

An assessment of the underwater timber salvation project on the Volta Lake,
implications and recommendations: Could the underwater salvation enhance
further development in Ghana?

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Abstract

This paper analyses the underwater timber salvation project that will remove timber from submerged forests in the Volta Lake. It will frame this by evaluating how the project can enhance development for Ghana.

Kwame Nkrumah's Volta River Project is primarily assessed as this led to the flooding of the Volta Lake. Nkrumah's aspirations for Ghana at its independence set the scene for the course of development taken over the last 60 years. Later chapters discuss the underwater timber logging project and the far-reaching impacts it has on Ghana's sustainable development. Issues such as illegal fishing and logging, deforestation and the Government of Ghana's protocol for development are analysed. These chapters investigate the implications of the underwater timber harvest on the environment and local communities, special emphasis is placed on discussing the potential of this project to improve inland water transportation on the Volta Lake.

Finally some recommendations are made in an attempt to enhance further sustainable development in Ghana. These recommendations are directed towards the Government of Ghana, the underwater timber salvation company and wider subsidiaries involved in increasing safety on the Volta Lake.

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Chapter 1: Introduction

Introduction to the study

From the shore, the Volta Lake displays an ominous scene as submerged trees poke through the waters surface. Almost half of the 850,000 hectares of water contains submerged forest tracts. These exposed and hidden treetops cause devastating casualties on the Lake and have taken over 300 lives since the Lake's creation in 1965.¹ In addition to risking the safety of those on the Lake, the submerged forests pose wider dilemmas concerning inter alia, fishing practices, infrastructure, deforestation and sustainable development. In the last decade two international underwater timber salvation projects have attempted to remove some of the stumps from the Lake. These projects embolden opportunities for further development of the inland water infrastructure that could transform Ghanaian industries and communities. As the Lake consumes 4% of Ghana's landmass, focus on the Volta Lake and its potential to provide an inland water transportation network should be recognised.² However the underwater timber project cannot single-handedly solve these problems, instead it holds catalytic influence, looking to future projects to continue the work of improving infrastructure while reaching wider development goals for the country.

The underwater timber salvation project on the Volta Lake does have the potential to enhance and progress development in Ghana. This is primarily due to its multifaceted impacts, however as it stands it will rely upon further, future investments to solidify this development.

Exploring the underwater timber salvation project within a historical context of the Volta River Project is paramount to understanding the full implications of development projects taking place in developing countries. The Volta River

¹ M. M. Phillips, 'A Man has a plan to harvest a forest in Ghanaian Lake: Volta Boatmen dodge trees that tilapia seem to like; Dunn's hardwood fortune', *Wall Street Journal*, 21 July 2007

² Dedeso Holdings Inc. & Serengeti Capital, *Lake Volta Timber Salvage Project*, Brochure, December 2016, pp. 1-13, p. 3

Project and Akosombo Dam form pillars of Ghanaian advancement and modernisation, these qualities can also be mirrored in the underwater harvest project. It may be idealistic to associate Akosombo to a small timber-harvesting project in the Volta Lake, however it is not the scale of the projects but their potentials that are vital in this assessment. Moreover the Akosombo Dam led to the creation of the Volta Lake, thus they are intrinsically linked.

Problem Statement

Ghana faces great infrastructural challenges, which are detrimental not only to the movement of people but also to the transportation of goods, thus inhibiting full cooperation within the global market. The charm of this underwater timber project in particular lies in its simplicity to vastly improve inland water transport. Although the underwater timber salvation itself cannot deliver all of these aspirations, its collaborations with outside investors can increase its probability. The simplicity lies in utilising an asset like the Volta Lake, which spans from the Northern to Southern regions of Ghana and making it navigable, opening up a new and efficient form of infrastructure.

Local fishermen interviewed for this study largely oppose the timber salvation project. Their concerns surround the potential disruption of fish habitats, which could result in lower yields. The previous timber-harvest project, carried out under Canadian company Clark Sustainable Resources Development (CSRSD) was violently protested by fishermen; eventually the project was forcibly shut down. Dedeso Holdings Incorporated (Dedeso) is performing the current underwater timber salvation and has pledged to build company-community relations. Yet there are still fishermen who oppose the project.

Sustainable development and the efforts of this project to align with this are central to this paper. Ghana's alarming deforestation rate is detrimental to the global community, yet both local communities and wider national exports rely on timber. The underwater timber harvest can ease deforestation rates by harvesting trees from the Lake. However profits of these proceeds will neither benefit local communities nor the Government of Ghana, thus prompting the

issue of neo-colonialism within private extraction enterprises. Under The Constitution of the Republic of Ghana, Section 36, the State is obliged to ensure that the national economy is managed to “secure the maximum welfare...of every person in Ghana.”³ In regards to the private sector this means that they “bear their fair share of social and national responsibilities including responsibilities to contribute to the overall development of the country.”⁴ It is within this capacity that criticism for the Government of Ghana is framed; the above statements highlight the contemporary shortcomings of the Government.

Literature Review

As a qualitative study, secondary papers and theories are highly relevant, of which Meischer’s interpretations are central in building a picture of the Volta River Project and wider modernisation issues facing Ghana at independence. These issues are currently impacting the exogenous projects and further development. It is for this reason that Chapter 2 and its assessment of the Volta River Project is so vital, Meischer’s historical analysis is required to formulate sound recommendations for the future of development projects in Ghana. Meischer draws upon the significance of the project by reclaiming its informal title, “Nkrumah’s Baby.”⁵ Moreover he outlines some theories of modernisation that were utilised during the 1960’s, these theories are criticised and labelled as quintessentially Western, not necessarily suited for developing African countries. As well as being important for modernisation and development, these theories and criticisms are also vital in this study. Emphasis on these theories throughout allows for some reflection on how the current Government of Ghana is enabling development through private enterprises.

Gardener offers a criticism of these modernisation theories projected onto developing countries, attesting that essentially economic growth does not equate

³ The Constitution of the Republic of Ghana, 1992, Chapter 6: The Directive Principles of State Policy, Section 36 (1)

⁴ Ibid, (1,c)

⁵ S. F. Meischer, “Nkrumah’s Baby:” The Akosombo Dam and the dream of development in Ghana 1952-1966, *History Department University of California*, December 2004, pp. 341-366

to enhanced standards of living, drawing on arguments of further underdevelopment.⁶ This associates with the neo-colonial arguments that continue to surround exogenous extraction projects such as this underwater timber salvation. Due to this Malunga has argued that these projects have negatively impacted African Governments today.⁷ Arguing they cannot control their own development, as they become increasingly dependent on exogenous projects. Exogenous projects are both “top down driven” and within this case study have non-local origins. This definition highlighted by Malunga is central to this research and its findings. Despite Dedeso being a Ghanaian firm, their project is classed as exogenous due to the profits and materials extracted being exported from the country of origin.

This paper will primarily utilise secondary sources, focusing on development theories, especially how Nkrumah began this journey with the Volta River Project. As the paper progresses and the implications of the underwater timber harvest project are explored, primary sources from interviews will be utilised to build an understanding of their objectives.

Methodology

This paper and the arguments posed are predominately formulated from qualitative research. To understand and address how the timber salvation could increase its benefits for the further development of Ghana and any wider implications of this, the use of qualitative data is fundamental. The objective of the research is to discover the far-reaching implications of this timber salvation, within society, the economy and wider theories of Ghana’s development. To properly assess this, qualitative data is required to gauge an understanding of how local communities in particular, will be affected.

As well as consulting secondary data on how these types of exogenous extraction projects impact developing countries, semi-structured interviews

⁶ K. Gardener & D. Lewis, *Anthropology, Development and the Post-modern Challenge*, (London: Pluto Press, 1988)

⁷ C. Malunga & S. H. Holcombe *Endogenous Development: Naïve romanticism or practical route to sustainable African development*, (Routledge: London, 2016)

conducted on a field trip to Ghana will also be utilised. These interviews formulate a vital component of the evaluations and recommendations made in this paper. As the interviews were semi-structured and conversational there was not one set of questions to be asked for each respondent. Mr. Pianim is the Executive Director of Dedeso while Mr. Dunn is a co-founder of both Dedeso and the previous timber salvation project under CSRD. Their testimonies and questions centred upon the themes of what Dedeso would like to achieve for their project, whether they are facilitating further development projects on the Volta Lake and how are they collaborating with local communities to achieve total success. Other key stakeholders such as Technical Director at the Ghana Maritime Authority and employees at both the Volta River Authority (VRA) and Volta Lake Transport Company (VLTC) provided vital information on how the underwater project will impact their work on the Lake. During their interviews further inquiries were made into their responsibilities for ensuring safety on the Lake, how this was achieved and any current restrictions faced. Local community members in the Lakeside community of Kpando were also interviewed, providing vital testimonies allowing many of the recommendations of this paper to be formulated to suit their best interests. Questions here were focused on what could be changed and opinions of the underwater timber salvation, it was important to determine what they believe needed to change to ensure safety and whether the underwater harvest would assist this.

To analyse these interviews and their legitimacy primarily requires comparison, essentially evaluating whether the interviewees contradict one another. The limitation of relying upon interviews is that each individual has an agenda or position within the project, for example Mr. Pianim and Mr. Dunn are promoting their underwater timber salvation as best they can. The foremost limitation faced in this research was time constraints. Simply there was not enough time spent in the field to conduct as many interviews as preferred. However this research has been able to consult secondary sources also based on primary data gained from Lakeside communities, and so in addition to the primary data presented here, the findings and recommendations remain sound and well researched.

Chapter 2: Nkrumah's Dream and the Volta River Project

The Volta River Projects forms the cornerstone of Ghanaian development. In bringing hydropower to the newly independent country it was able to establish export industries and build trade relations with the rest of the World. This transformed Ghana, propelling it into the modernised World. Contemporary press labelled Akosombo Dam “Nkrumah’s Baby”, a fitting description considering the dedication Nkrumah paid to the project.⁸ This chapter will place Akosombo within Ghana’s history and development, telling the story of how Nkrumah’s dream was realised. It will follow Nkrumah’s visions for industrialisation through to the controversial resettlement programme, then showing how the Volta Lake has today presented major investment opportunities for underwater timber logging. By centring Akosombo and the subsequent Volta Lake in Ghana’s development, the question of how the project to remove tree stumps to further enhance the lives of people on and around the Lake can be addressed.

This transformative era has not ended; possibilities for sustainable development continue to emerge. It is the quest of this research to ensure that the timber salvation can enhance further development. The context of historical development in Ghana since its independence is necessary to maximise success of the timber salvation and further propel Ghana’s development. Similarly to the underwater harvest project, the Volta River Project alone would not create a modernised and developed country. Investment projects, either endogenous or exogenous are not a pre-requisite for modernisation or development, the Government also has a responsibility to shepherd private projects to ensure they achieve sustainable development for the country.

Genesis of the Akosombo Dam

The idea for a dam at the Volta River to produce hydroelectricity in Ghana came long before Nkrumah; he simply adopted the idea and made it a reality. Nkrumah made the project his own, attaching his Pan-African ideals to it, namely

⁸ S. F. Meischer, “Nkrumah’s Baby”, pp. 341-366, p. 350

through his ambition to share electricity across borders to aid and inspire other African countries.⁹ Albert Kitson first drew up plans for a dam in 1915 but it was not until 1949 that the Gold Coast Government and a British firm of engineers commissioned any research into the feasibility of the project. In 1953 a Preparatory Commission was established under Sir Robert Jackson who carried out further surveys of building a port and harbour in addition to a dam.¹⁰ First estimations revealed a cost of over £300 million to complete the project.¹¹ Following these initial steps a pamphlet was distributed to the people of Ghana to explain what the project would involve. Nkrumah vowed to his citizens that the project “could be the beginning of our industrial age.”¹²

Nkrumah’s vision of building the largest dam in Africa was complex as it contradicted his political standpoint against his ambitions for a modern Ghana. Essentially Nkrumah’s methods of funding the project with the assistance of foreign aid conflicted with his assertions to end imperial influence and led to criticism from within his party. In *Africa Must Unite* Nkrumah laments, “every time we import goods that we could manufacture...we are continuing our dependence and delaying our industrial growth.”¹³ As a result of becoming so engrossed by this philosophy, Nkrumah allowed his wider political ambitions to be contradicted. Nkrumah was eager to bring modernisation and industrialisation to Ghana, these concepts became powerful tools, utilised by many emerging nations in the 1960’s, Ghana being no exception. In an attempt to follow the course of modernisation, Nkrumah used Akosombo to transform Ghana and lead it to the industrialised world.

Non-Alignment

The Cold War raged and tensions between East and West amplified. Nkrumah’s Ghana was considered a pawn, as the U.S was eager to secure

⁹ Ibid, p. 359

¹⁰ Ibid, p. 350

¹¹ D. Rooney, *Kwame Nkrumah: Vision and Tragedy* (Sub Saharan Publishers, 2007), p. 217

¹² K. Nkrumah ‘The Volta River Project: What it means to you’ *Pamphlet Published by Government of Ghana*, 1961, p. 1

¹³ K. Nkrumah, *Africa Must Unite* (London: Mercury Books, 1965), p. 112

influence over the first colonised African country to gain independence. This tense global milieu played a pivotal role in Ghanaian efforts to attain U.S funding for the Volta River Project. Nkrumah, when asked of his affiliations stated, “We face neither East nor West. We face forward.”¹⁴ Despite these numerous declarations of neutrality, President Eisenhower remained dubious as Nkrumah continued communications with the East. Eisenhower’s administration has been described as being more narrow-minded than the later Kennedy equivalent, thus making negotiations for investment particularly delicate; Eisenhower consistently accused Nkrumah of favouring the Eastern bloc in the face of abundant assurances of neutrality.¹⁵ Nkrumah could not escape the political and economic ramifications of the ideological battle between the US and Soviet Union. This meant that he must adopt some accommodating politics, rather than simply expressing his non-alignment; the U.S needed to see that non-alignment did not equate to Eastern sympathies.

