

## **POLICY BRIEF-01**

### **FOREST DESTRUCTION, AGRICULTURE PRACTICES AND BIODIVERSITY CONSERVATION AT LAKE BOSOMTWE BASIN**

### **THE COMMUNITY-BASED INDEPENDENT REPORTING PROJECT, LAKE BOSOMTWE, GHANA**

By FIDEP Foundation with funding support from Rufford Foundation



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## INTRODUCTION

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At the national level, Ghana's Draft National Biodiversity Policy (NBP)<sup>1</sup> recognizes biodiversity is the basis of sustenance of life on earth. In signing and ratifying the United Nations Convention on Biological Diversity (CBD) and its protocols, Ghana committed to implementing all the Articles enshrined in the Convention. The CBD is based on the principle that the protection and use of biodiversity should be considered always from an ecological, economic and socio-cultural viewpoint. The CBD also takes into recognition Principle 15 of the Agenda 21 - the Precautionary Principle. The successful implementation of this policy will thus contribute to the achievement of the Post 2020 Biodiversity Framework of the CBD and the Sustainable Development Goals (SDGs). Other national policies such as the Buffer Zone Policy (2013), Forest and Wildlife Policy (2012) and the Water Policy (2007) recognize the critical importance of Lake Bosomtwe as Biosphere reserve and the need to protect, regenerate and maintain the active and established vegetation in riparian buffer zones of this Biosphere Reserve.

Given its ecological, economic and social importance, Lake Bosomtwe was designated as a biosphere reserve by UNESCO In 2016. Biosphere Reserves were launched by UNESCO's 1974 Man and Biosphere Programme which recognized the need to reconcile the conservation of areas that are host to valuable biodiversity with local land-use needs through the delineation of core areas, buffer areas and transition zones<sup>2</sup>. Biosphere Reserves is one of the six operational models providing useful lessons in implementing sustainable development and for securing biodiversity conservation. The Bosomtwe Basin must have looked more beautiful and healthier and, therefore, pleasant with plenty of food and adequate clean water for all a few decades ago. Barely 30 years ago, farmers in the Basin produced all their food requirements. They had plenty to eat and the excess sold to traders from Kumasi, the regional capital, and the surrounding urban markets. Besides cocoa, farmers cultivate crops such as plantain, cocoyam, cassava, maize and vegetables.

Yet, recent evidence show that the core zones (riparian vegetation and aquatic) remain under serious threat from socio-economic activities and climate change. Ironically, the trend has changed due to the destruction of the green vegetation, which is the basis of food production. The people can barely feed themselves now. Today, traders buy the same basic food items they produced and transport them from Kumasi and elsewhere to communities around Lake Bosomtwe. In response to this, several stakeholder groups have introduced a number of interventions such as the "Community Collective Action for Food Security, Climate Mitigation and Conservation of the Newly Designated Lake Bosomtwe Biosphere Reserve project<sup>3</sup>, led by Arocha-

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<sup>1</sup> Ministry Environment Science and Technology (MESTI), (2021). Draft National Biodiversity Policy. MESTI, Accra Ghana

<sup>2</sup> Graham Bennett. (2004). Integrating Biodiversity Conservation and Sustainable Use: Lessons Learned From Ecological Networks. IUCN, Gland, Switzerland, and Cambridge, UK. vi + 55 pp.

<sup>3</sup> Arocha Ghana; <https://ghana.arocha.org/news/a-rocha-ghana-launches-special-initiative-to-serve-lake-bosomtwe/>

Ghana and The Bosomtwe Land Restoration Project led by the Asante Kingdom Land Restoration Project (AKLRP)<sup>4</sup>.

