

**AUTORITE DU BASSIN DE LA VOLTA**

**VOLTA BASIN AUTHORITY**

**Bénin- Burkina- Côte d'Ivoire- Ghana- Mali- Togo**



**VOLTA BASIN AUTHORITY**

**STRATEGIC PLAN**

**2010-2014**

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## Abbreviations and Acronyms

Abbreviation	Definition
2IE	International Institute for Water and Environmental Engineering
ADB	African Development Bank
AMVS	Autorité de Mise en Valeur de la Vallée du Sourou
MPDSWM	Master Plan for Development and Sustainable Water Management
CBO	Community Based Organisation
CGIAR	Consultative Group on International Agricultural Research
CPWF	Challenge Program on Water and Food
CSIR	Council for Scientific and Industrial Research
ECOWAS	Economic Community of West African States
EPA	Environmental Protection Agency, Ghana
EU	European Union
GDP	Gross Domestic Product
GEF	Global Environment Facility
GLOWA	Globaler Wandel Wasserkreislaufes
GTZ	Gesellschaft Für Technische Zusammenarbeit
GVP	GLOWA Volta Project
GWP	Global Water Partnership
HDI	Human Development Index
HYCOS	Hydrological Cycle Observation System
IMF	International Monetary Fund
IUCN	International Union for Conservation of Nature and Natural Resources
IWMI	International Water Management Institute
IWRM	Integrated Water Resources Management
MAHRH	Ministre de l'Agriculture, de l'Hydraulique et des Ressources Halieutiques,
MEAHV	Ministère de l'Eau, de l'Assainissement et de l'hydraulique villageoise
MEE	Ministre de l'Energie et de l'Eau, Benin : Mali
MEEF	Ministre de l'Environnement, des Eaux et Forêts
MoU	Memorandum of Understanding
MW	Megawatt
MWRWH	Ministry of Water Resources Works and Resources
NBA	Niger Basin Authority
NGO	Non Governmental Organisation
OECD	Organisation for Economic Cooperation and Development
OMVG	Organisation pour la Mise en Valeur du fleuve Gambie
OMVS	Organisation pour la Mise en Valeur du fleuve Sénégal
PAGEV	Projet d'Amélioration de la Gouvernance de l'Eau dans le Bassin de la Volta
SIDA	Swedish International Development cooperation Agency
SWOT	Strengths, Weaknesses, Opportunities and Threats
UEMOA	Union Economique et Monétaire de l'Afrique de l'Ouest
UG	University of Ghana, Legon
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
VBRP	Volta Basin Research Project
VBA	Volta Basin Authority
VRB	Volta River Basin
VRBM	Volta River Basin Management
WAWP	West Africa Water Partnership
WMO	World Meteorological Organisation
WRCC	Water Resources Coordination Centre

## 1.0 INTRODUCTION

### 1.2 Background

Recognizing the importance of coordinated management of shared resources, the Governments of Benin, Burkina Faso, Cote d'Ivoire, Ghana, Mali and Togo approved a draft Convention and Statutes for the Volta Basin in July 2006 in Lomé, Togo. This Convention makes provisions for the Volta Basin Authority (VBA), an organization tasked to: *promote permanent consultation tools among the basin's stakeholders, promote the implementation of IWRM and the equitable distribution of benefits, evaluate planned infrastructure developments that impact the water resources of the basin, develop and implement joint projects and works and contribute to poverty reduction, sustainable development and socio-economic integration of the sub-region.*

The Volta Basin riparian countries are in various stages of accession to the Convention<sup>1</sup>. In the meantime, the Volta Basin Authority, established in 2006, is preparing to end its transitional status with the coming into force of the Volta Basin Convention on 14 August 2009<sup>2</sup>.

Many partners and projects are currently active in the Volta Basin. These initiatives span a range of Integrated Water Resources Management (IWRM), environment and development issues and themes. To date, many of these projects are not well aligned with the VBA and are not well coordinated with other initiatives in the basin. There is considerable risk of duplication of efforts between some of the larger projects.

A programming framework, developed by stakeholders in a participatory way, would go far in establishing the VBA's priorities and assisting the various partners and projects to align their efforts with the VBA and coordinate so as to avoid duplication of efforts.

### 1.3 Aim of Study and Expected Results

The objectives of the study are to:

- Establish a programming framework which outlines the key priorities of the VBA and will facilitate the VBA and its partners to better focus their efforts in serving the needs and priorities of the Volta Basin while avoiding duplication of efforts;
- Collect further information to finalize the VBA Strategic Plan and prepare a comprehensive 5-year Strategic Plan that would guide the overall direction and goals of the VBA.

The expected outputs of the study are:

- Programmatic framework highlighting the VBA priorities prepared;
- VBA Strategic Plan finalised and presented at a VBA Experts Committee Workshop.

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<sup>1</sup> To date, Burkina Faso, Benin, Ghana, Mali and Togo have ratified the Volta Basin Convention.

<sup>2</sup> The Convention entered into force after 4 countries had deposited their Ratification Instruments (Burkina Faso, Ghana, Mali and Togo)

### **1.3 Methodology**

Based on initial work by a consultant to draft a Strategic Plan, the UNEP/GEF Volta Project assisted the VBA to organize a Programming Workshop in Ouagadougou from 10 to 13 August 2009. The objective of this review and participatory workshop was to establish a programming framework which outlines the key priorities of the VBA and will facilitate the VBA and its partners to better focus their efforts in serving the needs and priorities of the Volta Basin while avoiding duplication of efforts.

Representatives of all the VBA Member Countries and the major projects on Integrated Water Resource Management of the Volta Basin were in attendance. The discussions were organized alternately through plenary and group sessions to ensure that a greater number of stakeholders could participate.

The session enabled the stakeholders to come out with major and shared orientations to ensure the drafting of a 5-year Strategic Plan for the VBA. The 3-day workshop also offered a convenient platform for all stakeholders involved to gradually arrive at a common consensus and vision on the integrated water resource management of the Volta basin. In the end, the deliberations contributed to deepening the common understanding of the role of the Basin Authority. The VBA Strategic Plan was approved during the 3<sup>rd</sup> meeting of the VBA Council of Ministers in Accra on 15 December 2009.

## 2.0 SITUATION ANALYSIS OF THE VOLTA RIVER BASIN

### 2.1 Overview of the Volta Basin

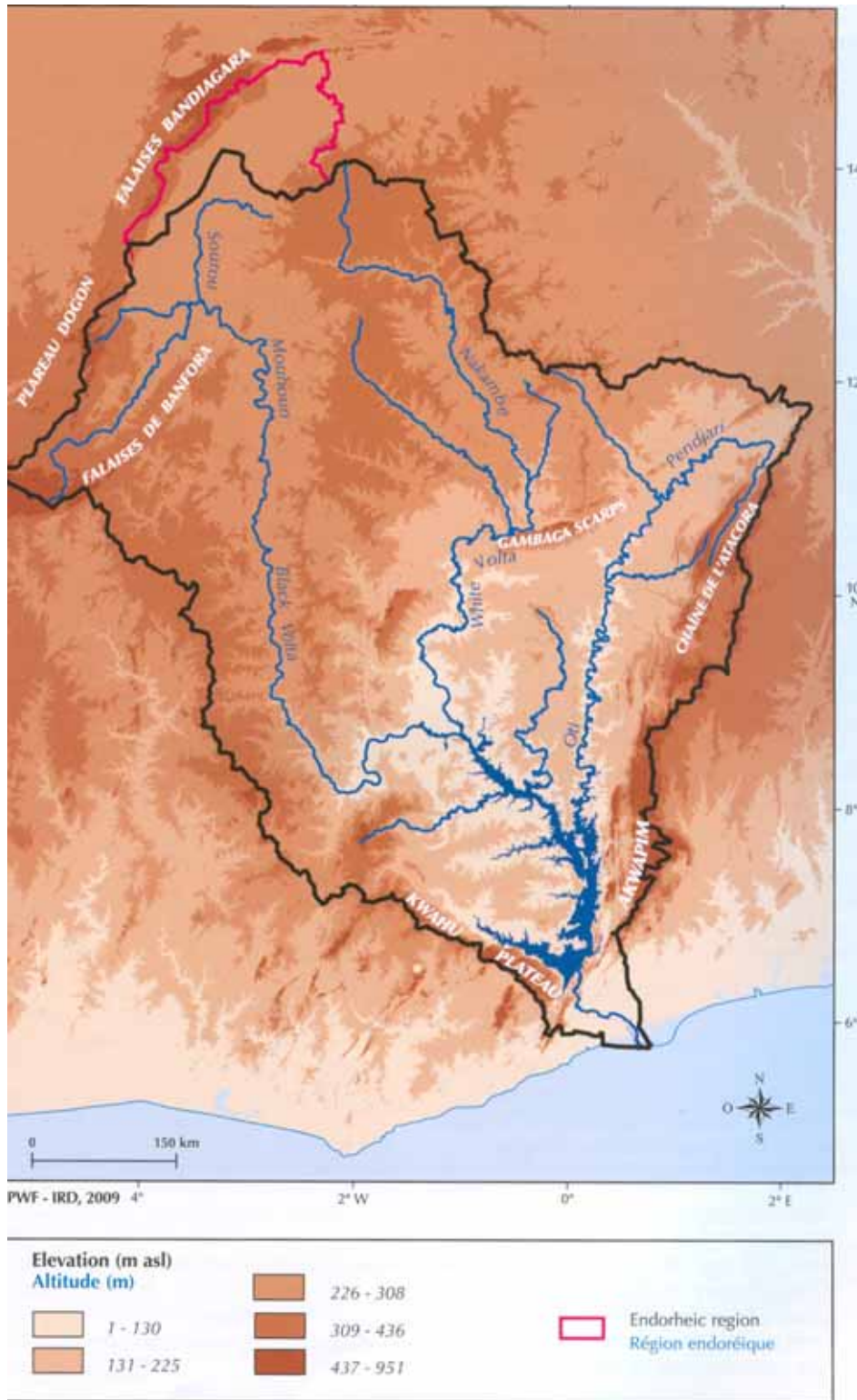
The Volta River Basin is spread over six West African countries (Benin, Burkina Faso, Cote d'Ivoire, Ghana, Mali and Togo). The major sub-basins (Fig. 1) include the Black Volta, White Volta with the Red Volta as a tributary, Oti River and the Lower Volta. The basin covers an estimated area of 400 000 km<sup>2</sup> that stretches from approximately latitude 5° 30' N in Ghana to 14° 30' N in Mali. The widest stretch is from approximately longitude 5° 30' W to 2° 00'E but the basin becomes more narrow towards the coast of the Gulf of Guinea. The basin has low relief in general with altitudes varying between 1 and 920 m. Mean altitude is approximately 257 m, with more than half the basin in the range of 200 to 300 m. The global slope index is between 25 and 50 cm/km. The mean annual rainfall volume is about 500 km<sup>3</sup>.

