and capacity building of stakeholders;
- Collaboration with CILSS on capacity building of communities towards the implementation of water resources management activities in the basin;
- Engagement of MMDAs on the enforcement of community initiated by-laws on riparian buffer zones;
- Collaboration with other regulatory institutions such as the EPA on the implementation of the Sustainable Land and Water Management and the Ghana Environmental Resource Management projects;
- Stakeholder identification exercise of the Black Volta Basin with the Tano Basin Secretariat.

3.3 Ankobra Basin

3.3.1 Ankobra Basin Board

The Ankobra Basin Board (ABB) met once focusing on the impact and mitigating the damages caused by illegal mining, especially alluvial mining in the water bodies.

The ABB undertook ecological monitoring of the downstream portion of the Ankobra Basin. The members first visited the confluence between the Bonsa (a tributary of the Ankobra) and the Ankobra River and observed the level of destruction of the confluence by illegal miners. The members also visited Adamus Resources Ltd, a gold mining company, to familiarize with the company's water use operations. The members also visited Dominase and Saoma (see Figure 7).

3.3.2 Ecological Monitoring

The Ankobra Basin Secretariat undertook ecological monitoring of the upstream portions of the Ankobra Basin to determine the status of the aquatic and terrestrial environments as well as the livelihoods and health of the people. The monitoring also afforded the opportunity to obtain in-depth and functional information to help assess the health of the riparian ecosystem in order to take practical step in reversing the negative impacts.

Findings of the ecological monitoring include:

- Severe flooding (two days of inundation) at Kutukrom;
- Extremely turbid water due to artisanal mining, mostly unregulated, in and around the river banks;
- Sighting of few fish and crustacean species such as mudfish, herrings, crabs and fingerlings. Crocodiles were also sighted in the Fure River, a tributary of the Ankobra;
- The vegetative cover was generally found to consist of bamboo, raffia, monocots and mangroves;
- Agricultural activities were mainly crop farming with virtually no fishing in the basin;
- Extensive use of agrochemicals such as weedicides, fertilizers and pesticides; and
- Water-related diseases that included bilharzias were noted in the communities.

3.3.3 Regulatory Activities

The secretariat assisted in the administration and compliance monitoring of regulations by undertaking regular and continuous inspection of water abstraction points and processing of applications (see Figures 8 and 9).

3.3.4 Awareness Creation, Education and Training

During the year under review, the Ankobra Basin secretariat undertook public education and awareness creation activities such as radio programs at Space and Dynamite FM Stations at Tarkwa and Best FM at Bogoso to mark the World Water Day celebration.

3.3.5 Collaborative and Coordinating Activities

The Ankobra Basin secretariat collaborated with the EPA and the Tarkwa Nsuaem Municipal Assembly to stop the illegal dredging near the Tarkwa Senior High School as shown in Figure 10. The office also participated in the public hearings organized by the EPA as part of the Environmental Impact Assessment (EIA) processes in the basin.

3.3.6 Implementation Status of Basin IWRM Plan

Implementation of the Ankobra Basin IWRM Plan was routinely carried out as part of the secretariat's activities. The IWRM plan is due for review in 2014 to tackle the dynamic changes that have occurred in the basin since 2008.

3.4 Pra Basin

3.4.1 Pra Basin Board

The Pra Basin Board (PBB) met three times during the year. All the committees of the PBB also met to develop their respective programs for the year.

3.4.2 Ecological Monitoring

The Pra Basin Secretariat carried out ecological monitoring exercises to the mid-stream section of the Offin sub-basin. Specific rivers and locations monitored include:

- River Mankran – Mankranso
- River Offin – Mfensi, Manso Nkran, Adiembra, and Barekese Headworks
- River Agogo – Agogoso

- River Nyinahin – Nyinahin
- River Oda – Ejisu Emena/Deduako, Donaso, Anwiankwanta, and Odaso Headworks

Most of the monitored water bodies had been polluted through improper waste disposal, encroachment and illegal mining. However, some rivers such as River Offin at Mfensi (depicted in Figure 11) were in good condition.

3.4.3 Regulatory Activities

The secretariat took part in the site visits to new water users (refer to Table 2). Twenty-four (24) and five (5) water users in Obuasi and Kumasi respectively were identified and educated on the need to obtain permits.

A visit to Ankaase to verify reports of a new cage aquaculture activity on the Lake Bosomtwe (shown in Figure 12) and another visit to Mpeasem, in the Central Region confirmed reports that Romex Mining Ghana Limited did not adhere to the water permit condition to divert a stream. Instead the company had had undertaken other activities that had polluted the stream. An enforcement notice was issued to the company to comply with the permit conditions.

3.4.4 Awareness Creation, Education and Training

The public awareness and education activities that were undertaken in the basin during the year were as follows:

- Program at the Kumasi-based radio station, K FM (103.7), to clarify issues on the cage aquaculture on the Lake Bosomtwe;
- Used the opportunity at workshops and meetings as platforms to educate participants on water resources related issues and the operations of the WRC;
- Served as panellist on radio program on Ultimate Radio 106.9 on the UNESCO supported Man and Biosphere (MAB) program on the Lake Bosomtwe; and
- Took part in the MAB meetings with the Fisheries Commission, Ghana Tourism Authority and the Bosomtwe and Bosome-Freho District Assemblies.

3.4.5 Collaborative and Coordinating Activities

A number of collaborative and coordination activities were organised with NGOs, DAs and other stakeholder organizations. The activities included:

- Collaboration with Nadwos Projects (an Environmental NGO) in organizing a quiz for Primary Schools on 22nd March 2013 (World Water Day). The Commission supported the program with posters and T-Shirts for the school children (see Figure 13);
- Involvement of two (2) schools (Namong Senior High Technical and Mizpah International) in the World Water Monitoring Day program. Figures 14 and 15 show students of the two schools being educated and using the test kits;
- Participated actively in the UNESCO–MAB Project as part of the team that visited and educated fourteen (14) Lake Bosomtwe communities on the Biosphere and CREMA concepts. The communities were also educated on how their activities, such as washing and bathing in the lake, were affecting the sustainability of the lake.



Figure 4: Residual Fish Cages on the Weija Lake after enforcement notices



Figure 5: Community Durbar at Ntoaso in the Densu Basin (1)



Figure 6: Community Durbar at Ntoaso in the Densu Basin (2)



Figure 7: PBB Members on their way to Bonsa-Abawye, confluence between Bonsa and Ankobra



Figure 8: Compliance monitoring at Adamus Resources Ltd



Figure 9: Compliance monitoring at Aboso Gold Fields Gh. Ltd



Figure 10: Illegal Mining close to a dormitory in Tarkwa Senior High School



Figure 11: Comparatively clean water of the River Offin at Mfensi



Figure 12: Decommissioned Cage Aquaculture on Lake Bosomtwe at Ankaase



Figure 13: Schools Quiz organized on WWD



Figure 14: Students of Namong SHS testing Water Quality Parameters



Figure 15: Students of Mizpah International School testing Water Quality Parameters

3.5 Tano Basin

3.5.1 Tano Basin Board

The Tano Basin Board (TBB) held two meetings during the year. The first board meeting adopted the Operational Guidelines, elected the vice chairman, and formed the committees of the TBB.

The TBB working committees also met and prepared their respective action plans that detailed measures to resolve the degradation of the water resources, public awareness creation and education, and budgeting of programs.

3.5.2 Ecological Monitoring

Ecological monitoring was conducted along the Tano River and some of its tributaries to ascertain the impacts of anthropogenic activities on the water resources. Monitoring was also carried out on the discharge of water from the Water Storage Facility (WSF) of Newmont Ahafo Mine through the Awonsu stream into the company's Environmental Control Dam 2 (ECD 2) and finally into the Tano River (as shown in Figures 16 and 17).

3.5.3 Regulatory Activities

During the year 2013, water use permits were issued to The Pure Company Limited in Buipe, Newmont Ghana Gold Limited (NGGL) Ahafo Mine, and L & X Company Limited at Yapei. These permits were for, industrial use, mining, and dredging respectively.

Site verification and compliance monitoring visits were conducted for new sites and some permit holders. Companies visited included Paulus Filtered Water; Genser Co. Ltd; Savanna Diamond Cement Co. Ltd., Buipe; Ghana Nut Co. Ltd., Techiman; Oti Yeboah Co. Ltd., Abesim; Jokumah Co. Ltd, Sunyani; Newmont Ghana Gold Ltd., Kenyasi; and Amoro Puse Co. Ltd., Elubo.

3.5.4 Aware Creation, Education and Training

Awareness creation, education and training activities were carried out within the basin for the public to assist in preserving and conserving the Tano River and its tributaries for sustainable use. The activities included:

- Radio programs at Dormaa Ahenkro, Sunyani, and Techiman to sensitize the people about the Commission, its mandate and activities;
- A community forum at Bonokyempim Hall in Techiman. It was well attended by various water users such as large and small-scale mining industries, sachet water producers, poultry farmers association, washing bay operators, and aquaculture farmers association. Traditional Authorities and institutions such as EPA, MOFA, FDA, and MMDAs were also present at the forum;
- Two educational workshops organised in collaboration with the Minerals Commission, Bibiani, for the Small Scale Miners Association on the importance of water resources and the need to have water use permits for their operations (see Figure 18);
- A community forum organised with Minerals Commission at Atuna to sensitize the community on the impact of small-scale mining activities on water resources (see Figure 19)



Figure 16: TBB members on ecological monitoring at Ntotroso



Figure 17: Water Storage Facility (WSF) at Newmont Gold Mining Company



Figure 18: Awareness creation with Small Scale Miners at Bibiani in the Tano Basin



Figure 19 Community forum at Atuna in the Tano Basin

CHAPTER 4 - PUBLIC AWARENESS AND EDUCATION

Public awareness and education activities that were specific to each of the functional River Basin offices and boards have been put out under their respective section in chapter 3 of this report. The activities and programs presented in this chapter were undertaken at the national level.

4.1 Implementation of Communication Strategy

Implementation of the WRC Communication Strategy and Action Plan 2012-2016 was aimed at delivering structured and professional communication interventions to facilitate a wider reach to the intended targets.

During the year 2013, a number of nationwide radio and television discussions were organized on the state of water resources in the country, particularly on the issue of 'galamsey' and its impact on water resources.

4.2 Public Awareness Creation in IWRM

A number of awareness creation and education workshops were organized for target groups to promote and facilitate IWRM awareness at all levels.

Furthermore, extensive media coverage was provided on the launch of the White Volta Basin Flood Hazard and Assessment report in July 2013 and the validation workshop on the National Dam Safety Unit and Regulations in December 2013.

4.3 Educational Materials and Publications

As part of promoting and increasing awareness on IWRM 5,000 copies each of flyers for the White Volta, Ankobra and Tano basins were printed for distribution. Another 5,000 copies of the reviewed Water Use Regulations flyer were also printed for distribution.

The process was initiated to update the documentaries on the national IWRM, and the Tano and Pra basins. The revision of scripts was completed and fieldwork had started by the end of the year 2013.

4.4 World Water Day

The theme for the 2013 World Water Day (WWD) celebrations was '*International Year of Water Cooperation*'. The celebration in Ghana drew national attention to promote transboundary water management through dialogue and cooperation.

The celebrations were climaxed with a symposium at the Trade Fair Centre Auditorium in Accra. Presentations were made by UNESCO, CONIWAS, WRC, Water Aid Ghana, Forestry Services Division and the GWCL on the topics "Financing Cooperation in Water and Linkages to the MDGs, Challenges and the Way Forward", "Transboundary Water Management, Diplomacy, Legal Frameworks, Challenges and the Way Forward" and "The Challenges and Prospects of Forest Management and Watershed Protection in the Country" (see Figures 20 and 21).

Other activities that were carried out included:

- A tree planting competition for four selected schools in Accra. They are, South La Estates Basic School, Osu Home Junior High School, Royal Preparatory School, and Airport Police A & B Basic Schools. This activity was launched on 21st March 2013 at the WRC office Annexe;
- Health/ Water awareness walk in Accra on Saturday March 16, 2013 which was attended by the stakeholders in the water sector and schools (see Figure 22);
- Twenty-five (25) radio interview and five (5) television talk show programs; and
- Publication of feature articles in the two national dailies on the theme.



Figure 20: WWD – Resource Persons at the Symposium at Trade Fair Auditorium



Figure 21: WWD – The Audience at the Symposium at Trade Fair Auditorium



Figure 22: WWD - Water Awareness Health Walk, Accra

CHAPTER 5 - WATER GOVERNANCE ACTIVITIES

5.1 Policy Development

The main policy adopted by the WRC, the harmonized Buffer Zone Policy, seeks to ensure that land strips/areas along open water bodies (rivers, streams, lakes) are designated and managed as conservation areas to restore, conserve and maintain the ecological integrity and provide optimal socio-economic benefits of such designated areas.

Implementation of the policy started partially in 2013 with relevant sections stated as conditions in water use permits issued. Establishment of pilot buffer zones was also initiated to protect water bodies in the Black and White Volta basins as part of donor funded projects (refer to Sections 3.2.4 and 7.4).

5.2 Development of Legislative Instruments

The Commission completed the development of the third Regulations on dam safety. The aim is to regulate all relevant activities related to dam design, construction, operations, maintenance, and decommissioning to ensure uniform and adequate level of safety for all dams in Ghana.

The draft Regulations was validated at a workshop organised for the technical committees, Dam Safety Working Group, and the Commission. The draft Dam Safety Regulations document was submitted to the Attorney General's Department (AGD) through the MWRWH. The AGD completed drafting the Legislative Instrument, which will be submitted to parliament in 2014.

5.3 Establishment of Water Governance Institutions

WRC continued with the process of establishing new governance institutions in the form of river basin secretariats and their functional Boards as well as a dam safety unit.

- (i) **Birim and Black Volta Basin Offices:** The Birim and Black Volta River Basins are the new priority basins that require decentralised secretariats and Basin Boards to assist in the management of the water resources. In the case of the Black Volta, a basin survey was undertaken and a stakeholder identification exercise was conducted for the set up of the basin board.
- (ii) **Dayi Basin Board:** The Dayi Basin Board was inaugurated and two board meetings were held. A basin tour was organised for the board members to familiarise themselves with the water management issues in the basin. The tour included a visit to the pilot buffer zone established in the basin.
- (iii) **National Dam Safety Unit (NDSU):** the NDSU is envisaged to be the centralised body responsible for administering the regulations and coordinating activities on dams to ensure that adequate and uniform level of dam safety is maintained with respect to the failure consequences that dams impose.

During 2013, an assessment of the staff requirement of the unit was completed. Office space was made available to accommodate the unit and a dam safety manual was developed to serve as a guide in the management of dams.

CHAPTER 6 - WATER RESOURCES ASSESSMENT AND PLANNING PROGRAMS

6.1 Water Quality Assessment

The Commission has been monitoring the water quality of surface water in Ghana since 2005. However, there was no monitoring in 2009, but it resumed and continued from 2010. Since 2012, the Commission started to involve staff in the Basin Secretariats directly in the water quality monitoring exercises with the assistance of the Water Research Institute. The exercise is to build the capacities of the Assistant Basin Officers in particular and to ensure sustainability of the monitoring.

The main objective of the water quality monitoring is to determine the state and trend of water quality in the country. The monitoring program initially covered 40 (forty) monitoring stations over the country, but Lawra was included in the monitoring in 2013 to provide water quality information on the upper reaches of the Black Volta Basin within Ghana. Hence, thirty-two (32) river stations and nine (9) reservoir/lake stations were monitored during the year. The breakdown of monitoring stations is as follows:

| | | |
|----------------------|---|-------------|
| South-western System | - | 19 stations |
| Coastal System | - | 8 stations |
| Volta System | - | 14 stations |

Sampling of the rivers and lakes was undertaken in July and November 2013. Assessments were carried out on physico-chemical water quality parameters including Temperature; pH; Conductivity; Total Suspended Solids (TSS); Transparency; Nutrients; Major Ions; and Trace metals. Lake Bosomtwe recorded the highest pH value of 9.09 while the lowest value of 6.39 was record at Brimso (in July) and Dominase (in November). The highest turbidity level of 770 NTU for 2013 was recorded at Daboase (R. Pra) and could be due to 'galamsey'.

Table 3 shows that many of the rivers are deteriorating in quality and classified as Class III (poor water quality). Lake Bosomtwe recorded the minimum WQI score of 32.3 (Class III), while Ajena in the Main Volta Lake had the maximum WQI score of 62.2 (Class II). The Weiija Lake showed improvement in its quality from a WQI value of 49 in 2012 to 58.2 in 2013, while the quality declined at Nsawam from WQI value of 47.6 to 37.5 in 2012 and 2013 respectively.