Nkrumah built relationships with the West at a time when his neutrality and anti-imperialist beliefs were being widely broadcast. Moreover the crescendo of the Cold War crisis makes the creation of Akosombo all the more impressive, the project was completed just four years after investments were finalised. Advocating neutrality while simultaneously attempting to gain investments from the U.S was a complex process and so securing financial backing from the US in 1960 has been heralded as one of Nkrumah’s great successes.¹⁶

Akosombo formed the backbone of his plan for national development. In 1961 he defended the project by stating, “electricity is the basis for industrialisation.”¹⁷ The primary objective for the Volta River Project was to provide cheap hydroelectric power for the aluminium smelter to facilitate

¹⁴ H. Fuller, ‘Father of the Nation: Ghanaian Nationalism, Internationalism and the Political Iconography of Kwame Nkrumah 1957-2010’, *African Studies Quarterly*, 16:1 (December 2015), pp. 33-70, p. 33

¹⁵ K. X. Metzmeier, ‘John F Kennedy, Ghana and the Volta River Project: A Study in American Foreign Policy towards neutralist Africa’, *University of Louisville Theses and Dissertation Paper 967*, 1982, p. 79

¹⁶ D. Rooney, *Kwame Nkrumah: Vision and Tragedy*, p. 222

¹⁷ S. F. Meischer, “Nkrumah’s Baby”, pp. 341-366, p. 358

exportation of natural bauxite sources found in Ghana, thus decreasing dependency on cocoa exports.¹⁸ In the 1950-1960's modernisation became a powerful tool used by emerging nations to establish their position within the industrialised world.¹⁹ This referred to the historical transformation of a new nation embracing rapid industrialisation, it was advised this could be achieved through infrastructure projects such as dams; this is precisely what Nkrumah was pursuing with the Volta River Project. Critics of this modernisation theory have argued that it primarily promoted a Western style of modernisation through set infrastructural development guidelines and bureaucratic decision-making; even if a country were to follow this protocol ultimately there was no such guarantee that this would lead to modernisation.²⁰ This is certainly true; there is no one path to modernisation, industrialisation or development. It is vital that governments, private investors and multilateral aid organisations support the nations domestic plans for development and remain open-minded and endorse all methods of sustainable development, which will be beneficial for the emerging nation.

Nkrumah was aware of potential pitfalls of foreign investments and loans for his development projects. Unfortunately this did not protect him from them. In addition to receiving funding from the U.S and Britain, the World Bank also funded Volta River Project, with half of the final sum paid by Ghana.²¹ It was decided that the Government of Ghana would put forward \$98 million, the UK \$14 million, World Bank \$47 million and the U.S \$37 million.²² The World Bank primarily questioned Ghana's ability to sell enough power to make the project feasible, but Kaiser Aluminium had agreed to buy around half of the power generated for their aluminium smelter, thus guaranteeing economic viability and stability of the project.²³ As more international players and private

¹⁸ R. Chambers, *The Volta Resettlement Experience* (London: Pall Mall Press, 1970), p. 10

¹⁹ S. F. Meischer, & D. Tsikata, 'Hydro Power and the Promise of Modernity and Development in Ghana: Comparing the Akosombo and Bui Dam Projects, *Ghana Studies* 12:13, 2009, pp. 15-54, p. 16

²⁰ Ibid, p. 18

²¹ D. Rooney, *Kwame Nkrumah: Vision and Tragedy*, p. 234

²² K. X. Metzmeier, 'John F Kennedy, Ghana and the Volta River Project', p. 85

²³ Ibid, p. 79

organisations become involved in the Volta River Project, Nkrumah had to prove to supporters that he would not fall victim to further imperialism or lose control of his project to the international donors.

Decker has argued that Nkrumah “grudgingly accepted” foreign investment on the presumption that foreign influence could be controlled.²⁴ However this would not necessarily be the case; Kaiser Aluminium held central role in the progression of the Volta River Project. Due to Cold War tensions straining relations between the U.S and Ghana, Kaiser facilitated the relationship between the two, allowing them to gain great involvement and influence.²⁵ Kaiser became a ‘corporate diplomat,’ mediating between the two nations. Although this eventually allowed Nkrumah to build a rapport with President Kennedy to secure the investment needed; it meant that he was reliant on the private corporation to keep his project afloat.²⁶ Nkrumah seemed to be falling for what he had tried to avoid in regard to foreign investment. This is evidenced in the deal that Kaiser would purchase almost half of the hydropower produced for its aluminium smelter. The Government of Ghana leapt at this opportunity as it meant it could afford to service its debts to Britain, the U.S and World Bank, however in turn this gave Kaiser enormous bargaining power.²⁷ Contrary to Nkrumah’s dreams of an African socialist utopia with Akosombo at its heart, both Kaiser and the World Bank would leverage great influence over the development of the project, thus clouding Nkrumah’s initial hopes.

From anti-imperialism to the politics of accommodating

As the Preparatory Commission first estimated a cost of £300 million to construct the Volta River Project, it was evident that international investment would be required.²⁸ For a newly independent country such as Ghana, advanced Western countries and multilateral banks, such as the World Bank, were the only

²⁴ S. Decker ‘Corporate political activity in less developed countries: The Volta River Project in Ghana 1958-1966’, *Business History*, 53:7, (December 2011), pp. 993-1017, p. 993

²⁵ Ibid, p. 995

²⁶ Ibid, p. 995

²⁷ Ibid, p. 1002

²⁸ D. Rooney, *Kwame Nkrumah: Vision and Tragedy*, p. 217

options. This position necessitated for Nkrumah to adopt a politics of accommodation, rather than a confrontation of his anti-imperialist viewpoints.

Nkrumah and Eisenhower first met after Ghana's independence where he also met with an American firm, Kaiser Aluminium.²⁹ Despite leaving the US without any firm commitment from Eisenhower or Kaiser, in 1959 Kaiser travelled to Ghana with a counter report to the Preparatory Commission. Kaiser submitted plans with a reduced cost for the Volta River Project to around £130 million; furthermore the potential power output had been raised from 564MW to 768MW.³⁰ Although this decreased price was substantial, Nkrumah's Government still did not have the capacity to solely fund the project and was forced to abandon his politics for the greater development of the country.

Nkrumah openly condemned the West and their colonial activities in Africa. While some of his contemporaries distrusted the concept of borrowing from the West, arguing it contradicted their position of neutrality, Nkrumah believed that he could build international partnerships without becoming victim to further imperialism.³¹ Despite his contemporary critics, Nkrumah was astute to at least consider multilateral donors. To pursue the industrialisation and modernisation goals he had set without them would have been impossible. Therefore this abandonment was not wrong and believing otherwise to begin with was naïve.

Due to his obsession with securing investments for the Volta River Project, Nkrumah has been criticised for allowing industrialisation to replace independence as the basic political objective of his party, thus allowing his African socialism to instead transform paradoxically into a Ghanaian economy reliant on private investments.³² Despite criticism and his anti-imperialist feelings, in 1961 Nkrumah travelled to the U.S to meet with President Kennedy who agreed to release money reserved for the project.³³ This was followed by a

²⁹ K. X. Metzmeier, 'John F Kennedy, Ghana and the Volta River Project', p. 76

³⁰ D. Rooney, *Kwame Nkrumah: Vision and Tragedy*, p. 219

³¹ S. F. Meischer, "Nkrumah's Baby", pp. 341-366, p. 348

³² D. Apter, *Ghana in Transition* (Princeton: Princeton University Press, 1972), p. 357

³³ D. Rooney, *Kwame Nkrumah: Vision and Tragedy*, p. 230

formal signing between the Government of Ghana and Kaiser Aluminium in January 1962, with plans to begin filling the Lake in 1964.³⁴ Nkrumah had secured U.S investment for the Volta River Project in the face of Cold War tensions and through a transition of two Presidents but finally his dream was becoming reality.

For who was Akosombo built?

In 1961 the Government of Ghana in collaboration with the British and U.S Governments, the World Bank and Kaiser established the VRA as a public corporation. VRA was born from the Volta River Development Act, 1961 and declared their duty to “generate electricity by means of the water power of the river Volta.”³⁵ This also handed over all responsibility for the resettlement of people living in the area to be flooded; moreover repayment of loans would be under their control. Essentially this is a very tactful move from the Government of Ghana as they could now decentralise the burden of loan repayments to the VRA; it became the company’s responsibility to make the repayments from their profits, rather than deducting it from Government funds.

Yet similarly to the Government being held indebted to Kaiser, VRA now became indebted to the World Bank. After the first few years of operations, a performance contract was signed between VRA and the World Bank, requiring VRA to ensure that its returns on assets were consistent every financial year.³⁶ Arrangements such as these have sparked a debate on whether VRA is socially responsible or simply having to show that they are, thus fitting with the institutional theory. This dictates that cultural, political and social forces mould an organisations action; such actions are introduced to maintain appearances and legitimacy rather than actually enabling decisions for better outcomes for society.³⁷ As a result of World Bank funding VRA must adhere to their conditions.

³⁴ Ibid, p. 233

³⁵ Government of Ghana, ‘Volta River Development Act, 1961’, Part II, Section 10(a)

³⁶ A. S. Rahaman, S. Lawrence and J. Roper, ‘Social and environmental reporting at the VRA: Insitutionalised legitimacy or legitimation crisis?’, *Critical Perspectives on Accounting* (2004), pp. 35-56, p. 37

³⁷ Ibid, p. 41

Another requirement is the publication of annual reports of any issues, social or environmental, and reviews on the year's power generation, tariffs and other subsidiaries.³⁸ Although these reports can be useful for public or government knowledge, they are an example of tying a developing country into a relationship and commitment with the international economic sphere, which may not always coincide with their individual path to sustainable development. Moreover this does not give the VRA motivation to carry out social responsibilities for the benefit of Ghana or communities living on or around the Volta Lake, they are instead legally bound and arguably capable of doing the bare minimum to appease the World Bank.

Despite initial international trade incentives, Akosombo was also expected to eventually provide universal access to electricity across the country.³⁹ Nkrumah further anticipated that the project could create opportunities for fishing livelihoods in lakeside communities. Fishing and fish farming have now become the primary source of income for those living in communities on the Volta Lake. Ostensibly Nkrumah's Pan-African ideals also played a role in the project; he wanted Akosombo to produce enough hydro-electricity to be able to share across borders.

The Social and Environmental consequences of Akosombo

Construction of Akosombo Dam led to the flooding of the Volta Lake, this began in 1964 and created the largest man-made reservoir in the world by area, comprising of 850,000 hectares. This covers 4% of Ghana's total land mass and so thousands of communities are directly reliant upon its livelihood opportunities.⁴⁰

In creating the Lake it has been estimated that 80,000 people were resettled and displaced.⁴¹ This casts a dark shadow over the glory that Nkrumah had

³⁸ Ibid, p. 49

³⁹ K. Nkrumah, *Africa Must Unite* (London: Mercury Books, 1965), p. 111

⁴⁰ Dedeso Holdings Inc. & Serengeti Capital, *Lake Volta Timber Salvage Project*, p. 3

⁴¹ R. Lawson 'The Volta Resettlement Scheme' *African Affairs*, 67:267, 1968, pp. 124-129, p. 124

hoped for Akosombo and is something that continues to impact lakeside communities today. Within this population were 740, widely scattered communities relying upon agricultural livelihoods.⁴² In addition to the modernisation that the Volta River Project would bring to industry, resettlement was also seen as an opportunity to modernise disparate, rural communities.⁴³ This harbours great intentions but unfortunately the realities of funding and planning meant that the resettlement scheme could not keep up with construction timelines.⁴⁴ Originally it was estimated that £200 per house would be allocated however as construction costs rose, by 1965 an average cost of £330 was taken for the entire housing scheme.⁴⁵ Additionally due to lack of clearing equipment and planning, it was not possible to clear enough land for agricultural development in the new communities, leaving 42,000 acres still to clear at the end of 1965.⁴⁶ Due to many of the houses for displaced citizens being left incomplete, the World Food Programme had to intervene, offering assistance to these communities.⁴⁷ Nkrumah made a statement in 1952 that as a result of the resettlement nobody would be worse-off, however as budgets for compensation continued to be reduced, one can question whether Nkrumah would be able to keep his promise.⁴⁸ In hindsight it seems foolish for Nkrumah to make such a statement before he was fully aware of the budgets and land being made available, however it could be perceived that Nkrumah believed Akosombo would benefit everyone, even those resettled, by bringing electricity to Ghana.