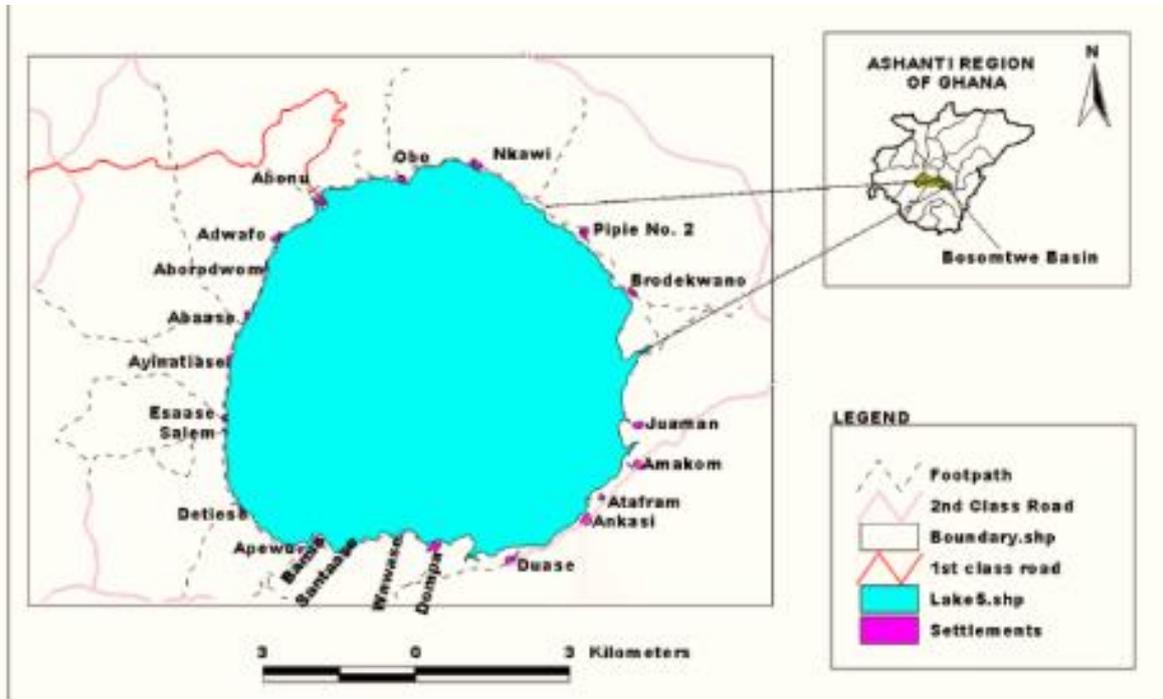


Figure 1.1 Location of Lake Bosomtwe Biosphere Reserve

While these interventions, among others, have yielded meaningful results, degrading activities are still ongoing, and threaten to undermine the biosphere reserve status of Lake Bosometwe. Therefore, this report merely seeks to summarize a six month (1st March to 30th August, 2021) record of two main degrading activities around Lake Bosomtwe, namely: harmful farming activities and charcoal burning, both of which involve the clearing of riparian vegetation cover.

Owing to the multi-level nature of integrated biodiversity management (IBM) and its associated multi-level actions undertaken by various stakeholders, a deconstructed<sup>5</sup> outcome mapping methodology was adopted for this study. This allowed for the breaking down of research data, bypassing potentially misleading images, establishing conservation priorities and exposing unquestioned assumptions in the governance processes of protected ecosystems. This study placed emphasis on the second stage of the outcome mapping process; Outcome Monitoring and Organizational Reflection, while drawing on sub-elements of the first (Intentional Design) and third (Strategic Evaluation). This approach provided a framework for the ongoing monitoring of the initiative's actions in support of the outcomes and the

<sup>4</sup> The AKLRP: <https://greenasantekingdom.org/about/>

<sup>5</sup> Deconstruction is an approach to understanding the relationship between text and meaning. It was originated by the philosopher Jacques Derrida (1930–2004), who defined the term variously throughout his career

boundary partners' progress towards the realization of IBM of the Lake Bosomtwe Biosphere Reserve. This approach also lends itself well to community-led data collection.