Table 3: River Stations Water Quality Index (WQI) for River Systems (2010-2013)

| Sampling Sites | Water Quality Index (Year) | | | | | | | |
|----------------------------------|----------------------------|-------|------|-------|------|-------|------|-------|
| | 2010 | Class | 2011 | Class | 2012 | Class | 2013 | Class |
| Weiija Lake | 61.5 | II | 53.2 | II | 49.0 | III | 58.2 | II |
| Potroase- River Densu | 76.0 | II | 62.2 | II | 50.4 | II | 51.2 | II |
| Mangoase- River Densu | 57.3 | II | 52.3 | II | 27.0 | III | 36.3 | III |
| Nsawam- River Densu | 53.9 | II | 52.4 | II | 47.6 | III | 37.5 | III |
| Mankrong J – River Ayensu | 58.9 | II | 59.5 | II | 50.4 | II | 51.4 | II |
| Akim Oda-River Birim (Pra Basin) | 58.3 | II | 53.5 | II | 44.9 | III | 38.4 | III |
| Akim Brenase-River Pra (mid) | 64.2 | II | 57.1 | II | 46.2 | III | 32.4 | III |
| Daboase – River Pra | 56.8 | II | 55.3 | II | 46.2 | III | 35.7 | III |
| Dunkwa- River Offin (Pra Basin) | 57.8 | II | 49.0 | III | 39.7 | III | 33.6 | III |
| Lake Barekese –River Offin | 59.6 | II | 57.1 | II | 60.8 | II | 49.8 | III |
| Ekosi-River Ochi-Nakwa | 59.0 | II | 57.3 | II | 39.7 | III | 46.0 | III |
| Mankesim-River Ochi-Amisa | 60.4 | II | 62.7 | II | 56.8 | II | 49.9 | III |
| Lake Brimso-River Kakum | 59.7 | II | 60.7 | II | 54.8 | II | 44.6 | III |
| Ewusijo-River Butre | 71.3 | II | 67.3 | II | 46.2 | III | 54.9 | II |
| Dominase- River Ankobra | 55.2 | II | 57.2 | II | 51.8 | II | 40.6 | III |

| | | | | | | | | |
|---------------------------|------|----|------|-----|------|-----|------|-----|
| Prestea –River Ankobra | 63.5 | II | 54.3 | II | 49.0 | III | 38.1 | III |
| Elubo- River Tano | 64.3 | II | 61.0 | II | 38.4 | III | 54.1 | II |
| Sefwi-Wiawso – River Tano | 59.2 | II | 59.5 | II | 54.8 | II | 41.6 | III |
| Dadieso-River Bia | 60.8 | II | 59.9 | II | 47.6 | III | 38.4 | III |
| Osino- R. Birim | 56.8 | II | 51.2 | II | 51.8 | II | 35.0 | III |
| Twifo-Praso - R. Pra | 58.9 | II | 49.4 | III | 49.0 | III | 37.0 | III |
| Adiembra - R. Offin | 61.4 | II | 55.3 | II | 46.2 | III | 35.0 | III |
| Lake Bosomtwe | 56.3 | II | 49.8 | III | 43.6 | III | 32.3 | III |
| Baafrikrom Reservoir | 71.2 | II | 67.8 | II | 56.3 | II | 42.1 | III |
| Bonsaso - R. Bonsa | 65.7 | II | 58.3 | II | 47.6 | III | 45.1 | III |
| Ampansie | 59.6 | II | 48.5 | II | 40.9 | III | 42.8 | III |
| Tanoso –R. Tano | 63.4 | II | 61.0 | II | 51.9 | II | 45.1 | III |
| Aframso - R. Afram | 55.8 | II | 63.5 | II | 54.3 | II | 42.2 | III |
| Hohoe – R. Dayi | 74.0 | II | 57.3 | II | 62.4 | II | 49.0 | III |
| Damanko – Oti | 61.5 | II | 63.1 | II | 47.6 | III | 44.9 | III |
| Sabari - R. Oti | 65.7 | II | 61.9 | II | 42.3 | III | 36.0 | III |
| Saboba –R. Oti | 64.0 | II | 58.1 | II | 46.2 | III | 43.8 | III |
| Pwalugu -White Volta | 55.8 | II | 59.9 | II | 62.4 | II | 46.7 | III |
| Nabogo - White Volta | 61.9 | II | 60.4 | II | 39.7 | III | 41.9 | III |
| Daboya - White Volta | 61.5 | II | 61.8 | II | 44.9 | III | 40.6 | III |
| Buipe - Black Volta | 63.8 | II | 67.4 | II | 50.4 | II | 51.7 | II |
| Bamboi - Black Volta | 68.5 | II | 64.4 | II | 54.8 | II | 53.2 | II |
| Ajena - Main Volta | 73.0 | II | 69.3 | II | 65.6 | II | 62.2 | II |
| Kpong - Main Volta | 70.6 | II | 68.5 | II | 64.0 | II | 51.1 | II |
| Sogakope - Lower Volta | 67.8 | II | 55.8 | II | 60.8 | II | 50.7 | II |
| Lawra - Black Volta | - | - | - | - | - | - | 45.6 | III |

| Statistical Analysis of results WQI | 2010 | 2011 | 2012 | 2013 |
|-------------------------------------|------|------|------|------|
| Maximum | 76.0 | 69.3 | 65.6 | 62.2 |
| Minimum | 53.9 | 48.5 | 27.0 | 32.3 |
| Standard Deviation | 5.6 | 5.6 | 8.0 | 7.4 |

Water Quality Classification System

>80: Class I - Good water quality

25 – 50: Class III - Poor water quality

50 – 80: Class II - Fairly good water

< 25: Class IV- Grossly polluted water

The continued and unregulated activities of small-scale miners (galamsey) were almost entirely responsible for the apparent deterioration of some water bodies such as the Tano, Birim, Offin, Ankobra, and Pra rivers. This is evidenced by the elevation of parameters such as Total Suspended Solids (TSS) in the Pra River.

Background TSS concentrations are normally less than 100mg/l, but any increase in TSS concentrations must be limited to less than 10 % of the background TSS concentrations at a specific site and time¹. Figure 23 shows that the TSS values recorded in 2013 on the Pra River by Newmont

¹ *Ghana Raw Water Quality Criteria and Guidelines, Vol 6, Protection of Aquatic Ecosystems (CSIR, August 2003)*

Golden Ridge Ltd at Hweakwae showed elevated levels particularly in June and July. However, the lower TSS levels recorded in 2013 compared to that recorded in 2012 could be attributed to the presence of the Anti-Galamsey Task Force, which may have led to a reduction in galamsey activities in and around the Pra River.

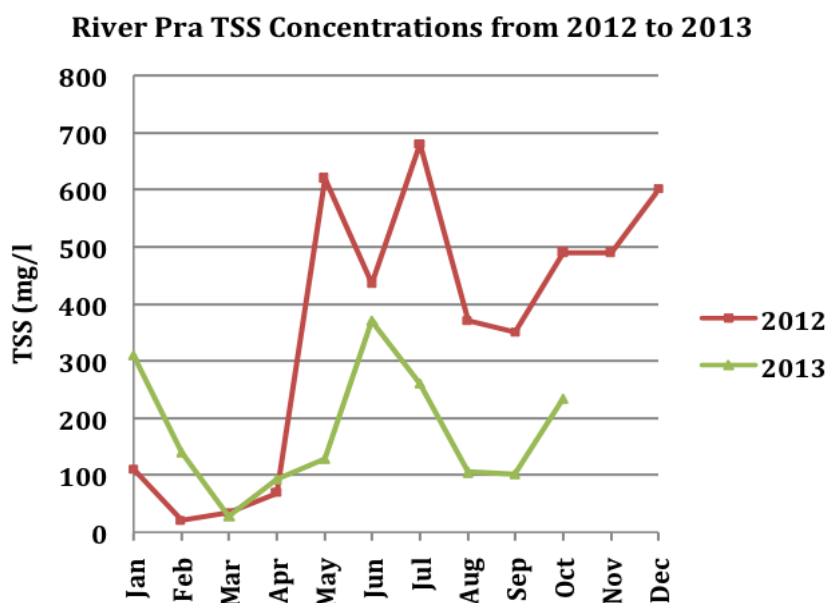


Figure 23: River Pra TSS (mg/l) values from 2012-2013

6.2 Hydrogeological Assessment

Most of the hydrogeological assessment activities were on improving the knowledge base and comprehension of the hydrogeological make-up of the three (3) regions in northern Ghana.

During the reporting year the National Nuclear Research Institute (NNRI) on behalf of the WRC undertook one monitoring campaign on the 37 monitoring wells. Field data collected included groundwater levels and in situ groundwater quality measurements such as temperature, pH and conductivity. Groundwater samples were also collected for laboratory analysis. However, the report on these activities would be submitted during the 1st quarter of 2014.

The major challenge faced in the field monitoring was data gaps usually due to low frequency of field visits and untimely availability of spares to deal expeditiously with the frequent failures of the measuring devices.

6.3 National and River Basin IWRM Plans

River Basin IWRM plans serve as a 'blue print' with prioritised list of actions and measures to address basin specific water management issues and to guide the utilisation and improvement of water resources. On the other hand, the National IWRM Plan sets out the direction and implementation framework for the legal and institutional development to achieve the overall goal of the water resources management component of the National Water Policy.

At the end of 2013, the Commission initiated the process to undertake the baseline studies that would serve as inputs into the development of the Black Volta Basin IWRM plan. The review of the

Densu basin IWRM plan commenced with two stakeholders workshops to assess and evaluate the implementation status of the IWRM plan, and review aspects of the plan that do not reflect the current situation in the basin. A third workshop would be organised in 2014 to complete the review.

6.4 Climate Variability and Change Initiatives

The Water, Climate and Development Programme (WACDEP) was initiated by the Global Water Partnership to meet the demand of the African Ministers' Council on Water (AMCOW) for the implementation of the Declaration of the Summit of Heads of State in 2008. WACDEP is a 5- year programme, from 2011 to 2016, which aims to integrate water security and climate resilience in the development planning processes, build climate resilience, and support countries to adapt to a new climate regime through increased investments in water security. On a pilot basis, WACDEP is being implemented in eight countries including Ghana and Burkina Faso, and four river basins including the Volta Basin. WRC is the host institution and the Country Water Partnership is the implementer.

The overall objective of the WACDEP is to support the integration of water security and climate resilience in development planning and decision-making processes, through enhanced technical and institutional capacity and predictable financing and investments in water security and climate change adaptation. The expected outcomes of the programme are:

- Water security and climate resilience integrated in development planning and decision-making processes;
- Capacities of partnerships, institutions and stakeholders enhanced to integrate water security and climate resilience in development planning and decision-making processes;
- “No regrets” investment and financing strategies for water security, climate resilience and development formulated and governments begin to implement them. In addition, fundable projects for water security, climate resilience and development defined and shared with development banks.

6.5 Flood Hazard Assessment - White Volta Basin

A World Bank supported project that was initiated in 2011 to perform a Flood Hazard Assessment study for the White Volta River ended in 2013. The study investigated the scale and severity of flood hazards, assessed the effectiveness of structural and non-structural measures to mitigate flood damages in the future, and developed a Flood Early Warning System (FEWS) for flood forecasting, flood warning, and flood crisis management.

The outcomes of the project were presented at a high-level stakeholder dissemination workshop in July 2013. The major outputs of the project include:

- Water Information System (WIS Volta)
- GIS data base (GIS Volta)
- Flood assessment models namely; flood genesis, flood mitigation, flood maps, and flood early warning system (FEWS Volta)

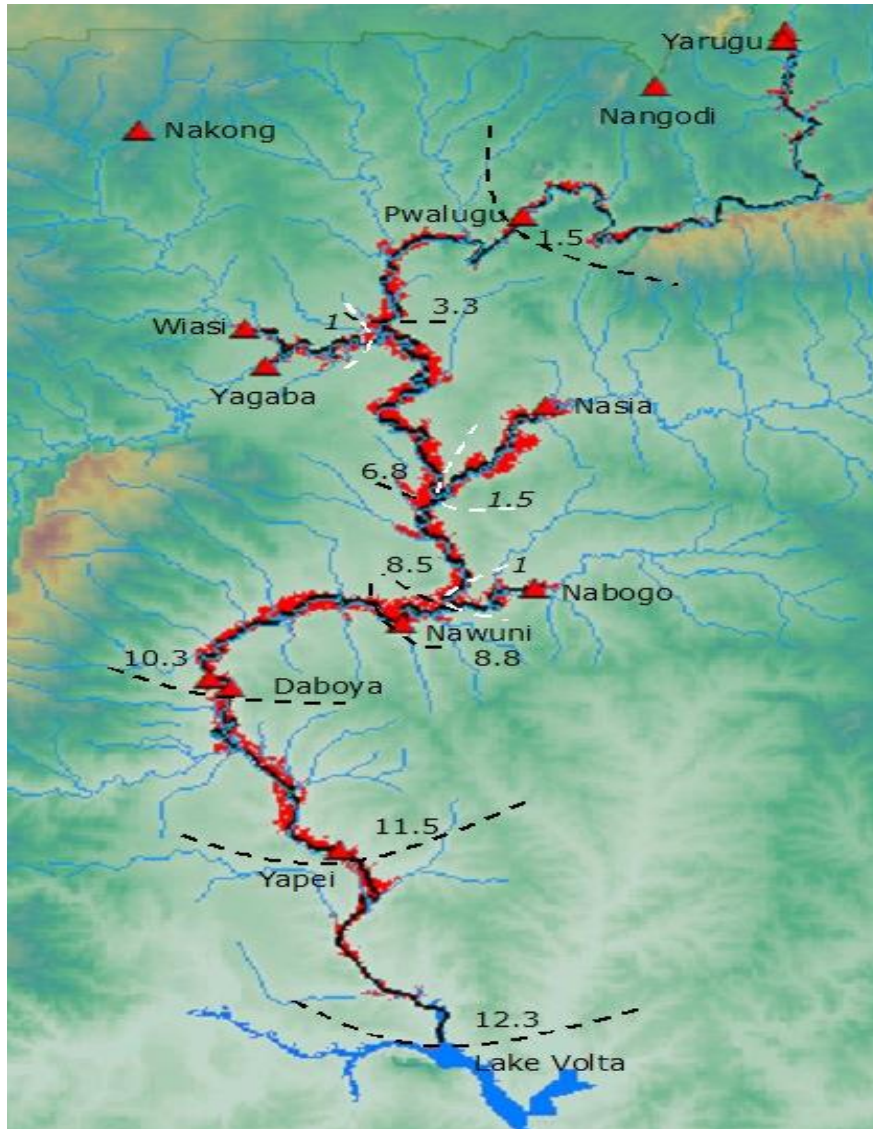


Figure 24: Flood propagation time along the White Volta from Yarugu to Lake Volta

Note: The areas in red along the river indicate frequently flooded areas of the White Volta. The dotted lines indicate the propagation time of the flood wave from Yarugu to Lake Volta.

CHAPTER 7 - TRANSBOUNDARY WATER MANAGEMENT

The WRC continued with its role as the national focal institution charged with coordinating international cooperation and initiatives to improve water governance at the transboundary level.

7.1 The Volta Basin Authority

The Volta Basin Authority (VBA) was formally established in August 2009 to ensure international cooperation for the rational and sustainable management of the water resources of the Volta basin shared by six (6) countries: Burkina Faso (42.95%), Ghana (41.63%), Togo (6.41%), Benin (3.42%), Mali (3.12%), and Ivory Coast (2.48%).

During the year 2013, VBA undertook activities towards fulfilling its strategic objectives for 2010 - 2014:

1. Towards improving the efficiency of VBA's key organs, Expert Committee and Forum of Parties, a delegation comprising representatives from the VBA Executive Directorate and Experts Committee visited the Seine Normandie Water Agency in Paris and Adour Garonne Water Agency in Toulouse from 31 January to 05 February 2013;
2. The 2nd meeting of the Forum of Parties was held from 21 to 23 October 2013, in Ouagadougou. The By-laws for the Forum of Parties and the Terms of Reference for the VBA Master Plan were finalized at this meeting;
3. As part of strengthening the knowledge base of the Volta Basin, a VBA Observatory is being set up which involves the establishment of a communication, information and decision-support tool. DHI was selected to develop the tool. The first draft report (Report A) on identification and prioritization of indicators was validated in a workshop held on 17 July 2013. The consulting team visited some VBA Member States including Ghana to verify the data collected and familiarize itself with the operational procedures and national plans. A training workshop on the Decision Support Team (DST) was held from 2-4 December 2013. The training workshop was followed by the validation workshop on the Action Plan;
4. The Tilapia Volta Project, which is supported by the FAO, aims at providing the countries of the Volta Basin with recommendations for the future use of genetically improved strains of tilapia, taking into consideration the possible impacts on the existing fish populations, the benefits of using such strains and their possible impact in the alleviation of poverty in the participating countries. A validation workshop was held in Accra on 29 and 30 July 2013 and the final documents were submitted to FAO in November 2013. Other partners involved in the project included CIRDES, Burkina Faso; CSIR WRI, Ghana; and Wageningen University;
5. The project on Support for Implementing IWRM in the Nakambé /White Volta Basin is being executed by VBA with l'Agence de l'Eau du Nakambé (Burkina Faso) and White Volta Basin Board (Ghana), in partnership with Agence de l'Eau Loire Bretagne and International Office for Water. The institutional, organizational and mode of implementation of operating resources allocated to IWRM varies from one Volta basin country to the other. For the common benefit of the member States, VBA must standardize, coordinate and develop resources, methods and tools for concerted water resource management at national level. The project therefore aims at standardizing and coordinating the IWRM approaches of the national management bodies on the Nakambe/White Volta basin. A Launching Seminar was held in Bolgatanga, Ghana, from 24 to 26 April 2013 and a Joint Planning Workshop was held in Ziniaré, Burkina Faso, from 09 to 11 September 2013.

7.2 Ghana/Burkina Faso Joint-Technical Committee on IWRM

The Ghana-Burkina Faso Joint Technical Committee on IWRM (JTC-IWRM) was set up in 2005 to strengthen consultation for the joint management of the natural resources of the Volta Basin and to advise the Ministers in charge of water of the two countries. The WRC is the focal institution for Ghana while the DGRE acts for and on behalf of Burkina Faso.

No formal meeting or activity was held in the year. However, the exchange of hydrological information between the two countries continued especially with respect to the water levels of the Bagre and Kompienga Dams during the wet season.

7.3 ECOWAS Water Resources Coordination Centre

The ECOWAS Water Resources Coordination Centre (WRCC) is one of the four organs of the Permanent Framework for Coordination and Monitoring (PFCM) of IWRM in West Africa. ECOWAS Heads of State and Government established the WRCC in December 2001 to promote, co-ordinate, and implement IWRM in West Africa in compliance with ECOWAS mission and policies.

During the year, WRC focused mainly on advancing the manual on 'Guidelines for the Development of Water Infrastructure in West Africa', which was adopted in 2012. The guidelines presented in the manual are intended to help the actors involved in large water infrastructure projects to meet the challenge of conflicts by focusing on six key priority areas:

1. Affirming the critical role of basin organisations in the development and implementation of cross-border projects;
2. Involving affected populations in projects as actors, partners and beneficiaries;
3. Ensuring that all actors involved in project development play their respective roles;
4. Assessing and optimising the profitability of large water infrastructure in West Africa;
5. Capitalising and sharing existing experiences within the framework of ECOWAS and
6. Adopting a regional framework for environmental and social assessment of transboundary projects and delivery of their associated plans.