As previously mentioned, Nkrumah initially hoped that Akosombo would provide electricity for the whole of Ghana. However this has not been the case and instead the source that the country most relies upon for electricity generation, is very often inefficient due to drought. In 2015 it was reported that 68% of Ghana's electricity generation comes from hydropower with Akosombo

⁴² Ibid, p. 124

⁴³ S. F. Meischer, & D. Tsikata, 'Hydro Power and the Promise of Modernity', pp. 15-54, p. 13

⁴⁴ Ibid, p. 23

⁴⁵ R. Lawson 'The Volta Resettlement Scheme', pp. 124-129, p. 125

⁴⁶ Ibid, p. 126

⁴⁷ S. F. Meischer, & D. Tsikata, 'Hydro Power and the Promise of Modernity', pp. 15-54, p. 24

⁴⁸ R. Chambers, *The Volta Resettlement Experience*, p. 13

holding a capacity of 1020 MW, 960MW of which are available, and 81% of the population having access.⁴⁹ Even though these statistics are seemingly positive, the reliance this 81% has on hydropower is not sustainable, especially as the dry season causes drought and hydropower cannot be stored. Recent cases of load shedding led to ‘dumsor’ in Ghana, where power outages were scheduled in many cities across the country.

In addition to Akosombo having the ability to become unreliable at times of low rainfall, the Volta Lake itself also hosts a dangerous environment. Forests submerged by the flooding are limiting safe movement on the Volta Lake. The trees have become cured by a lack of oxygen, creating a gravely dangerous scenario for those crossing the Lake. Due to its sheer size, the Lake forms a vital inland water transport system, facilitating the movement of goods from the agricultural North to industrial South and vice-versa. The pathways used by private companies and public transportation and local fishermen are unsafe due to submerged tree stumps.

The Lake created to accommodate for Nkrumah’s Akosombo Dam submerged large tracts of forest, which are now being salvaged in a private enterprise. Similarly to Akosombo this underwater timber salvation holds great potential for development in infrastructure and industry. However the somewhat exogenous ambitions of Dedeso to export the timber and increase profits has an effect on its developmental potentials for Ghana. Moreover the contemporary state of the Government of Ghana is riddled with corruption, this has contributed to a weak ability to implement their constitutional intentions.⁵⁰ Unfortunately this also impacted relationships with outside donors, as the Government cannot always be trusted to act within the best interests of the people or environment. These issues transgress from the Akosombo project to the current underwater timber salvation project.

⁴⁹ S. Gyamfi, M. Modjinou & S. Djordjevic ‘Improving electricity supply security in Ghana: The potential of renewable energy,’ *Renewable and Sustainable Energy Reviews*, 43 (2015), pp. 1035-1045

⁵⁰ C. Malunga & S. H. Holcombe *Endogenous Development*, p. 143

Conclusions

Malunga argues that historically Western ideas, models and frameworks have dominated development projects.⁵¹ However the creation of the Volta River Project, originating from an endogenous perspective begins to challenge this theory. The internal nature of the Akosombo project is vital in contemporary Ghana as many extractive projects, including the underwater salvation, are often at the expense of Ghana's natural resources for the benefit of individual corporations. The increase of Ghanaian development projects for the benefit of Ghana's progression within industry, infrastructure and social aspects such as education are paramount to increased development. Therefore in its ideals and motives, Akosombo continues to serve as an inspiration exemplification for future investment projects.

Although foreign donors, some of whom have continued to influence direction of the VRA had aided the project, the project itself is unique in its origins by and development for wider benefit of Ghana. Akosombo's position in Ghana's development history is significant. It is vital that the contemporary Government of Ghana recall Nkrumah's conduct concerning the pitfalls of foreign investment as they also face exogenous development projects.

⁵¹ Ibid, p. 1

Chapter 3: Deaths on the Volta Lake: The need for intervention

During construction of the Akosombo Dam 850,000 hectares of land were flooded, leaving vast tracts of forest submerged under the Volta Lake.⁵² The land previously harbouring homes, farms and communities was destroyed to accommodate for Nkrumah's hydropower project. Communities were relocated and livelihoods adapted to the new lakeside surroundings. Views of the Volta Lake from the shore are striking as treetops emerge from the water, the only remnants of life in this area before Akosombo. The submerged forests consume around 350,000 hectares, almost half of the total Lake area; some trees rooted 200 feet below water level.⁵³ The issue of the underwater forests may appear detached from wider Ghanaian development however the two are intrinsically linked.

The presence of submerged tree stumps has made movement on the Volta Lake increasingly difficult and extraordinarily dangerous. The frequent occurrence of boating accidents in the Lake has taken hundreds of lives. On a regular basis boats carrying people and goods across the Lake are sunk or compromised due to the existence of these stumps. The lack of safe navigation and sufficient safety equipment are endangering lives of people on the Lake. It is not just the lives of those on and around the Volta Lake that are affected by submerged tree stumps; wider national development is also inhibited. Ghana's dependency on the Lake for inland transportation of goods means that improving the efficiency of navigation will vastly improve infrastructure of the country.

In order to make navigation on the Lake safe and improve the lives of people who rely on fishing, a new initiative to remove the tree stumps from the bottom of the Lake was introduced in 2015 by the Government. This chapter will outline

⁵² D. Rooney, *Kwame Nkrumah: Vision and Tragedy*, p. 233

⁵³ Clark Sustainable Resource Developments, *Salvage Timber from the Volta Lake: A Project by CSR Developments*, Information Brochure, 2010

the necessity for the underwater timber project and the ways in which the stumps at present are hindering further development.

Deaths on the Volta Lake: Boat-Stump collisions

The underwater tree branches are often invisible when on the water, they tear open boats full of passengers and goods, risking lives and inhibiting inland water transport. In 2007 it was reported in the Wall Street Journal that since the Volta Lake was created in 1964, nearly 300 people had died in boat-tree collisions.⁵⁴ Since then many more accidents have occurred, with one as recent as June 2016 taking 25 lives.⁵⁵ Another similar case in 2011 led to the deaths of almost 70 passengers.

As water levels fluctuate with rainy and dry seasons, the submerged forest can become hidden beneath the water. Although spectators regard the submerged trees as a constant danger to those using the Lake, local fishermen and boatmen argue that skill and practise allow them to circumvent the trees.⁵⁶ Evidently the fishermen believe this to be true however it is precarious at the least. Practice and luck alone do not safeguard passengers at risk, injured or killed as a result of these stumps. Additionally it cannot be ascertained that only 'experienced' fishermen or boatmen will be on the Lake carrying passengers and so this is simply not a justifiable practicality. The image below shows a photograph taken at Kpando in the Volta Region from the shore.

⁵⁴ M. M. Phillips, 'A Man has a plan to harvest a forest in Ghanaian Lake', *Wall Street Journal*

⁵⁵ S Agbai 'Curbing the perennial Volta Lake Disaster calls for concerted efforts', Modern Ghana, <https://www.modernghana.com/news/697268/curbing-the-perennial-volta-lake-disaster-calls-for-concerte.html> June 2016

⁵⁶ O. Kuma, pers. comm. Kpando, 16 February 2017



Outlines of tree stumps protruding through the waters surface are conspicuous. This emphasises and visualises the concern of just how many proximate trees remain hidden.

It is not solely the submerged forests that are causing accidents on the Volta Lake. The lack of life jackets and wider safety measures are also responsible, collectively these issues are limiting safe travel across the Lake.⁵⁷ The concerning lack of safety equipment on transport vessels is, alongside collision with stumps, one of the most easily avoided yet prominent causes of death on the Lake. At present life jackets are expensive and provided by neither private boat owners nor the responsible Government subsidiaries, such as the Maritime Authority. Moreover there have been widespread cases of life jackets being stolen due to their high value.⁵⁸ It is highly possible that with some closer monitoring from the Maritime Authority officers, for example, this theft could be prevented and punished. The shortage of life jackets is risking the lives of passengers and with the dangers posed by the submerged tree stumps; they are needed more than

⁵⁷ N. Boateng-Lawrence, *Underwater timber harvesting on the Volta Lake: Implications for the environment and transportation* World Maritime University, 2012, p. 17

⁵⁸ W. Ackon, pers. comm. Naval Offices, Kpando, 16 February 2017

ever. This concern will form part of the later recommendations to be made in this paper.

Another cause for trepidation is overloading, which has again been causing boats to capsize.⁵⁹ The practice of overloading boats with passengers exemplifies all safety issues faced on the Lake. In an attempt to increase profits, boat operators over load vessels with passengers and if it is compromised by hitting a tree stump, there are not sufficient life jackets on board. It is clear that the removal of tree stumps will not eradicate all causes of death on the Lake, however it will significantly decrease the probability of capsizing.

As a result of a lack of oxygen in the water, tree stumps in the Volta Lake have been cured. Meaning that the trees have not rotted and are strong and sturdy, only exacerbating danger for those on the Lake. The types of wood found in the Lake consist of mahogany, ebony, wawa, odum and teak, all highly valuable and distinctively dense timber hardwoods.⁶⁰ Fishing boats on the Volta Lake are open wooden canoes, these are insecure in storms and when confronted with a tree stump, they simply crack in two pieces. In addition to punching holes in the vessels themselves, stumps that lie just below the waters surface catch on fishing nets. This environment not only poses risks to the lives of the fishermen but also to their livelihoods, costing them money to repair nets and loss of earnings.

Undoubtedly the potential for this project to save lives on the Volta Lake is why the Government has encouraged the underwater timber salvation. The project could be overwhelmingly positive and helpful in aiding wider infrastructural development projects. The accidents that appear frequently in Ghanaian news have cost the lives of hundreds. Dedeso's project does not intend to directly alleviate issues surrounding damaged fishnets or overloading. Although at this early stage the project is not participating in chartering navigable routes on the Lake, many lakeside communities will benefit from the planned timber harvest as it stands, in terms of safety on the water. By removing

⁵⁹ Ibid

⁶⁰ N. Boateng-Lawrence, *Underwater timber harvesting on the Volta Lake*, p. 16

tree stumps fewer fishing nets and boats will be damaged and there will be a decline in boat-stump collisions. Therefore, even without the later chartering projects some lakeside communities will be alleviated of the risks brought by stumps.

The Initial Timber Salvation Project: Its Creation and Collapse

In 2006 the Government of Ghana granted a 25-year concession to a Canadian company CSRD, to begin salvaging timber from the Volta Lake.⁶¹ Primarily it was estimated that each hardwood tree excavated could be worth between US\$ 1,500-2,500 with a total harvest value of around US\$ 3 billion.⁶² With such phenomenal potential returns on their side, CSRD had no problem attracting investors and initiating the underwater timber salvation, however securing local support proved impossible. Despite beginning the underwater harvest in 2011, in 2013 CSRD removed their workers from Ghana and the project was ceased.⁶³ CSRD had not consulted with local communities and so their project was protested and essentially run out of the country by local fishermen. These fishermen were concerned for their fish yields following rumours that fish would be disrupted by the underwater timber salvation and would migrate.⁶⁴ Environmental reports to be discussed later will show that there are some misgivings surrounding this issue. Yet it was not the environmental issues that fundamentally led to their downfall, instead it was the lack of consideration that CSRD took for the local communities.⁶⁵ Their dismissal of local concerns and inability to explain procedures resulted in the project being blocked. This is a complicated situation, which ended in extremely violent protests, something that cannot be condoned. Mr Dunn was Founding CEO of

⁶¹ Clark Sustainable Resource Developments, *Salvage Timber from the Volta Lake: A Project by CSR Developments*, Information Brochure, 2010

⁶² G. York, 'Will Joe Clark's tree project sink Ghana's fishermen' *The Globe and Mail*, <http://www.theglobeandmail.com/news/world/will-joe-clarks-tree-project-sink-ghanas-fishermen/article4282323/?page=all>, August 2009

⁶³ Ghana Web, 'Company cutting logs in the Volta Lake attacked by locals; fold up' <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Company-cutting-logs-in-Volta-Lake-attacked-by-locals-fold-up-324347>, September 2014

⁶⁴ Ghana Web, 'Stakeholder worried about total removal of tree stumps from Volta Lake' <http://www.ghanaweb.com/GhanaHomePage/regional/Stakeholder-worried-about-total-removal-of-tree-stumps-from-Volta-Lake-461608>, August 2016

⁶⁵ W. Dunn, pers. comm. Leiden, 9 May 2017

CSRD before becoming a major shareholder and integral part of Dedeso. Mr. Dunn has stated that despite CSRD's high-quality work within a technical capacity, they "were of the opinion that they had zero responsibility to engage with communities, other than to tell the fishermen where to remove their nets."⁶⁶

As Dedeso renew the concession to salvage timber in the Volta Lake, it is imperative that they take heed of the downfalls of CSRD to establish positive local relations and create a viable, sustainable project.

Dedeso's Development of the Timber Salvation

Unlike the media fanfare that surrounded the CSRD project, Dedeso have adopted the underwater timber salvation in a low-profile fashion. This is aided by the fact that they simply absorbed conditions of the previous concession assigned to CSRD. Dedeso is a Ghanaian company, working in collaboration with the British-Ghanaian investment firm, Serengeti Capital among others. Proceedings of the project are under the control of Mr. Pianim, a Dutch-Ghanaian citizen who believes that his Ghanaian nationality has influenced the smooth progression thus far.⁶⁷ Mr. Pianim seems to believe that his Ghanaian nationality will allow his project to be classed as endogenous, however in all characteristics other than this, it remains predominately exogenous. This can be seen in the fact that profits will not contribute to the Ghanaian economy, instead any benefits to Ghana in terms of deforestation rates and safety on the Lake, are somewhat unintended by-products. So despite his Ghanaian nationality, Mr Pianim's project should remain to be labelled as exogenous.