The sub-basin of the White Volta, also known as Nakambé in Burkina Faso (which includes the Red Volta or Nazinon) contributes about 23% of the annual flow into the Volta Lake (Andreini *et al.*, 2000). With a catchment area of 104, 749 km<sup>2</sup>, the mean annual flow of the White Volta is about 300 m<sup>3</sup>/s. The landscape in the largest part of the White Volta is relatively flat with some gently sloping hills (<100 m) in the upstream part and a very broad floodplain area surrounded by hills (up to 500 m) in the downstream part of the sub-basin. In the upstream part, the river only carries water in the wet season (July to mid-October). Since 1994 the downstream portion of the river in southern Burkina Faso and northern Ghana is influenced by releases from the Bagre Dam in Burkina Faso, which is used for hydroelectric power generation and irrigation.

The Black Volta or the Mouhoun sub-basin has an area of 149,015 km<sup>2</sup> and contributes about 23% of the annual flow into Volta Lake (Andreini *et al.*, 2000; Shanin, 2002). The mean annual flow at Bamboi is about 200 m<sup>3</sup>/s. This sub-basin has fewer dams and dugouts on it. The river carries water all year round. In the slightly hilly upstream part of the Black Volta, near Bobo Dioulassou in Burkina Faso, the river flows roughly north, opposite to the general flow direction in the basin. The river makes a 180° turn where it meets the Sourou River situated in a north-south depression. This depression routes the flood wave of the river and retains much of its sediment (Shanin, 2002). On the border between Ghana and Cote d'Ivoire the river flows from north to south through a valley that is surrounded by hills (up to 500 m high). At Bui in Ghana, the Black Volta passes through a gorge. A dam (the Bui Dam) being constructed at this site has reached an advanced stage of development.

The Oti or Pendjari sub-basin takes its source from Benin. It flows through Togo and enters Ghana in the north-eastern border with Togo. Although this river accounts for only about 18% of the total basin area, it contributes between 35 and 40% of the annual flow into the Volta Lake (Gyau-Boakye and Tumbulto, 2000; Andreini *et al.*, 2000). It has a catchment area of 72, 778 km<sup>2</sup> and the mean annual flow varies between 100 and 300 m<sup>3</sup>/s but can exceed 500 m<sup>3</sup>/s. This is because its catchment is the most hilly and mountainous (>900 m) in the whole Volta Basin. Below the Kompienga Dam, the Oti River carries water all year round as a result of regular releases from this hydropower dam located in Burkina Faso.





**Fig. 1: Hydrographical Network of the Volta River Basin**

Source: Lemoalle and de Condpa, 2009

In addition to the major dams at Akosombo, Kpong, Kompienga and Bagre are two new dams currently under construction in Burkina Faso and Ghana and which will also be used mainly for hydropower generation are the Samandeni and Bui dams respectively. The two dams are both located in the Black Volta basin. Other dams in the basin include Ziga and Lery for water supply and irrigation respectively in Burkina Faso. In Ghana, the Tono, Bontanga and Vea dams located in the Volta basin are used mainly for irrigation purposes. There are many small reservoirs in the basin located especially in Burkina Faso but also in the northern part of Ghana. These serve multiple purpose uses, including dry season farming, livestock watering, fishery and domestic water requirements.

The underlying rocks of the basin (basement complex and consolidated sedimentary formations) have no primary porosity. The thickness of the aquifer varies from several metres up to roughly 100 m, while the mean thickness is approximately 20 m. The groundwater potential varies over the basin. For example, the region that contains the headwaters of the Black Volta has a good groundwater potential while, at the other end, the Middle Voltaian Obosum Sediments in Ghana have generally a low groundwater potential (Martin and Giesen, 2005). Generally, high yielding wells are at locations where both components of the aquifer system (weathered mantle and fractured bedrock) are well developed (Sommen and Geirnaert, 1988). However, the mean yield from boreholes in the basin is relatively low, between 2 and 9 m<sup>3</sup>/h (Sommen and Geirnaert, 1988; Dapaah-Siakwan and Gyau-Boakye, 2000, Glowa-Volta data cd).

Overall, data on the occurrence of groundwater in the Volta basin is inadequate since there is no systematic monitoring of groundwater. The DGRE in Burkina Faso runs a monitoring network of observation wells. About 38 wells from the network are situated in the Volta Basin but the entire basin is not covered. In most wells the monitoring started in the 1980s. In Ghana, the Canadian International Development Agency (CIDA) is assisting the Water Resources Commission of Ghana in a well monitoring programme in the White-Volta sub-basin, covering about 22 wells. The GLOWA-Volta Project has compiled a database on urban and rural boreholes and wells in Burkina Faso and Ghana. It contains hydrogeological information but the quality is questionable and differs, depending on the drilling agent.

Based on water balance calculations, water table fluctuations and isotope analysis, Sommen and Geirnaert (1988) provide a rough estimate of an annual recharge in the basin to be in the range of 2 to 16% of the annual precipitation (i.e. 17 to 136 mm/y). A literature study conducted by Martin and Giesen (2005) present annual recharge rates that vary with the rainfall; up to 13% in sandstone and up to 8% in weathered rock.

Since 1970, the number of drilled wells equipped with hand pumps has increased from several hundreds to almost 20,000. This notwithstanding, on a basin-wide perspective, the mean abstractions from groundwater for urban and rural use (2001) from the part of the Volta located in Ghana and Burkina Faso is less than 5% of the estimated annual recharge, Martin and Giesen (2005). The need to undertake location specific studies to support resource exploitation cannot be overemphasised.

## **2.2 Water and Environmental Challenges of the Volta River Basin**

### **2.2.1 Pollution and Water Quality Degradation**

The Volta River Basin Preliminary Transboundary Diagnostic Analysis (UNEP, 2002) reveals that water quality degradation in the basin results partly from poor farming practices, improper land use, intensive grazing activities of cattle and sheep, and bushfires. Improper application of fertilizers to agricultural lands promotes leaching into the water bodies. These chemicals are transferred downstream into other countries without any restriction. Discharge from untreated industrial effluents is not significantly present in the basin due to limited industrial activities, but some untreated sewage is discharged into the waters. Additionally, humans and animals defecating and bathing in rivers and water sources add to the degradation of water quality. Other significant causes of water quality degradation include; poor awareness and education about public health, population pressure, urbanization and poverty. The introduction of urban waste, particularly from run-off from inland port communities and urban settlements located near banks of the rivers and reservoirs (poor planning of settlements) also form a major cause of water pollution and degradation. Surface water resources are shared throughout the basin, making the degradation of water quality a strongly transboundary problem. Pollution is distributed throughout the waterways and this has had many socio-economic impacts such as scarcity of potable drinking water, scarcity of non-polluted water for agriculture and animal husbandry, effects on human health, water-borne diseases and loss of fisheries.

Human and agricultural wastes that are washed from the land into the tributaries of the Oti River for example, cause siltation, destruction of aquatic fauna and their habitats, and the invasion of these rivers by aquatic weeds. This state of affairs decreases the biological resources of the basin. With the exception of pockets of areas of high acidity in Burkina Faso, groundwater is in general suitable for most uses. On the other hand, surface water quality is declining with significant quantities of iron and phosphates especially in Nakambé River. The bacteria and parasites in the water also pose a serious health risk.

The water quality in Côte d'Ivoire (national part of the Volta River Basin) is threatened by increasing urbanization and agriculture in the basin, as well as by pollution produced by households. Water quality of the major rivers within the Volta Basin in Ghana is good for general purposes, although localized pollution occurs close to developed areas and by industries including food processing and mining. On the Oti River, for example, mean pH values vary from 6.9 to 7.5. Mean suspended solid concentrations are generally less than 2000 mg/l. The dissolved oxygen concentrations generally indicate low levels of pollution. Water in Mali (national part of the Volta River Basin) is polluted from human, livestock, and agricultural waste. Fungicides, pesticides, and fertilizers as well as some prohibited and extremely detrimental chemicals, such as DDT, are being used. Water pollution in Togo comes from three sources: industry, agriculture, and transport.

### **2.2.2 Land Degradation**

The problem of land degradation in the basin encompasses soil degradation, intense erosion, desertification and bushfires. Land degradation in the region has both transboundary causes and effects. The movement of cattle, sheep, and people across national boundaries (transhumance) results in reckless destruction of vegetation, watering sources, etc. The situation also creates social tension and disruption of socio-economic activities, sometimes proving fatal.

Only a small amount of land is suitable for agriculture, livestock, and for dwellings in the Volta Basin of Benin. As a result, competition exists over these finite resources. Thus, given

the region's significant demographic pressure, there is increasing unsustainable use of land and the attendant risks for long-term economic development. Land in Burkina Faso is threatened by agricultural practices, deforestation, and, in some areas, by mining activities. Its forest area decreased between 1980 and 1992 by 1.26 million ha. Agriculture is a significant contributor to land degradation in the Volta Basin of Côte d'Ivoire. Cotton is a main crop in the area, as well as corn, sorghum, rice, and groundnuts. The area is also used as pastureland to a significant extent. Herders come from Mali and Burkina Faso to use lands in Côte d'Ivoire. Bushfires are used extensively in the region in hunting, managing pastures, preparing agricultural lands, and for other purposes, which results in land degradation.