Pursuit to the implementation of priorities (2) and (5) a multi-stakeholder technical workshop was organized to develop consensual tools and approaches for implementing these ECOWAS recommendations.

WRCC also initiated steps towards the development of methodological tools and approaches to support the practical guide for implementing the recommendations on large water sector infrastructure projects in West Africa.

7.4 Transboundary UNEP/GEF Volta Project

The transboundary UNEP/GEF Volta project, which was hosted by WRC, commenced in January 2008 and ended in December 2013. The Project was a regional imitative of the six riparian countries sharing the Volta basin and designed to promote a more sectorally coordinated management approach, based on the principles of IWRM, at the national and regional levels. The project sought to integrate environmental concerns into development plans of the basin and reduce human activities that lead to water scarcity.

In 2013, activities were carried out at two levels i.e. coordination of activities at the national level and implementation of the Demonstration 3 project in the Black Volta basin.

With respect to the coordination of national level activities, the focus was mainly on facilitating and supervising the implementation of the Demonstration 3 project field interventions:

1. Carried out a monitoring mission to the project area and sites to assess project implementation, discuss project completion and sustainability with project partners and make recommendations; and
2. Held the 3rd and last Project Steering Committee meeting in October 2013 and presented results of the Demo 3 project at the final regional wrap up workshop in Lome, Togo in November 2013.

The interventions undertaken under the Demonstration 3 Project were:

1. The four (4) sets of awareness raising campaign materials were used at community fora organized at Bale, Chache, and Senyeri in July 2013. The community members were sensitized on the following:
 - Impact of settlement and farming within the 50m riparian buffer zone, and the dangers of using chemicals or explosives in fishing and mining;
 - Application of weedicides and chemical fertilizers on food crops; and
 - The immediate and long term effects of these practices to their health, the water bodies, and the environment.
2. A third batch of 7,500 seedlings were purchased and replanted in July 2013 at Bale and Senyeri sites. In all, three (3) hectares were replanted. A hectare was replanted at Bale with 2,500 seedlings and two (2) hectares at Senyeri with 5,000 seedlings.
3. The 10m wild fire belts were repeated around the plantation established at the various hot spots to prevent wide fires from burning the young trees. However, the plantation at Senyeri at the bank of the Gbongbong River experienced fire outbreak again. Hence, the replanting in July 2013.
4. Dredging of sediments from identified spots of riverbeds and river embankment restoration along the tributaries:
 - Hot spots of selected river beds identified in Dole and Gbongbong rivers;
 - Dredging involved the community volunteers using wheelbarrows, head pans, shovels, and pick axes;
 - Dredging was carried out in September 2013 and continued after the rainy season.
5. The following relevant monitoring and evaluation tools for monitoring hydrological parameters of selected tributaries on sediment yield, forest management, and overall project progress were developed:
 - a. Socioeconomic baseline studies;
 - b. A Forest Management Plan; and
 - c. Mapping, hydrological and meteorological data collection as well as modelling and water balance assessment

The major accomplishments and indicators of the Demo 3 Project include:

1. Over 30 chiefs, elders, and opinion leaders in the 5 communities were well sensitized on the project during the community entry and mobilization;

2. Over 400 community members (about 60% were women) were educated on the project through the community forums. Participation in the project interventions was very high and the people showed great interest;
3. About 50 Community Implementation Committee members were trained on their roles and responsibilities in the project implementation. They greatly assisted in the local running of the project;
4. About 80 charcoal producers were trained and about 8 persons from the partner organization benefitted from the charcoal improvement production. These local trainers served as trainers of other communities;
5. The new technology called the Kiln method of charcoal production was successfully introduced to the communities.
6. About 9 hectares of plantations were established at different hot spots despite challenges of bush fires. Specifically:
 - a. 4 hectares of plantation of acacia was established at the Gbongbong river site at Senyeri, which is in good standing. However, it needs maintenance such as tending and maintenance of fire ride around the trees especially the young ones.
 - b. 4 hectares of acacia plantation was established at the Doli river site at Bale also in good standing, but also requires maintenance.
 - c. 0.25 hectares of acacia plantation was established at the bank of the Black Volta River at Chache in good standing.
7. About 420 persons (55% were women) were educated in the awareness forum organized in the four communities. Participants acquired knowledge on the following:
 - a. The practical causes of environmental degradation, and how to reverse the trend;
 - b. Efficient production of charcoal using improved local methods as described in the poster as well as the kiln method of charcoal production for commercial purposes.
 - c. Bush fires and how to reduce their destructive effects on crops and woodlands.

Some of the major challenges during the execution of the project activities include the following:

- Despite the fire belts that were created at all hot spots the plantations experienced severe fire outbreaks.
- Flooding of some areas in the rainy season made roads unmotorable, hence reducing accessibility of the communities. For instance Saru, Ntereso and Nsunua could not benefit fully from the project interventions due to their inaccessibility.
- Untimely release of funds was also a major setback since some specific activities like dredging, and planting of seedlings had to be carried out at specific times of the year.
- During the period of project implementation, the working relationship among the partners was cordial. However, the high manpower turnover within the Bole Ghana National Fire Service (GNFS) affected the implementation of its assigned activities. Hence, the establishment and training of community fire volunteers, and the radio programs on fire prevention could not come off. This was as a major setback since bush fires was the risk to the plantations established along the tributaries of the Black Volta River.

7.5 Hosting of International Delegation

Sierra Leone is undergoing reforms in the water sector that includes learning from the experiences of other countries. Therefore, as part of its function of promoting international cooperation, the WRC hosted a 4-member delegation from Sierra Leone from 2-6 December 2013.

The focus of the study visit was to learn from the Ghanaian experiences in the administration of water rights. The key elements covered during the 5-day interaction were:

- The Water Use Regulations, permitting schedules, internal roles and responsibilities, and external collaboration;
- Application procedure – identification of users, details of forms, acquisition and submission;
- Pre-monitoring of the application – site visit processes and reporting;
- Approval process - drafting of permits/content of permits, issuance procedure;
- Fees for water use – bases and determination;
- Payment procedures and accountability;
- Perspectives of permit holders on fees;
- Database on Water Use Permits; and
- Monitoring for compliance.

The delegation was taken on a field trip to the Weiija Lake area within the Densu Basin

CHAPTER 8 - ADMINISTRATIVE AND HUMAN RESOURCES

8.1 Training Courses

Targeted staff training programs were undertaken both at the national and international levels. The main focus was on competency-based training mainly in water resources management.

Staff of the Commission benefited from the following training programmes and courses:

1. Efficient Water Management for Sustainable Agriculture; Agency for International Development Cooperation (MASHAV) and Centre for International Agricultural Development Cooperation (CINADCO); Israel, 15 October - 5 November 2013
2. Environmental Management for Sustainable Cage Aquaculture Development, CSIR-Water Research Institute and University of Stirling, Accra, February 2013
3. TIGER Training, Sahara and Sahel Observatory (OSS), Tunisia and University of Twente, Netherlands, Tunisia, 20- 27 October 2013
4. Training of Trainers in Economics of Adaptation; the Water, Climate and Development Program, Global Water Partnership, Addis Ababa, November 2013
5. Training on Information, Communication and Decision Support Tools; Volta Basin Authority, Ouagadougou, Burkina Faso, 2-5 December 2013
6. Water Management: Decision Making, Environmental Aspects & Risk Assessment; Robert H. Smith Faculty of Agriculture, Food and Environment, Division of External Studies, Rehovot, Israel, 5-31 October 2013
7. Water Resources Management and Sustainable Development; National Institute of Rural Development, Hyderabad, India, 14-28 March 2013
8. Water Resources Management for Developing Countries; Hunan International Business Vocational College Changsha, China. 15 – 30 October, 2013
9. Water Resources Management for Sustainable Development; African-Asian Rural Development Organization & Ministry of Rural Development, National Institute of Rural Development (NIRD), Hyderabad, India, 16 November- 2 December, 2013

8.2 Academic Courses

Two staff members, Adwoa Dako and Joachim Abunga, completed their Masters programs, while five (5) staff members continued their academic degree programs:

1. Mawuli Lumor: PhD in Climate Change and Land Use, WASCAL
2. Florence Akpabli: BSc. Administration; Datalink University
3. Nicholas Owusu: BSc. Administration; IPS
4. Abigail Aziakpor: BSc. Administration; Methodist University
5. Grace Quicoe; BSc. Administration; University of Cape Coast

8.3 Workshops, Meetings and Conferences

During the course of 2013, WRC organized or was represented at several meetings, workshops, and conferences including the following:

1. Aquaculture Sensitization Workshop, EPA, Asutsuare, 18 December 2013
2. Climate Resilience of Africa infrastructure, World Bank, Accra, 29-30 October 2013

3. Conference on Environmental Enforcement Networks, Concepts Implementation and Effectiveness, Flemish High Council of Environmental Enforcement, INECE and the Government of Flanders, Belgium, November 2013
4. Consultative meeting of the Joint Ghana-Togo Project Coordination, Accra, May 2013
5. Consultative Meeting on Cage Fish Culture in the Weija Lake, Weija, Accra, October 2013,
6. Development of Aquaculture Guidelines and Code of Practice; Ministry of Fisheries and Aquaculture Development, Koforidua, 22-27 September 2013
7. Disaster Risk Reduction, NADMO, Koforidua, 10-11 October, 2013
8. Dissemination workshop White Volta Basin Flood Hazard Assessment and Forecasting, Accra, July 2013
9. Launch of the National Forest and Wildlife Policy, Forestry Commission, Accra, December 2013.
10. Match Making in PPP under the Ghana WASH Window, The Hague, Netherlands, September 2013
11. Meetings on Annual Progress Report (APR) of Ghana Shared Growth and Development Agenda (GSGDA), NDPC, Accra, January and April 2013
12. Ministerial visits to Barekese and Owabi water headworks and the illegal cage culture on the Lake Bosomtwe, April and May 2013
13. Modernizing National Meteorological and Hydrological Services to improve early warning of extreme events through South – South Cooperation; World Bank, Shanghai, China, October 2013
14. National Workshop on CREMAs in Ghana; Forestry Commission, Accra, December, 2013
15. Post UN Conference on Sustainable Development consultations, UN-DESA, New York, USA, November 2013
16. Promoting a Value Chain Approach to Climate Change Adaptation in Agriculture in Ghana”, The Root and Tuber Improvement and Marketing Programme (RTIMP), MOFA, Techiman and Sunyani, 26-28 March, 2013
17. Review of the Densu Basin Integrated Water Resource Management Plan, Koforidua, October and November 2013
18. Stakeholder and community meetings on the importance of buffer zones at Twifo Praso (Central Region), Kwakye Dida, Nsuta (Sekyere Central District), Asokwa (Kumasi), April, July August, 2013
19. Stakeholder consultations on ‘Atewa Forest, A Heritage at a Cross Road, What Future?’ A Rocha Ghana, Accra, November 2013
20. Stakeholder Consultative meetings on the Greater Kumasi Sub-regional Spatial Development Framework and Structure Plan, MESTI and JICA, Kumasi and Accra, February 2013
21. Stakeholder workshop on the Pwalugu multipurpose dam, Akosombo, June 2013
22. Study Tour by VBA Experts Committee to the Seine Normandie Water Agency and Adour Garonne Water Agency in Paris and Toulouse, France, 31 January – 5 February 2013
23. The 18th Katoomba Meeting, Forest, Water & People; Beijing Forestry Society, Beijing, China, May 2013

24. Validation of “Establishment of the Volta Basin Observatory as an Information, Communication and Decision Support Tool” study inception report and 4th Steering Committee Meeting of VBA Observatory, Ouagadougou, Burkina Faso, 15 – 18 July 2013
25. Workshop on River Basin Commissions and other Joint Bodies for transboundary Water Co-operation, Legal and Institutional Aspects, UNECE-EU, Geneva, September 2013
26. Workshops on the National Emergency Preparedness Plan for WASH in Emergency, MLGRD/MWRWH/RCN, Sogakope and Accra, July and September 2013

8.4 Committees

The Commission hosted or served on a number of committees during the year under review. These include:

1. Advisory Council of ISSER
2. Experts Committee of the Volta Basin Authority
3. Inter Agency Committee on Natural Resources Management and Sensitization
4. Joint Ghana-Togo Project Coordination team for the construction of a hydropower dam on River Oti, Ministry of Energy
5. Liaison Group for Mining in Production Forest Reserves
6. National Consultative Committee (NCC) of the Ghana Dams Dialogue
7. National Security Committee on Land and Natural Resources, Accra
8. Natural Resources Technical Review Committee
9. Planning Committee of the 4th Ghana Water Forum
10. Planning Committee of the World Water Day celebrations
11. Siting Committee for the development of Energy infrastructure, Energy Commission
12. Steering committee of the Implementation of the Environmental Management Plan (EMP) for Akosombo and Kpong Hydroelectric Plants, Volta River Authority
13. Steering Committee of the Pwalugu multipurpose dam project, Volta River Authority
14. Steering Committee of the Country Water Partnership
15. Technical Expert Committee of the Permanent Framework for Coordination and Monitoring of IWRM In West Africa, ECOWAS
16. Technical Working Group, WACDEP

8.5 Human Resources

The Commission had 31 staff members (19 male and 12 female) at post. The number of senior staff was 19 with the remaining 12 as junior staff. One staff retired from the Commission. The staff members at post as at the end of the year were:

Non-Contract Appointments

- | | |
|-----------------------|----------------------------------|
| 1. Ben Y. Ampomah | Ag. Executive Secretary |
| 2. Dorcas A. Paintsil | Water Quality Specialist |
| 3. Enoch B. Asare | Ground Water Specialist |
| 4. Bob Alfa | Surface Water Resources Engineer |
| 5. Bernadette Adjei | Lawyer |

| | |
|---------------------------|--|
| 6. Esi E. Biney | Ecologist |
| 7. Linda G. Ennison | Admin. Officer |
| 8. Adwoa M. Dako | Public Relations Officer |
| 9. Stephen A. Boateng | Accountant |
| 10. Aaron Bundi Aduna | Basin Officer, White Volta Basin, Bolgatanga |
| 11. Mawuli Lumor | Basin Officer, Ankobra Basin, Tarkwa |
| 12. Ronald Abrahams | Basin Officer, Densu Basin, Koforidua |
| 13. Dufie Wiredu Bremang | Basin Officer, Pra Basin, Kumasi |
| 14. Solomon Danso Ankomah | Basin Officer, Tano Basin, Sunyani |
| 15. Edwin Afosah-Anim | Assistant Officer (Planning) |
| 16. Eric Muala | Assistant Officer (Legal & Monitoring) |
| 17. Joachim Ayiwe Abunga | Assistant Officer, White Volta Basin, Bolgatanga |
| Fredrick Wiredu Bremang | Assistant Officer (IT) Head Office, Accra |
| 18. Adwoa A. Afran | Assistant Officer (Legal & Monitoring) |
| 19. Edward A. Gyasi | Accounts Clerk, Head Office, Accra |
| 20. Dorcas Abban | Administrative Assistant, Densu Basin, Koforidua |
| Florence Akpabli | Secretary/Receptionist, Head Office, Accra |
| 21. Nicholas Sakyi Owusu | Accounts Clerk II, Head Office, Accra |
| 22. Laiza Sulley | Secretary, White Volta Basin, Bolgatanga |
| 23. Emmanuel Mensah | Office Assistant, Head Office, Accra |
| 24. Edward Toah | Driver, Head Office, Accra |
| 25. Samuel Quaye | Driver, Head Office, Accra |
| 26. Daniel Botwe | Driver, Head Office, Accra |
| 27. Abigail Aziakpor | Secretary/Receptionist, Head Office, Accra |
| 28. Paapa Salifu | Cleaner/Gardener Head Office, Accra |
| 29. Grace Quarcoe | Assist. Admin. Officer, Ankobra Basin, Tarkwa |

Contract Appointments

| | |
|---------------------------|--|
| 1. Raissa Manomba-Asamoah | Assistant Officer, Densu Basin, Koforidua |
| 2. Francis Swanzy | Assistant Officer, Ankobra Basin, Tarkwa |
| 3. Belinda Pra | Assistant Officer, Tano Basin, Sunyani |
| 4. Yaw Boateng Opoku | Assistant Officer, Pra Basin, Kumasi |
| 5. Kwadwo Twum Karikari | Accounts Clerk, Head Office, Accra |
| 6. Aminatu Mohammed | Assistant Officer, Admin, Head Office, Accra |
| 7. Stella Awusi | Cleaner, Densu Basin, Koforidua |
| 8. Joyce Annor | Cleaner, Head Office, Accra |
| 9. Elizabeth Quicoe | Cleaner, Ankobra Basin, Tarkwa |
| 10. Pascalina Nsoh | Cleaner, White Volta Basin, Bolgatanga |

Retirement

| | |
|----------------------------|---|
| 1. Francis Kwadade- Cudjoe | Information Technology Specialist (July 2013) |
|----------------------------|---|

8.6 Library

The library in the year 2013, continued to collect and receive materials/information both in soft (CDs, diskettes, flash disks, emails, etc.) and hard (printed paper documents) copies. A total of thirty one (31) books, newsletters, journals and compact disks were received and logged into the library database, which brought all items in the library to a total of one thousand, one hundred and forty three (1,143). The items received were materials on water resources management (both ground and surface water), annual reports, water quality, training manuals, water supply and sanitation and hygiene, irrigation and consultancy reports.

These materials were received from institutions such as the Water and Sanitation Monitoring Platform (WSMP), Community Water and Sanitation Agency (CWSA); Institute of Statistical, Social and Economic Research (ISSER); and the United Nation Environment Programme (UNEP).

The library also received subscriptions from the Ghana Publishing Corporation. Ghana Gazette, Commercial and Industrial, Land and Concessions Bulletins, Local Government Bulletins, Acts, and Statutory Instruments were received from the Assembly Press.