The underwater timber salvation itself will involve GPS systems, placed on a barge, to allow the locating of submerged timber, then depending on the diameter of the stump it will be cut at the base of the trunk and removed.⁶⁸ The removed stumps will be transported to a processing mill, ready to be sold on the

⁶⁶ Ibid

⁶⁷ E. Pianim, pers. comm. Accra, 22 February 2017

⁶⁸ Ibid

international timber market. Similarly to CSRD, Dedeso have a 20-year concession on the project and are awaiting the final environmental reports before beginning the underwater timber salvation. It has been estimated that to remove every tree in the Volta Lake would take 200 years of working at full capacity. Therefore Dedeso have focused their attention on simply removing trees with the largest diameter, to maximise profit, this will result in around 2% of total stumps in the Lake being removed.⁶⁹

Similarly to the Volta River Project, there are pitfalls of accepting exogenous projects into a developing country. The Maritime Authority argues that the project is necessary for wider development; however understands that the Government of Ghana does not have the funds to implement the project internally.⁷⁰ Yet in allowing Dedeso to complete the project, the Government is sacrificing an opportunity to further influence development. Dedeso's role is not to increase infrastructural development through clearing the Volta Lake; their interests lie in the timber market. Mr. Dunn understands the potential of the project in serving wider infrastructural change in Ghana but admits that this is not within the realm of their underwater timber salvation.⁷¹ Although Dedeso are aware of the social benefits this project could have concerning local communities inhibited by tree stumps, they are not responsible for solving these problems unless they coincidentally comply with their wider plans. Furthermore the Government is somewhat limited in what they can demand or expect, fundamentally this is the downfall of seeking private investment. Dedeso have committed to working with the Government in locating and supporting other investors to carry out future development projects but have made it clear that they do not solely have the resources to do so.⁷²

The Maritime Authority

In addition to granting the concession to salvage tree stumps, the Government of Ghana has taken some in-house steps to diminish the occurrence

⁶⁹ Ibid

⁷⁰ A. A. Akanteyam, pers. comm.. Ghana Maritime Authority, Accra, 10 February 2017

⁷¹ W. Dunn, pers. comm. Leiden, 9 May 2017

⁷² Ibid

of grave accidents on the Lake. The Maritime Authority defines itself to hold a regulatory role in safety issues on the Volta Lake.⁷³ Mr Akanteyam, Director of Technical Services at the Authority recognised that the foremost cause of accidents on the Lake are tree stumps. Furthermore in conjunction with the aforementioned criticism of experienced boatmen claiming to successfully navigate the Lake, Mr Akanteyam highlighted that often accidents occur due to adverse weather conditions, which force the boats into proximate tree stumps.⁷⁴

In 2006 the Maritime Authority collaborated with the Ghana Navy to deploy naval personnel at various checkpoints along the Lake, with the task of enforcing safety standards.⁷⁵ These officers are responsible for patrolling and monitoring overloading and drunken boat operators.⁷⁶ Additionally they watch out for illegal fishing practices, with bamboo or unregulated mesh nets.⁷⁷ It could be argued that as accidents on the Lake are still occurring as a result of overloading, the naval personnel are not performing their duties sufficiently. Agbai has argued this vehemently, stating there is no evidence that any of the services described by the Maritime Authority have been delivered.⁷⁸

Malunga further explains that globalisation and the rise of exogenous donors in development are some causes of lack of implementation of laws and responsibilities in developing African countries. This argument seems fitting as it draws on the influences that exogenous donors have had within Ghana's development history with partners such as the World Bank and Kaiser Aluminium. This highlights how exogenous projects can influence wider attitudes in government and policymaking, in the worst example discouraging

⁷³ A. A. Akanteyam, pers. comm.. Ghana Maritime Authority, Accra, 10 February 2017

⁷⁴ Ibid

⁷⁵ Ghana Maritime Authority, 'Accident on Lake Volta Report: Update on Recommendations of previous Committees of inquiry on accidents on the Volta Lake' *Accident Report*, 2010

⁷⁶ Ibid

⁷⁷ Ibid

⁷⁸ S. Agbai, 'Curbing the perennial Volta Lake Disaster calls for concerted efforts'

government's from properly upholding their responsibilities to achieve sustainable development.⁷⁹

The VRA: Subsidiaries and Safety

The VLTC is a subsidiary of the VRA, is responsible for the transport of goods and people across the Volta Lake. Ostensibly this is not the only method people use to cross the Lake as we have established that smaller, locally run ferries are also used to carry people. Annually they transport 88,000 tons of cargo and a 300-passenger vessel, which moves between Akosombo and Yeji.⁸⁰ The VLTC boldly asserted they “never hit the tree stumps because of GPS,” which allows them to circumvent stumps and travel on navigable routes.⁸¹ Despite the fact that GPS assists in navigating the Lake, VLTC assertions that the removal of stumps would not impact their ability to transport goods and people across the Lake is inaccurate. To remove some tree stumps and charter routes across the Lake would undoubtedly lead to a more efficient service and decrease risks. The significance of this inland water service is overwhelming when considering the outreach it has. The expanse of the Lake covers both Northern and Southern regions of Ghana, with goods such as lint cotton and shea nuts being shipped by VLTC from the agricultural North.⁸² Along the way, produce such as yam and cassava are transported from agricultural lakeside communities to be taken to food markets in the southern towns.⁸³ Almost all of the villages along the Lake are market centres, utilising this inland transport system to import and export goods.

As established in the previous chapter the VRA was founded to generate hydro-electricity from the Akosombo Dam, organise the resettlement of communities ahead of the creation of the Volta Lake and make repayments on investment loans. The VRA also worked alongside the Government of Ghana to

⁷⁹ C. Malunga & S. H. Holcombe *Endogenous Development*, p. 143

⁸⁰ Volta River Authority, 'Volta Lake Transport', http://www.vra.com/subsidiaries/volta_lake_transport.php

⁸¹ Volta Lake Transport Company, pers. comms. 16 February 2017

⁸² Ibid

⁸³ N. Boateng-Lawrence 'Underwater timber harvesting on the Volta Lake, p. 16

approve the salvage of underwater timber in the Volta Lake as in some capacities the Lake legally falls under their jurisdiction. The VRA ascertains that their responsibility over the Volta Lake is exclusive to the generation of hydropower from Akosombo.⁸⁴ However the widespread impacts of creating the Volta Lake, a direct result of the construction of Akosombo, used to generate hydropower, begs to question whether VRA can draw such a finite line, especially as so many people are injured or killed on the Lake each year. Officially the VRA contends that they cannot take responsibility for people moving on the Volta Lake. Considering the vast surface area of the Lake in comparison to the location of VRA offices in Akosombo, this is a legitimate contention. However it seems that as a component of VRA social responsibility they should attempt to educate those using the Lake. As it seems the VRA do not have a legal responsibility, they instead have a moral one to keep people safe on the Volta Lake. Their prominent position in Ghanaian society means that any suggestions or awareness they attempt to raise would receive national attention; VRA should take advantage of this to educate those using the Lake and prevent further deaths.

Conclusions

The necessity for an underwater timber salvation to remove hazardous tree stumps in the Volta Lake is obvious. The grave accidents causing over 300 deaths due to boat-stump collisions is reason enough to endorse the project. It is unfortunate that the private enterprise does not have the capacity to finally solve the problems facing navigation on the Lake. However with the collaboration of Dedeso and the Government of Ghana with its subsidiaries, it is entirely possible that charting navigable routes on the Volta Lake can transpire. It is vital that the Government and subsidiaries maintain their interest in the project to ensure that Ghana also benefits from the underwater timber harvest. It is undoubted that the project is needed in Ghana; instead it is how the project is carried out that requires further analysis. This chapter has outlined the ways in which the stumps currently are inhibiting development and safety for lakeside communities, emphasising the need for this project.

⁸⁴ Volta Lake Transport Company, pers. comms. January 2017

Chapter 4: The Implications of Intervention

In virtually all its uses the term development implies positive change or progress, but within the context of underwater timber salvation in the Volta Lake this can be somewhat contested. Although this project has the potential to enhance development in Ghana, there are some limitations and public concerns that must be debated. These matters concern the environment, local communities and the sustainable development of Ghana.

Within the framework of the timber salvation project, Dedeso has committed to work within the United Nations Sustainable Development Goals (SDG). These objectives including, “responsible consumption and production” and “climate action,” are targets to be met to ensure that sustainable development is achieved globally.⁸⁵ By aligning with these targets Dedeso are highlighting their commitment to an equal and prosperous development for Ghana. This is somewhat problematic for Dedeso, although their project will ease deforestation rates their exogenous private enterprise and profits contradict this. For this reason it is important that this chapter outlines the implications of the underwater timber salvation on the environment, local communities and the Ghanaian economy.

Deforestation or Reforestation

Ghana has one of the highest deforestation rates in the World; between 1990-2015 26% of the entire forest coverage was destroyed.⁸⁶ This equates to almost 135,000 hectares lost annually.⁸⁷ Not only is this detrimental to the environment but also to poorer communities that continue to rely upon charcoal and wood for cooking. Around 53% of rural households rely upon these materials for cooking; even in urban areas this percentage is as high as 30%.⁸⁸ Evidently the time to

⁸⁵ United Nations ‘Sustainable Development Goals’

<http://www.un.org/sustainabledevelopment/sustainable-development-goals/>, May 2017

⁸⁶ N. Boateng-Lawrence, ‘Underwater timber harvesting on the Volta Lake’, p. 25

⁸⁷ Ibid, p. 25

⁸⁸ P. A. Kwakwal, E. D. Wiafe & H. Alhassan, ‘Households Energy choice in Ghana’, *Journal of Empirical Economics*, vol. 1, no. 3 (2013), pp. 96-103, p. 97

reverse deforestation is Ghana has already passed, the issue is now extremely urgent and is impacting quality of life for poorer communities.

The wider, global impacts of this level of deforestation are profound. Deforestation has been a major contributor to global warming, leading the emission of greenhouse gases.⁸⁹ Forests store a large amount of carbon dioxide and as they are logged this is released into the atmosphere.⁹⁰ Needless to say these high levels of deforestation also decrease biodiversity, eventually having the potential to force species into extinction. The saving grace of Dedeso's project in the Volta Lake is that in its extraction of timber, it will not exacerbate deforestation rates. Although this does not necessarily aid Ghana's crisis, it does mean, albeit extractive, that this project is not causing further detriment to Ghana's forests.

Regrettably Ghana faces an illegal logging crisis, which worsens the already alarming deforestation rates. Ghana Web frequently reports on this issue and has criticised Government inaction stating, "The number of trees illegally cut down yearly is way beyond the number of culprits arrested."⁹¹ Moreover the article continues to pressure the Government concerning both illegal and legal logging activities as they argue, "no proper reforestation activities are being implemented," causing irreparable damage to the environment.⁹² These criticisms have raised questions amongst citizens and legal loggers, primarily whether the legalities of logging are meant to protect the environment or instead the logging corporations and benefactors in Government. Ghana Web has denounced the Government, labelling it "desperate" for foreign investments, despite the consequences often being the extraction of destruction of Ghana's natural resources.⁹³

⁸⁹ N. Boateng-Lawrence, *'Underwater timber harvesting on the Volta Lake*, p. 26

⁹⁰ Ibid, p. 25

⁹¹ Ghana Web, 'Ghana has Highest Rate of Deforestation'

<http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Ghana-has-the-Highest-Rate-of-Deforestation-212616>, July 2011

⁹² Ibid

⁹³ Ibid

Laws such as the Timber Resources Management Act (TRMA) 1997, have been implemented in an attempt to reverse and control deforestation. Under the Act logging operators can only harvest trees if they follow regulations; evidently this has been ineffective, as deforestation has remained a prominent problem since 1997. Policy makers claim the lack of enforcement and failure to monitor TRMA regulations are to blame for continued deforestation.⁹⁴ This theme continues from the previous chapter that discussed lack of expertise and money, which prevents the Maritime Authority from also preventing illegal activity in the Volta Lake. Lack of enforcement of the law is proving detriment to the environment and impeding further development in Ghana. However it is not only illegal practices that are increasing deforestation, the Government's eagerness to encourage private logging enterprises without proper consideration of reforestation or sustainable development have proved equally catastrophic.

The exclusionist theory posits that private companies will adopt voluntary environmental restraints as consumers increasingly begin to value environmental impacts.⁹⁵ This is a wonderful sentiment, but not something that the government of a nation with one of the highest deforestation rates can rely upon. Similarly to the institutional theory, which again poses that cultural and social pressures will encourage affirmative action, are too placid for the urgency that faces Ghana and its deforestation rate. It is simply illogical for the Government of Ghana to wait patiently for private firms to voluntarily adopt reforestation practices, or to wait for the international timber market to demand change. The Constitution of Ghana states that appropriate measures will be taken to "protect and safeguard the national environment" and will do so by also seeking cooperation with other states and bodies for the wider benefit of mankind.⁹⁶ As a result of this the Government must take further steps to promote reforestation and enforce current laws surrounding illegal logging.

⁹⁴ K. O. Kufuor, 'New Institutional Economics and the Failure of Sustainable Forestry in Ghana' *Natural Resources Journal*, vol. 44, 2006, pp. 743-760 p. 744

⁹⁵ *Ibid*, p. 758

⁹⁶ The Constitution of the Republic of Ghana, 1992, Chapter 6: The Directive Principles of State Policy, Section 36 (9)

Submerged timber in the Volta Lake pose both a challenge and an opportunity. By salvaging underwater timber, the Government can endorse the logging project knowing that deforestation rates will not worsen. High value, hardwood timber species such as wawa, ebony and odum are plentiful in this submerged forest. The specific underwater environment and lack of oxygen has cured the wood, meaning the quality of the wood has not decreased, making it ideal for the international timber market. Essentially it is hoped that by taking supplies from the Lake, the rate of deforestation on land will decrease.⁹⁷ The underwater timber salvation will reduce global deforestation by removing timber and bringing it to the market without killing a single, living tree, fundamentally a bilateral success.