In the Volta River Basin in Ghana soil is being rapidly degraded as a result of shortened fallow periods. This is especially pronounced in the Black and White Volta areas. The Lower Volta, Daka and Oti catchments are degraded by combination of sheet and gully erosion. The maintenance of large herds of livestock has tended to exceed the carrying capacity of the ecosystem, particularly in the northern part of the basin where mean annual rainfall is about 1000-1200 mm.

In Mali, approximately 80% of the land in the basin is used for agriculture, livestock, or dwellings. There is competition between the livestock breeders and the farmers for scarce land and water resources. The basin of the Sourou River is considered to be the granary of the country, but poor agricultural practices have steadily degraded the land. The lands are now no longer very fertile and are prone to wind erosion. Degradation of the land in Togo results from a variety of factors. First, trees are harvested at an unsustainable rate in some areas as the demand for wood has increased. This increases erosion and desertification as the land cover is removed. Second, poor agricultural practices, such as the misuse or overuse of pesticides and fertilizers, have damaged soil resources. Finally, overgrazing of the land further exacerbates the problems of erosion and desertification.

### ***2.2.3 Climate Change, Unsustainable Management and Water availability***

Average annual rainfall varies across the basin from approximately 1 600 mm in the south-eastern section of the basin in Ghana, to about 360 mm in the northern part of Burkina Faso. Due to decreasing precipitation over the past few decades, some areas that used to have bi-modal type of rainfall have only one mode as the second minor season has become very weak or non-existent. Hence, rain-fed agriculture can only be carried out once instead of twice a year. Lowering of the water tables has also been observed in large parts of the basin. Evidence of a rise in temperatures in the White Volta Basin over a thirty-year period has emerged during a study of climate change impact on water resources. Human activities such as deforestation and urbanization in the region also play a critical role in the availability of water resources.

The average annual rainfall in the Oti River Basin in Benin is approximately 1100 mm. Flows are about 58.6 m<sup>3</sup>/s, which is equivalent to an annual flow volume of approximately 1.85 x 10<sup>9</sup>m<sup>3</sup>. Over the past forty years, the precipitation patterns have been one of increased dryness, especially between 1970 and 1980. While rainfall increased between 1985 and 1995, the last decades are marked by decrease in river flow, decreased availability of groundwater, the drying up of source waters, and degradation of vegetation cover. The total ground water resource of the Volta basin in Burkina Faso is approximately 20.8 x 10<sup>9</sup> m<sup>3</sup>. The theoretical availability of the renewable resources is put at 1,750 m<sup>3</sup> yr<sup>-1</sup> per capita for the entire country, with the threshold of shortage usually fixed at 1,000 m<sup>3</sup>yr<sup>-1</sup> per capita. In Côte d'Ivoire,

average annual rainfall over the basin is approximately 1000 mm. The surface water resources derived from the Black Volta are about  $0.788 \times 10^9 \text{ m}^3 \text{ yr}^{-1}$ , recharge of the groundwater is 2,125,000,000  $\text{m}^3$  while total available water is 2,912,500,000  $\text{m}^3$ . This is far short of projected increased demand over the next several decades, indicating that there will be an increased scarcity of water. In Ghana, mean annual flow of the Volta is estimated at  $37.90 \times 10^9 \text{ m}^3$ . Yields from boreholes in the country are from about 0.1  $\text{m}^3/\text{h}$  to 36  $\text{m}^3/\text{h}$ .

In Mali, water has been in such short supply that the first priority has been to provide water to the inhabitants. The Sourou River is the main source of surface water in the portion of the basin. Annual rainfall is approximately 400 mm and surface flows are only ephemeral as streams dry up after 3 to 5 months of the rainfall season. About 52% of the villages in the region depend on surface water (i.e., streams, lakes, ponds, etc.) for short periods. The depth of the groundwater is estimated to be between 35 and 85m in Seno and 35 and 65m in Samori. Thus, constructing a reliable well is difficult and expensive.

Togo's water shortage is projected to be exacerbated by the effects of climate change and variability. It is estimated that by 2025, average monthly temperatures will rise from South to North 0.48 to 0.58%, which is 0.8 to 1° C over 1995 levels. Precipitation is expected to decrease 0.1 to 0.3%. The northern section of the basin receives between 1000 and 1200 mm of rainfall annually, while the southwest region receives from 1000 to 1500 mm per year. Surface water resources estimated for the basin are about  $4.71 \times 10^9 \text{ m}^3 \text{ yr}^{-1}$ . Most streams dry up during the dry seasons due to high evapo-transpiration. In the northern part of the basin, the Oti, enlarged by its tributaries and Mò exceed 100  $\text{m}^3 \text{ s}^{-1}$  in the Savannah region and 100 to 300  $\text{m}^3/\text{s}$  in the area of Kara. The extreme variability of the flows between the wet and dry seasons makes depending on the surface water for irrigation difficult. In the south-western section of the basin, the Menou, Wawa, and Danyi have much smaller flows of between 1 and 6  $\text{m}^3/\text{s}^{-1}$ , but these are perennial flows as the climate is wetter. The groundwater resources are estimated to be  $4.38 \times 10^9 \text{ m}^3 \text{ yr}^{-1}$ . Groundwater, as in the rest of the basin, is found in discontinuous aquifers.

Interpretation of the information given in the foregoing discussion as to water resources availability should be handled with care as the figures given are annual figures and do not reveal the seasonal deficits in water resources in the basin. Most riparian countries have deficits of runoff during the greater part of the year.

Increased frequency of floods and droughts and associated erosion result from climate change. Extremely high rainfall rates, the construction of uncoordinated dams without appropriate reservoir operation and abusive land use practices are partly responsible for flooding in the basin area. The inter-annual variation of rainfall and run-off hinders the ability to supply needed water resources. For example, in the upper reaches of the catchment, such as in Mali and some sections of Burkina Faso, river flows are not perennial and some groundwater wells/boreholes dry up during certain months. Some coastal countries observed higher coastal erosion, some as a probable result of sea-level rise and, creation of the Akosombo Dam with the attendant deficit of sediments reaching the coast. However, uncontrolled dam releases from the upper part of the basin, for example, from Burkina Faso to Ghana on the White Volta, from Burkina Faso to Togo on the Oualé, and also from Burkina Faso to Mali on the Sourou River result in *artificial* flooding. Socio-economic impacts that have been observed in parts of the basin include: loss of human lives, infrastructure, and agricultural productivity; water-borne diseases, migration, disruption of transportation infrastructure and increased poverty.

#### 2.2.4 *Loss of Biodiversity*

The Volta River Basin has globally significant biodiversity and diverse habitats that are threatened by both climatic and anthropogenic factors; perhaps the greatest threat comes from deforestation. Further, the creation of dams and other impoundments within the basin have altered hydrological regimes of rivers and streams, and thus alter habitats both downstream and upstream. Unsustainable fishing practices in the region result in a reduction in the fisheries. Additionally, exotic species such as water hyacinth (*Eichhornia crassipes*) have been introduced through fishing practices and as ornamental plants and have caused the destruction of biodiversity. Excessive hunting and poaching of wildlife in protected areas also occurs and has pushed some species to the brink of extinction.

Poaching is prevalent in Benin's protected areas. During the dry season, fauna gather in the vicinity of the Oti River. Poachers from Benin, Ghana, and Burkina Faso take advantage of this situation by camping on the banks of the river and then easily preying on the large wild animals. The poaching in the reserves and parks constitutes the principal problem of the Oti National Park. When park inspections occur, confrontations often take place between poachers and foresters. In Burkina Faso, there are a number of threatened and vulnerable species. For instance, the mammal Oryx has disappeared from that country. The ostrich is also near disappearance.

In Côte d'Ivoire, the Comoé National Park has seen significant biodiversity loss in recent decades. The species that were formerly widespread currently experienced the most significant reductions, some greater than 90%. Some species such as the Cobe de Buffon and the Guib are water dependent and remain close to waterways. This has made them vulnerable to poachers who would usually set up camp at the edge of a river. The majority of the species experienced losses greater than 75% in only 20 years. The Bubale, Hippotraque and Buffalo proved to be the exception, however. Their ability to survive could be related to the fact that they are less dependent on water than other species and this allowed them to better escape poachers.

Several areas within the basin in Ghana are becoming population nodes as people migrate from the rural areas to urban centres in search of a better livelihood and to escape tribal conflicts. As a result of urban growth, habitats that could serve to conserve wildlife of international significance are being lost and this is leading to the decimation of biodiversity. Probably the greatest threat to biodiversity is water pollution arising from the urban wastewater. Most urban areas are close to wetlands and discharge untreated or poorly treated domestic waste into these wetlands, thereby harming aquatic biodiversity. Interestingly, populations in areas within the basin that have been designated, as protected areas have not experienced any significant change over the past decade. The Volta estuary, comprising the Keta and Songor Lagoons are important sites for coastal biodiversity and are being protected with the status of Ramsar Sites (EPA Ghana, 2004)

In Seno (Mali), more than 90% of the lands are occupied by settlements or agriculture, leaving little room for biodiversity. Vegetation is sparse and reproduces with difficulty. Fauna are rare and are rapidly disappearing due to habitat loss and poaching. Aquatic species do not flourish due to the temporary nature of the surface water. In Samori, however, there is strong biological diversity. The vast forests support a great many flora species. Avifauna dominates the forests, especially guinea fowls and ducks. Additionally, gazelles, hyenas, jackals, and

hares can be found in the region. The Sourou River supports several fish species and is important habitat for hippopotamuses.

The uncontrolled incidence of bushfires, deforestation, pollution, poaching, and the variations of river flows are resulting in the degradation of habitat and loss of biodiversity in Togo.