External visitors to the library were mainly students, lecturers, consultants, and researchers. The library database was fully operational and able to address activities such as, capturing of data (items being received into the library) and querying/searching for specific information as may be required.

CHAPTER 9 - TECHNICAL ASSISTANCE

9.1 Norwegian Agency for Development Cooperation

The Norwegian Agency for Development Cooperation (NORAD) provided a 3-year assistance for the establishment of a National Dam Safety Unit and the development of Dam Safety Regulations. The project formally started in 2010 and technically ended in 2013 (Refer to sections 5.2 and 5.3 for details).

9.2 Africa Water Facility

WRC is the executing agency for two (2) projects supported by the African Development Bank through the Africa Water Facility (AWF):

Re-optimization of Operations of Akosombo and Kpong Dams on the Volta River Project: seeks to explore how the two dams could be reoperated to achieve among others the simultaneous outcomes of restoring downstream ecosystems and human livelihoods; increasing the total electric power output; increasing the reliability of water supply for hydropower generation; and reducing the incidence of water borne disease vectors.

It is being implemented with other local and external partners (Volta River Authority, Water Research Institute, Institute of Environment and Sanitation Studies, Centre for African Wetlands, International Water Management Institute (IWMI), and National Heritage Institute of California).

At the end of 2013:

- Most of the project partners had completed the first set of tasks. The data required mainly from VRA had been obtained for the partners.
- The 5th project partner i.e. IWMI initiated action on its assigned tasks.
- The 1st phase of the model development of the lower Volta basin was also completed.
- A mid-term review exercise was being planned for early 2014.

Design For Reuse – Harvesting the Value of Effluent and Nutrients for Sustaining the Operation of Sanitation Facilities Project: aims at improving the public health and environmental integrity in urban and peri-urban Ghana through the provision of reliable and complete sanitation by increasing the reuse of treated effluent and nutrients. IWMI is the main implementing partner.

At the end of 2013:

- Rehabilitation of the Wastewater Treatment Plant (WWTP) at Presec, Legon was completed to allow for the flow of wastewater to meet irrigation (quality) requirements, and reuse needs (e.g. storage reservoirs, distribution).
- Activities related to the feasibility of incorporating aquaculture given influent waste water quality, market analysis of demand for different farmed fish species, etc. for incorporation of aquaculture incorporation at WWTPs were completed
- Water quality monitoring, assessment of yield efficiency towards biogas generation and recovery at WWTP were also initiated.
- A one-year project extension was granted for the testing of the effluent for irrigation and the training component to be completed.

9.3 World Bank

The WRC hosted the World Bank supported 2-year White Volta Flood Hazard Assessment project, which ended in 2013 (refer to 6.5 for details).

Based on the outcomes of the project, the Government of Ghana has requested further assistance for strengthening flood management through the Disaster Risk Management (DRM) country plan. The Global Facility for Disaster Reduction and Recovery (GFDRR), managed by the World Bank, has responded to the request and allocated a grant of US\$ 1.3 million for the country DMR plan.

The main objective of the 2nd phase is to strengthen the institutional capacity of the agencies responsible for flood and disaster risk management in support of Ghana's efforts to achieve the Hyogo Framework for Action for disaster reduction.

The project will be implemented from 2014 along two project components:

- a. Project Component 1 - Advocacy and capacity building for disaster risk reduction will be implemented by UNDP through a service agreement between the World Bank and UNDP.
- b. Project Component 2 - Strengthening flood management in the White Volta Basin will be implemented as a small recipient executed grant through the Water Resources Commission

CHAPTER 10 - FINANCIAL STATUS

10.1 Audited Financial Statements

The audited financial statements indicate that total income for 2013 was GH¢5,902,469. On the other hand, details of expenditure show that general administrative expenditure for the period amounted to GH¢4,054,412 showing a net gain of GH¢1,848,057. The accumulated balance as at 1 January 2013 was GH¢2,573,684 and the recorded accumulated balance as at 31 December 2013 was GH¢4,438,008.

The detailed Audited Financial Statements for the year ended 31 December 2013 is presented in Annex 4.

Appendix 1 Members of the Water Resources Commission

At the end of the year 2013, membership of the Commission was as follows:

- | | | |
|---|---|---|
| 1. Mr. Paul Derigubaa | - | Chairman |
| 2. Dr. Kwabena Kankam-Yeboah | - | Water Research Institute |
| 3. Mr. Julius Wellens-Mensah | - | Hydrological Services Department |
| 4. Grp. Captain (Rtd) Komla | - | Ghana Meteorological Agency |
| 5. Mr. Daniel S. Amlalo | - | Environmental Protection Agency |
| 6. Mr. Raphael Yeboah | - | Forestry Commission |
| 7. Mr. Jonathan Ahenkorah | - | Minerals Commission |
| 8. Mr. Charles K. O. Addo | - | Volta River Authority |
| 9. Mr. Clement Bugase | - | Community Water and Sanitation Agency |
| 10. Mr. Benjamin Arthur | - | CONIWAS (NGO Representative) |
| 11. Mrs. Clare Banoeng-Yakubo | - | Women's Representative |
| 12. Pe Oscar Batabi Tiyiamu II (Kayoro-Pio) | - | Representative, Traditional Authorities |
| 13. Mr. Ben Ampomah | - | Acting Executive Secretary, WRC |
| 14. Mr. Zachary Gbireh | - | Irrigation Development Authority |
| 15. Mr. Ebenezer Garbrah | - | Ghana Water Company Limited |

Appendix 2: Water Use Register for 2013

| No | User Name | District/Municipal/Metro | Point of Use | Type of Source | Water Use Activity | Primary Purpose | Expiry date |
|----|--|--------------------------|------------------|----------------|--------------------|----------------------------------|-------------|
| 1 | A & O Scale Limited | Dangme East | Volivo | Groundwater | Abstraction | Dredging | 31-Dec-16 |
| 2 | A & O Way Limited | Shama | Atwereboanda | Groundwater | Abstraction | Dredging | 26-Nov-16 |
| 3 | Abosso Goldfields Limited | Prestea Huni-Valley | Damang | Stream | Diversion | Mining | 1-Jan-13 |
| 4 | Abosso Goldfields Limited | Prestea Huni Valley | Damang | Tamang Dam | Abstraction | Mining | 31-Dec-15 |
| 5 | Abosso Goldfields Limited | Prestea Huni Valley | Damang | Groundwater | Abstraction | Mining | 31-Dec-15 |
| 6 | Abosso Goldfields Limited | Prestea Huni Valley | Damang | Groundwater | Abstraction | Mining | 31-Dec-15 |
| 7 | Adamus Resources Limited | Ellembelle | Nzema Gold Plant | River Ankobra | Abstraction | Mining | 1-Oct-13 |
| 8 | Adamus Resources Limited | Ellembelle | Salman | Bangara stream | Spillage | Mining | 31-Mar-16 |
| 9 | Adamus Resources Limited | Ellembelle | Salman | Groundwater | Abstraction | Mining | 31-Mar-16 |
| 10 | Adamus Resources Limited | Ellembelle | Salman | Groundwater | Abstraction | Mining | 28-Feb-14 |
| 11 | Adansi Gold Company (Gh) Limited | Amansie West | Manso Nkran | Groundwater | Abstraction | Mining | 31-Oct-16 |
| 12 | ADM Cocoa Ghana Limited | Kumasi Metropolitan | Kaase | Groundwater | Abstraction | Industrial | 1-Jan-15 |
| 13 | African Plantation for Sustainable Development | Sene | Bantama-Lailai | Groundwater | Abstraction | Irrigation/Construction/Domestic | 31-Dec-15 |
| 14 | Akoduro Company Limited | North Tongu | Aveyime | Groundwater | Abstraction | Dredging | 31-Dec-16 |
| 15 | Akosombo Textiles Limited | Asuogyaman | Akosombo | Groundwater | Abstraction | Industrial | 31-Dec-15 |
| 16 | AngloGold Ashanti | Obuasi Municipality | Akrofuom, Obuasi | Jimi River | Abstraction | Mining | 1-Jan-14 |
| 17 | AngloGold Ashanti | Wassa West | Iduapriem | Groundwater | Damming | Mining | 1-Jan-13 |
| 18 | AngloGold Ashanti (Iduapriem) | Tarkwa Nsuaem | | Groundwater | Abstraction | Domestic/Municipal | 31-Dec-15 |
| 19 | AngloGold Ashanti (Iduapriem) | Tarkwa Nsuaem | Angonabeng | Groundwater | Abstraction | Mining | 31-Dec-15 |

| | | | | | | | |
|----|--|---------------------|--------------------|----------------------------|----------------------------|---------------------------------|-----------|
| 20 | AngloGold Ashanti (Iduapriem) | Tarkwa Nsuaem | Angonabeng | Groundwater | Dewatering | Mining | 31-Dec-15 |
| 21 | AngloGold Ashanti (Iduapriem) | Tarkwa Nsuaem | Abumpuni | Groundwater | Abstraction | Mining | 31-Dec-15 |
| 22 | Azumah Resources Gh Limited | Nadowli | Nanga | Groundwater | Abstraction | Mining | 31-Dec-13 |
| 23 | Benso Oil Palm Plantation Limited | Mpohor East | Benso | Groundwater | Abstraction | Industrial | 31-Dec-15 |
| 24 | Boskudos International Limited | Tarkwa Nsuaem | Iduapreim | Groundwater | Abstraction | Mining | 31-Dec-15 |
| 25 | Cargill Ghana Limited | Tema Municipal | Industrial | Groundwater | Abstraction | Industrial | 1-Jan-14 |
| 26 | Central Ashanti Gold Limited | Upper Denkyira West | Abnabna & Ayanfuri | Groundwater | Abstraction | Mining | 1-Jan-13 |
| 27 | Central Ashanti Gold Limited | Upper Denkyira West | Abnabna & Ayanfuri | Abnabna Stream | Abstraction | Mining | 1-Jan-13 |
| 28 | Clark Sustainable Resource Dev. (Ghana) Ltd. | Asuogyaman | Sedorm | Volta Lake | Underwater wood harvesting | Industrial | 1-Sep-13 |
| 29 | Clark Sustainable Resource Dev. (Ghana) Ltd. | Asuogyaman | Sedorm | Lake Volta and Groundwater | Abstraction | Industrial | 1-Sep-13 |
| 30 | COB-A Industries Limited | Shama | Supoma Dunkwa | Groundwater | Abstraction | Commercial | 31-Dec-15 |
| 31 | Fayce Limited | South Tongu | Sokpe | Volta River | Fish cage | Aquaculture | 31-Jan-16 |
| 32 | Fayce Limited | South Tongu | Sokpe | Volta River | Abstraction | Aquaculture | 31-Jan-16 |
| 33 | Genser Energy Ghana Limited | Sefwi-Wiawso | Chirano | Groundwater | Abstraction | Power Generation | 30-Nov-15 |
| 34 | Ghana Gas Company Limited | Ellembelle | Atuabo | Groundwater | Abstraction | Industrial | 31-Jan-16 |
| 35 | Ghana Manganese Company Ltd | Wassa West | Nsuta | Kawere River | Damming | Mining | 1-Jan-13 |
| 36 | Ghana National Gas Company Ltd | Ellembelle | - | Rivers | Diversion | Industrial | - |
| 37 | Ghana National Gas Company Ltd | Ellembelle | Atuabo | Groundwater | Abstraction | Industrial | 31-Dec-15 |
| 38 | Ghana Oil Palm Development Co. Ltd. | Kwaebibirem | Kwae-kade | Groundwater | Abstraction | Industrial/Irrigation, Domestic | 17-Jan-16 |
| 39 | Ghana Water Company Ltd | Asuogyaman | Kpong New | Volta Lake | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 40 | Ghana Water Company Ltd | Asuogyaman | Kpong Old | Volta Lake | Abstraction | Domestic/Municipal | 31-Jan-17 |

| | | | | | | | |
|----|-------------------------|---------------------|---------------------|--------------|-------------|--------------------|-----------|
| 41 | Ghana Water Company Ltd | Ga South | Weija -Adam Clark | Densu | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 42 | Ghana Water Company Ltd | Ga South | Weija Candy | Densu | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 43 | Ghana Water Company Ltd | Ga South | Weija –Bamag | Densu | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 44 | Ghana Water Company Ltd | Dangme East | Keseve/Adafoah | Volta Lake | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 45 | Ghana Water Company Ltd | Atwima Nwabiagya | Barekese | River Offin | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 46 | Ghana Water Company Ltd | Atwima Nwabiagya | Owabi | Owabi | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 47 | Ghana Water Company Ltd | Sekyere West | Mampong | Kyeremea | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 48 | Ghana Water Company Ltd | Ashanti-Akim North | Konongo | Anunu | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 49 | Ghana Water Company Ltd | Sekyere East | Effiduase / Asokore | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 50 | Ghana Water Company Ltd | Obuasi Municipality | Odaso / Obuasi | Odaso | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 51 | Ghana Water Company Ltd | Adansi | New Edubiase | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 52 | Ghana Water Company Ltd | Ahafo Ano North | Tepa | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 53 | Ghana Water Company Ltd | Agona West | Agona | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 54 | Ghana Water Company Ltd | Mpohor Wassa East | Daboase | Pra | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 55 | Ghana Water Company Ltd | Shama Ahanta East | Inchaban | Anakwari | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 56 | Ghana Water Company Ltd | Tarkwa Nsuaem | Bonsa / Tarkwa | Bonsa | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 57 | Ghana Water Company Ltd | Wassa West | Prestea | Groundwater | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 58 | Ghana Water Company Ltd | Wassa West | Bogoso | Groundwater | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 59 | Ghana Water Company Ltd | Wassa West | Aboso | Groundwater | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 60 | Ghana Water Company Ltd | Nzema East | Axim | Denkyemsule | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 61 | Ghana Water Company Ltd | Nzema East | Axim | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 62 | Ghana Water Company Ltd | Jomoro | Elubo | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |

| | | | | | | | |
|----|-------------------------|-----------------------------|------------------|--------------|-------------|--------------------|-----------|
| 63 | Ghana Water Company Ltd | Cape Coast Municipality | Brimsu | River Kakum | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 64 | Ghana Water Company Ltd | Twifo Hemang Lower Denkyira | Twifo Praso | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 65 | Ghana Water Company Ltd | Mfantseman | Baifikrom | Ochi Amissa | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 66 | Ghana Water Company Ltd | Awutu Effutu Senya | Winneba | Ayensu | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 67 | Ghana Water Company Ltd | Agona | Kwayanku | Ayensu | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 68 | Ghana Water Company Ltd | Asikum-Odoben-Brakwa | Breman - Asikuma | Ochi Nacho | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 69 | Ghana Water Company Ltd | Upper Denkyira East | Dunkwa-Offin | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 70 | Ghana Water Company Ltd | Shama | Sekyere - Heman | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 71 | Ghana Water Company Ltd | West Akyem | Akim Aboabo | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 72 | Ghana Water Company Ltd | Birim South | Akim Oda | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 73 | Ghana Water Company Ltd | Birim South | Akim Asene | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 74 | Ghana Water Company Ltd | Birim South | Akim Swedru | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 75 | Ghana Water Company Ltd | Kwaebibirim | Asuom | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 76 | Ghana Water Company Ltd | Kwaebibirim | Kade | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 77 | Ghana Water Company Ltd | New Juaben Municipality | Koforidua | Ayensu | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 78 | Ghana Water Company Ltd | New Juaben Municipality | Koforidua | Volta Lake | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 79 | Ghana Water Company Ltd | New Juaben Municipality | Koforidua | Groundwater | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 80 | Ghana Water Company Ltd | New Juaben Municipality | Suhyen | Groundwater | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 81 | Ghana Water Company Ltd | Asuogyaman | Anum Boso | Volta Lake | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 82 | Ghana Water Company Ltd | Kwahu South | Kotoso | Volta Lake | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 83 | Ghana Water Company Ltd | Kwahu West | Nkawkaw | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 84 | Ghana Water Company Ltd | West Akim | Asamankese | Abuchem | Abstraction | Domestic/Municipal | 31-Jan-17 |

| | | | | | | | |
|-----|-------------------------|----------------------|------------------|--------------|-------------|--------------------|-----------|
| 85 | Ghana Water Company Ltd | Akwapim South | Nsawam | Densu | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 86 | Ghana Water Company Ltd | East Akim | Apedwa – Asafo | Densu | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 87 | Ghana Water Company Ltd | East Akim | Kibi | Birim | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 88 | Ghana Water Company Ltd | East Akim | Kibi | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 89 | Ghana Water Company Ltd | Suhum Kraboa-Coaltar | Suhum | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 90 | Ghana Water Company Ltd | Atiwa | Anyinam | Birim | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 91 | Ghana Water Company Ltd | Fanteakwa | Begoro | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 92 | Ghana Water Company Ltd | East Akim | Bunso | Birim | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 93 | Ghana Water Company Ltd | Atiwa | Kwabeng | Awusu | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 94 | Ghana Water Company Ltd | East Akim | New Tafo | River Bayira | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 95 | Ghana Water Company Ltd | Fanteakwa | Osino | Birim | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 96 | Ghana Water Company Ltd | Tamale Metro. | Dalun / Nawuni | White Volta | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 97 | Ghana Water Company Ltd | Yendi | Yendi | Daka | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 98 | Ghana Water Company Ltd | South Dayi | Kpeve | Volta Lake | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 99 | Ghana Water Company Ltd | Ho Municipality | Tsito | Wuve | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 100 | Ghana Water Company Ltd | Keta | Kpando & Keta | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 101 | Ghana Water Company Ltd | Kpandu | Sovie | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 102 | Ghana Water Company Ltd | Kpandu | Anfoega | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 103 | Ghana Water Company Ltd | Kpandu | Nkonya - Ahenkro | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 104 | Ghana Water Company Ltd | Hohoe | Hohoe | Dayi | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 105 | Ghana Water Company Ltd | Ketu | Agordome / Sega | Volta Lake | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 106 | Ghana Water Company Ltd | Ketu | Aflao | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |

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|-----|--------------------------------|-------------------------|--------------------|--------------|-------------|--------------------|-----------|
| 107 | Ghana Water Company Ltd | Ketu | Denu | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 108 | Ghana Water Company Ltd | Ketu | Agbozume | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 109 | Ghana Water Company Ltd | Akatsi | Abor | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 110 | Ghana Water Company Ltd | Keta | Avenopeme/ Anyako | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 111 | Ghana Water Company Ltd | Jasikan | Jasikan | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 112 | Ghana Water Company Ltd | Jasikan | Worawora | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 113 | Ghana Water Company Ltd | Kadjebi | Kadjebi / Juapong | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 114 | Ghana Water Company Ltd | Sunyani Municipality | Abesim | Tano | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 115 | Ghana Water Company Ltd | Berekum | Berekum | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 116 | Ghana Water Company Ltd | Asutifi | Biaso | Biaso | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 117 | Ghana Water Company Ltd | Tano North | Dwomo | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 118 | Ghana Water Company Ltd | Asutifi | Acherensua | Tano | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 119 | Ghana Water Company Ltd | Techiman Municipal | Techiman / Tonoso | Tano | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 120 | Ghana Water Company Ltd | Techiman Municipal | Techiman Boreholes | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 121 | Ghana Water Company Ltd | Bolgatanga Municipality | Bolgatanga | Vea Dam | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 122 | Ghana Water Company Ltd | Bawku-East Municipality | Bawku | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 123 | Ghana Water Company Ltd | Kasena-Nankana | Navrongo | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 124 | Ghana Water Company Ltd | Bolgatanga Municipality | Zuarungu | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 125 | Ghana Water Company Ltd | Wa Municipality | Wa | Ground Water | Abstraction | Domestic/Municipal | 31-Jan-17 |
| 126 | Global Agri-Development Co Ltd | North Tongu | Torgome | Volta Lake | Abstraction | Irrigation | 31-Dec-13 |
| 127 | Golden Star (Wassa) Limited | Mpohor Wassa East | Wassa | Groundwater | Abstraction | Mining | 1-Jan-13 |
| 128 | Golden Star (Wassa) Limited | Mpohor Wassa East | Mpohor Wassa | Obrayebona | Abstraction | Mining | 1-Jul-13 |

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|-----|--|---------------|-------------------|----------------------------|-------------|--------------------|-----------|
| | | | | stream | | | |
| 129 | Juaben Oils Mills Limited | Ejisu Juaben | Juaben | Groundwater | Abstraction | Industrial | 31-Dec-15 |
| 130 | Kibi Goldfields Limited | Fanteakwa | Saamang | Anoma River | Abstraction | Mining | 1-Jan-14 |
| 131 | Kibi Goldfields Limited | Fanteakwa | Saamang | Groundwater | Abstraction | Domestic/Municipal | 1-Jan-14 |
| 132 | Kibi Goldfields Limited | Fanteakwa | Saamang | Groundwater | Abstraction | Mining | 1-Jan-14 |
| 133 | Kingsmat Dan Fish Farm | Asuogyaman | Oframase-Gyakiti | Volta Lake | Fish Cage | Aquaculture | 1-Dec-14 |
| 134 | L & X Scale Limited | Central Gonja | Yapei | Groundwater | Abstraction | Dredging | 31-Dec-16 |
| 135 | Laveroff Farms Limited | Asuogyaman | Apaatifi | Volta Lake | Fish Cage | Aquaculture | 1-Jan-15 |
| 136 | Laveroff Farms Limited | Asuogyaman | Apaatifi | Volta Lake | Abstraction | Aquaculture | 1-Jan-15 |
| 137 | Lee W Farms Limited | Asuogyaman | Omankeleke | Groundwater | Abstraction | Aquaculture | 31-Dec-15 |
| 138 | Lee's Farm Ghana Limited | Asuogyaman | Adjena | Volta Lake | Fish Cage | Aquaculture | 1-Jan-13 |
| 139 | Mairene Ventures | Ga – East | Kwabanya | Groundwater | Abstraction | Domestic/Municipal | 1-Jan-13 |
| 140 | Maleka Farms Limited | Dangbe West | Akuse | Lake Volta and Groundwater | Abstraction | Aquaculture | 1-Jan-17 |
| 141 | Ministry of Energy (Mini Hydro Power Plant, Hohoe) | Hohoe | Tsatsadu | Tsatsadu River | Diversion | Power Generation | 1-Jan-13 |
| 142 | Newmont Ghana Gold Limited | Asutufi | Kenyasi II | Groundwater | Abstraction | Mining | 31-Dec-15 |
| 143 | Newmont Ghana Gold Ltd | Asutifi | Kenyasi -Ntotroso | Subri stream | Damming | Mining | 1-Jan-13 |
| 144 | Newmont Ghana Gold Ltd | Asutifi | Subika, Kenyasi | Groundwater | Abstraction | Mining | 1-Feb-13 |
| 145 | Newmont Ghana Gold Ltd | Asutifi | Kenyasi II | Groundwater | Abstraction | Mining | 1-Jan-15 |
| 146 | Newmont Ghana Gold Ltd | Abirem North | New Abirem | Groundwater | Abstraction | Mining | 1-Jan-14 |
| 147 | Newmont Ghana Gold Ltd | Birim North | Hweakwae | Groundwater | Abstraction | Mining | 1-Jan-14 |
| 148 | Newmont Ghana Gold Ltd | Asutufi | Kenyasi | Groundwater | Abstraction | Mining | 31-Jan-16 |

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|-----|------------------------------|-----------------------|---------------------|--------------------------------|-------------------------|---------------------|-----------|
| 149 | Newmont Golden Ridge Limited | Birim North | New Abirem | Groundwater | Abstraction | Mining | 31-Dec-16 |
| 150 | Newmont Golden Ridge Limited | Birim North | Abirem | Rainwater | Harvest rainfall-runoff | Mining | 31-Mar-16 |
| 151 | Newmont Golden Ridge Ltd | Birim North | Hweakwae | Pra River | Abstraction | Mining | 31-Dec-14 |
| 152 | Newmont Golden Ridge Ltd | Birim North | Hweakwae | Yaayaaso stream | Diversion | Mining | - |
| 153 | Newmont Golden Ridge Ltd | Birim North | - | Adenchensu stream | Diversion | Mining | - |
| 154 | Noble Gold Bibiani Limited | Bibiani/Anhwia/Bekwai | - | Mpokwampai | Diversion | Mining | - |
| 155 | Noble Gold Bibiani Limited | Bibiani/Anhwia/Bekwai | Bebiani | Groundwater | Abstraction | Mining | 31-Mar-16 |
| 156 | Noble Gold Bibiani Limited | Bibiani/Anhwia/Bekwai | Bibiani | Groundwater | Abstraction | Mining | 31-Mar-16 |
| 157 | Norpalm Ghana Ltd | Ahanta West | Ewusiejoe | Groundwater | Abstraction | Industrial/Domestic | 31-Dec-17 |
| 158 | Owere Mines Limited | Asante Akyem | Obenmabe | Groundwater | Abstraction | Mining | 1-Jan-14 |
| 159 | Perseus Mining (Gh) Limited | Upper Denkyira | Ayamfuri | Asuafo Stream | Damming | Mining | 31-Dec-14 |
| 160 | Perseus Mining (Gh) Limited | Upper Denkyira West | Ayamfuri | Groundwater | Abstraction | Mining | 31-Dec-15 |
| 161 | Perseus Mining (Gh) Limited | Upper Denkyira West | Ayamfuri | Groundwater | Abstraction | Mining | 31-Dec-16 |
| 162 | Prestea Sankofa Gold Limited | Prestea Huni Valley | Bondaye, Prestea | Essuo Kofi stream, groundwater | Abstraction | Domestic/Municipal | 1-Sep-13 |
| 163 | Reeba Farms Limited | Asuogyaman | Old Dodi Asantefrom | Groundwater | Fish cage | Aquaculture | 31-Dec-15 |
| 164 | Rehobothgoshen Fisheries Ltd | Asuogyaman | Apaatifi | Groundwater | Abstraction | Aquaculture | 31-Dec-15 |
| 165 | Romex Mining Ghana Limited | Upper West Denkyira | Mpeasem | Offin stream | Abstraction | Domestic/Municipal | 26-Nov-15 |
| 166 | Romex Mining Ghana Limited | Upper West Denkyira | | Ahensu stream | Diversion | Mining | - |
| 167 | Safeway Estates Limited | South Dayi | Tongo Bor | Volta Lake and groundwater | Abstraction | Aquaculture | 1-Jan-17 |
| 168 | Samuel Opoku & Sons Limited | Gomoa | Adjumako | Rain water | Abstraction | Industrial/Mining | 31-Dec-17 |

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|-----|-----------------------------------|----------------|-----------------|-----------------|----------------|--------------------|-----------|
| 169 | Savanna Diamond Company Ltd | Central Gonja | Buipe | Groundwater | Abstraction | Industrial | 1-Oct-15 |
| 170 | Sun Woo Culturing System Ltd. | Asuogyaman | Akosombo | Volta Lake | Fish Cage | Aquaculture | 1-Mar-14 |
| 171 | The Pure Company Limited | Kintampo North | Benkrom | Groundwater | Abstraction | Commercial | 31-Dec-16 |
| 172 | The Royal Senchi Limited | Asuogyaman | Senchi | Volta Lake | Abstraction | Recreation | 30-Apr-15 |
| 173 | Triton Aquaculture Africa Limited | Asuogyaman | Dodi Asantekrom | Volta Lake | Fish Cage | Aquaculture | 1-Jun-14 |
| 174 | Triton Aquaculture Africa Limited | Asuogyaman | Dodi Asantekrom | Volta Lake | Fish Pond | Aquaculture | 1-Jan-15 |
| 175 | Tropo Farms Limited | Dangme West | Asutsure | Groundwater | Fish cage | Aquaculture | 31-Dec-16 |
| 176 | Tropo Farms Limited | Asuogyaman | Mpakadan | Groundwater | Fish cage | Aquaculture | 31-Dec-16 |
| 177 | Tropo Farms Limited | Asuogyaman | Mpakadan | Groundwater | Fish cage | Aquaculture | 31-Dec-16 |
| 178 | US Group of Companies Limited | Asuogyaman | Serdom | Volta Lake | Fish cage | Aquaculture | 31-Dec-16 |
| 179 | US Group of Companies Limited | Asuogyaman | Serdom | Volta Lake | Fish pond/cage | Aquaculture | 31-Dec-16 |
| 180 | Vegpro Ghana Limited | North Tongu | Torgome | Kpong Reservoir | Abstraction | Irrigation | 1-Jan-15 |
| 181 | Vision 2000 Farms Company Ltd. | Asuogyaman | Domeabra | Groundwater | Fish cage | Aquaculture | 31-Dec-14 |
| 182 | Voltic (Gh) Limited | Bosomtwe | Nyameani | Groundwater | Abstraction | Commercial | 31-Dec-15 |
| 183 | WaterHealth Ghana Limited | Ga West | Manhean | River Densu | Abstraction | Domestic/Municipal | 1-Jan-14 |
| 184 | WaterHealth Ghana Limited | Ga West | Afuaman | River Densu | Abstraction | Domestic/Municipal | 1-Jan-14 |
| 185 | WaterHealth Ghana Limited | West Akim | Adeiso | River Ntiribo | Abstraction | Domestic/Municipal | 1-Jan-14 |
| 186 | WaterHealth Ghana Limited | Ga West | Nsakina | River Nsaki | Abstraction | Domestic/Municipal | 1-Jan-14 |
| 187 | WaterHealth Ghana Limited | Akwapim South | Pakro | River Densu | Abstraction | Domestic/Municipal | 1-Jan-14 |
| 188 | Waterhealth Ghana Limited | Ashaiman | Michel Camp | Groundwater | Abstraction | Domestic/Municipal | 30-Nov-16 |
| 189 | Waterhealth Ghana Limited | North Tongu | Napkoe | Volta Lake | Abstraction | Domestic/Municipal | 30-Jun-16 |
| 190 | Waterhealth Ghana Limited | Ga West | Amasaman | Groundwater | Abstraction | Domestic/Municipal | 31-Mar-16 |

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|-----|---------------------------|----------------|---------------|--------------|-------------|--------------------|-----------|
| 191 | Waterhealth Ghana Limited | Krachi East | Asukawkaw | Groundwater | Abstraction | Domestic/Municipal | 30-Apr-16 |
| 192 | Waterhealth Ghana Limited | Krachi East | Dambai | Groundwater | Abstraction | Domestic/Municipal | 30-May-16 |
| 193 | Waterhealth Ghana Limited | South Dayi | Dzemeni | Volta Lake | Abstraction | Domestic/Municipal | 30-Jun-16 |
| 194 | Waterhealth Ghana Limited | Biakoye | Tapa Abotoase | Volta Lake | Abstraction | Domestic/Municipal | 30-Apr-16 |
| 195 | Waterhealth Ghana Limited | North Tongu | Volo | Groundwater | Abstraction | Domestic/Municipal | 30-Dec-16 |
| 196 | Waterhealth Ghana Limited | Adaklu-Anyigbe | Ziope | Tsiave River | Abstraction | Domestic/Municipal | 30-Jun-16 |
| 197 | Waterhealth Ghana Limited | Akwapim North | Amonokrom | Groundwater | Abstraction | Domestic/Municipal | 30-Jun-16 |
| 198 | Waterhealth Ghana Limited | Akwapim North | Akropong | Groundwater | Abstraction | Domestic/Municipal | 31-Oct-16 |
| 199 | Waterhealth Ghana Limited | Ga West | Oduman | Groundwater | Abstraction | Domestic/Municipal | 31-Jul-16 |
| 200 | Waterhealth Ghana Limited | Ga West | Pokoase | Groundwater | Abstraction | Domestic/Municipal | 31-Oct-16 |
| 201 | Waterhealth Ghana Limited | Ga West | Obeyeyie | Groundwater | Abstraction | Domestic/Municipal | 31-Mar-16 |
| 202 | WBHO Ghana Limited | Ga South | New Bortianor | Groundwater | Abstraction | Construction | 31-Mar-15 |
| 203 | West African Fish Limited | Asuogyaman | Domiabra | Volta Lake | Fish Cage | Aquaculture | 1-Jun-15 |

Appendix 3: Well Drilling License Register - 2013

| No | Permit Holder | Address | Company Registration No. | Licence No. | Category | Expiry Date |
|----|---|--|--------------------------|----------------|----------|-------------|
| 1 | 7 A's Christian Construction and Dev't Consul Ltd | P. O. Box AN 5038, Accra-North | CA-74,771 | WRC/WDL/081/11 | C | 26-Jun-14 |
| 2 | Abotwa and Sons Company Ltd. | P. O. Box 38, Tamale | CA-81,758 | WRC/WDL/109/11 | C | 24-Jun-15 |
| 3 | Afrihope Missions | P. O. Box 529, Berekum-Bia, Ghana | G-20,731 | WRC/WDL/093/11 | C | 10-Oct-15 |
| 4 | Aglawu Company Limited | P. O. Box SK 332, Tema | CA-56,869 | WRC/WDL/094/11 | C | 12-Oct-14 |
| 5 | Akira Limited | P. O. Box GT 6346, Accra-North | CA-57,608 | WRC/WDL/106/12 | C | 22-May-15 |
| 6 | Alhaji Iddi Akugri Drilling & Const. Works | P. O. Box 132, Kumasi, Ashanti Region | BN-22,330 E | WRC/WDL/137/13 | C | 21-Mar-16 |
| 7 | Amazing Tramensco Limited | P. O. Box 8, Assin-Foso | CA-70,483 | WRC/WDL/120/12 | C | 22-Oct-15 |
| 8 | Andeg Limited | P. O. Box LG 893, Legon, Accra | CA-23,481 | WRC/WDL/104/12 | C | 18-Mar-15 |
| 9 | Aqua Saline Company Limited | P. O. Box 95,639, Tema | CA-95,639 | WRC/WDL/124/13 | C | 9-Jan-16 |
| 10 | Aquamasters Company Ltd. | P. O. Box CO 1123, Tema | CA-81,820 | WRC/WDL/100/12 | A | 22-Jan-15 |
| 11 | Bauer Resources Ghana Limited | P. O. Box MB 615, Teshie - Nungua, Accra | CA - 72,956 | WRC/WDL/050/13 | B | 19-Aug-16 |
| 12 | Benta Enterprise Limited | P. O. Box 120, Bolgatanga, Upper East Region | CA-94,971 | WRC/WDL/130/13 | C | 4-Mar-16 |
| 13 | Bizgeo Company Limited | PMB MD 127, Madina-Accra | CA-22,859 | WRC/WDL/057/10 | C | 16-Aug-13 |
| 14 | BlessedField Limited | P. O. Box AD 52, Adabraka, Accra | C-63,579 | WRC/WDL/111/12 | C | 22-Aug-15 |
| 15 | Bonfirm Company Limited | P. O. Box UP 55 KNUST-Kumasi | CA-74,253 | WRC/WDL/123/13 | C | 9-Jan-16 |
| 16 | Brushwell Associates Limited | P. O. Box DC 439, Dansoman | CA-28,586 | WRC/WDL/073/11 | B | 25-Apr-14 |
| 17 | Caspian Energy Ghana Ltd. | P. O. Box OS 726, Osu-Accra | CA-65,594 | WRC/WDL/041/10 | B | 25-Feb-13 |
| 18 | Cephavick Limited | P.O. Box MB 359 Mamprobi-Accra | CA-17,548 | WRC/WDL/08/005 | C | 24-Jun-14 |
| 19 | Champion Man Company Limited | P. O. Box KW 302, Kwadaso - Kumasi | CA-60,706 | WRC/WDL/052/13 | C | 10-Oct-16 |