The severe deforestation rates and frequency of accidents caused by the submerged stumps make the project an obvious step for Ghana's development. However debates surrounding fish yields, fishing practices and the exportation of the salvaged timber raise some cause for trepidation. Moreover benefits of salvaging underwater timber in lieu of on land timber will only be successful if the Government of Ghana monitors illegal logging more closely.

The fish will leave, won't they?

Resistance to the underwater timber salvation is predominately divided into two perceptions; first that all tree stumps will be removed from the Lake and second that this will result in a dramatic change to fish habitats and decrease fish yields. Again these issues are entangled within obstacles surrounding the prevention of illegal fishing practices that are detrimental to the environment. A plethora of environmental studies have been conducted to warrant the project, however as the Government of Ghana has not passed the Right to Information (RTI) Bill, these are unavailable to the public. This does not create an environment where those affected by the timber project can feel certain that Dedeso's assurances are legitimate.

⁹⁷ E. Kwablah 'Treasures of the Volta' *Business Times Magazine*, January 2010

Under CSRD the project was forcibly abandoned due to violent protests in 2013. CSRD have taken responsibility for their inability to collaborate and consult with local communities to inform them of the exact implications of the project.⁹⁸ This mistrust and breakdown of communications created false and exaggerated information being shared across lakeside communities, causing panic and eventually protests. The abovementioned concerns centred on the number of tree stumps being removed and subsequent disruption to be caused to fish habitats.

During the early stages of the underwater timber salvation in 2006 many reports believed that all submerged tree stumps in the Volta Lake were to be removed. This is not only false but also impossible. According to Dedeso there are around 30 million trees in the Lake with each removal taking 3-5 minutes, this would mean that to remove all the stumps would take working at full capacity for 200 years.⁹⁹ Removal of tree stumps has led environmentalists to disagree on the impact this will have on fish yields. It is unambiguous that if all the tree stumps were to be removed then the fish habitats would be negatively impacted; this is due to the fact that algae formed on the trees serve as a food source for the fish.¹⁰⁰ However not all the tree stumps are being removed and so this environmental assessment is not relevant. In addition, tree stumps being removed will be lumbered at the trunk, leaving the base of the trunk intact and allowing algae to continue to grow. Only 2% of the submerged trees in the Lake will be removed, meaning that fish habitats will not be as dramatically altered as primarily anticipated.¹⁰¹ A theory has been proposed that as the Volta Lake was only created in 1960, the migration patterns of the fish are not inherent; instead that fish previously adapted to the Lake environment and would continue to do so as the environment changes. Although this paper does not hope to understand migration patterns of fish in the Volta Lake, it does seem that many

⁹⁸ W. Dunn, pers. comm. Leiden, 9 May 2017

⁹⁹ E. Pianim, pers. comm. Accra, 22 February 2017

¹⁰⁰ Ghana Web, 'Stakeholder worried about total removal of tree stumps from Volta Lake' <http://www.ghanaweb.com/GhanaHomePage/regional/Stakeholder-worried-about-total-removal-of-tree-stumps-from-Volta-Lake-461608>, August 2016

¹⁰¹ E. Pianim, pers. comm. Accra, 22 February 2017

environmental reports are inconsistent in how fish may be impacted by the project. Mr Pianim has boldly stated that the negative environmental impacts on the fish caused by the underwater timber salvation, were rumours spread by bamboo fishermen to ensure the project was blocked. Mr. Pianim has also claimed that under CSRD's project, environmental impact analyses display an increase in fish stocks as a result of illegal fishing practices being monitored closely within the catchment areas of the logging process.¹⁰²

In recent years there has been an increase in Illegal, Unreported and Unregulated (IUU) fishing acts on the Volta Lake. One particularly damaging practice is bamboo fishing. This method utilises bamboo sticks punctured with holes being lowered to the water, trapping the larger and often pregnant fish. As the fish are unable to swim backwards they are trapped, this prohibits natural reproduction cycle in the Lake.¹⁰³ Regardless of the underwater timber salvation these IUU fishing practices are destroying fish yields that so many lakeside communities rely upon. Bamboo fishermen are amongst the group of people most opposed to the project because they tie their bamboo traps to stumps. Not only is this illegal but it is also very dangerous for the fishermen. Mr Pianim has dismissed the fishermen's grievances, stating firstly that the practices are illegal and secondly that many fishermen were misled by rumours.¹⁰⁴ It is wrong for Mr. Pianim to simply debunk this because the actions are illegal, instead he and Dedeso should be working to educate and prevent the practices while improving dialogues with these fishermen.

Before the underwater timber salvation could begin, both CSRD and Dedeso had to obtain environmental reports from Environmental Protection Agency (EPA). Dedeso are currently awaiting EPA approval before entering the water.¹⁰⁵ Ghana has not passed the RTI Bill, and so any environmental report issued to Dedeso will not be made available to the public. This accounts for some of the inconsistencies in environmental reports thus far, as the true implications

¹⁰² Ibid

¹⁰³ N. Boateng-Lawrence, *Underwater timber harvesting on the Volta Lake*, p. 25

¹⁰⁴ E. Pianim, pers. comm. Accra, 22 February 2017

¹⁰⁵ Ibid

analysed by the Government are still unknown. It is assumed that as Dedeso are preparing to carry out the project, the EPA report will not be making assertions to stop this, however it may shed light on impacts that will remain unknown to wider society. It will be later recommended in further detail that the Government of Ghana pass the RTI Bill to ensure that those affected by the project properly understand any environmental issues that will correspond.

Local opinions on the project are also mixed, some fishermen are in dispute as to whether they support or oppose the project. As previously mentioned it is mainly bamboo fishermen who protested the underwater timber salvation as they tie their nets to the stumps. However some fishermen have come forward to support the project. Some feel burdened by the risks posed to themselves and their boats by the stumps and argue that they catch on fishing nets, causing damage and inconsistent yields.¹⁰⁶ The expense of purchasing and repairing regulation nets is one reason why illegal practices become commonplace. Dissimilarly to CSR's haphazard approach to community relations and communication, Dedeso have committed to work closely with lakeside communities to prevent further protests. Dedeso claim to be collaborating with the Canoe Fishermen Association, as they believe the only way to make a success of their project is with the support of everybody; "the only way you can carry people with you is if they are benefiting from a project as well."¹⁰⁷ Considering the peaceful progression thus far, it can be established that Dedeso have held their promise to build community relations. However a lack of violent protests does not necessarily equate to support for the project. Still there are fishermen in the Volta Region who oppose the project, maintaining the argument that, "the fish will leave." Interestingly in the lakeside town of Kpando where fishermen opposed the project, the Assembly Woman supported it, believing that the stumps were posing a grave danger to her community.¹⁰⁸ Mrs. Kuma claimed

¹⁰⁶ York, G., 'Will Joe Clark's tree project sink Ghana's fishermen' The Globe and Mail, <http://www.theglobeandmail.com/news/world/will-joe-clarks-tree-project-sink-ghanas-fishermen/article4282323/?page=all>, August 2009

¹⁰⁷ E. Piani, pers. comm. Accra, 22 February 2017

¹⁰⁸ O. Kuma, pers. comm. Kpando, 16 February 2017

that since CSRD had removed some of the stumps, accidents had decreased.¹⁰⁹ It seems that Dedeso still have some work to do before they can win the support of local communities, regardless of their EPA reports.

Timber exports

Ghana's main exports comprise of gold, cocoa beans and timber, all of which are high value products on the international market.¹¹⁰ In the year 2000 Ghana's timber accounted for 11% of total export earnings. With around 2 million people depending on Ghana's forests for either collecting wood for charcoal or carving-centred livelihoods, the importance of the lumber market is indisputable.¹¹¹ This dependency can also account for why illegal logging is so prominent and why deforestation is occurring at such a quick rate. Illegal logging has taken a devastating toll on Ghana's timber exports, as these methods do not adopt reforestation practices meaning there is simply less available to export.

As previously mentioned, the underwater timber salvation project has been estimated to be worth around US\$ 3 billion.¹¹² Under the Forestry Commission Trees and Timber Decree 1974, Dedeso are obligated to pay levies for any stumps extracted and sold on the international market. Export levies vary on the species and quality of the material being exported, for example if it is processed or dried. In this instance, all timber will be processed in Ghana before exportation.¹¹³ This Act lists various species of timber found in Ghana and their associated levy, for example processed odum has a levy of 15%.¹¹⁴

Dedeso and the Government of Ghana have arranged that only levies will be paid in return for the underwater timber salvation. Furthermore all of the timber

¹⁰⁹ Ibid

¹¹⁰ Trading Economics, 'Ghana Exports' <http://www.tradingeconomics.com/ghana/exports> (2017)

¹¹¹ The Ghana Export Promotion Council, 'The export of timber from Ghana' <http://www.gepcghana.com/timber.php> (2017)

¹¹² G. York 'Will Joe Clark's tree project sink Ghana's fishermen' The Globe and Mail, <http://www.theglobeandmail.com/news/world/will-joe-clarks-tree-project-sink-ghanas-fishermen/article4282323/?page=all> (August 2009)

¹¹³ Government of Ghana, 'Trees and Timber Decree 1974' Section 15A, Schedules

¹¹⁴ Ibid

will be sold directly to the international market, meaning Ghana will not have an opportunity to make any profit for itself. Mr. Pianim simply conveys that this is supply and demand and if market demand were to increase in Ghana, he would be glad to participate.¹¹⁵ This means that besides the levies, Ghana will not financially benefit from the highly valuable resources being extracted. This draws comparison to neo-colonial activity and the question of moral obligations for extraction companies in developing countries. Nkrumah believed that neo-colonialism increased exploitation in lieu of development, thus increasing the disparity between wealthy and impoverished countries in the World.¹¹⁶ Evidently the extraction of natural materials for the sole profit of one foreign private entity could be considered neo-colonial. Mr. Pianim has argued the opposite; “natural resources are not sufficient for development...the Government can participate or they can choose not to participate.” This argument of participation is critical within this thesis as it avoids the moral obligations of exogenous investors and host Governments. The Government did not have the funds to carry out such a large project although it is necessary to increase infrastructure and prevent further accidents on the Volta Lake. Dedeso provided a solution, however the agreement of solely paying levies and exporting the timber out of Ghana is not beneficial to the host country. Consequently Mr Pianim’s argument of ‘participate or don’t’ is a very simplified version of the dilemma facing the Government of Ghana. It is evident that the previous Government under the National Democratic Congress (NDC) recognised an opportunity to profit from the levies but failed to leverage a deal that could have substantially benefitted the country by incorporating profit sharing.

Conclusions

Implications of the underwater timber salvation are vast, covering issues of deforestation, neo-colonialism and the Government’s law enforcement inabilities. Dedeso have followed the regulations set by the Government of Ghana to ensure environmental protection and company-community relations, yet it is

¹¹⁵ E. Pianim, pers. comm. Accra, 22 February 2017

¹¹⁶ K. Nkrumah, *Neo Colonialism, The Last Stage of Imperialism* (London: Panaf, 1965), p. 5

the quality of these Government-set regulations that must also be questioned. This will be impossible without the passing of the RTI Bill. It seems that Dedeso are going above and beyond to ensure their project is a success, even if it is for their own profitable gain. If the underwater timber salvation is to serve as an example and inspiration for further development projects on the Volta Lake, there must be a precedent established by the Government to guarantee that all projects will wholly benefit the people and development of Ghana.

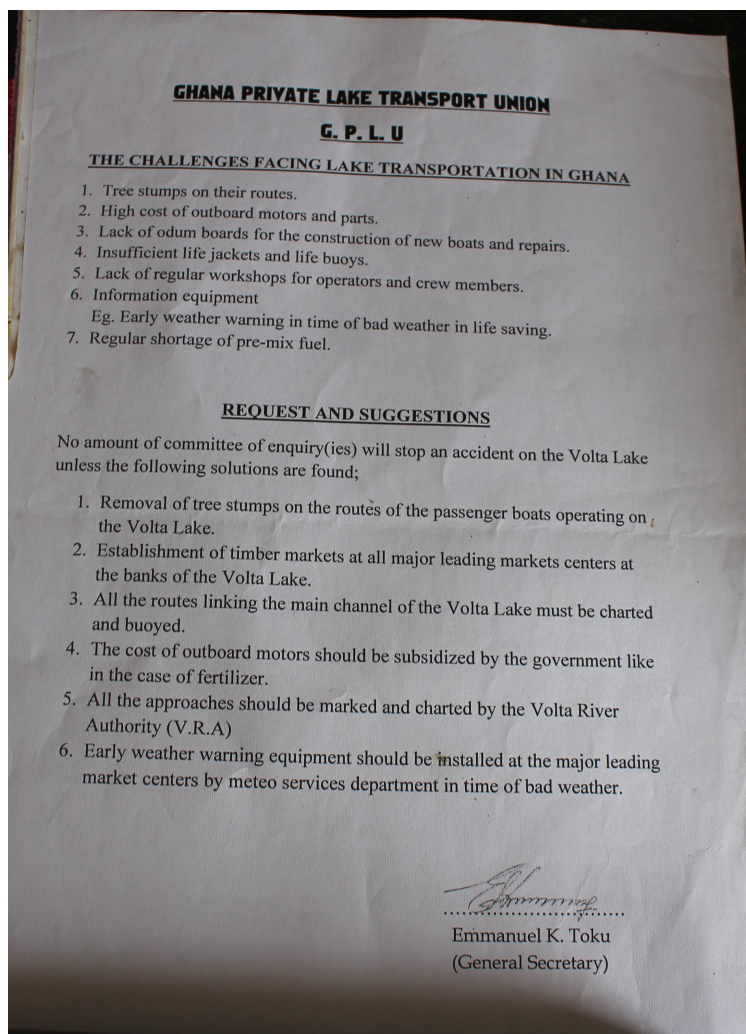
Chapter 5: Recommendations and Conclusions for enhancing the lives of people around the Volta Lake

The intention of this paper was to outline and evaluate how the underwater timber salvation project could serve to enhance lives in lakeside communities and be used to develop inland water transportation across Ghana. Succeeding the evaluation of the necessity of the project and the implications facing its progression, recommendations for how to secure the potential of this project must be made. These recommendations have been formulated from the research put forward in this paper and aim to correspond with the current New Patriotic Party (NPP) policies. Considering this, the recommendations are not meant to be elaborate, costly or outside the realms of what have previously been promised by the Government, their subsidiaries and Dedeso. These are not unrealistic goals for the new NPP Government to achieve within their time in office.