## **2.3 Socio-economic Challenges**

### **2.3.1 Population Trends**

Demographic statistics estimate that the basin population was 18.6 million in 2000 and will reach 33.9 million in 2025. The indication is that the population of the basin will double between 1990 and 2020, a period of 30 years. If this trend continues, the population will double again before 2050 to 45 million. The current growth poses a problem of matching the population with the available natural resources, especially those of water. 64% to 88% of the basin population is rural and live on the natural resources, which is a challenge for their sustainable management. (UNEP, 2002). This high population growth in the basin will also impact on available infrastructure and facilities and will have social and political implications.

The basin area also experiences population migration. In Ghana, for example, the decline in upstream fishing activities due to the creation of the Volta Lake has resulted in people moving to settle in the immediate surroundings of the Lake. In Togo, some people, mainly in the Savannah and Kara areas, which migrated southwards before 1990 have had to return, subsequent to social and political conflicts. Migration has also occurred in Mali aimed at finding new farmlands in the « forests » of Samori, which is a sub basin of the Volta. Other migrations took place during the 1985 drought. Also, the spread of populations to the Seno, a sub-basin of the Volta in Mali resulted in the depletion of fallow land, which led to a continuous impoverishment of soils. In addition, people continue to move to urban areas in search of jobs (VBA Pre-Investment Study, 2009).

In addition, migration for the purposes of agriculture and livestock breeding will remain for long and be potential sources of conflicts –social and economic. Sustainable support is needed from basin institutions/authorities to prevent social and economic conflicts.

### **2.3.2 Economic Profile of the Basin Countries**

The countries, which share the Volta basin, are among the poorest in the world with weak economies. The 2008 UNDP Human Development Report indicates that Côte d'Ivoire has the highest GDP per capita because it is a major centre of commercial activities in the sub region with 90% of its GDP depending on foreign trade.

Côte d'Ivoire is followed by Benin and Ghana respectively. The general economic situation of the former has improved over the last five years. Indeed, from 1997-2001, the actual economic growth was on average 5.2 % with an average inflation rate was of 3.8 %. For Ghana, its economic growth rate was 6.3 % in 2007 although it was affected by the soaring prices of oil which it largely imports to meet only 12 % of its consumption, 6,000 b/d. Recent IMF figures show that the growth of Ghana's GDP in 2008 will reach 6.5 %. Agriculture remains the core sector of the Ghanaian economy contributing 38.8 % of GDP.

Mali comes after Ghana with an average growth rate of 5.1% from 2002 to 2006 as opposed

to 3% for the rest of the Economic Community of West Africa States (ECOWAS). It is Mali's ambition to achieve an average growth rate of 7% from 2007 to 2012 to significantly reduce poverty levels, which were 59.2% in 2005. Burkina ranks 5<sup>th</sup> with a fall of its GDP growth by 1.5 points in 2007, compared to 2006, to 4% supported mainly by secondary industries (1.8 points) and the tertiary sector (1.5 points). The remarkable reduction of cotton production (-44%) in 2007 significantly contributed to reduced economic growth of the primary sector (-0.13%). The combined effects of economic growth and the implementation of large social programmes contributed to reducing and stabilising the poverty level at 42.6% in 2007 against 46.4% in 2003.

The economy of Togo is ranked 6<sup>th</sup> as this country has visible constraints in its economy. For instance, UEMOA indicators show that Togo has not met, even once, the minimum standard, meanwhile during the same period – 1997 to 2001, countries like Mali, Burkina, Senegal, Benin and Niger have made huge efforts to either meet UEMOA's minimum standards or exceed them.

Using the Human Development Index (HDI) to assess progress made by countries in the area of human development, countries like Ghana, Benin, Mali and Burkina have engaged in a drive to improve human development. On the other hand, the situation in Togo and Côte d'Ivoire has been stable since 2000.

Notwithstanding the efforts made in some countries, there is still poverty in the basin area, mainly rural, where majority of people live on agriculture, which currently provides low economic and financial returns. The prevalence of the primary sector in the basin economy exerts pressure on the natural resources that undergo rapid degradation.

### **2.3.3 Economic Trends**

The economy in Sub-Saharan Africa grew by 5.4 % in 2008, the first time in 45 years that this figure has exceeded 5% in five consecutive years, notwithstanding external negative influences in 2008. High demand, high cost of basic products and the contribution of private capital boosted economic growth in a number of countries, both rich and poor.

In some countries, high costs of energy, agricultural products and weak agricultural outputs due to the climate change, thwarted industrial production. In fact, many West African countries have experienced a reduction in their food processing business, which can be ascribed to low agriculture production and the high cost of farming inputs. The soaring costs of foodstuffs and fuel have led to the a general inflation in half of the Sub Saharan countries; median inflation reached 13 % by end of September 2008; median inflation for foodstuffs grew by more than 17.7 %

High import prices, combined in some cases with strong demand for investment have brought about reduced current balances in 2008. 13 out of 44 countries have experienced a fall of over 2 % of their GDP and 19 of them recorded deficits higher than 10 %. In Ghana for instance, the trade gap exceeded 26.2 % of the GDP during the second quarter of 2008 and this is likely to go beyond 30 % in 2009. The gap, except for public transfers, is likely to go beyond 17 % of GDP (VBA Pre-Investment Study, 2009).



### **3.0 THE VOLTA BASIN AUTHORITY**

#### **3.1 Mandate and Structure**

The Volta is a transboundary river system, which for many years remained one of the few large transboundary river basins in Africa without formal legal and institutional arrangements among the riparian countries for managing its resources. In order to institute measures for sustainable transboundary water resources management, the Ministers in charge of water resources of the riparian countries established the Volta Basin Authority (VBA) on 16th July 2006 at Lomé. The Ministers approved a draft Convention and Statutes of the VBA and adopted a *Road Map* determining the priority preparatory activities to be undertaken for the establishment of the VBA. The Ministers also appointed an Acting Executive Director and his Deputy who were charged with the implementation of the Road Map. The Convention was signed by the Heads of State of the riparian countries (Republic of Benin, Burkina Faso, Côte D'Ivoire, Ghana, Mali and Togo) at their first assembly held in Ouagadougou on 19 January 2007 under the auspices of the Government of Burkina Faso, and finally came into force on 14<sup>th</sup> August 2009.

According to Title III, Article 6 of the Convention on the Status of the Volta River and Establishment of the Volta Basin Authority, its mandate is to:

- Promote permanent consultation tools among the parties for the development of the basin;
- Promote the implementation of integrated water resources management and the equitable distribution of the benefits resulting from their various utilization;
- Authorize the development of infrastructure and projects planned by the stakeholders and which could have substantial impact on the water resources of the basin;
- Develop joint projects and works;
- Contribute to poverty alleviation and the sustainable development of the Parties in the Volta basin, for better socioeconomic integration in the sub-region.

The mandate of the VBA is made operational by its Statutes. Title II, Article 2 of the Statutes defines the specific objectives and clarifies the 5 points outlined in the mandate.

The pillars of Integrated Water Resource Management are therefore spelt out with respect to the establishment of the necessary governance for dialogue, sharing of information, management of the resource through knowledge building, data compilation, improvement in expertise and understanding and also for the development of the basin through providing the necessary infrastructure for sustainable development of the population of the Volta basin.

The coming into force of the Convention offers the VBA an opportunity to be better positioned to carry out its assigned mandates and objectives, be recognized by international financial partners, have good international image, effectively coordinate projects which have regional impact; attract/mobilize funds; and collaborate with several reputable international institutions, projects and programmes.

In order to effectively carry out its assigned mandate, the VBA Council of Ministers, during its first meeting in Ouagadougou on 16 November 2007, approved an Institutional Framework for the VBA, which include an Organizational Chart with the following six (6) major

divisions and their component units:

- i. Executive Directorate under the Executive Director composed of:
  - International Cooperation and Communication Unit;
  - Office of the Executive Director comprising a Bilingual Secretary, Protocol Officer and Driver of the Executive Director;
- ii. Department of Operations managed by the Deputy Executive Director and composed of:
  - Four sectoral units Irrigated Agriculture, Water Supply and Sanitation, Fishery and Hydro electricity;
  - Secretariat of the Director and the Driver;
- iii. Department of Planning and IWRM managed by a Director and made up of:
  - Coordination Unit for Basin Stakeholders and National Focal Points
  - Monitoring and Evaluation Unit
  - Legal Unit
  - Research and Planning Unit
  - Secretariat and the Driver;
- iv. Department of Administration and Finance led by a Director and composed of:
  - Administration and Human and Material Resources Management Unit;
  - Finance and Accounting Unit;
  - Translation and Interpretation Unit;
  - Secretariat and liaison officer/driver;
- v. Basin Observatory, which is a department managed by a Director;
- vi. The Financial Controller, with a rank of Director, who reports to the Council of Ministers but is administratively under the Executive Director.

### 3.2 Vision

The six Member States and the major partners defined the following vision for the Volta Basin Authority during the workshop:

**« A basin shared by willing and cooperating partners managing the water resources rationally and sustainably for their comprehensive socio-economic development »**

The above vision highlights all the key points necessary for a common vision for integrated water resource management of river basins. It is based on the fundamental values of a Basin Authority focused on integrated management of watersheds.

The Integrated Management seeks to promote implementation of an IWRM-compliant water policy both at the Volta basin and at the national levels. This implies provision of ample opportunity for dialogue and discussion among the stakeholders engaged in the development of the basin, a collective ownership of common interests, *through collaboration and partnership.* Such ownership will challenge each party to be committed to its own responsibilities. The basin or regional level provides a genuine decision-making platform for managing *water and associated resources in a prudent and sustainable manner for socio-economic development of the basin countries.*

The integrated management approach is imperative, but in order to succeed it must be seen as more than a mere technical and rational process. It cannot be decreed, but needs to be developed through a listening and learning process and taking cognizance of the realities on

the ground. The dialogue mechanism initiated on the Volta basin is in response to this process.