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|----|---|--|------------------|----------------|---|-----------|
| 20 | China Geo-Engineering Corporation (Gh) Ltd. | P. O. Box CT 3477, Cantonments-Accra | 76,967 | WRC/WDL/055/10 | B | 16-Aug-13 |
| 21 | China Henan Geo-Construction Company Limited | P.O. Box KS 12198, Kumasi | C-89,839 | WRC/WDL/08/003 | B | 18-May-14 |
| 22 | China Zhong Hao (Gh) Limited | P. O. Box 649 OF, Accra (Plot No. 39, Dome-Accra) | CA-4,096 | WRC/WDL/08/002 | B | 8-Jun-14 |
| 23 | Chucatel Ghana Limited | P. O. Box TN 962, Teshie Nungua, Accra | CA-79,368 | WRC/WDL/074/11 | B | 25-Apr-14 |
| 24 | Church of Christ (Rural Water Dev. Programme) | P. O. Box AN 6017, Accra-North | G.3.785,D.S.W/59 | WRC/WDL/08/001 | B | 8-Jun-14 |
| 25 | Cognizant Business Solutions Limited | P. O. Box 2067, Fiapre-Sunyani, Brong Ahafo Region | CA-62,459 | WRC/WDL/139/13 | C | 16-May-16 |
| 26 | Dadick Limited | P. O. Box DS 2044, Dansonman-Accra | 88,007 | WRC/WDL/112/12 | C | 22-Jul-15 |
| 27 | Darkata Engineering Services Limited | P. O. Box 62, Trade Fair, Accra | 71,666 | WRC/WDL/097/11 | C | 3-Nov-14 |
| 28 | Dextin Company Limited | P. O. Box CT 4329, Cantonments, Accra | CA-51,527 | WRC/WDL/086/11 | C | 19-Jul-14 |
| 29 | E E & E Company | P.O. Box AE 1163,Accra | CA-18,392 | WRC/WDL/014/12 | B | 6-Oct-15 |
| 30 | Ebekae Limited | P. O. Box SE 1188, Suame -Kumasi | CA-41,887 | WRC/WDL/068/11 | C | 7-Feb-14 |
| 31 | Elektro Aquah Services | P. O. Box 518, Fante New Town-Kumasi | C-73,552 | WRC/WDL/064/11 | C | 18-Jan-14 |
| 32 | Elex Investments Ghana Limited | P. O. Box TL. 2299, Tamale | CA-70,832 | WRC/WDL/066/11 | C | 18-Jan-14 |
| 33 | Elinapoa Investment Limited | P. O. Box LT 624, Laterbiokoshie, Accra | CS033632012 | WRC/WDL/128/13 | C | 27-Jan-16 |
| 34 | Enacent Agency Limited | P. O. Box MD 438, Madina-Accra | 75,913 | WRC/WDL/054/13 | C | 10-Oct-16 |
| 35 | Ersfa Limited | P. O. Box AN 10032, Accra-North | C-75,078 | WRC/WDL/110/12 | C | 25-Jun-15 |
| 36 | Fadl Rahaman Enterprise Ltd. | P. O. Box AX 1651, Takoradi | CA-61,417 | WRC/WDL/039/10 | C | 12-Jan-13 |
| 37 | FBB Drilling & Construction (Gh) Ltd. | P. O. Box BC 169, Burma Camp, Accra | C-85,647 | WRC/WDL/051/10 | C | 15-Aug-13 |
| 38 | GC Bescom Limited | P. O. Box SK 444, Sakumono - Tema | CA-89,283 | WRC/WDL/118/12 | C | 22-Oct-15 |
| 39 | Gemrock Drills Ghana Limited | P. O. Box KS16456 | CS032732012 | WRC/WDL/121/12 | B | 31-Oct-15 |
| 40 | Georgeland Ventures | P. O. Box CT 5655, Cantonment | C-63,089 | WRC/WDL/149/13 | C | 19-Dec-16 |
| 41 | Geosource Drilling Technologies Limited | P. O. Box AT 2264, Achimota | CA-22,285 | WRC/WDL/096/11 | C | 1-Nov-14 |
| 42 | Geosystems Consulting Limited | P. O. Box 28 Abuakwa-Kumasi | CA-40,567 | WRC/WDL/069/11 | C | 7-Feb-14 |

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|----|---|--|--------------|-----------------|---|-----------|
| 43 | Global Almas Limited | P. O. Box LG 825, Legon | CA-6,125 | WRC/WDL/059/10 | C | 16-Aug-13 |
| 44 | GM Projekts | P. O. Box 16157, Accra | CA-7,340 | WRC/WDL/085/11 | C | 18-Jul-14 |
| 45 | G-Mark Environmental Engineering Company Ltd | C/O Trustees Services Ltd, Box GP 1632, Accra | CA-91,243 | WRC/WDL/095/11 | C | 1-Nov-14 |
| 46 | Good Father & Mother Enterprise | P. O. Box 100 Wa | BN - 68,044B | WRC/WDL/077a/11 | C | 9-Jun-14 |
| 47 | Haiva Company Limited | P. O. Box CS 8741, Tema | CA-29,838 | WRC/WDL/126/13 | C | 9-Jan-16 |
| 48 | Heisa Engineering Company Ltd. | P. O. Box JT 223, James Town, Accra | 65,305 | WRC/WDL/105/12 | C | 16-May-15 |
| 49 | Hitesh Impex Limited | P. O. Box 4610-CT, Cantonment Accra, Ghana | CA-88,981 | WRC/WDL/022/13 | B | 8-Apr-16 |
| 50 | Hu Bei Geology & Engineering Company Ltd. | Box 282 Education Ridge, Tamale, Northern Region | C-78,734 | WRC/WDL/048/13 | B | 14-Jul-16 |
| 51 | Huchang Infrastructure Eng. Co. (Gh) Ltd. | P. O. Box 1470, Madina-Accra | CA-8,136 | WRC/WDL/056/10 | B | 16-Aug-13 |
| 52 | Geosource Drilling Technologies Limited | P. O. Box AT 2264, Achimota | CA-22,285 | WRC/WDL/096/11 | C | 1-Nov-14 |
| 53 | Hydronomics Limited | P. O. Box LG 924, Legon, Accra | CA-10,929 | WRC/WDL/114/12 | B | 22-Jun-15 |
| 54 | IB-Max Company Ltd. | P. O. Box CT 426, Cantonments, Accra | CA-60,844 | WRC/WDL/115/12 | C | 16-Aug-15 |
| 55 | Indo-Ghana Borehole Services Ltd. | P. O. Box GP 4711, Accra-Ghana | CA-1,830 | WRC/WDL/016/12 | B | 18-Oct-15 |
| 56 | J. Adom Limited | P. O. Box KD 429, Kanda, Accra | C - 87,66 | WRC/WDL/061/10 | C | 14-Oct-13 |
| 57 | Jaka Sewerage & Construction Services Limited | P. O. Box DS 1459, Dansoman-Accra, Ghana | CA-6,546 | WRC/WDL/127/13 | C | 21-Jan-16 |
| 58 | Jamesbury Trading and Construction Ltd. | P. O. Box GP 1632, Accra 6397, Accra-North | CA-10,562 | WRC/WDL.076/11 | C | 15-May-14 |
| 59 | JCR Drilling Ghana Limited | P. O. Box KB 792, Korle-Bu, Accra | CA-50,988 | WRC/WDL/063/11 | C | 18-Jan-14 |
| 60 | Joanasco Company Limited | P. O. Box 407, Madina, Accra | CA-38,367 | WRC/WDL/107/12 | C | 23-May-15 |
| 61 | Joissam Construction Ltd. | P. O. Box AD 1188 Adabraka-Accra | CA-16,243 | WRC/WDL/049/10 | B | 15-Aug-13 |
| 62 | K.S.K. Builders Network Limited | P. O. Box KD 1198 Kanda-Accra | CS200142013 | WRC/WDL/141/13 | C | 14-Jul-16 |
| 63 | Keldem Engineering Company Limited | P. O. Box AF 1815 Adenta-Accra | CS1622642013 | WRC/WDL/135/13 | C | 21-Mar-16 |
| 64 | Kingaka Construction Ltd. | P. O. Box TN 385, Accra | 61,309 | WRC/WDL/058/13 | B | 19-Sep-16 |
| 65 | Kinkubi Solutions | P. O. Box SN 366, Santasi-Kumasi | BN-29,924D | WRC/WDL/088/11 | C | 16-Aug-14 |

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|----|---------------------------------------|---|----------------|------------------|---|-----------|
| 66 | Kuadeck Limited | P. O. Box GP 20187, Accra | CA-48,534 | WRC/WDL/133/13 | C | 18-Mar-16 |
| 67 | Kutia Limited | P. O. Box 9987, Airport- Accra | CA-2,398 | WRC/WDL/144/13 | C | 19-Aug-16 |
| 68 | Kwik Silver Ghana Limited | May's Plaza, Community 8, Tema | C-69,898 | WRC/WDL/053/10 | C | 16-Aug-13 |
| 69 | Leka Interactive Company Ltd | P. O. Box 474, Teshie-Nungua | CA-83,361 | WWRC/WDL/083/11 | C | 3-Jul-14 |
| 70 | Marknoc Enterprise | P. O. Box Tkw 413, Tarkwa, W/R | BN-50,730C | WRC/WDL/099/11 | C | 13-Nov-14 |
| 71 | Mega Drilling Ghana Limited | P. O. Box WY 834, Kwabenya | CS047192012 | WRC/WDL/143/13 | B | 30-Jul-16 |
| 72 | Meridian Water Well Drilling Ltd | P. O. Box CT 5632, Accra | CA-74,412 | WRC/WDL/072/11 | B | 4-Apr-14 |
| 73 | Mikanbros Company Ltd | P. O. Box MB 687, Ministries-Accra | CA-77,893 | WRC/WDL/080/11 | C | 26-Jun-14 |
| 74 | Mowakari Trading and Construction Ltd | P. O. Box 468. Obuasi | CA-78,411 | WRC/WDL/078/11 | C | 9-Jun-14 |
| 75 | MTL Boreholes Limited | P. O. Box 2264, Opp. ABC, Achimota | CA-51,269 | WRC/WDL/103/12 | B | 22-Feb-15 |
| 76 | Multi-Hydro Technique Limited | P. O. Box TA 312, Taifa, Accra | 95,844 | WRC/WDL/108/12 | C | 17-Jun-15 |
| 77 | Oti Yeboah Complex Ltd. | P. O. Box 244 Sunyani, Brong Ahafo | 30,777 | WRC/WDL/040/10 | C | 12-Jan-13 |
| 78 | Pamcor Limited | DTD P11 Coastal Estates, Off Spintex Rd, Baatsona | CA-30,525 | WRC/WDL/098/11 | C | 7-Nov-14 |
| 79 | Pekwapong Company Ltd | P. O. Box P531, Kumasi | CA-69,855 | WRC/WDL/071/11 | B | 17-Mar-14 |
| 80 | Plumblin Global Service Ltd. | P. O. Box LG 1069, Legon, Accra | CA-62,100 | WRC/WDL/090/11 | C | 21-Sep-14 |
| 81 | Posen Enterprise Limited | P. O. Box MP 1697, Mamprobi-Accra | CA-56,784 | WRC/WDL/042/10 | C | 17-Mar-13 |
| 82 | PRD Rigs Ghana Ltd | P. O. Box CT 5285, Cantonments-Accra | CA-46,471 | WRC/WRL/084/11 | C | 5-Jul-14 |
| 83 | Prefan Investments Company Ltd | P. O. Box 1694, Kumasi | CA-81,470 | WRC/WDL/082/11 | C | 26-Jun-14 |
| 84 | Quay Hydro Consult Limited | P. O. Box OD 293, Odorkor, Accra | CA - 71,027 | WRC/WDL/062/10 | C | 14-Oct-13 |
| 85 | Rahmex Enterprise Ltd. | P. O. Box 410, Wa | 81,479 | WRC/WDL/045/10 | C | 22-Mar-13 |
| 86 | Ramdison Enterprise | C/O P. O. Box 566, Wa, Upper West Region | BN-51,516D | WRC/WDL/140/13 | C | 11-Jul-16 |
| 87 | Sabailo Ltd | P. O. Box 93, Bolgatanga | CA-21,576 | WRCL/WDL/072/11 | C | 10-Apr-14 |
| 88 | Sabfex Enterprise | P. O. Box 77, Wassa Nsuta Tarkwa | TIN-1240023975 | WRC/WDL/099-a/11 | C | 8-Dec-14 |

| | | | | | | |
|-----|--|---------------------------------------|-------------|----------------|---|-----------|
| 89 | Sages Consult (Ghana) Ltd. | P. O. Box 1231, Sunyani -Brong Ahafo | CA-52,314 | WRC/WDL/092/11 | c | 9-Oct-14 |
| 90 | Samjust Engineering Co. Ltd. | P. O. Box 837, Kenten, Techiman-B/A | CA-8,158 | WRC/WDL/087/11 | C | 1-Aug-14 |
| 91 | Sandimax Company Ltd | P. O. Box NG 59, Nungua-Accra | CA-18,692 | WRC/WRL/079/11 | C | 23-Jun-14 |
| 92 | Sem Equipment Limited | P. O. Box 15447, Accra-North | CA-84,237 | WRC/WDL/101/12 | C | 22-Feb-15 |
| 93 | Springer Ghana Limited | P. O. Box 2439, Tamale | CB-696 | WRC/WDL/116/12 | C | 16-Aug-15 |
| 94 | Stanton Limited | P. O. Box KS 6613 Kumasi-Ghana | C-46,734 | WRC/WDL/047/10 | C | 26-May-13 |
| 95 | Starco Ventures Limited | P. O. Box 1235, Koforidua | CA-17,860 | WRC/WDL/044/10 | B | 17-Mar-13 |
| 96 | Stardust Construction Limited | P. O. Box 560, Odorkor, Accra | C-75,226 | WRC/WDL/148/13 | C | 21-Nov-16 |
| 97 | TBL Resources Limited | P. O. Box CT 6109, Cantonments-Accra | CA-9,686 | WRC/WDL/09/012 | B | 23-Mar-15 |
| 98 | Tech-2 Resources Limited | P. O. Box 882, Tamale | CA-39,729 | WRC/WDL/075/11 | C | 2-May-14 |
| 99 | Tedson Drilling & Construction Limited | P. O. Box HP 582, Ho, Volta Region | C-90,609 | WRC/WDL/018/13 | B | 14-May-16 |
| 100 | Time Heals Enterprise Limited | P. O. Box 261, Bawku | CA-7008 | WRC/WDL/065/11 | C | 18-Jan-14 |
| 101 | Trecor Company Limited | P. O. Box 994, Teshie-Nungua Estates | CA-90,994 | WRC/WDL/131/13 | C | 4-Mar-16 |
| 102 | Trust Water Works Limited | P. O. Box OS 1852, Osu-Accra | CA-12,033 | WRC/WDL/011/11 | C | 18-Jan-14 |
| 103 | Unipumps Nigeria Limited | P. O. Box 5732 Accra, North | EXT. 1,510 | WRC/WDL/122/12 | B | 12-Nov-15 |
| 104 | Vent-3 Limited | P. O. Box CT 3759, Cantonments, Accra | C-73,219 | WRC/WDL/132/13 | C | 18-Mar-16 |
| 105 | Viekele Enterprise | C/O P. O. Box 15, Tendamba, JHS, Wa | BN-86,764D | WRC/WDL/138/13 | C | 8-Apr-16 |
| 106 | Waale Construction Works Limited | P. O. Box 250, Bolgatanga | CA-19,730 | WRC/WDL/046/10 | C | 22-Mar-13 |
| 107 | Waterfirst Springs Limited | P. O. Box CT 5436, Accra | CA-56,992 | WRC/WDL/134/13 | C | 21-Mar-16 |
| 108 | Watersan Engineers Limited | P. O. Box TA 88, Taifa-Accra | CA-72,975 | WRC/WDL/129/13 | C | 4-Feb-16 |
| 109 | Waterside Ghana Limited | P. O. Box 1099 Madina-Accra | CA-61,583 | WRC/WDL/021/13 | C | 19-Sep-16 |
| 110 | Wenenco Limited | P. O. Box 1424, Sunyani | CA-98,769 | WRC/WDL/142/13 | A | 29-Jul-16 |
| 111 | Zegor Limited | P. O. Box LG 629, Legon, Accra | CA - 21,945 | WRC/WDL/043/10 | C | 17-Mar-13 |

WATER RESOURCES COMMISSION

FINANCIAL STATEMENTS

FOR THE YEAR ENDED 31 DECEMBER 2013

Morrison & Associates
Chartered Accountants, Tax &
Management Consultants
2nd Floor Trinity House
Ring Road East
P.O. Box CT 2890
Cantonments-Accra

**WATER RESOURCES COMMISSION
FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2013**

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WATER RESOURCES COMMISSION

BOARD OF COMMISSIONERS, OFFICIALS AND REGISTERED OFFICE

BOARD OF COMMISSIONERS

Agyewodin Prof.A. Gyamfi Ampem (Chairman)
Mr. Ben.Y. Ampomah (Ag. Exec. Secretary)
Mr. Clement Bugase
Mr. Raphael Yeboah
Mr. Simon Abagna Aplo
Ing. Ada E. Asomantsi
Mr. Carl Kojo Fiati
Dr. Joseph Addo Ampofo
Mr. Peter N. Hodgson
Mr. Kwaku D. Dovlo
Mr. Huber Osei-Wusuansa
Mr. Osei Y. Owusu-Sekyere
Mr. Alhaji Alhassan Bene
Ms. Bernice Sam
Mrs. Aisha Sahia

REGISTERED OFFICE

No. E.4 Leshie Crescent
Labone Estate
Accra

AUDITORS

Morrison & Associates
Chartered Accountants, Tax &
Management Consultants
2nd Floor, Trinity House
Ring Road East
P. O. Box CT 2890
Cantonments-Accra

BANKERS

Ecobank Ghana Limited
Bank of Ghana

REPORT OF THE COMMISSIONERS

The Commissioners present their report and the audited financial statements of the Commission for the year ended 31 December 2013.

STATEMENT OF COMMISSIONERS' RESPONSIBILITIES

The Water Resource Commission Act, 1996 (Act 522) requires the Commissioners to prepare the financial statements for each financial year, which give a true and fair view of the state of affairs of the Commission.