The recommendations will be divided into 3 sections. First centring on ensuring safety on the Lake with recommendations that are directed at the local level. Second the focus will shift to Dedeso and what they can do to ensure that their project can indeed become a catalyst for further infrastructural developments and finally recommendations directed to the Government of Ghana.

Recommendation 1: Increase Safety on the Volta Lake

To continue with the vehemently posed case running throughout this paper, increasing safety on the Volta Lake is essential. The need to protect fishermen and passengers not only from the submerged tree stumps but also from lack of safety measures taken by boat operators is urgent. On a site visit to Kpando in the Volta Region, Naval Officer Mr. Acton was keen to express his concerns after dedicating several years petitioning for safety reforms. The image below is a document sent by Mr. Acton in 1995 to the Government of Ghana, outlining recommendations to ensure the safety of those working on the Lake and the provision of much needed equipment to enable the naval personnel to carry out rescue missions.



As shown in the above document, the presence of tree stumps is the foremost challenge faced by the lakeside officers. Perhaps more concerning is the fact that these recommendations were made in 1995 and since then there have been no efforts to address or rectify these grievances. Although this problem is being somewhat addressed with Dedeso's project, their commitment is to remove only 2% of the stumps and so further chartering lies with other future investors.¹¹⁷ It is clear that many of the challenges outlined in this document should have been resolved since 1995, but instead they have been ignored. The Government and Maritime Authority have ignored these simple requests. This is not to deny the good work already done, it is extremely positive that weather warnings are issued to the lakeside communities and the process of underwater timber harvesting is beginning. Despite this Mr. Acton and his Naval Officers in Kpando

¹¹⁷ E. Pianim, pers. comm. Accra, 22 February 2017

are not in possession of a rescue boat.¹¹⁸ This is extremely detrimental and as long as this basic necessity is lacking, any other recommendations or reforms will be ineffective. In September 2006 the Maritime Authority took the initiative to deploy naval personnel at various lakeside locations to safeguard lives.¹¹⁹ Although this is a great accomplishment, their primary tasks cannot be achieved. Without rescue boats the officers cannot act efficiently in times of crisis, moreover they cannot patrol the waters to prevent capsizing. This is not only dangerous and irresponsible; it is also a waste of resources for the Government of Ghana; naval personnel are salaried to perform tasks that they do not have the simple resources to undertake. Ostensibly the first recommendation is that every naval office positioned on the Volta Lake is equipped with a rescue boat. In addition to the safety benefits of acquiring a rescue boat, the naval personnel could also monitor more closely any illegal fishing practices occurring on the Lake. As mentioned in Chapter 3, illegal practices such as bamboo fishing are destroying fish yields in the Volta Lake and this has the potential to sabotage the environment and livelihoods.¹²⁰ As fishing is the foremost livelihood for lakeside communities, its detriment would be devastating.¹²¹ Consequently, the addition of rescue boats to the naval offices in lakeside communities would be a collective victory.

The second issue to be addressed concerning lakeside safety is more complex. As previously discussed the lack of lifejackets on board passenger ferries has been the cause of many deaths on the Lake. It would appear that simply providing more lifejackets to passengers would solve this problem and lives would be saved.¹²² Unfortunately the Government in the past has supplied life jackets and life buoys to passenger ferries but they have been stolen due to their high value. At this point it seems that if the Government were to administer

¹¹⁸ W. Ackon, pers. comm. Naval Offices, Kpando, 16 February 2017

¹¹⁹ Ghana Maritime Authority 'Accident on Lake Volta Report: Update on Recommendations of previous Committees of inquiry on accidents on the Volta Lake' <http://www.ghanamaritime.org/assets/photos/forms/reports/Accident%20on%20Lake%20Volta.pdf>

¹²⁰ N. Boateng-Lawrence, *Underwater timber harvesting on the Volta Lake*, p. 25

¹²¹ Emmanuel Kwablah 'Treasures of the Volta' *Business Times Magazine* (January, 2010)

¹²² N. Boateng-Lawrence, *Underwater timber harvesting on the Volta Lake*, p. 16

precious and limited funds on the distribution of life jackets, they would potentially be stolen again. The provision and distribution of life jackets is essential however the Government and naval personnel must determine an approach to ensure that lifejackets can be supplied without being stolen. Once more it is important that this paper outlines the realities of the suggested recommendations.

The illegal fishing practices that continue to damage the fish yields and wider environment in Ghana must be monitored. In an attempt to dissuade people from using illegal nets and traps, the NPP have pledged to eliminate import duties on regulated fishing nets.¹²³ To further protect fish yields the new Government has promised to enforce conditions under the Fisheries Act 2002, which aims to closely monitor illegal fishing practices.¹²⁴ Although these promises would be beneficial to eradicate illegal fishing, the Fisheries Act was implemented in 2002 whilst the NPP held office, yet they have proven to be ineffective at implementing their own policy. Therefore some doubt is cast over how probable or effective future enforcements will be. It is paramount that the new NPP Government upholds their commitments to their own legislation and begins to properly monitor illegal fishing on the Volta Lake.

These adjustments could vastly improve safety on the Lake. By simply administering the provisions needed by the naval personnel to carry out their role as safeguards, many lives could be saved as the officers could do the jobs they are trained for.

Recommendation 2: A Commendation of Dedeso

Dedeso's underwater timber salvation in the Volta Lake has the potential to transform Ghana's inland water transport system into a widely connected infrastructure network, spanning the country. However there are some limitations, mainly that this is not an infrastructure project and any infrastructural enhancements will be a coincidental by-product carried out in

¹²³ New Patriotic Party, '2016 NPP Manifesto', p 54

¹²⁴ Ibid, p. 55

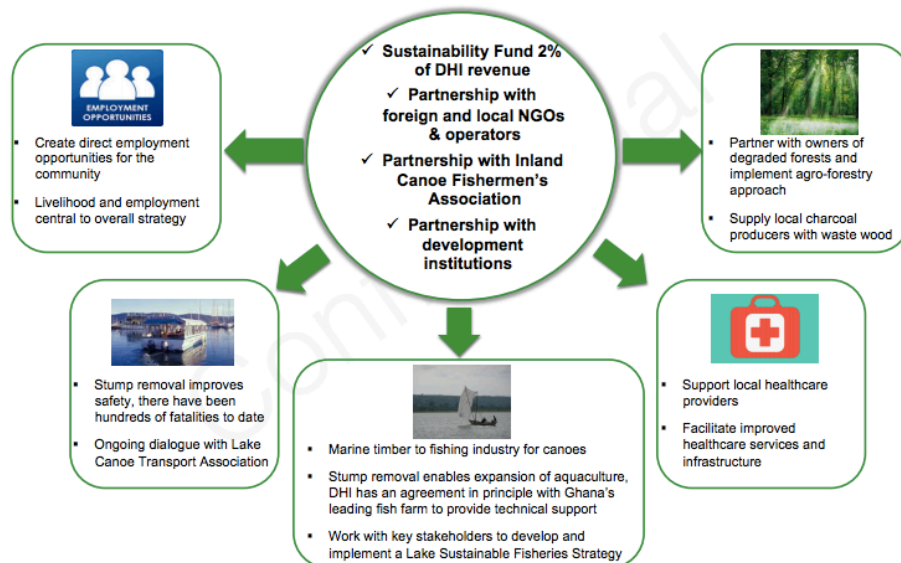
future ventures. Instead this project is a catalyst; it has overwhelming potential to influence later projects to charter navigable routes on the Lake. Dedeso have stated that they are keen to work alongside chartering projects with other investors. Whether Dedeso continue to work towards this once their project has been completed is to be seen. The recommendations for Dedeso centre on this aspiration.

Both Mr. Pianim and Mr. Dunn attest that they will encourage and support future projects aiming to develop further the work they are performing on the Lake. This includes collaboration projects, which aim to charter routes and fight illegal child labour on the Volta Lake.¹²⁵ It is highly recommended that Dedeso continue to pursue these collaborations. As highlighted throughout the paper, while Ghana remains a developing nation it requires private investments to bring about development projects that are necessary for further progression of the country. As previously ascertained with the construction of Akosombo, there are concerns that accompany accepting private investments for developing countries. However as both Akosombo and the timber salvation have shown, it seems that multilateral investment opportunities have been the only way these projects could be realised. That being said, the Government of Ghana must take care and caution of any repercussions these projects may bear. Dedeso has committed to work alongside the 17 UN SGD's. Moreover Dedeso have developed numerous strategies and funds, such as the Sustainable Forestry Strategy and the Sustainability Fund, which will invest 2% of Dedeso's revenue to sustainability and social impact.¹²⁶ Below is taken from a document received from Dedeso outlining the underwater timber salvation project, showing their commitments to social responsibility and the UN Development Goals.

¹²⁵ W. Dunn, pers. comm. Leiden, 9 May 2017

¹²⁶ Dedeso Holdings Inc. & Serengeti Capital, *Lake Volta Timber Salvage Project*, p. 12

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Dedeso created this document for distribution and so there is some bias concerning their intentions and priorities, especially as this document was also forwarded to potential investors. It could be that Dedeso are following suit of VRA, simply displaying their social responsibility activities to keep up appearances for their investors and the Government of Ghana. However from the point of view that the timber salvation project is needed to enhance the lives of people using the Volta Lake and propel the infrastructure of the country, the reasons behind these activities are not so important. What matters is that they stay true to the commitments made in this information hand out. If the Government of Ghana is going to have to rely on collaborations with private investors to reach their development goals, then it is vital that these companies comply with the UN SDG's and work towards a better future.

Following interviews with both Mr. Dunn and Mr. Pianim the recommendations to be made for their project centre on their commitments to corporate social responsibility and working alongside other chartering projects. Primarily it was hoped that Dedeso could be recommended to carry out the chartering themselves, however Mr. Dunn argues that their underwater timber

salvation will not financially nor technically allow for this type of work. Mr. Dunn stated that they would not be able to charter navigable routes as they are foremost salvaging within 10-mile radius of their mill sites in the Afram Arm, therefore they will not have logging equipment present on large parts of the Lake.¹²⁷ Moreover Mr Dunn claimed that their operation “is not widely profitable, it needs to be managed carefully.”¹²⁸ He explained that if there were a community nearby that desperately needed some stumps cleared, perhaps they could intervene “on a one off basis.”¹²⁹

It is clear that the recommendations to be made to Dedeso centre on their own commitments post-salvation. If Dedeso can continue to support the UN Development Goals and work with outside investors and charities with aligning intentions, then they could truly enhance lives on the Volta Lake. Moreover they are in the ideal position to assist with chartering a navigable route across the Lake. They have built a good rapport with local communities, they have workers with relevant skills to salvage underwater timber and they have the equipment already positioned at the Afram Arm. It is highly recommended that Dedeso pursue the opportunity to collaborate with outside investors to finally begin the process of chartering the Volta Lake, finally allowing Ghana to make use of a properly developed inland water transport system.

Recommendation 3: Good Governance in Ghana

An overarching burden concerning the development of Ghana is the Government itself. It is widely acknowledged and reported that the Government of Ghana is riddled with corruption and mistrust. Despite remarkable levels of political activity among the masses, demonstrated in high voting turnout numbers, these issues prevail.¹³⁰ The governance issues in Ghana are outside the remit of these recommendations, however it should be noted that due to the Government’s malfeasances they are predominately untrustworthy when

¹²⁷ W. Dunn, pers. comm. Leiden, 9 May 2017

¹²⁸ Ibid

¹²⁹ Ibid

¹³⁰ Election Guide, ‘Republic of Ghana, Voter Turnout’
<http://www.electionguide.org/countries/id/83/>

managing relationships with outside donors. This leads to the power of multinational corporations, particularly within the extractive industries, to exacerbate the corruption of some African Governments.¹³¹ Consequently two scenarios are presented, either the future of Ghana's development relies upon trustworthy donors keen to perform sustainable and wholly progressive projects, following the exclusionist theory. Alternatively the Government of Ghana must take action to eradicate internal corruption and discourage companies not committed to prioritising sustainable development. Ostensibly it is naïve to assume the former as this could create a milieu whereby foreign donors seek to take advantage of Ghana's natural resources, exploiting their environment. Therefore, it is imperative in the highest degree that the Government of Ghana erases corruption completely.