As far as the VBA is concerned, the integrated management goes beyond a simple procedure targeting technical objectives; therefore to confine it to this role would be inappropriate. It requires a great deal of pragmatism on the part of the administrators. It is not an issue of contrasting technical rationalities and human and economic coherence but of being conscious of their complementarity. Thus, integrated management requires a somewhat long term preparation and gestation.

### 3.3 Mission

The six Member States and the major partners defined the following mission for the Volta Basin Authority during the workshop:

**« Promote permanent consultation and sustainable development of the water and related resources of the Volta basin for equitable distribution of benefits towards poverty alleviation and better socio-economic integration »**

This common synthesis shared by all parties takes into consideration the 5 points indicated in the VBA mandate. It also takes into consideration the specific objectives outlined in the Statutes of the VBA. It must be noted that the development of joint projects and works specified in the Convention and Statutes can imply « equitable sharing of benefits... ». In the long term, it is through this sharing that the VBA will have the opportunity to work towards achieving poverty reduction.

To understand the mission of the VBA in its entirety, it is quite important to recall that the VBA comprises different decision-making and consultative organs and an Executive Directorate responsible for the implementation of the above mission. The effectiveness of the VBA will stem from the capacity of the Executive Directorate to make all the organs functional and to prove its credibility in terms of the technical expertise within the basin as a factor outside the administrative purview of the Member States. In this way, the mission of the VBA will be operationalised through a proactive facilitation and coordination for the establishment of a gradual but permanent linkage between the Executive and the decision-making and consultative bodies.

To carry out this operational link, facilitation is the driving force for the coordination, monitoring and design, implementation and continuous evaluation of the specific objectives of the VBA. These constitute an integral part of the detailed strategic plan indicated in Section 5 below.

The coordination allows for oversight by the Authority and preparation of all meetings and the secretarial functions of all the organs of the VBA. It promotes dialogue among all the institutional and non-institutional partners of the Volta Basin. The coordination also implies provision of technical support for project planning and the preparation of programming documents for the integrated management of the Volta Basin. Communication and sensitization of all the inhabitants within the basin including the stakeholders engaged in management are unavoidable actions in the area of coordination. Finally, it is necessary to participate in the different networks of the IWRM to enrich the process through sharing of experiences. To ensure effective coordination there is the need for capacity building to

provide the administrative, regulatory and technical assistance on water resources management.

The monitoring of the elaboration and implementation of the specific objectives of the VBA implies an expansion of existing databases from studies already carried out or yet to be carried out. The establishment of a baseline to ensure subsequent and effective monitoring of actions must be incorporated into the core activities of the Executive Directorate. The drafting of a Master Plan for Development and Sustainable Water Management (MPDSWM) and carrying out of the necessary supporting studies should be initiated as soon as possible. Ensuring technical coordination of all the services and focal points will promote this aspect of the mission. Finally, all the technical initiatives to ensure mainstreaming of IWRM shall be promoted and carried out internally by staff of the Basin Authority.

The continuous evaluation of implemented activities will help in carrying out impact assessments of actions both at the regulatory and contractual levels through the Environmental Observatory and other thematic operational reports. These assessments, which are the major functions of the Executive Directorate, will guarantee development and constant progress in the area of planning within the Volta Basin.

It is through this linkage between the three focal areas above that the VBA will ensure the success of its mission.

### **3.4 Core Values**

The core values of the VBA agreed upon, after extensive discussions with representatives of all the VBA Member Countries and the major projects on IWRM of the Volta Basin during the workshop, are:

- Transparency;
- Teamwork;
- Mutual respect;
- Good governance;
- Gender and social equity;
- Efficiency.

#### **4.0 SWOT ANALYSES**

To accomplish the VBA’s mandate and mission, it is important to analyse its Strengths, Weaknesses, Opportunities and Threats (SWOT). It is essential to identify areas of opportunity where the strengths of the VBA could be applied for maximum advantage while managing the constraints and threats. Complementarily, the weaknesses represent gaps that need to be filled if the VBA is to take advantage of the opportunities. Given the competition for resources, these could help the VBA to better focus the scope of activities to enhance the effectiveness in execution. To achieve this focus requires a Strategic Plan, which provides a road map for the Authority based on the SWOT as well as on issues related to natural resources management and water utilization in the basin as a basis for identifying priority areas for action. The output of the SWOT analysis is presented in Table 1.

**Table 1: Summary Table of VBA's Strengths, Weaknesses, Opportunities and Threats**

<b>Strengths</b>	<b>Weaknesses</b>	<b>Opportunities</b>	<b>Threats</b>
The coming into force of the Convention better positions VBA to <b>promote</b> international cooperation for the rational and sustainable management of the water resources of the Volta Basin and for the socio-economic integration among the riparian countries	The role and mission of the VBA are better known by the international technical and financial partners than structures within State Parties	Take advantage of ongoing global awareness in protecting natural resources to promote regional IWRM initiatives	Delayed ratification of Convention to establish VBA as a permanent authority by some countries will constrain its ability to mobilize financial and other resources due to growing competition for scarce resources
Recognition of VBA by several international financial partners who supported its creation	Most projects in the basin are implemented without reference to VBA and/or without technical supervision	Accelerate process of ratification of Convention in defaulting countries to establish VBA as a permanent body with its requisite well-staffed departments. This will engender donor and partner interests and mobilization of financial, human and technical resources	Unpredictable global financial situation
Coordination of projects which have regional impact	The VBA has no communication plan	Coordinate and tap the expertise of the large number of existing environmental NGOs	Focus on individual national interest at the expense of attention for transboundary water management issues
Good international image and reputation	Some permanent organs of VBA such as the Forum of Parties exist theoretically; are yet to be functionally established. The composition and missions of National Focal Bodies are not well defined in the Statutes	Build capacity of staff in IWRM by using existing accredited local and regional institutions offering IWRM courses	Inadequate motivation constraining ability to compete for qualified manpower
The proposed rotational manner in which the sessions of the Council of Ministers are to be held among the State Parties	Inadequate funding constrain long-term planning	More effective partnerships through implementation of collaborative projects	Inadequate trained manpower

Capacity to recruit permanent staff	Financial contributions by some State Parties are not up to date	Capitalize on information generated through cross basin, country and regional research	Continued commitment from national authorities and support from partners
Ability to attract/mobilize funds (contribution from State Parties) to fulfil mission	Staffing is very poor (2 out of planned 25 in place)	Take advantage of rich resources of the basin and define modality of use and equitable allocation of resources	Maintenance of mutual respect and trust between State Parties.
Strong collaborative links with several reputable international institutions, projects and programmes	Inadequate infrastructure in the face of rapid expansion of projects	Increase capacity building activities to provide more opportunities for training, knowledge transfer and application of research results.	
Well positioned as an established permanent and independent authority to provide direction and methods for achieving objectives of projects implemented in the basin	Delayed completion of the establishment of VBA and its component Departments is a big challenge to its operations	create awareness on use, management and protection of water resources and other natural resources in the basin	
Authority to permit development of infrastructure and projects planned by the State Parties in the Basin.	Inadequate political will to follow up agreed action		
Development of joint projects and works	Focus mainly on surface waters at the expense of groundwater constrains IWRM		
	Inadequate motivation (low salaries)		
	Most focal points institutions are very weak in IWRM.		

## **5.0 STRATEGIC OBJECTIVES OF THE VOLTA BASIN AUTHORITY**

### **5.1 Introduction**

The Volta Basin Authority, during the Programming Workshop, defined its medium term working objectives in collaboration with its major partners. Its strategic objectives for the next 5 years are as follows:

- Strengthening policies, legislation and institutional framework;
- Deepening knowledge about the basin;
- Coordination, planning and management;
- Communication and capacity building for all stakeholders;
- Effective and sustainable operations.

Table 2 below indicates the strategic objectives in terms of deliverables by the VBA in the next 5 years from 2010-2014. These strategic objectives constitute the medium term framework for intervention by the VBA and should not be considered as separate but viewed in their interrelated form. Also, the five-year strategic framework of the Volta Basin Authority should not be viewed as an action plan for the basin management. The document mainly identifies certain actions that would help the VBA officials to direct and prioritize their future plan.

The five-year strategic framework of the Volta Basin Authority should be viewed as a guideline for operationalising VBA for the early years after the establishment of the authority at the organizational, technical, political and financial levels. The strategic framework is also a reference document for all the VBA partners to ensure:

- Common understanding on the orientation of the VBA concerning its setting up;
- Proactive involvement in terms of technical and financial support for the VBA;
- Identification of key priorities and avoidance of duplication of efforts through coordination.

It is also important to highlight here that:

- The political partners must be in a position to monitor the process of setting up a Basin Authority on their territory of intervention;
- The technical partners must be in a position to mainstream their technical interventions into the basin plan in line with other actions on the Volta Basin;
- The financial partners must be able to understand and be fully aware of the time schedule of the activities of the VBA so as to be able to target their funding and ensure visibility in its use.

The strategic framework must first and foremost be seen as a shared document by the major VBA partners. This principle is all the more important in the context of the Volta Basin Authority as it is an emerging institution which cuts across a vast expanse of international territory whose boundaries are not administrative but hydrological.

The VBA's mission can only be meaningful if these 5 strategic objectives are taken into consideration simultaneously by the management body of the VBA and by all the political, technical and financial partners.