## REPORTS FROM THE LAKE BOSOMTWE RESIDENT SUSTAINABILITY TEAMS

From the period 1st March to 30th August, 2021, there were 32 reports of harmful farming activities (clearing vegetation less than 30 meters from the water body) and 16 reports of charcoal burning around the riparian vegetation. Both of these activities have serious negative externalities on the riparian vegetation. From these reports, it was noted that the pressure on the land has been largely the result of a combination of factors. Firstly, the nature of the Bosomtwe terrain is such that it is naturally not suitable for cultivation. Part of the reason is also the result of increasing population as a result of immigration into the Basin. Table 1.1 and figures 1.2-1.3 suggest that harmful farming activities and charcoal burning is intensifying in at least 7 out of the 21 communities monitored between 1st March to 30th August, 2021. The highest number of reports on harmful farming activities came from Anyinatease and Koninyaw (recording 19% each). The highest number of reports on charcoal burning activities came from Gyemasu-Anweaso and Pipie, both recording 19% (see table 1.1 and figure 1.2).

Table 1.1: Reports of harmful farming activities and charcoal burning activities for the period, 1st March to 30th August, 2021

COMMUNITY	HARMFUL FARMING ACTIVITIES	CHARCOAL BURNING
Anyinatease	6	2
Pipie	4	3
Abaase	4	1
Abono	3	4
Danso,	4	1
Koninyaw	6	2
Gyemasu-Anweaso	5	3

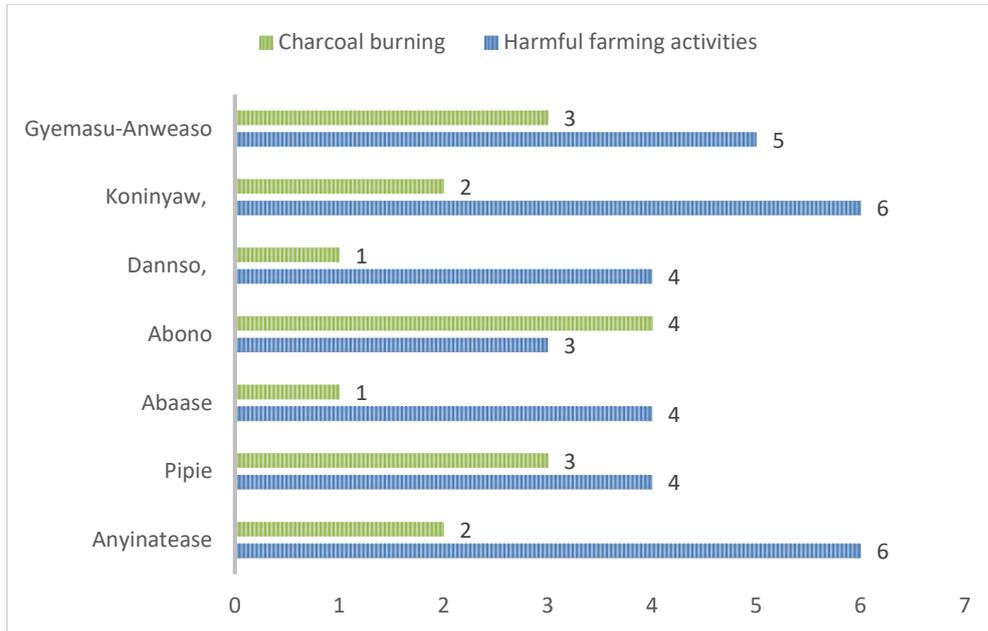


Figure 1.2: Reports of harmful farming activities and charcoal burning activities for the period, 1st March to 30th August, 2021