At the beginning of 2017 the NPP were elected into office following 8 years of opposition rule. The NPP are classed as having centre-right alignments and so it is unsurprising that they have pledged to build a "business friendly economy...that will create jobs and prosperity."¹³² As previously mentioned, this has the capability to be overwhelmingly positive for the continued development of Ghana, just so long as the Government limits this to projects that are in line with the UN SDG's and supports Ghana's independent path to development. The recommendations within this paper are not that the Government should avoid investors or exogenous donors per-se, instead it is recommended that the Government implement strict index's to prevent unsustainable projects. Understandably sustainability is difficult to measure, however by encouraging potential investors to focus on tracking changes long-term while examining processes of implementation the Government can be more aware of the quality of projects they are welcoming. Additionally this process could be enhanced through community interactions, by ensuring that companies work alongside the to-be-affected communities, not only can the projects be most effective but the Government can assure, to an extent, that the project will be useful and sustainable for their citizens.

¹³¹ C. Malunga & S. H. Holcombe *Endogenous Development*, p. 144

¹³² New Patriotic Party, '2016 NPP Manifesto', p. 13

It seems in the past that Government of Ghana has fallen victim of accepting private projects that had short-term benefits rather than considering the long-term impacts. Often the Government perceives the short-term benefit of immediate investment as a solution to ease cash-flow problems, this has clouded trade agreements. Moreover projects are sometimes perused to appease voters, thus allowing the party to retain power for longer. Unfortunately these tactics are all too common in Ghana and consequently the country and its people do not always benefit from foreign investments. By regularly voicing these criticisms it is hoped that they can be addressed and eradicated moving forward. It is recommended that the new NPP Government ensure the long-term sustainability of projects that are to be welcomed into Ghana. Moreover it should also ensure that, where natural resources are concerned, they receive appropriate financial reimbursement. For instance the underwater timber salvation project in the Volta Lake although having the potential to remove US\$ 3 billion worth of timber, the Government will barely benefit financially through the negotiated levy system.¹³³ Mr. Pianim has contended that:

“Natural resources are not sufficient for development and they are probably not necessary...I don’t think these natural resources are at all important to anybody, they are not vital and it is not exploitation per-se. You can participate or you can choose not to participate. Given that the people who are complaining are not the owners of the asset anyway, I don’t know what standing they have to complain.”¹³⁴

This is all very well coming from an investor and benefactor of the extraction of hardwood timber from the Volta Lake. The above statement aligns with the global capitalist market as Mr. Pianim poses the opportunity for the Government of Ghana to participate or not. However Mr. Pianim is oversimplifying, evidently he is aware that the stumps are causing boating accidents on the Lake and consequently he is aware that the Government cannot simply dismiss his proposal. This could be justified simply as supply and demand but morally the

¹³³ G. York ‘Will Joe Clark’s tree project sink Ghana’s fishermen’ The Globe and Mail, <http://www.theglobeandmail.com/news/world/will-joe-clarks-tree-project-sink-ghanas-fishermen/article4282323/?page=all> (2009)

¹³⁴ E. Pianim, pers. comm. Accra, 22 February 2017

issue of Dedeso becoming the primary beneficiary from Ghanaian natural resources mirrors neo-colonial culture. Due to this it is imperative that the Government of Ghana understands that this is not supply and demand whereby they are simply the 'demanders.' Contrary to Mr. Pianim's seeming disregard of the profits to be made from natural resources in the above statement, the Government should view themselves as the suppliers of a highly valuable and marketable product, hardwood timber. By increasing leverage and taking advantage of the trend of intrusion of extractive industries into regions of low-income, resource abundant countries, the Government of Ghana could propel their economy and global position, as seen in Malaysia.

A consequence of the aforementioned corruption and mistrust in general of the Government of Ghana has led to increased demands by the public for the passing of the Right to Information (RTI) Bill. This Bill would allow for an increased transparency in government decision-making, thus allowing for some degree of accountability. Although the RTI Bill was initially drafted in 1999 and repeatedly reviewed up to 2007, it was not until 2010 that it was presented to Parliament.¹³⁵ The right to information is classed as a fundamental human right, further guaranteed by Ghana's 1992 Constitution.¹³⁶ The NPP Government have promised to facilitate the passing of the RTI Bill within their time in office. However reports have shown that in the NDC's attempts to pass the Bill, NPP members resisted in the final moment.¹³⁷ Evidently political games are overshadowing the greater need for the Constitution to be upheld. It is finally recommended that the new NPP Government conclusively pass the RTI Bill, allowing citizens to gain access to information and increasing accountability and transparency of the Government. Moreover the Bill allows the public to retain some control and knowledge over the implications of development projects

¹³⁵ Government of Ghana, 'Parliament begins consideration of RTI Bill' <http://www.ghana.gov.gh/index.php/media-center/news/2565-parliament-begins-consideration-of-rti-bill> (2016)

¹³⁶ Ghana Web, 'Minority shoots down passage of Right to Information Bill; raises red flag' <http://www.ghanaweb.com/GhanaHomePage/NewsArchive/Minority-shoots-down-passage-of-Right-to-Information-Bill-raises-red-flag-496185> (December 2016)

¹³⁷ Ibid

taking place in the country. If Mr. Pianim is correct in his assurance that during the time of the CSRD-managed project, illegal fishing practices diminished due to their increased presence on the Lake, then the environmental reports to prove this should be made public. Primarily this would ease company-community relations by ensuring opposing fishermen that fish yields will not be diminished. Secondly it could also aid the devastating deforestation rates, it is well known that educating people on social issues such as deforestation, can expose the realities of the problems to everyday life. Making environmental reports of extraction projects available for public consumption increases transparency and accountability of the project and its true implications.

Final Conclusions

Despite its vast influences the underwater timber salvation has received minimal global attention and so the objective of this paper was to bring to light this unconventional development project while exploring its myriad of implications on infrastructure, climate change and development. In addition this project can be used as an example to outline how the Government of Ghana should be more astute when collaborating with and encouraging exogenous projects to achieve sustainable development.

Within the last 20 years Ghana's forests have been reduced at an alarming speed, hence the prospect of logging timber from the depths of the Volta Lake is altogether beneficial for deforestation rates. This underwater timber salvation is not faultless but does hold the potential to enhance lives of those on the Volta Lake. Furthermore its true saving grace derives from its ability to ease the deforestation rate by leaving the living trees on land untouched, the exogenous project can achieve its goals without further harming the environment. Needless to say the environmental benefits of salvaging the timber from the Volta Lake is evident in the concomitant implications that would arise from further loss of forests in Ghana.

The prospect of a stump-free Volta Lake is greatly advantageous to Ghana's development and would largely increase the quality of life for those living on the

Lake. However these projects alone are not a pre-requisite for modernisation or development; the Government has a responsibility to shepherd private projects and encourage positive attitudes towards wider sustainable development for the country. Throughout the study this underwater logging project has been defined as exogenous, extracting natural resources from a developing country for the profit of a private firm and small group of benefactors. It is clear that the Government of Ghana did not have sufficient funds to implement this project and so outside private investment was needed; this is not a negative matter.

Due to his obsession with securing investments for the Volta River Project, Nkrumah was criticised for allowing industrialisation and development to replace independence as his basic political objective.¹³⁸ Interestingly contemporary governments are accused of similar pitfalls; advocating exogenous projects to become a priority over solving detrimental issues such as poverty and corruption. The encouragement of foreign investment projects are not always negative; often they are required to conduct much-needed projects that the Government cannot afford to finance. The overarching message of this paper is that foreign investment is not the enemy; instead it is the Government who must ensure that this foreign investment benefits the majority, not the minority.

It is understandable that for developing countries, there is a desire to meet certain expectations of development, for example to build roads, bridges and hospitals. Furthermore it is somewhat comprehensible that the desire to achieve these goals means that regard for any far-reaching implications are overlooked. Developing nations should be encouraged to set their own path for development, allowing them to ensure that all projects are wholly inclusive and sustainable. This means that there should be a departure from the current standards and responsibility to ensure this should lie with both the host government and private enterprise.

Arguments surrounding responsibility in this paper could be perceived as personal, moral assumptions concerning what is expected of a government.

¹³⁸ D. Apter, *Ghana in Transition* (Princeton: Princeton University Press, 1972), p. 357

However the expectations and recommendations made within this paper simply originate from the constitutional responsibilities outlined by the Government of Ghana. Within this it is outlined that the Government will ensure that all development programs will consider social and national implications.¹³⁹ This paper has intended to highlight that the Government of Ghana have established these moral guidelines and failed to uphold them.

It is clear that the removal of tree stumps will not eradicate all causes of death on the Lake, however it will significantly decrease the probability of deaths on the Volta Lake. Due to the fact that the underwater timber salvation project alone will not solve all the outlined risks, it is paramount that the Government of Ghana collaborate with their subsidiaries, such as the Maritime Authority, to ensure over loading is prohibited and adequate life jackets provided. It is apparent that safety regulations are not being effectively implemented. Most of the vessels operating on the Volta Lake have little to no safety equipment on board. This is evidenced in the frequent accidents and hundreds of deaths so far. Moreover the neglect of boat operators in relation to overloading and drunken behaviour proves that there are further monitoring concerns.

Dedeso's underwater timber salvation project holds great potential to influence the future of exogenous development projects in Ghana. It is imperative that the Government encourage an inclusive future for the benefit of Ghana and set an example of how sustainable development can be achieved with the aid of exogenous projects.

¹³⁹ The Constitution of the Republic of Ghana, 1992, Chapter 6: The Directive Principles of State Policy, Section 36 (1,c)

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Appendices

Appendix A

Interview with Adaangiak A. Akanteyam
Director of Technical Services at Ghana Maritime Authority, Accra
Friday 10 February 2017

KF: Could you explain the role the Maritime Authority plays within the context of the stumps on the Volta Lake and the problems this poses for those crossing the lake?

AA: Our role is regulatory so we are interested in safety issues on the Volta Lake. So the tree stumps are a problem because, I don't know whether you've been to the lake, but the types of boats, which operate there are small, wooden and open. They are not very well constructed so they cannot withstand impact from the tree stumps. The tree stumps are quite strong and hard. So if they are not getting, the problem is that some of them, when the water level is up, they are hidden. You don't easily see them. So if you are on the water and you go into them, the boats usually split or there is a large hole and the boats will capsize. There are a lot of fatalities. So also if there is a rainstorm and it blows them, because they don't have much power it will blow them across and into the stumps. We are interested in them removing them to make it safe.

KF: So you think that the stumps should be removed?

AA: Yes, yes. We want them removed. But the problem is that we don't have the money to remove them because it is quite expensive. Some time ago they had an agreement with a Canadian company, Clark Resources, to remove them. But they've run into problems with the fishermen. The fishermen say that it affects their fishing because they hang their bamboo nets, traps, on the tree stumps in the water. Although that is illegal, nobody has been able to enforce that. It is illegal because when the bamboo traps are there they grab the fish, which are pregnant.

KF: Clark Resources left because of protests from the locals, however the Ghana Government commissioned the project. So what happened, did the government just let the company leave or did they attempt to reconcile?

AA: Yes, I think when Clark's experienced these problems they contacted the Government, there were a lot of meetings. They even sent military personnel there to help the situation but it wasn't successful. The people who live there, they were fighting with those working on the boats and it was dangerous. But there was a Committee, a Technical Committee was set up comprising a number of Government agencies. I was part of it, we were part of it. We deliberated but we couldn't resolve the issue so eventually Clark Resources just had to leave. The company needs a salvage permit from the Forestry Commissions, they are the

government body responsible for the salvage. There were 10 institutions part of the committee including Environment, Energy, Transport, Trade and Industry, Forestry, Maritime and the Community and Civil Society and the Fisheries. But we were not able to resolve it. Now they've left a new company, it is not a new company, they are using the same name, but a different owners. But they are using the same name. They are going by the old agreement. So they came around 2 weeks ago, they came to talk to us about what they're doing. They are not working now. Because there was a gap between when the initial group left, the equipment needs to be refurbished before they can start. They are trying to refurbish the equipment but they are not actually in the water yet. But they will be doing so once the equipment is working. They came here to see what assistance we can offer, so we said to them that we are in charge of personal safety. So once they have got the equipment into shape, they will invite us so that we can inspect and certify it and then they can go ahead. But as I said it is not just us, they will have to contact other institutions as well.

KF: I didn't realise that the project was being revived, that's very interesting.

AA: Yes, it is a new group but they are going with the same agreement. The original project was set to last 25 years, they have this time to remove the stumps

KF: Do you know how many of the stumps they had already taken out?

AA: It's 10,000 or so. Yes 10,000 trees on the Volta Lake. The total area they will need to cover is around 350,000 hectares so this 10,000 is only covering around 190 hectares so it's a small area.

KF: Is the plan to remove all the stumps?

AA: Yes, their plan is to remove all stumps. Because theirs is a commercial business, as part of that they are doing social responsibility and that is why they are considering our safety aspects. So when they're finished they will help us mark the routes for navigation. Their sole business is to harvest it, process it and market it.

KF: Do you know if they are still working to build a power generation plant to use the debris to generate energy?

AA: Oh, I don't know much about that. You could perhaps visit their offices in Sedorm, Akosombo to speak to them. That is where all their equipment is. The new company is called Serengeti, here is their card so you can speak to them.

KF: In the last years since Clark's stopped the removal process, what has the Maritime Authority been doing to ensure safety on the lake?