**Table 2 Summary Specific Objectives, Expected Outcomes and Programme (2010-2014)**

Expected Outcomes	Activities/projects	Deadline for Execution	Level of priority
<b>1- Strengthening of Policies, Legislation and Institutions</b>			
<b>1.1 Policies for good water governance guide VBA and its activities</b>	1.1.1 Ownership and internalization of water resources policies in West Africa and the Volta Basin States	5 years	2
	1.1.2 Assist member States as necessary to introduce IWRM into national legislations and harmonization of approaches where necessary.	5 years	2
<b>1.2 Legislation for water governance in the Volta basin established</b>	1.2.1 Draft a Water Charter for the Volta basin	From the 1 <sup>st</sup> year	1
<b>1.3 All VBA organs are operationalized</b>	1.3.1 Establish and organize regular meetings of the statutory VBA organs (e.g., Council of Ministers, Forum of Parties...)	5 years	<b>1</b>
<b>2- Strengthen the Knowledge Base of the Volta basin</b>			
<b>2.1 The state of water and environmental resources is known</b>	2.1.1 Conduct inventory of water resources and their uses	Completed 3rd year	<b>1</b>
	2.1.2 Conduct studies on the environmental status of the basin including land use, biodiversity, climate change and socio-economic aspects in the basin.	Completed 3rd year	<b>1</b>
<b>2.2 Data management and sharing mechanisms are in place</b>	2.2.1 Support national institutions to strengthen or create qualitative and quantitative monitoring networks for surface and underground water and socio-economic conditions	5 years	2
	2.2.2 Support national institutions to strengthen monitoring and evaluation of the quality and quantity of surface and underground water and of socio-economic-conditions	5 years	2
	2.2.3 Finalize establishment of the observatory	5 years	<b>1</b>
<b>3- Coordination, Planning and Management</b>			
<b>3.1 Sustainable management and regulation of water resources</b>	3.1.1 The VBA or its organs (Experts/Technical Committee) direct sustainable water resources management initiatives in the basin	To be completed in 3 years	2
<b>3.2 Knowledge and coordination of projects</b>	3.2.1 Formulate a process for the identification, monitoring and dialogue in respect of projects	To be completed in 3 years	2
<b>3.3 A Plan for an environmental management and planning of the basin is launched</b>	3.3.1 Draft a sustainable Master Plan	To take off in year 1 and completed in year 5	<b>1</b>

Expected Outcomes	Activities/projects	Deadline for Execution	Level of priority
<b>4- Communication and Capacity Building for All Stakeholders</b>			
<b>4.1 Through communication and dissemination of information, ensure a common understanding of the functioning of the Volta basin</b>	4.1.1 Develop and implement a communication plan that takes into account both technical information and general awareness raising tools such as: -Production of documentary films; and -Identification of partnerships and networks for the dissemination of communication products	To take off in year 1 and completed in year 3	<b>1</b>
	4.2 Capacity for all stakeholders to share and collaborate in the development of IWRM	4.2.1 Develop and implement plan for stakeholder participation and capacity building 4.2.2 Identify and establish partnerships and networks with stakeholder groups the basin (user groups NGOs, CBOs, farmers, industrialists, etc)	5 years To be completed in 5 years
<b>5- Effective and Sustainable Operations of the VBA</b>			
<b>5.1 Ensure implementation of the Strategic Plan</b>	5.1.1 Monitoring and evaluation framework drafted and activities carried out regularly including mid-term and 2013 revision.	<b>In 5 years</b>	<b>1</b>
	5.1.2 Direct the implementation of the plan	In 5 years	<b>1</b>
<b>5.2 Financial resources and partnerships mobilized in support of VBA mandate</b>	5.2.1 Engage and extend the Donors Consultative Group network of technical and or financial partners	Start in year 1 and stabilized in 5 years	<b>1</b>
	5.2.2 VBA plays its role in the network of basin organizations	Start in year 1 then sustained	<b>1</b>
	5.2.3 Consolidate the internal funds of the VBA (States, donors, projects)	To be completed in 5th year and ongoing	<b>1</b>
<b>5.3 Human and material resources and administrative procedures developed to support implementation of VBA activities</b>	5.3.1 Headquarters built and furnished	To start in 1 <sup>st</sup> year and completed in 5 years	<b>2</b>
	5.3.2 Procedures for internal regulations established and implemented	To be completed in 3 years	<b>2</b>
	5.3.3 Qualified personnel recruited according to needs	To be completed in 2 <sup>nd</sup> year	<b>1</b>
	5.3.4 Training in basin management (administrative and technical) for VBA personnel, its focal structure and partners	To be completed in 5 years	<b>2</b>

## **5.2 Details of Strategic Objectives**

The proposed five Strategic Objectives are explained further below to ensure their understanding by VBA management other stakeholders (political, technical and financial partners). In order to promote efficiency of the VBA mission, it is in fact pertinent that right from the launch of the Strategic Plan, a common language is used to minimize interpretations.

It must be underscored here that the Strategic Objectives are interdependent and the VBA mission will ensure that these interrelations are factored into the scheme of things through its facilitation.

### ***5.2.1 Strengthening of Policies, Legislation and Institutions***

The preparation and signature by riparian countries of the VBA Convention implies a complete change in management of the basin and its related developmental and socio-economic problems. Gradually, by relying on the VBA, the States will incorporate this basin approach into all aspects of national life: political, technical, financial and human, once the importance of the basin is identified.

The role of the VBA does not only require establishing and making its organs operational (Outcome 1.3) but it also includes gradually heading towards a comprehensive basin policy. Formulating and designing a basin policy does not mean substituting with the home-grown policies of each Member State but to design an additional policy adapted to the watersheds within the confines of the basin and not within the administrative spheres of the States. The issue is formulating a policy which does not exist as at now, but which is important to ensure sustainable development (Outcome 1.1). Outcome 1.1.1 in the first place, enables the VBA to master and internalise policy orientations of each of the States in respect of water resources, then harmonize, adapt and create coherence among them by defining water policy in the Volta Basin. This point, which aims at good governance of water resources, will necessarily involve gradual adjustments of national policies particularly in the areas of IWRM (1.1.2) and water policy (1.2).

The preparation of a Water Charter will ensure the definition of common rules on water management, that is, the principles and modalities for the allocation of water in terms of its various uses, the rules for validating new projects that entail water use or generate pollutants, the modalities for the conservation of all aquatic environments and for participation by all the stakeholders in decision-making including management of water resources. The Water Charter will be the political and legal backbone of the VBA and will enable it to play its full role as a Basin Authority.

### ***5.2.2 Strengthening of the Knowledge Base of the Basin***

Knowledge and scientific characterisation of the Volta River Basin is important for the VBA to build its basin policy and enable cohesion and coordination of development projects. The modalities for strengthening the knowledge base and for supporting national institutions will be done through the stages stated in the Expected Outcomes 2.1 and 2.2. There is the need to acquire and/or collect environmental data particularly those relating to water including specific socio-economic information on the Volta basin and then ensure that the data is organized and easy to update. The VBA must within a period of 5 years be able to fulfil its

specific objective on the characterisation of the basin through establishment and operation of its observatory.

Some key issues that the VBA will take into account to ensure success in strengthening knowledge are as follows:

- The inventory of water resources and their uses and studies on the environmental status of the basin (2.1.1 and 2.1.2) implies as much as possible a regrouping of what has already been done, verification and validation where necessary to update the work. The VBA shall direct the objective of studies to be carried out towards realizing its mission and mandate. The VBA is an operational organ for integrated water resources management;
- The tools such as databases, operating reports, observatory (2.2.3), monitoring networks (2.2.2), data exchange agreements, etc. must be made operational as quickly as practicable. For this reason, it is necessary, right from the onset, to design a dynamic tool with time in order to enhance their functioning and performance. The VBA will not seek to put in place already designed tools from the start, as there is the risk of never achieving any results; the most important thing is to gain credibility as an institution from the partners and local stakeholders in the basin area;
- In the context of this strategic objective, the VBA will be the sole steering body as far as data on the basin is concerned. Even though it may not carry out the studies through its executive directorate, the VBA will systematically validate knowledge-based projects linked to the state of the environment including all water resources in the basin.

### **5.2.3 Coordination, Planning and Management**

With regard to the operationalisation of this Strategic Plan, the VBA shall establish, in addition to its traditional role of coordination, the organizational mechanisms for the coordination of existing and future projects in the Volta Basin (3.2). To ensure success in this regard, the VBA will not develop a simple coordination procedure; it will adopt a clear mechanism for better planning and management of water resources in the Volta Basin. Towards this end, this item shall be linked to Strategic Objective 1 on Strengthening of Policy, Legislation and Institutions. Project coordination must be appreciated by all partners. Coordination can only be achieved if there are proactive exchanges between VBA and its partners.

The VBA shall engage in an effective educational campaign with a focus on the major stakeholders.

The development of a sustainable development plan for the basin (3.3.1) is an objective for the VBA, which should be carried out in phases. The first phase to anchor IWRM is the drafting of a Master Plan for Development and Sustainable Water Management (MPDSWM) in the basin. The MPDSWM is a logical follow-up to strengthening of knowledge base of the basin (Strategic Objective 2). The MPDSWM is the key planning tool, which the VBA shall use in carrying out its mission. Together with the Water Charter, it will provide a solid framework within which the VBA can undertake its management and other necessary socio-economic development of the Volta Basin. The MPDSWM shall be the concrete expression of the water policy in the Volta Basin. It will be linked to the Strategic Action Plan being currently developed by the UNEP/GEF Volta Project.

In relation to its Strategic Objective 1 of strengthening the institutions, the VBA shall initiate the establishment of a Water Basin Management and Regulation Committee even though no joint engineering works have been started. The major engineering structural works on the basin shall in the long run be managed in a coherent manner in order to optimize the hydrological and hydrodynamic operation of the Volta Basin. This will entail a long phase of dialogue and technical ownership by the VBA, which could be initiated by this Management and Regulation Committee (3.1.1). In the first place, it is not necessary to establish a new specific body. Towards this end, the Executive Directorate shall recruit a high calibre hydraulic engineer with background in the IWRM (item relating to Strategic Objective 5, on strengthening of the effectiveness of VBA).

In conclusion, the success of the VBA in establishing a planning scheme on the Volta basin is to be able to implement concrete actions that carry strong messages in terms of IWRM while laying the foundations for the Basin Authority (the Observatory, MPDSWM and Water Charter are imperative actions).

#### **5.2.4 *Communication and Capacity Building for All Stakeholders***

Recognition of the VBA, ownership of the IWRM, knowledge and governance of the basin cannot be achieved without any tangible Communication Plan (4.1). However, it is necessary to identify the set targets and the messages to be communicated. It is important to distinguish between general communications on the basin status and the more technical aspects relating to the operationalisation of the basin. On this latter point, a close relationship must be established with the products of the Observatory.