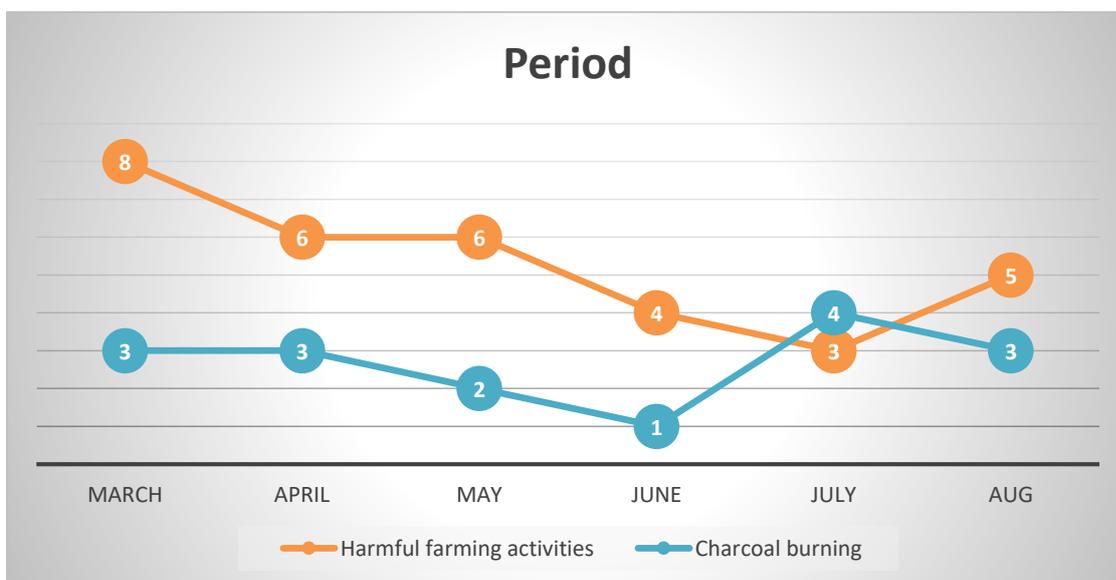


Figure 1.3: Trend of harmful farming activities and charcoal burning activities for the period, 1st March to 30th August, 2021

Figure 1.3 is a trend illustration of harmful farming activities and charcoal burning as reported in 7 out of the 21 communities monitored between 1st March to 30th August, 2021. The reports suggest that both harmful farming activities and charcoal burning were carried through out this 6 month period. It also suggest that both activities tend to decline from June to July but both activities increase again very rapidly between July and August. Harmful farming activities decline to its lowest between June and July while charcoal burning is at its lowest between May and June but rises to its highest in August.

The other new driving factor observed in the biosphere reserve is urbanization. On 15th March, 2021, our team from Pipie community first reported on the destruction of forest in Pipie by a private developer. This was reported using whatsapp platform. In this story, a private developer had destroyed over 500 trees planted along the bank of the Lake at Pipie despite bye-laws declaring 100 meters from the water as a buffer zone. In reference to this incident, the Asantehene indicated that "For the perpetrator not realizing that these trees were planted for a purpose was very worrying. Even though the Assembly and other stakeholders have resolved that he replants the trees, it should come with a caution to deter others." The strong reaction from the Asantehene to this media report is an indication of the influence that media attention could have on biodiversity conservation at Lake Bosomtwe. In the study on illegal logging and related trade response in Ghana, Allison Hoare (2014), highlighted international and domestic media coverage as an important indicator that provides insight into levels of public awareness of illegal logging and related trade. Allison Hoare (2014) highlights that effective media attention will give an indication of the approaches being taken within a country to address illegal forest operations, the policy gaps and tradeoffs. Our community reporters noted that between 1st March to 30th August, 2021, there were 12 media reports on activities within the Lake Bosomtwe Biosphere reserve, including print media, radio discussions, traditional online media, facebook and youtube.

Interviews with key opinion leaders suggest that there has been so much destruction of the green vegetation, the basis of food production around the Lake. The most disheartening aspect of the untold story of the disappearing forest is that the Lake Bosomtwe Basin is fast losing the opportunity for agriculture and its tourism potential. Intensive cultivation of agriculture practiced on the fragile ecosystem is still the most destructive landuse practice in the biosphere reserve. Just as the situation in the other parts of the country, these farmers have practiced the slash and burn agriculture for ages. This sedentary agriculture has caused declining agricultural production.