In preparing these financial statements, the Commissioners are required to:

- select suitable accounting policies in accordance with International Public Sector Accounting Standards (IPSAS) and to apply them consistently and
- make judgments and estimates that are reasonable and prudent.

The Commissioners are responsible for ensuring that the Commission keeps proper accounting records that disclose, with reasonable accuracy at any time, the financial position of the Commission. The Commissioners are also responsible for safeguarding the assets of the Commission and taking reasonable steps for the prevention and detection of fraud and other irregularities.

FINANCIAL STATEMENTS

The results for the year are as set out in the attached financial statements and show an accumulated fund carried forward of GH¢4,438,008 made up as follows:

| | 2013 | 2012 |
|---------------------------------|------------------|------------------|
| | GH¢ | GH¢ |
| Accumulated fund at 1 January | 2,573,684 | 1,234,241 |
| Prior year net adjustments | 16,267 | - |
| Surplus for the year | <u>1,848,057</u> | <u>1,339,443</u> |
| Accumulated fund at 31 December | <u>4,438,008</u> | <u>2,573,684</u> |

The Commissioners consider the state of the Commission's affairs to be satisfactory.

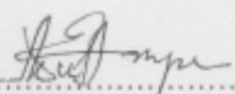
NATURE OF BUSINESS

The Water Resource Commission (WRC) established by The Water Resources Commission Act, 1996 (Act 522) of the Republic of Ghana is responsible for the regulation and management of the utilisation of water resources, and for the co-ordination of any policy in relation to them.

There has been no change in the nature of business of the Commission during the year.

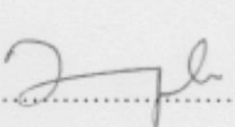
AUDITORS

The Auditors, Morrison & Associates, have indicated their willingness to continue in office pursuant to section 134(5) of the Companies Act, 1963 (Act 179) and will so do.

..........)

)

) COMMISSIONERS

..........)

ACCRA

.....23/09/..... 2014



Chartered Accountants, Tax & Management Consultants)

2nd Floor, Trinity House

Ring Road East

P. O. Box CT 2890

Cantonments - Accra, Ghana

Tel: (+233-302) 771372

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Fax: (+233-302) 771232

E-mail: info@morrisonassociatesgh.com

Website: www.morrisonassociatesgh.com

REPORT OF THE INDEPENDENT AUDITORS TO THE BOARD OF WATER RESOURCES COMMISSION

We have audited the accompanying financial statements of Water Resources Commission, which comprise the statement of financial position as at 31 December 2013, the statement of financial performance, the cash flow statement, and changes in net assets / equity for the year then ended, and a summary of significant accounting policies and other explanatory notes.

Commissioners Responsibility for the Financial Statements

The Board of Commissioners is responsible for the preparation and fair presentation of these financial statements in accordance with International Public Sector Accounting Standards (IPSAS) and the Companies Act, 1963 (Act 179). This responsibility includes: designing, implementing and maintaining internal controls relevant to the preparation and fair presentation of financial statements that are free of material misstatement, whether due to fraud or error, and making accounting estimates that are reasonable in the circumstances.

Auditor's Responsibility

Our responsibility is to express our independent opinion on these financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance whether the financial statements are free of material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal controls relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control.

An audit also includes evaluating the appropriateness of the accounting policies used and the reasonableness of accounting estimates made by the Commissioners, as well as evaluating the overall presentation of the financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Water Resources Commission as of 31 December 2013, and of its financial performance and its cash flows for the year then ended in accordance with International Public Sector Accounting Standards (IPSAS) and the Companies Act, 1963, (Act 179).

Report on other Legal and Regulatory Requirements

The Companies Act, 1963 (Act 179) requires that in carrying out our audit we consider and report on the following matters. We confirm that:

- a. We have obtained all the information and explanations which to the best of our knowledge and belief were necessary for the purposes of our audit;
- b. Proper books of account have been kept by the Commission, so far as appears from our examination of these books; and
- c. The statement of financial position, statement of financial performance and statement of changes in net assets /equity of the Commission are in agreement with the books of account.

Momisan & Associates

CHARTERED ACCOUNTANTS (ICAG/E/2014/097)

ACCRA, GHANA

25th September
....., 2014

PARTICULARS OF PARTNER SIGNING:

NAME: SAMUEL WILFRED YAW INKOOM

SIGNATURE: *[Signature]*

PRACTISING CERTIFICATE NUMBER: ICAG/P/1118

WATER RESOURCES COMMISSION
STATEMENT OF FINANCIAL PERFORMANCE FOR THE YEAR ENDED 31 DECEMBER 2013

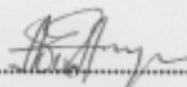
| | | 2013 | 2012 |
|---------------------------------|------|------------------|------------------|
| | NOTE | GH¢ | GH¢ |
| Revenue | 5 | 1,661,470 | 738,720 |
| Other Revenue | 6 | 4,240,999 | 2,379,754 |
| Total Revenue | | 5,902,469 | 3,118,474 |
| General administration expenses | 7 | (4,054,412) | (1,779,031) |
| Surplus for the year | | 1,848,057 | 1,339,443 |

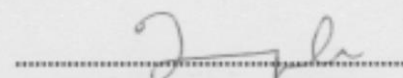
WATER RESOURCES COMMISSION
STATEMENT OF CHANGES IN NET ASSETS/EQUITY
FOR THE YEAR ENDED 31 DECEMBER 2013

| Changes in equity for 2012 | Development Fund | Accumulated Fund | Total |
|------------------------------------|---------------------|---------------------|------------------|
| | GH¢ | GH¢ | GH¢ |
| Balance at 1st January 2012 | 59,845 | 1,234,241 | 1,294,086 |
| Net Revenue for the year | - | 1,339,443 | 1,339,443 |
| Balance at 31 December 2012 | 59,845 | 2,573,684 | 2,633,529 |
| Changes in equity for 2013 | | | |
| Balance at 1st January 2013 | 59,845 | 2,573,684 | 2,633,529 |
| Net Revenue for the year | - | 1,848,057 | 1,848,057 |
| Prior year adjustment 3 | | 20,250 | 20,250 |
| Prior year adjustment 2 | | (3,983) | (3,983) |
| Balance at 31 December 2013 | 59,845 | 4,438,008 | 4,497,853 |

WATER RESOURCES COMMISSION
STATEMENT OF FINANCIAL POSITION AS AT 31 DECEMBER 2013

| ASSETS | NOTE | 2013 GH¢ | 2012 GH¢ |
|---------------------------------|------|-------------------------|-------------------------|
| Current Assets | | | |
| Cash & Cash Equivalents | 8 | 2,962,685 | 1,556,945 |
| Account Receivables | 9 | 923,820 | 417,623 |
| Prepayment for Residence | | 60,000 | 4,830 |
| Deferred Expenditure | 10 | - | 2,880 |
| | | <u>3,946,505</u> | <u>1,982,278</u> |
| Non- Current Assets | | | |
| Pra Capital Expenditure | 11 | 23,151 | 26,718 |
| White Volta Capital Expenditure | 11 | 12,897 | 17,383 |
| Tano Capital Expenditure | 11 | 56,389 | 64,444 |
| Property, plant & equipment | 12 | 484,294 | 611,311 |
| Intangible Assets | 13 | 8,930 | - |
| | | <u>585,661</u> | <u>719,856</u> |
| Total Assets | | 4,532,166 | 2,702,134 |
| Current Liabilities | | | |
| Account Payable | 14 | (34,313) | (68,605) |
| Net Assets | | <u>4,497,853</u> | <u>2,633,529</u> |
| REPRESENTING:- | | | |
| Net Assets/Equity | | | |
| Accumulated Fund | | 4,438,008 | 2,573,684 |
| Development Fund | 15 | 59,845 | 59,845 |
| Total Net Assets/ Equity | | <u>4,497,853</u> | <u>2,633,529</u> |


 (CHAIRMAN)


 (AG. EXECUTIVE SECRETARY)

ACCRA

23 / 09 / 2014

Notes 1-16 form an integral part of these financial statements and should therefore be read in conjunction therewith.

**WATER RESOURCES COMMISSION
CASH FLOW STATEMENTS
FOR THE YEAR ENDED 31 DECEMBER 2013**

| | 2013 | 2012 |
|---|------------------|------------------|
| | GH¢ | GH¢ |
| <u>Cash flows from operating activities</u> | | |
| Surplus/Deficit for the Year | 1,848,057 | 1,339,443 |
| Non-cash movements | | |
| Depreciation | 164,068 | 175,556 |
| Amortisation | 4,465 | |
| Profit on disposal of non- current assets | 12b (7,986) | (22,600) |
| White Volta Capital expenditure written off | 4,486 | 4,486 |
| Pra Capital expenditure written off | 3,567 | 3,567 |
| Tano Capital expenditure written off | 8,055 | 8,055 |
| Deferred expenditure written off | 2,880 | 2,880 |
| Increase in account receivables | (506,197) | (162,820) |
| Increase in prepayments for residence | (55,170) | (4,830) |
| Decrease in account payables | (34,292) | (449) |
| Net cash flow from operating activities | 1,431,934 | 1,343,288 |
| <u>Cash flows from investing activities</u> | | |
| Purchase of property, plant and equipment | (47,665) | (135,825) |
| Purchase of Intangible assets | (13,395) | |
| Receipt from the sale of property, plant and equipment | 34,865 | 22,600 |
| Net cash flows from investing activities | (26,195) | (113,225) |
| Net increase in cash & cash equivalents | 1,405,740 | 1,230,063 |
| Cash & cash equivalents at 1 January(Note 1) | 1,556,944 | 326,881 |
| Cash & cash equivalents at 31 December (Note 1) | 2,962,684 | 1,556,944 |

Note 1

Notes to the cash flow statements

Analysis of cash and cash equivalents as shown in the statement of financial position.

| | 2013 | 2012 | Change |
|--------------|------------------|------------------|------------------|
| | GH¢ | GH¢ | in year |
| Cash on hand | 3,161 | 1,603 | 1,558 |
| Cash at bank | 2,959,524 | 1,555,342 | 1,404,182 |
| Total | 2,962,685 | 1,556,945 | 1,405,740 |

**NOTES FORMING PART OF THE FINANCIAL STATEMENTS
FOR THE YEAR ENDED 31ST DECEMBER, 2013**

1.0 CORPORATE INFORMATION

1.1 Nature of Company and Domicile.

The Water Resource Commission (WRC) established by The Water Resources Commission Act, 1996 Act 522 of the Republic of Ghana is responsible for the regulation and management of the utilisation of water resources, and for the co-ordination of any policy in relation to them.

The Commission is domiciled in Ghana with its registered office at No. E.4 Leshie Crescent, Labone Estate, Accra.

1.2 Compliance with International Public Sector Accounting Standards (IPSASs).

The financial statements of the Commission for the year ended 31st December 2013 have been prepared in accordance with International Public Sector Accounting Standards (IPSASs). The accounting policies have been applied consistently throughout the period.

2.0 ACCOUNTING POLICIES.

The significant accounting policies adopted by the Commission and which have been applied in preparing these financial statements are stated below:

2.1 Basis of Accounting.

The financial statements have been prepared under the historical cost convention.

2.2 Functional and Presentation Currency.

The financial statements are presented in Ghana Cedi (GHS) which is the functional and presentation currency of the Commission.

2.3 Recognition of revenue, transactions and other events.

2.3.1 Revenue

Revenue is recognised to the extent that the economic benefits or service potential will flow to the Commission and the revenue can be reliably measured.

2.3.2 Transactions and other events.

The financial statements have been prepared on the accrual basis therefore transactions and other events are recognised in the financial statements of the periods to which they relate or when they occur (and not only when cash or its equivalent is received or paid). The elements recognised under accrual accounting are assets, liabilities, net assets/equity, revenue, and expenses.

2.4 Financial Instruments: Initial Recognition and Subsequent Measurement.

2.4.1 Initial Recognition of financial instruments.

The Commission initially recognises a financial asset or a financial liability in its statement of financial position when, it becomes a party to the contractual provisions of the instrument.

The Commission derecognises a financial asset when:

- (a) The contractual rights to the cash flows from the financial asset expire or are waived; or
- (b) It transfers the contractual rights to receive the cash flows of the financial asset.

A financial liability (or a part of a financial liability) is removed from the Commission's statement of financial position when, it is extinguished – i.e., when the obligation specified in the contract is discharged, waived, cancelled or expires.

2.4.2 Subsequent Measurement.

For the purpose of measuring a financial asset after initial recognition the Commission classifies financial assets into the following four categories:

- (a) Financial assets at fair value through surplus or deficit;
- (b) Held-to-maturity investments;
- (c) Loans and receivables; and
- (d) Available-for-sale financial assets

After initial recognition, the Commission measures financial assets including derivatives that are assets, at their fair values, without any deduction for transaction costs it may incur on sale or other disposal, except loans and receivables and held to maturity investments which are measured at amortised cost using effective interest method.

2.4.2.1 A financial asset or financial liability at fair value through surplus or deficit.

A financial asset or financial liability at fair value through surplus or deficit is a financial asset or financial liability that meets either of the following conditions.

- (a) It is classified as held for trading. A financial asset or financial liability is classified as held for trading if:
 - (i) It is acquired or incurred principally for the purpose of selling or repurchasing it in the near term;
 - (ii) On initial recognition it is part of a portfolio of identified financial instruments that are managed together and for which there is evidence of a recent actual pattern of short- term profit-taking; or
 - (iii) It is a derivative (except for a derivative that is a financial guarantee contract or a designated and effective hedging instrument).
- (b) Upon initial recognition it is designated by the entity as at fair value through surplus or deficit.

2.4.2.2 Held-to-maturity investments.

Held-to-maturity investments are non-derivative financial assets with fixed or determinable payments and fixed maturity that an entity has the positive intention and ability to hold to maturity other than:

- (a) Those that the entity upon initial recognition designates as at fair value through surplus or deficit;
- (b) Those that the entity designates as available for sale; and
- (c) Those that meet the definition of loans and receivables.

2.4.2.3 Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market other than:

- (a) Those that the entity intends to sell immediately or in the near term, which shall be classified as held for trading, and those that the entity upon initial recognition designates as at fair value through surplus or deficit;
- (b) Those that the entity upon initial recognition designates as available for sale; or
- (c) Those for which the holder may not recover substantially all of its initial investment, other than because of credit deterioration, which shall be classified as available for sale.

An interest acquired in a pool of assets that are not loans or receivables (e.g., an interest in a mutual fund or a similar fund) is not a loan or receivable.

2.4.2.4 Available-for-sale

Available-for-sale financial assets are those non-derivative financial assets that are designated as available for sale or are not classified as

- (a) Loans and receivables,
- (b) Held-to-maturity investments or
- (c) Financial assets at fair value through surplus or deficit.

2.4.2.5 Gains and Losses

A gain or loss arising from a change in the fair value of a financial asset or financial liability that is not part of a hedging relationship is recognised, as follows.

- (a) A gain or loss on a financial asset or financial liability classified as at fair value through surplus or deficit shall be recognised in surplus or deficit.

(b) A gain or loss on an available-for-sale financial asset is recognised directly in net assets/equity through the statement of changes in net assets/equity.

The commission's principal financial assets are accounts receivable and cash and cash equivalents.

2.4.3 Financial asset.

A financial asset is any asset that is:

- (a) Cash;
- (b) A contractual right to receive cash or another financial asset from another entity;
- (c) A contractual right to exchange financial instruments with another entity under conditions that are potentially favourable; or
- (d) An equity instrument of another entity.

2.4.4 Financial liability.

A financial liability is any liability that is a contractual obligation:

- (a) To deliver cash or another financial asset to another entity; or
- (b) To exchange financial instruments with another entity under conditions that are potentially unfavourable.

The Commission has no financial liabilities.

2.4.5 The amortised cost of a financial asset or financial liability.

The amortised cost of a financial asset or financial liability is the amount at which the financial asset or financial liability is measured at initial recognition minus principal repayments, plus or minus the cumulative amortisation using the effective interest method of any difference between that initial amount and the maturity amount, and minus any reduction (directly or through the use of an allowance account) for impairment or uncollectibility.

2.4.6 The effective interest method.

The effective interest rate method is a method of calculating the amortised cost of a financial asset or a financial liability (or group of financial assets or financial liabilities) and of allocating the interest revenue or interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments or receipts through the expected life of the financial instrument or, when appropriate, a shorter period to the net carrying amount of the financial asset or financial liability. When calculating the effective interest rate, an entity shall estimate cash flows considering all contractual terms of the financial instrument (e.g., prepayment, call and similar options) but shall not consider future credit losses.

2.4.7 Fair Value.

The amount for which an asset could be exchanged or a liability settled, between knowledgeable, willing parties in an arm's length transaction.

2.4.7.1 Availability of active market.

The fair value of a financial instrument traded in active markets such as the Ghana Stock Exchange (GSE) at the reporting date is based on its quoted market price without any deduction of transaction costs.

2.4.7.2 Non-availability of active market.

Equity investments that do not have quoted market price in an active market and whose fair value cannot be reliably measured are measured at cost. Investments whose fair values can be reliably measured are measured professionally through the use of valuation techniques.

2.4.7.3 Short term receivables

The fair value of short term receivables approximates book value and is measured as such.

2.5 Property, plant and equipment (PPE)

The Commission recognises an item of property, plant and equipment as an asset when it is probable that future economic benefits or service potential associated with the item will flow to it and the cost or fair value of the item can be measured reliably.

The Commission initially measures its property, plant, and equipment at cost. Where an asset is acquired through a non-exchange transaction, its cost is measured at its fair value as at the date of acquisition.

After initial recognition as an asset, an item of property, plant, and equipment is carried at its cost, less any accumulated depreciation and any accumulated impairment losses.

The depreciation charge for each period is recognised in surplus or deficit, unless it is included in the carrying amount of another asset.