For communication to be understood and appreciated by the major partners the VBA shall outline a training scheme for current and future partners (4.2.2). This means that the VBA would have to depend on the existing network of competencies in the basin, or would undertake a training of trainers within the national focal institutions to make the process more sustainable and well owned. The identification of users of the basin is a strategic one in the medium term because apart from the opportunities for project delivery and dissemination of information to the population, it shall be done through their membership associations and groupings within the decision-making organs of the VBA.

The VBA shall ensure that in defining communication and training plans, it shall not establish a large number of expensive and irrelevant tools. An internal expertise should be available to play the role of an arbitrator.

#### **5.2.5 *Internal Capacity Building***

For the next 5 years, this will be an important strategic objective of the VBA. In the absence of a focused and qualitative capacity building by the VBA, all the other objectives cannot be achieved. To ensure the success of the IWRM process and recognition of the Volta Basin Authority, it is important not to gloss over the foundations.

Two major imperatives that the VBA should focus on to ensure success of its mission are:

- Strong capacity (5.2.3) to develop and implement IWRM structural projects: As stated on several occasions in the other strategic objectives, the role of expertise will be quite fundamental to ensure credibility of the VBA and therefore its recognition as a powerful organ of the basin responsible for IWRM activities. It must be emphasized

that the VBA through its Executive Directorate will ensure early human resource development with respect to its mission and activities in the basin and not just recruit without any reference. The primordial recruitment objective is to provide the VBA with the technical competence to carry out the responsibility (project management) of the key structuring actions within the next 5 years. Finally, it is through this effective expertise that the VBA will ensure implementation of this strategic plan (5.1).

- Financial autonomy to implement basic activities (5.3.3): In the process of creating such a complex scheme as management of a transboundary basin, the VBA shall work towards developing adequate financial resources to ensure smooth operations in the institution on the one hand and to ensure steering of the structural actions in the basin on the other hand. It is essential to guarantee flexibility and responsiveness by the VBA to enable expeditious demonstration of its capacity as basin manager.

## **6.0 OPERATIONAL MEASURES**

### **6.1 Introduction**

The five strategic objectives presented in the previous chapter highlight the strategic development framework of the VBA in the coming years. This framework is the reference for the States and VBA partners. It allows for clarity in the development of the Basin Authority in its establishment and understanding of medium term decisions and actions.

The challenge for the VBA is to make operational all these interrelated strategic objectives. Without entering into the definition of the action plan and its funding, the following chapter presents priorities for interventions. The objective is to maintain the core element of the mission and the mandate of the VBA to quickly realize a real political and technical recognition.

The following priorities were identified so that in the next 5 years, the VBA will concretely undertake the major technical and institutional processes to ensure effectiveness in IWRM.

### **6.2 Priorities for Intervention by the VBA**

#### **6.2.1 Major Priorities for the VBA**

The Executive Directorate shall in the next 5 years undertake the following as a matter of priority (not in any hierarchical order):

- Develop its financial resources to enable it to fully carry out the basic studies and the daily institutional functions;
- Continue, launch and implement the following fundamental technical activities – finalize Observatory; launch and finalize the MPDSWM; formulate and implement Communication Plan;
- Establish and coordinate the national focal institutions;
- Recruit the technical and administrative teams - experts, project managers and secretarial staff - needed for the achievement of specific objectives 1, 2 and 3;
- Promote partnerships with the major technical and financial partners.

#### **Financial Resources**

Without adequate financial resources, the VBA will not be independent or be able to carry out its core functions effectively and efficiently. The VBA must be independent in its work in order to promote the development of the Volta Basin.

In addition to consolidation of contributions by Member States, which is the basic source of finance, it is imperative to create an additional fund **called «structural interventions »** to execute other priority actions indicated above. The **‘structural interventions’** is meant to cover the budget for both core technical studies and operations.

#### **Technical Studies**

The technical credibility of the VBA can only be achieved by presenting concrete elements to all the partners. It is this credibility that will enable the VBA to be recognized as a Basin Authority. It is also this credibility that will allow the VBA to play its political role among

States in the basin, as they will genuinely feel supported in their national development efforts. The three activities proposed for the next 5 years, the Observatory, MPDSWM and the Communication Plan all complement each another.

The Observatory for Water Resources and Related Ecosystems, which is being established, will ensure proper monitoring and evaluation of current and future public policies on the Volta Basin. This will help formulate an organized system of data collection and processing within the basin. In the long term, its diverse products for supporting decision-making will lead to an efficient, sustainable and beneficial water resource management for the population of the Volta Basin Authority.

The Communication Plan is the appropriate tool for advertising the VBA. Communication is indispensable for an organization operating in a basin as diverse and vast as the Volta to ensure operation in a manner that is not contrary to the set objectives. Thus a Communication Plan must be developed as a matter of priority in order to create awareness of the basin (its resources and problems), inform on actions undertaken and their outcomes, explain the role of the VBA and establish a continuous link with all the partners.

Master Plan for Development and Sustainable Water Management (MPDSWM) is the strategic orientation document that outlines the regulations for balanced management of water resources over a period of 10 to 15 years. It incorporates the choices of all basin stakeholders whose activities impact on water resources and ensures coherence in decision-making by incorporating the different national programmes and sectoral development plans. The MPDSWM is a requisite basic document for the VBA and an important one that needs to be developed. Initially it will demonstrate a strong commitment of the Basin Authority to institute a coherent management of the basin and will also quickly allow the Authority to establish its role as the coordinator. Waiting for far too long will complicate the work of the VBA, as some projects it may carry out could be contrary to future provisions of MPDSWM.

The MPDSWM shall be carried out in several key stages:

- Assessment of the state of the water resources and their uses in order to identify the problems, data gaps and existing programmes, among others;
- Identifying the fundamental basis for legislation and regulations towards a balanced management of the resources in the basin; and
- Formulating legislation and regulations for sustainable resource management.

After the development of the MPDSWM, it will be disaggregated into programmes to be implemented. The MPDSWM involves the mobilization of the decision-making organs of the VBA at different stages in order to validate, consult and inform the content of the document and make it a real working and appropriate framework for all parties.

### **Establishing VBA National Focal Institutions**

Article 10 of the VBA Statutes defines the framework for the creation of national focal institutions. In view of the size of the basin and the 6 countries involved, it is critical to ensure that there is a local working link to the Executive Directorate to quickly establish the focal institutions. The financial resources referred to above will serve as a basis for the establishment of the focal institutions and for making them operational.

Concerning the institutions to be established, it may not be necessary at the initial stages to multiply the number but the national focal institutions are a priority for the effective



implementation of the strategic objectives and the enhancement of the credibility of the VBA.

### **Recruitment of VBA Staff**

Staff recruitment, as indicated in Section 5.2.5 will be conducted according to needs and not necessarily according to a predetermined organizational chart. The following should form the bases for recruitment:

The 5 Specific Objectives of the VBA;

- Staff should have the ability to carry out studies to ensure independence of the Executive Directorate and avoid undue reliance on external experts who may not feel responsible to the VBA;
- Staff in the various departments should be recruited in consultation with the Heads of Department.

From the above, the Executive Directorate shall recruit the following:

- Staff of the Observatory;
- Communications Officer;
- Finance Officer;
- Staff of the IWRM Department comprising the Director, a hydraulic engineer, an expert in environmental issues and an agro-economist;
- Other technical and secretarial staff.

It is after the first 5 years of operations that a meaningful organizational chart can be designed. Before then, the structure should be simple, distinguishing the secretarial from the technical staff.

### **Promoting Technical and Financial Partnerships**

Without long term technical and financial partners, the VBA cannot grow, open up to the outside world, perfect itself and consolidate its financial resources for future interventions. This priority is an obligation for the Executive Directorate. The formation of a solid technical team as specified above will help create more time for the strategic mission. The Executive Director and his deputy will be responsible for the political link between the VBA organs and the external partner institutions and ensure the execution of the VBA mission and mandate. This mission will strengthen political and strategic decision-making at the Summit of Heads of State and the Council of Ministers.

It is clear from the above that stakeholder institutions constitute the backbone of VBA's success in implementing its policies and strategies. This is the normal situation in an IWRM regime. The institutions include those within riparian countries that work together and with those at the VBA level. They also include development partners who support various projects or programmes in varying time horizons.

It is imperative to establish partnerships and networking with relevant stakeholders in areas of common interest for achieving mutual benefits of generating and sharing knowledge and experiences and disseminating water resources management information to end users. In expanding partnership relationships, the VBA is involved in providing a platform for dialogue and exchange among basin organizations such as OMVS, OMVG, NBA and ECOWAS/WRCC, etc.

At country level, VBA, through its Focal Points, will strive to develop a number of strategic partnerships with development organizations, such as NGOs, and government agencies with

an implementation focus and substantial outreach to end users. This approach is to promote the application of knowledge generated and achieve impact at the level of the end users. In order to sustain established partnerships, there will be the need for formalizing such relationships by signing agreements such as MoUs, which spell out the roles and responsibilities of the partners.

With a Framework for Cooperation of Technical and Financial Partners Consultative Group developed by the VBA, their activities should be engendered to attract more partners to support VBA activities. A crucial role of the Authority is to support the riparian countries to create a favourable environment for private sector participation both in the national and transboundary water management.

### **6.2.2 Formulation of the VBA Partnership Programme**

The partnership and networking programme of the VBA shall cover the essential elements, including:

- Establishing the need for partnership and agreeing upon a common set of goals;
- Identifying and involving key stakeholder groups/individuals;
- Agreeing on expected outcomes for partnership activities;
- Providing the right forum(s) for partner participation;
- Obtaining direct involvement and support of partner leaders;
- Embracing a holistic view of a problem and its solution;
- Establishing and equal playing field for every partner;
- Defining roles and responsibilities of partners (including financing, outputs, mode of exit)
- Clarifying targets and resource provision;
- Encouraging maximum participation from planning to implementation;
- Evaluation of common projects; and
- Disseminating research results to target beneficiaries.