The result of the creaming away of the vegetation on the steep hills is the washing away of the topsoil into the Lake through surface runoff. The trees and forest prevented sandstorms and, therefore, the formation of sand dunes. The latter reduces the ability of farmers to cultivate the land whilst the former are injurious to both the human health and agricultural crop production. The organic matter of all soils decline rapidly once the vegetative cover has been removed. Land contamination in the area is so bad that the soil can no longer support food crops, causing food insecurity in the communities.

In addition, the excessive logging and intensive fire wood gathering coupled with the uncoordinated development of infrastructure have all had their toll on the Basin. Today, the farmers no longer cultivate shallots and tomatoes. It is unknown whether it has anything to do with the changing environment. The rampant and uncontrolled destruction of trees and forests on and along the hills has left in its trail bare land and gullies and, at best, grasslands.

However, observations suggest that, the increased media attention on Lake Bosomtwe is increasing youth voices and community power in the management of Lake Bosomtwe Biosphere reserve and integrated biodiversity management in general. Authorities are recognizing the voices of youth in terms of the management of Lake Bosomtwe Biosphere due to increased media reporting mostly using facebook and youtube. Across the 21 communities it has been noted that there is a broad recognition of the problem. The communities generally appreciate the enormity of the problem and are gradually mending the broken fences. Most of the communities have virtually stopped indiscriminate bush burning. The remaining solution is to modify the way of agriculture and stop the haphazard siting of infrastructure projects on the shores of the Lake.

## **POSSIBLE INTERVENTION POINTS FOR THE NATIONAL BIODIVERSITY POLICY**

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Based on these observations, the following action oriented recommendations can be made for the Draft National Biodiversity Policy to take into account as part of the National Biodiversity Action Plan (NBSAP):

### **Agroforestry and Land Cover Restoration of Lake Bosomtwe Biosphere Reserve:**

Introducing Agroforestry may be of essence now. This Agroforestry system is a land use management in which trees and/or shrubs are grown around or among crops or pastureland. In view of the importance of trees and forests in our agricultural systems and the environment they can never be dispensed with. There is, therefore, the need to halt forest destruction and plant more trees, particularly indigenous species like

Ceiba pentandra, Cocos nucifera, terminalia superba and Nuclei diderrichii to enrich the biodiversity status of the Lake Bosomtwe Biosphere Reserve. The Manhyia Palace has set a target for 3 million trees to be planted by the Asante Kingdom Landscape Restoration Programme along the lake by 2029. Among other interventions, Arocha Ghana has implemented a project which sought to enhance sustainable conservation of the lake and its resources through a collaborative community approach. As part of this project, about 5,500 tree seedlings were planted in four key locations managed by local communities including: Terminalia superba (1500 seedlings), Nuclei diderrichii (1500), Ceiba pentandra (2000) and Cocos nucifera (500).

The challenge with the restoration of degraded land approach is the increasing threat of construction activities around the lake as seen in the recent report captured on video by our reporting team, a private developer destroyed about 500 trees along the banks of the lake including destroying the spawning areas where the fishes lay their eggs. This is a real threat to any attempts to restore degraded areas around the lake. This threat further solidifies the need to intensify independent monitoring and reporting of activities around the Lake Bosomtwe Biosphere Reserve.

**Community Resources Tribunal (CRT) for Lake Bosomtwe Biosphere Reserve:** Given the important role that traditional authority plays in the management of Lake Bosomtwe, it can be expedient to establish a Community Resources Tribunal (CRT) which will serve as a "Special Court/Panel" or an Institution with authority to deal with problems or issues associated with natural resources in particular and the environment in general. This CRT will examine the available statutes (laws and regulations) regarding natural resources as well as relevant traditional or customary systems/practices and promote their prompt and judicious enforcement.