The depreciable amount related to each asset is determined as the difference between the cost and the residual value of the asset. The residual value is the estimated amount, net of disposal costs that the Commission would currently obtain from the disposal of an asset in similar age and condition as expected at the end of the useful life of the asset. The current annual depreciation rates for each class of property, plant and equipment are as follows:

| | |
|--|--------|
| Building | 3% |
| Office equipment/Furniture & fittings | 15% |
| Computers and accessories/ Intangible-software | 33.33% |
| Motor vehicles | 20% |

A full year's depreciation is charged in the year of acquisition but none in the year of disposal. Costs associated with routine servicing and maintenance of assets is expensed as incurred. Subsequent expenditure is only capitalised if it is probable that future economic benefits associated with the item will flow to the Commission.

The Commission derecognises the carrying amount of an item of property, plant and equipment:

- (a) On disposal; or
- (b) When no future economic benefits or service potential is expected from its use or disposal.

The gain or loss arising from the derecognition of an item of property, plant, and equipment determined as the difference between the net disposal proceeds, if any, and the carrying amount of the item.

The carrying values of property, plant and equipment are reviewed for indications of impairment when events or changes in circumstances indicate the carrying value may not be recoverable. If an item of property, plant, and equipment is revalued, the entire class of property, plant, and equipment to which that asset belongs is revalued.

If the carrying amount of a class of assets is increased as a result of a revaluation, the increase is credited directly to revaluation surplus. However, the increase is recognised in surplus or deficit to the extent that it reverses a revaluation decrease of the same class of assets previously recognised in surplus or deficit.

On the other hand if the carrying amount of a class of assets is decreased as a result of a revaluation, the decrease is recognised in surplus or deficit. However, the decrease shall be debited directly to revaluation surplus to the extent of any credit balance existing in the revaluation surplus in respect of that class of assets.

Revaluation increases and decreases relating to individual assets within a class of property, plant, and equipment is offset against one another within that class but is not offset in respect of assets in different classes.

There is no existence of restrictions on title, and no property, plant, and equipment of the Commission is pledged as a security for a liability.

2.5.1 Intangible Assets- Computer Software

An intangible asset is an identifiable non-monetary asset without physical substance. The Commission recognises an intangible asset when the expected future economic benefits or service potential that are attributable to the asset will flow to it; and the cost or fair value of the asset can be measured reliably.

Cost incurred to acquire and bring to use specific computer software licenses are capitalised and amortised on the basis of the expected useful lives using the straight-line method. Maximum useful live ranges between 4 and 5 years.

2.6 Provisions

The Commission recognises provisions when it has a present obligation (legal or constructive) as a result of past events and it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation.

Where the Commission expects some or all of a provision to be reimbursed by another party the reimbursement is recognised as a separate asset but only when the reimbursement is virtually certain. The expense relating to any provision is presented in the statement of financial performance net of any amount recognised for a reimbursement.

If the effect of the time value of money is material, provisions are determined by discounting the expected future cash flows at a pre-tax rate that reflects current market assessments of the time value of money and, where appropriate, the risks specific to the liability. Where discounting is used, the increase in the provision due to the passage of time is recognised as a borrowing cost.

Provisions are reviewed at the end of each reporting period and adjusted to reflect the current best estimate. If it is no longer probable that an outflow of resources embodying economic benefits will be required to settle the obligation the provision is reversed.

2.7 Employee Benefits

Social Security and National Insurance Trust (SSNIT)

Under a National Defined Benefit Pension Scheme, the Commission contributes 13% of employees' basic salary to SSNIT for employee pensions. The Commission's obligation is limited to the relevant contributions, which are settled on due dates. The pension liabilities and obligations, however, rest with SSNIT/other pension fund managers.

Wages and salaries payable to employees are recognised as an expense in the statement of financial performance at gross amount. The Commission's contribution to social security fund is also charged as an expense.

3.0 SIGNIFICANT ACCOUNTING ESTIMATES, ASSUMPTIONS & JUDGMENTS

In preparation of the financial statements, the Commission makes estimations and applies judgment that could affect the reported amount of assets and liabilities. Key areas in which judgment is applied include:

3.1 Impairment of Financial Assets

The Commission makes an allowance for unrecoverable financial assets when there is objective evidence that the carrying amount may not be recoverable. Significant management judgment is required to determine when objective evidence of impairment exists, and also in estimating future cash flows from the assets.

3.2 Impairment of Non-Financial Assets (including Property Plant & Equipment)

The Commission assesses at least at each financial year end whether there is any evidence that non-financial assets (including PPE) may be impaired. Where indicators of impairment exist, an impairment test is performed. This requires an estimation of the 'value in use' of the asset or the cash-generating units to which the asset belongs. Estimating the value in use amount requires management to make an estimate of the expected future cash flows from the asset or the cash generating unit and also to select a suitable discount rate in order to calculate the present value of those cash flows.

3.3 Foreign Currency

Transactions denominated in foreign currency are translated into Cedis at the rates of exchange ruling on the dates of the transactions. Assets and liabilities denominated in foreign currencies are translated into Cedis at exchange rates ruling at the reporting date.

Any gains or losses resulting from foreign currency translation or exchange are dealt with through the statement of financial performance.

3.4 Cash & Cash Equivalents

Cash comprises cash on hand and demand deposits. Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash and which are subject to an insignificant risk of changes in value.

For the purposes of the cash flow statement cash and cash equivalents include cash and balances with banks.

3.5 Events after the Reporting Period

Events that provide evidence of conditions that existed at the reporting date (adjusting events after the reporting date) are reflected in the financial statements while those that are indicative of conditions that arose after the reporting date (non-adjusting events after the reporting date) are not reflected. However, the nature and an estimate of the financial effect of a material non adjusting event is disclosed.

3.6 Net Assets/Equity

Net assets/equity refers to the residual measure in the statement of financial position (assets less liabilities).

3.7 Authorisation date

The Financial statements were approved by the Board of Commissioners on 19th September, 2014 and signed on its behalf by the Chairman and Executive Secretary.

3.8 Prior period errors

These are omissions from, and misstatements in, the entity's financial statements for one or more prior periods arising from a failure to use, or a misuse of, reliable information that:

- (a) was available when financial statements for those periods were authorised for issue; and
- (b) could reasonably be expected to have been obtained and taken into account in the preparation and presentation of those financial statements.

Prior period errors are corrected by adjusting the balance brought forward of the affected item.

3.9 Capital commitments

There were no capital commitments.

3.10 Contingent liabilities

A possible obligation that arises from past events, and whose existence will be confirmed only by the occurrence or non-occurrence of one or more uncertain future events not wholly within the control of the entity.

There were no contingent liabilities.

3.11 Categories of financial assets

The accounting policies for financial instruments have been applied to the following line items.

| 2013 | Category | | |
|----------------------------|---------------------|------------------|------------------|
| Description | Loans & Receivables | Fair Value | Total |
| | GH¢ | *TSD GH¢ | GH¢ |
| Bank balances | | 2,962,685 | 2,962,685 |
| Staff loans/advances | 15,152 | | 15,152 |
| Trade & Sundry receivables | <u>908,668</u> | <u>-</u> | <u>908,668</u> |
| | <u>923,820</u> | <u>2,962,685</u> | <u>3,886,505</u> |

2012

| Description | Category | | Total |
|----------------------------|---------------------|------------------|------------------|
| | Loans & Receivables | Fair Value *TSD | |
| | GH¢ | GH¢ | GH¢ |
| Bank balances | - | 1,556,945 | 1,556,945 |
| Staff loans/advances | 27,059 | - | 27,059 |
| Trade & Sundry receivables | <u>390,564</u> | <u>-</u> | <u>390,564</u> |
| | <u>417,623</u> | <u>1,556,945</u> | <u>1,974,568</u> |

*NB: TSD=Through Surplus or Deficit.

3.12 Capital

3.14.1 The objectives of capital management

The objectives of capital management at the Commission are:

- a) to ensure that the Commission has adequate resources to enable it execute its mission and
- b) to ensure availability of the right mix of financial resources to enable the Commission avoid any financing mismatches and thereby minimise liquidity risk.

These objectives are pursued through a policy of matching the nature of assets and related financing.

3.13 Capital Description

The Commission's capital is accumulated fund made up of surpluses over the past years. It is a subvented government organisation and hence not subject to any minimum capital requirement.

3.14 Comparative information

The comparative data covered the year ended 31 December 2012.

3.15 Level of precision

The figures in the financial statements have been rounded up to the nearest integer and may not add up.

3.16 Grants and subventions

The Commission is a Government of Ghana (GoG) subvented institution and receives revenue subventions from the Government of Ghana. Subventions received from GoG are reported through statement of financial performance. It also receives grants from international organisations to carry out specific projects. Revenue grants are reported through the statement of financial performance. Capital grants are amortised in tandem with the depreciation of the related assets. Annual amortisations are treated in the statement of financial performance whilst the unamortised portion of Capital grants is reported through the statement of financial position.

4.0 RISK MANAGEMENT

The risk emanating from financial instruments to which the Commission is exposed is credit risk.

4.1 Credit Risk

Credit risk arises from the potential that a counter-party is either unwilling to perform an obligation or its ability to do so is impaired, resulting in economic loss to the commission.

The main sources of credit risk inherent in the Commission's operations are from deposits with banks and trade and other receivables. Thus far the commission has managed this risk by restricting placements to only reputable financial institutions and the provision of services to only reputable organisation.

The maximum amount of credit risk by class of financial asset as at 31st December 2013 was as follows.

Loans and Receivables

| | 2013 | 2012 |
|----------------------------|----------------|----------------|
| | GH¢ | GH¢ |
| Staff loans/advances | 15,152 | 27,059 |
| Trade & Sundry Receivables | <u>908,668</u> | <u>390,564</u> |
| | <u>923,820</u> | <u>417,623</u> |

Financial Assets at Fair Value TSD

| | | |
|---------------|------------------|------------------|
| Bank balances | <u>2,962,685</u> | <u>1,556,945</u> |
|---------------|------------------|------------------|

WATER RESOURCES COMMISSION
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| 5 Revenue | 2013 | 2012 |
|---------------------------|------------------|------------------|
| | GH¢ | GH¢ |
| Abstraction Fees | 1,443,065 | 648,802 |
| Non- Abstraction fees | 68,388 | 22,788 |
| Administration Fees | 122,447 | 28,940 |
| Application Fees | 3,270 | 1,380 |
| Drilling Licence fees | 24,300 | 36,810 |
| | <u>1,661,470</u> | <u>738,720</u> |
| 6. Other Revenue | 2013 | 2012 |
| | GH¢ | GH¢ |
| GoG subventions | 504,849 | 517,866 |
| Danida grants | - | 311,952 |
| UN Habitat (WAC II) | - | 18,593 |
| Income/Other fees | 399,020 | 316,367 |
| World Water Day donations | 64,180 | 32,500 |
| African Development Bank | 3,272,950 | 1,182,476 |
| | <u>4,240,999</u> | <u>2,379,754</u> |

WATER RESOURCES COMMISSION
NOTES AND SCHEDULES FORMING PART OF THE FINANCIAL STATEMENTS
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7. General Administration Expenses

| | 2013 | 2012 |
|---|------------------|------------------|
| | GH¢ | GH¢ |
| Salaries | 639,543 | 604,907 |
| Social security fund | 51,392 | 49,293 |
| Electricity & water | 22,932 | 20,768 |
| Post & telecommunications | 17,557 | 8,459 |
| Sanitation charges | 15,828 | 7,790 |
| Armed guard & security | 19,503 | 18,574 |
| Contract for printing | 68,517 | 37,559 |
| Advertisements/publicity | 139,333 | 42,739 |
| Travelling & transport expenses | 334,898 | 108,734 |
| Motor vehicles running cost | 183,246 | 82,635 |
| Repairs & maintenance | 80,768 | 33,959 |
| Insurance & compensation | 17,799 | 23,349 |
| Bank charges | 1,268 | 749 |
| Contributions/donations | 46,600 | 6,000 |
| Medical expenses | 16,199 | 17,508 |
| Audit & accountancy | 15,000 | 11,500 |
| Community support | 359,542 | 105,518 |
| Commissioners' allowance | 88,286 | 67,802 |
| Staff training & prizes | 6,523 | 911 |
| Workshop/seminar | 129,584 | 232,678 |
| Consultancy service fees | 1,523,960 | 89,615 |
| Exchange loss | - | 3,235 |
| Amortised | 4,465 | - |
| Depreciation | 164,068 | 175,556 |
| White Volta Capital expenditure written off | 4,486 | 4,486 |
| Deferred expenditure written off | 2,880 | 2,880 |
| Pra capital expenditure written off | 3,567 | 3,567 |
| Tano Capital expenditure written off | 8,055 | 8,055 |
| Office material& consumables | 4,334 | 9,514 |
| Rent | 4,829 | 690 |
| Staff welfare | 79,449 | - |
| | 4,054,412 | 1,779,031 |

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| | 2013 GH¢ | 2012 GH¢ |
|------------------------------------|------------------|------------------|
| 8.Cash and cash equivalents | | |
| Cash on hand | 3,161 | 1,603 |
| Cash at bank | 2,959,524 | 1,555,342 |
| | <u>2,962,685</u> | <u>1,556,945</u> |

| | 2013 GH¢ | 2012 GH¢ |
|------------------------------|----------------|----------------|
| 9.Accounts receivable | | |
| Staff loans/advances | 15,152 | 27,059 |
| Trade & sundry receivables | 908,963 | 390,859 |
| Bad debt provision | (295) | (295) |
| | <u>923,820</u> | <u>417,623</u> |

| | | |
|--------------------------------|----------|--------------|
| 10.Deferred expenditure | | |
| Balance at 1 January | 2,880 | 5,761 |
| Amount written off | (2,880) | (2,881) |
| Balance at December 31 | <u>-</u> | <u>2,880</u> |

11. Capital Expenditure

| | White Volta Basin 10% | Pra Basin 10% | Tano Basin 10% | Total |
|-----------------------------|--------------------------------|---------------------|----------------------|----------|
| | GH¢ | GH¢ | GH¢ | GH¢ |
| Balance at 1 January 2013 | 17,383 | 26,718 | 64,444 | 108,545 |
| Sub-total | 17,383 | 26,718 | 64,444 | 108,545 |
| Write-off | (4,486) | (3,567) | (8,055) | (16,108) |
| Balance at 31 December 2013 | 12,897 | 23,151 | 56,389 | 92,437 |

12. Property plant & Equipment

WATER RESOURCES COMMISSION NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 DECEMBER 2013 12a. PROPERTY, PLANT & EQUIPMENT

| | Land & Buildings 3% GH¢ | Plant & Equipment 15% GH¢ | Comp. & Accessories 33.33% GH¢ | Furniture & Fittings 15% GH¢ | Motor Vehicles 20% GH¢ | Total GH¢ |
|------------------------------------|----------------------------------|------------------------------------|---|---------------------------------------|---------------------------------|------------------|
| Cost / Valuation | | | | | | |
| Balance at 1 January 2013 | 298,194 | 100,592 | 140,443 | 113,660 | 547,762 | 1,200,651 |
| Prior year adjustment 2 | - | - | (3,983) | - | - | (3,983) |
| Additions | - | 7,055 | 40,610 | - | - | 47,665 |
| Disposal | - | - | - | - | (44,799) | (44,799) |
| Balance at 31 December 2013 | 298,194 | 107,647 | 177,070 | 113,660 | 502,963 | 1,199,534 |
| Accumulated Depreciation | | | | | | |
| Balance at 1 January 2013 | 42,433 | 43,938 | 109,791 | 40,144 | 353,036 | 589,342 |
| Prior year adjustment 3 | - | - | (20,250) | - | - | (20,250) |
| Disposal | - | - | - | - | (17,920) | (17,920) |
| Charge for the year | 8,946 | 15,904 | 42,003 | 16,297 | 80,918 | 164,068 |
| Balance at 31 December 2013 | 51,379 | 59,842 | 131,544 | 56,441 | 416,034 | 715,240 |
| Net Book Value | | | | | | |
| Balance at 31 December 2013 | 246,815 | 47,805 | 45,526 | 57,219 | 86,929 | 484,294 |
| Balance at 1 January 2013 | 255,761 | 56,654 | 30,654 | # 73,516 | 194,726 | 611,311 |

WATER RESOURCES COMMISSION
NOTES AND SCHEDULES FORMING PART OF THE FINANCIAL STATEMENTS
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| | | |
|---|--------------------------|--------------------------|
| 12b. Profit on disposal of property, plant and equipment | 2013 | 2012 |
| Gross book value | 44,799 | 64,982 |
| Accumulated depreciation | (17,920) | (64,982) |
| Net book value | <u>26,879</u> | <u>-</u> |
| Sale proceeds | <u>34,865</u> | <u>22,600</u> |
| Profit on disposal | <u><u>7,986</u></u> | <u><u>22,600</u></u> |
| 13. INTANGIBLE ASSET | 2013 | 2012 |
| | GH¢ | GH¢ |
| COST /VALUATION | | |
| At January 1, 2013 | - | - |
| Additions | 13,395 | - |
| At December 31, 2013 | <u><u>13,395</u></u> | <u><u>-</u></u> |
| AMORTISATION | | |
| At January 1, 2013 | - | - |
| Amortisation for the year | 4,465 | - |
| At December 31, 2013 | <u><u>4,465</u></u> | <u><u>-</u></u> |
| CARRYING VALUE | | |
| At 31st December, 2013 | <u><u>8,930</u></u> | <u><u>-</u></u> |
| At 31st December, 2012 | <u><u>-</u></u> | <u><u>-</u></u> |
| 14.Accounts payable | | |
| Sundry payables | 12,719 | 52,353 |
| IRS-Paye | 6,594 | 4,752 |
| Audit fees | <u>15,000</u> | <u>11,500</u> |
| | <u><u>34,313</u></u> | <u><u>68,605</u></u> |
| 15.Development fund | <u><u>59,845</u></u> | <u><u>59,845</u></u> |
| This represents GoG grant in kind. | | |

16. PRIOR YEAR ADJUSTMENT

1.This is in respect of depreciation over charged in previous years (2009&2010).