#### **Need to Develop Strategic Partnership: Proposed Activities and Expected Outputs**

The role for water resources development rests with national governments. However, experiences show that in many African countries the financial, managerial and technical capability is unable to support accelerated development of integrated water resources management in a multi-sectoral setting. It is noted that water activities are often implemented in partnership with external support agencies. VBA will therefore establish partnerships with national as well as external agencies in order to accomplish the following proposed activities:

- Develop strategic partnership with development organizations, such as NGOs, government agencies, institutions, etc. with an implementation focus and significant outreach to end users through the Focal Points at country level;
- Formalize partnerships by signing agreements such as MoUs;
- Identify and establish partnerships with potential external agencies;
- Identify and establish linkages with regional frameworks and networks;

The key expected outputs are:

- Strategic partnerships established with relevant agencies in the six riparian countries
- Potential external development and donor agencies identified and partnerships established
- Relevant regional frameworks and networks identified and linkages established

- Agreements in the form of MoUs signed between VBA and established partners

### **6.2 3 Existing Institutions in the Volta Basin and Partners of VBA**

Table 3 presents the existing institutions identified as being actively engaged with VBA in the Volta basin. They may be grouped as follows:

- Riparian National Tertiary Institutions
- International Research Institutes, e.g. IWMI.
- Transboundary basin institutions e.g. OMVS
- Regional Economic Communities e.g. ECOWAS (WRCC)
- Regional IWRM Institutions, e.g. GWP/WAWP
- International Development Partners and Donors

**Table 3 Existing Institutions and Partners of the VBA**

<b>S/N</b>	<b>(Partner</b>	<b>Project/Objectives</b>	<b>Status</b>	<b>Linkage with /benefits for VBA</b>
1	SIDA/IUCN and ECOWAS/WRCC	Consolidation of institutional arrangements	Convention has come into force	Empowerment of VBA to fulfill its mandate & objectives
2	French GEF (& SIDA/IUCN)	Establishment of Volta Basin Observatory for water resources and related ecosystems	In progress	Improve VBA's access to requisite data Development of data base
3	EU (Water Initiative)	Reduction of poverty, food insecurity and land degradation of the Volta Basin	Project ended in December 2009	Baseline data, capacity building, reduction of poverty, food insecurity & land degradation
4	ADB, WMO	Volta HYCOS/Network of national hydrological observing systems to provide coherent quality information	Collected data, provided training to countries; Countries yet to collect data	Achievement of several BRB objectives
5	IUCN (PAGEV)	Improving water governance in the Volta; Pilot IWRM.	Phase 1 completed; Phase 2 began in Jan 2009.	Supported establishment of VRB, and achievement of several VRB objectives/ mandates.
6	Germany GLOWA	GLOWA Volta Project (GVP) Project/establish sound Decision Support System for water and land management	MOU signed in 2007 with VYB; transfer of Geodatabase,	Achieved joint projects & works; improved access to data & some of VRB mandates and objectives.
7	GTZ & SIDA/IUCN, ECOWAS/WRCU	Promoting partnership arrangements; collaborating with national focal points on awareness creation	Ongoing-	Promotion of stakeholder participation, capacity building.
8	CGIAR (with World Bank etc.)	Challenge Program on Water and Food (CPWF)-	Phase 1 ended in 2009, Phase 2 (2010-2013) approved.	In partnership with development Institutions & NGOs

<b>S/N</b>	<b>(Partner</b>	<b>Project/Objectives</b>	<b>Status</b>	<b>Linkage with /benefits for VBA</b>
9	UNEP GEF (Links with IUCN/PAGEV Project, EU Volta Project, & Volta HYCOS)	UNEP/GEF Volta River Project	MOU signed April 2009. Collaboration ongoing.	1.Capacity Building/ enhance stakeholders involvement in VRBM; 2.Develop basin legal, regulatory and institutional frameworks and management instruments 3.Demonstrate national and regional measures to combat transboundary environmental degradation
10	International Water Management Institute (IWMI)	Contribute to Food Security & poverty alleviation. Increased water productivity	To reassess all basin storages in the light of climate change.	Water resources management Volta Basins (water allocation, water quality, groundwater, policies and institutions) - Effects of climate variability/change: adaptation at different scales.
11	International Institute for Water and Environmental Engineering (2iE)	Hydrological research & modeling (Tougou & Nakambe basins)	Ongoing	Hydrological responses & regime of headwaters of the Volta Water availability forecasts using climate scenarios of CSIRO and HADCM3.
12	CSIR Water Research Institute	Currently evaluating the performance of other Tilapia strains by comparing with the 'locally' developed 'Akosombo' strain	Ongoing	Water storage for climate change adaptation; of information on shallow ground water irrigation to livelihood, security and poverty reduction in White Volta Basin; Tilapia strains research
13	University of Ghana	Volta Basin Research Project (VBRP)	Ongoing	VBRP/UG can provide Capacity Building for VBA and Partners;
14	Kwame Nkrumah University of Science and Tech.	TIGER Initiative	Ongoing	Free access to satellite data provided by ESA and from training and capacity building supporting activities.
15	The Authority for the Development of the Sorou Valley (AMVS)	4Agropastoral, 3 Hydrological, 1 Rural transport & 4 Energy programmes.		Exchange of information on Evaluation of water resources and water use planning; Exploitation of groundwater & Water and soil conservation.

## 7.0 BUDGET FOR THE STRATEGIC PLAN

The budget estimates for the Strategic Plan is summarised in Table 4 below. The estimated total is FCFA 18,162,000,000 (approximately € 27,687,787). Out of this total, FCFA 3,163,000 (€4,821,962), constituting 17%, is available in the form of the approved 2010 budget for VBA and from funds for projects such as Volta HYCOS and VBA Observatory. The remaining FCFA 14,999,000,000 (€ 22,865,826) will have to be searched for. The details of the budget are presented in Annex 1.

**Table 4 Summary of Budget Estimates**

Activities/Projects	Budget Estimate (FCFA x10 <sup>6</sup> )					Total	%
	2010	2011	2012	2013	2014		
<b>1. Strengthening of Policies, Legislation and Institutions</b>	125	422	641	409	145	1,829	10
<b>2. Strengthen the Knowledge Base of the Volta Basin</b>	1,324	2,827	1,750	0	0	5,901	32
<b>3. Coordination, Planning and Management</b>	33	630	570	470	470	2,713	12
<b>4. Communication and Capacity Building for All Stakeholders</b>	105	181	90	0	0	376	2
<b>5. Effective and Sustainable Operations of the VBA</b>	518	2,535	2,709	1,217	904	7,883	43
<b>Total</b>	2,105	6,595	5,760	2,183	1,1519	18,162	100
<b>Budget Available</b>	508	1,213	0	0	0	3,163	17
<b>Budget to be Searched For</b>	1,442	5,382	5,760	2,183	1,519	14,999	83

VBA will develop annual budget estimates on the basis of identified actions linked to the Strategic Plan to be funded by Member States and in relation to identified projects that require funding from donors.

## 8.0 MONITORING AND EVALUATION PLAN

VBA will be responsible for the preparation and submission of the following reports that form part of the monitoring process:

**Day to day** monitoring of progress of implementation will be the responsibility of the VBA based on its Annual Work Plan and expected outcomes with the support of its National Focal Points. The VBA will inform its Expert Committee of any delays or difficulties faced during implementation so that the appropriate support or corrective measures can be adopted in a timely and remedial fashion.

Periodic monitoring of progress of implementation will be undertaken by the VBA through the provision of half-yearly reports submitted to its Expert Committee and key partners.

Annual Monitoring will occur through the preparation of Annual Reports by VBA.

**Terminal Report:** During the last three months of the implementation of the Strategic Plan, VBA will prepare the Terminal Report for the Strategic Plan. This comprehensive report will summarize all activities, achievements and outputs of the Strategic Plan, lessons learnt, objectives met, or not achieved, structures and systems implemented, etc. It will be the definitive statement on the activities of the Strategic Plan during its lifetime. It will also propose recommendations for any further steps that may need to be taken to ensure sustainability and replicability of VBA's activities.

**Technical Reports:** Technical Reports are detailed documents covering specific areas of analysis or scientific specializations within the overall Strategic Plan. Technical Reports will be prepared by the VBA and external consultants and would be comprehensive, specialized analyses of clearly defined areas of research within the framework of the Strategic Plan. These technical reports will represent, as appropriate, the substantive contribution of the Strategic Plan to specific areas and will be used in efforts to disseminate relevant information.

**VBA Publications:** Publications will form a key method of crystallizing and disseminating the results and achievements of the Strategic Plan. These publications may be scientific or informational texts on the activities and achievements of the Strategic Plan, in the form of journal articles, multimedia publications, etc. These publications may be based on Technical Reports, depending upon the relevance, scientific worth, etc. of these Reports, or may be summaries or compilations of a series of Technical Reports. The VBA will determine if any of the Technical Reports merit formal publication, and will also, in consultation with the governments and other relevant stakeholder groups, plan and produce these publications in a consistent and recognizable format.

The Strategic Plan will be subjected to at least two independent external evaluations as follows:

- **Mid-Term Evaluation:** An independent Mid-Term evaluation will be undertaken at the end of the third year of implementation. The Mid-Term evaluation will determine progress made towards the achievement of outcomes and will identify course corrections if needed. It will focus on the effectiveness, efficiency and timeliness of implementation of the Strategic Plan; will highlight issues requiring decisions and actions; and will present initial lessons learned about the design, implementation and management of the Strategic Plan. Findings from this review will be incorporated as recommendations for enhanced implementation during the final half of the Strategic Plan term;
- **Final Evaluation:** An independent Final Evaluation will take place three months prior to the end of the implementation of the Strategic Plan. The final evaluation will also consider impact and sustainability of results, including achievement of the VBA mission. The Final Evaluation will further provide recommendations for follow-up activities.

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