**Media Attention on Lake Bosomtwe Biosphere Reserve:** The state of affairs and trend of development around the Lake Bosomtwe Biosphere reserve suggest that this is certainly the best time to a sustainable partnership with media in focusing attention on the Lake Bosomtwe Biosphere reserve. Adapting mass communication media to the rather technical issues in biodiversity conservation requires a full-bodied appreciation of tools and techniques that would encourage maximum interaction and sustain interest in the selected themes. This implies there is the need to frame the media activities in such a manner that ensures a wider coverage but also deconstructing the discussions down to the regional, district and community level. The reports received from the RST team at Lake Bosomtwe, suggest that an increase in public awareness on in biodiversity conservation is mostly a direct reflection of increased media attention or media engagement but not essentially an increase in media interest. However, without a sustained media interest in in biodiversity conservation, public awareness alone may not translate into improvements in public

participation in integrated biodiversity management at the Lake Bosomtwe Biosphere reserve.

**Urgent need for Geoethical Thinking:** Carefully assessing the reports and observations suggest a practical paucity of geoethical thinking in the management of LBBR and the fact that key stakeholders need to be exposed to the essence of geoethical thinking. Geoethics consists of research and reflection on the values which underpin appropriate behaviours and practices, wherever human activities interact with the Earth system. Its main issues and topics include: sustainable use of natural resources; reduction and management of natural and anthropogenic risks; management of land; pollution and its impacts on human health; global environmental changes, including the climate change; protection of natural environments, etc. These core elements of geoethics are have intrinsic relevance to the management of LBBR given its biodiversity values.

Lake Bosomtwe is one of the six major meteoric lakes in the world and it is believed to be 1.3 million years old. The lake is circular in shape with a rim diameter of 10.5 km and there are four streams that flow into it; but the lake lacks an outlet makes it a closed basin. There are 24 villages, with a total population of 11,800 people (the average size of a village is 500 people) along the 32km shoreline of Lake Bosomtwe. Research indicates that Lake Bosomtwe is rich in aquatic biodiversity of national and global significance. The most important species described to date is an endemic fish, *Tilapia busumana*. The fish species include sarotheroden *Galilaeus multifasciatus*, *Tilapia busumana*, *T. discolour*, and *T. zilli*. The other known fish of importance is the catfish of genus *Claria*.

The forests in the basin areas of Lake Bosomtwe harbors a variety of fauna that are recognized nationally and /or globally as endangered. These species include palm squirrel (*Epixerus ebii*), giant pangolin (*Manis [phataginus] gigantea*), tree pangolin (*M. tricuspis*), long-tailed pangolin (*M. tetradactyla*), the bareheaded rock fowl (*Piscathartes gymnocephalus*), and many more. However, as indicated in the reports presented table 1.1, the high level of unsustainable human interaction with this sensitive ecological area suggest that there is an urgent need to place emphasis on geoethical thinking as far as the protection of the natural environment is concerned and in particular around Lake Bomomtwe as a designated Biosphere Reserve.

## ACKNOWLEDGEMENTS

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We are especially thankful to all the local stakeholders and key opinion leaders and professionals who contributed their invaluable time local knowledge and expertise in contributing to this project.

## About the project

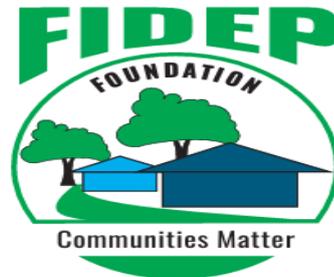
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FIDEP Foundation is introducing the community-based independent reporting as an intervention project. This project seeks to pilot test a community-based independent reporting platform using a mobile app-link as a means of connecting 21 buffer communities within the Lake Bosomtwe biosphere reserve to monitor and report, learn, share and co-develop assertive actions for Integrated Biodiversity Management (IBM).

This project is part of the FIDEP Foundation programme on Integrated Watershed Management. The overall goal of this programme is to promote a balanced interaction of water resources, communities and development activities through innovative management approaches in order to protect natural ecosystems and use natural resources sustainably, when conservation and sustainable use can be mutually beneficial.

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## PROJECT PARTNERS



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