AA: We survey the boats, the wooden boats; we put marks on them so that we can check them. We don't have offices or personnel in the Volta, that is why we

put naval personnel at those certain checkpoints. We also send weather warnings because so many boats are over turning in the bad weather. So the weather warnings will be sent to the District Assembly, this will be forwarded to the naval/military personnel so they can stop boats from sailing within the time the storm is arriving. Now we have a vessel traffic management system so that we can see what is happening on the lake and any accidents. These are based at Yeji and Kete-Krachi.

Appendix B

Interview with Elkin Pianim
Partner of Serengeti Capital, Executive Director Dedeso Holdings Inc
21 February 2017

KF: Overall what do you want to achieve? Is this purely for capital gain for the company? From your company's perspectives, what are your intentions?

EP: My intention is to run a sustainable, viable enterprise over a long time. This concession is for 20 years and the only way to make this thing viable is to have the support of everybody around you. The only way you can carry people with you is if they are benefitting from a project as well.

KF: So did you meet with CSRD? Why did they say the project had stopped?

EP: They said it stopped because they were having conflicts with the community and the government was not willing to step in and assure them of their safety.

KF: I also heard this. However the Ghana Maritime Authority informed me that a Committee made efforts but that this was unsuccessful and that there was no compromise to be reached.

EP: This essentially is a law and order issue. If you are not willing to maintain law and order as the government what are you there for? You have people committing acts of violence, and you refuse to step in. So what is this about reconciliation, if I come and burn down your house what is there to be reconciled about, I have committed a criminal act.

KF: So this company were literally forced to leave?

EP: That's correct.

KF: Have you started working in the water yet?

EP: We will probably be able to start in around 4 months because there is EPA and Community consultations. It is just a question of having the EPA permit renewed as opposed to a new permit.

KF: And how long do you think this project will take?

EP: The lifetime of the concession is 20 years.

KF: Are you planning on removing all of the trees from the Volta Lake or only timber trees?

EP: At full capacity it would probably take around 200 years to remove every single tree from the Volta Lake. So, no, we are selective about the trees we chose

to remove and there are a number of criteria. One of which is diameter. So in terms of percentage of trees we will remove it is probably less than 2%.

KF: I went to Kpando and spoke to fishermen about this project – the trees have been removed from Kpando by CSR in the past. All fishermen stated that they did not want trees to be removed because the fish will leave. Of course, the trees have been removed and the fish haven't left. Where did this argument come from?

EP: It came from this culture of claiming from extractive industry businesses that you have been damaged and deserve compensation. For instance, when you are starting a mining project you have to compensate people who have the land under which you are going to mine. There is a schedule of compensation and at the top of schedule is a tree crop, and at the bottom is crops that will be harvested within a year, like corn or tomatoes. Now, you have to give public consultation that we are going to do x, y and z. You will find that within weeks of the public consultation, there are a bunch of tree crops where there was nothing and now you are going to have to compensate people for this. So this is just a shakedown. Because this is not true (with the fish leaving). The project stopped 4 years ago, fish stocks in the lake are at the lowest they have ever been. In fact they have collapsed and the reason for that is these guys, the mesh on the nets have shrunk and shrunk. The biggest problem CSR had, so there are two types of fishermen on the lake, one type use nets and are settled in villages, the other type use traps and tend to be migrants. Now the traps are what force your fish catchers down because they are indiscriminate and they are also illegal. So they are pieces of bamboo with holes in them, fish swim in and they get stuck. For some reason it tends to be female fish that swim into the trap. So this really pushes down your catch. The fishermen who object to this project most ferociously are bamboo fishermen because they use these stumps to tie them.

KF: It is very problematic because fishermen have repeatedly expressed this concern. But you can't take that anywhere to try and stop the project because their practices are illegal.

EP: Yes. One, what you're doing is illegal, two we are removing trees selectively.

KF: This is the first time that I have heard this fact that the trees are being selectively removed. Before now all I have read and heard is that 'all the trees are being removed'

EP: It is not possible, cycle time is 3-5 minutes per tree, there are 30million trees, plus in the Volta Lake. How are we going to remove all of the trees? Why would we want to? Also, these people say 'remove,' the trees are not being removed, the trees are being cut, they are being cut from the same height from the ground that you would cut a tree in a logging operation. Now in a logging operation you cut a tree above the buttresses and you do that because you need consistency because you are taking something natural and then you're putting it into an industrial process. So you try and conform these things as closely as possible. So you take the tree above the buttresses because what you want is as close to a cylinder as

possible. So really you are leaving the root systems and removing the trunk, you're not removing the tree.

KF: Have you looked at case studies from South American countries that have carried out similar projects?

EP: Yes, most of them use divers, which we are not doing. In terms of innovation, the technology is already here, we are not leading the way. At this point there isn't a lot of innovation. Probably the next point of innovation is maybe, applying machine learning so you can identify the tree before extraction.

KF: So how are you identifying trees before you cut them?

EP: We use GPS and sonar. But we are cutting trees on diameter. We don't want trees below a certain diameter because then your conversion from log to saw timber is much lower

KF: And then what are you doing with the trees?

EP: We take them out, we take them by barge to the sawmill

KF: Are you still working on the project to produce energy from the debris?

EP: We are looking at that. Initially we need to get volumes reliable because the biomass experts need to be sure of the reliability and volumes that will be used. Until we get to that point, it will be a waste.

KF: What measures have you taken to ensure that the problems faced by CSRD will not reoccur now you have taken over the project?

EP: We had a meeting with the Inland Canoe Fishermen Association and we are figuring out modalities for working together. So I think the problem, the assumption of the Canadians was that this was a law and order issue and the government was willing and able to maintain law and order. In practice, that was not the right assumption.

KF: So you have had to take matters into your own hands?

EP: Yes. So what these fishermen did, in effect, was they went out, they misled a whole bunch of people, told a whole bunch of lies and because these guys were foreigners it was easy for them to do that. Thinking that all these white guys are coming to take the trees out and are not paying us. But they aren't your trees, and they are not causing any damage.

KF: So the biggest complain coming from the locals is that the fish will leave?

EP: That was the complaint that they verbalised, they verbalised that complaint because they found that it had the most traction. So they stuck to that. Always repeating fish loss. Environmental impact analyses were run that show

absolutely zero impact on fish stocks. In fact it was the opposite, fish stocks went up because there weren't these fishing practices within the catchment area during the logging process.

KF: As you said, there have been complaints that this project could be another example of the West exploiting natural resources from Africa. How do you respond?

EP: My view? My view is that if you look at history, natural resources are not sufficient for development and they are probably not necessary. These Westerners don't need your natural resources; if you drop Africa from global GDP what would you actually lose. You guys could disappear tomorrow and you wouldn't bloody matter. So I don't think these natural resources are at all important to anybody. They are nice to have but they are not vital and it is not really exploitation per-se. You can participate or you can choose not to participate. Given that the people who are complaining are not the owners of the asset anyway I don't really know what standing they have to complain. What you are seeing here is a tragedy of the commons right? Nobody owns this asset so everybody is misusing it.

KF: But don't the VRA own the Lake?

EP: They do.

KF: So if they say you can remove the tree stumps, then you can?

EP: By law, yes, that is how it is. This lake has been paid for, the people who live there whose lands have been covered by water, have been compensated. This "I wasn't compensated" myth has been running around forever, people are using it as a way to exploit money from the central government. But if you think about it, this thing was in the 1960's, records weren't great and it was done on a compressed time scale. So there is just chaos and no way of verifying if someone was or was not compensated.

KF: Is it true that CSRD had an agreement with Government of Ghana that they would donate, share, a certain percentage of the profits back to the government.

EP: That is not true. The concession that was given to CSRD is a concession that was given under Ghana's Timber Resources Act. Now Ghana's Timber Resources Act stipulates what amounts are due to the government in exchange for the concession. So it is stumpage fees. This is where it gets a bit funky. Stumpage fees are paid on a per species basis, so higher value species are 10 or 20% and a lower value species 3%. As the name suggests, the fees are based on the stump. Now the problem here is that when you cut the tree you don't know what it is, you also don't know what condition it is in. It may be twisted, it may be warped, it may be worth nothing.

KF: I was so disappointed when I went to the VRA about how disconnected they were from the people who were using the water. It is the VRA's water and they should take some responsibility for this.

EP: Look, you will just find that there is a cultural mistrust and unwillingness to accept responsibility. As far as the VRA are concerned, these people's desires are endless, because even in the early days Government was supposed to pay compensation and they saddled VRA with it. It was £10million and in the 60's that was a lot of money and it never ended. So the VRA's view is that the government were supposed to compensate these people now, because I'm here they are coming to me just because we are physically present. I am not running a social enterprise here, my mandate is to generate power, that is difficult enough. I don't want to deal with these people, you deal with it (VRA to Government)

KF: But that is not why they were established.

EP: They were established to generate power

KF: And to be responsible for the Lake. They created the Lake, that was part of their, you can't have one without the other

EP: But you say, I'm responsible for the Lake (VRA), now you use my Lake without my authorisation for your livelihood.

KF: Then stop people using it. If you don't like the consequences then you stop people. This is what should have been done in the 1960's then. If you don't want people using the Lake, you stop them, if you don't want to stop them you take responsibility. Of course the VRA cannot stop people from using the Lake now, if they were so affronted by it (in their claims that they can't stop people from using it and so it is not their responsibility), then they should have stopped that in the 1960's.

EP: Nobody has the resources to do this. You can't actually expect them to take this responsibility. There is no money. There is none

KF: I don't think that is really good enough, these are people's lives. So you find the money and you stop people from dying. It seems like logic to me.

EP: I don't see it, I really don't. I think you are very idealistic. Lots of people don't like to put monetary values on human lives but everyone does it.

KF: But in terms of basic health and safety, that is not right.

EP: Well how can I force my staff to wear life jackets, I can't make you. How do I make them do that? So you yourself has decided to take this risk. You have decided, you're ok. I don't know, I really don't know. So I think, in dealing with these issues what makes sense is it is on the basis of felt or articulated needs.

KF: So that is why the project has been halted for 7 years, because nobody else has been able to afford to do this?

EP: Yes. My belief is that if you want to have capital and if you have organisational abilities there is probably a much easier way to make a living.

KF: So how about the recent Chinese intervention in Africa, with their no-strings attached policies. You are saying you're being confronted with these roadblocks, is that not a more ideal situation, no strings for environmental impacts etc.

EP: From a certification perspective? For FSE? Well we are lucky that there are alternate markets we can access outside of FSE. But if you go back to, do I think it is great to having Chinese Governments help to corrupt competent African Governments, no I think that is terrible, of course. But these roadblocks, it is a question of extent. So if I look at what the FSE people need to do, the bulk of it I agree with but to hold me responsible for someone doing something that, to me is patently insane, something that I really would struggle to control. So four of my guys are out on a boat and they choose not to wear life jackets, how do I know? The things I can see, the things I can control, yeah of course I can be held responsible for them. I don't want people getting injured, it doesn't do me any good. I want to run the best possible operation that we can. One from a point of personal pride, two because it is the right thing to do and three because this doesn't drive long term returns as well. But there are some things that we simply cannot control.

KF: How many people will be employed in this project?

EP: I think at peak there could be 800-1000.

KF: And do you start in one area and move from there on a mapped route or do you have different teams going to different areas?

EP: You see, one of the complicating factors is that you, the water levels which fluctuate through the year, so you want to have areas mapped out based on the water levels you go there. Also you want to be able to warn the communities far in advance that you are coming so they can remove their nets and traps. Because all these bamboo fishermen are going around telling everyone that they have invested 10,000GHC in each one of these traps. I mean the fact that they have the audacity to tell people they invested, first of all that is a lie, it is not 10,000 GHC, if it is 1,000 I would be astounded. Secondly what you're doing is criminal and you know it. But, the reason these guys got away with it under the previous government, is that the previous government feel these fishermen are their political base so they didn't want to do anything to upset or offend them, so they let these guys get away with, what almost came close to murder.

KF: I am so shocked by that. That is insane.

EP: Well yes, but it's not atypical.

KF: So when you are in a certain township or district, how long will you be in each place. How long will these communities be disrupted?

EP: It depends on the rate at which the water levels change and it depends on the quantum of recoverable timber. Obviously we don't want to disrupt people's livelihoods, it doesn't help us in any way. So we want to be there for as short a time as possible. I think we are going to succeed in building a decent, workable relationship with these guys because the Canadians did not approach it in the right way, because some people would come and say 'I want x,y and z' and the Candaians were just there for the timber. They say 'chop alone, die alone.' We're all here we are next to each other, eventually whether I like it or not your problems will become my problems and vice-versa so let's talk about it. So I think what we've also found is in talking to people everybody is very excited and very pleased that we are a Ghanaian company that has taken over because it makes things a lot easier. Because what the Canadians would do is go to Government and say 'well you need to do this, this and this.' People don't like that kind of confrontational approach. You came here to cut trees and make money, they and we aren't there to share the money with the Government so these demands are not to be made.

Appendix C

Interview with Wayne Dunn
President and Founder of the CSR Training Institute, Co-Founder Dedeso
Holdings Inc
09 May 2017

WD: So we have tried to keep the project under the radar lately, less so as we are getting more pieces in place but it had a considerable and not so flattering profile at the end of its previous stage.

KF: That is what I was interested in talking to you about, partly about what happened at the end of CSR Development's role and then what you think about some recommendations that could be made to Dedeso's project in terms of what both Dedeso and the Ghana Government could do to make this project wholly viable. I think that the Government should use this opportunity to increase leverage over such projects that may arise in the future. So I'm interested in what you think Dedeso are doing in comparison to what you did with CSR?

WD: Well in full disclosure, I am actually one of the founding partners in Dedeso as well.

KF: Oh, you are? I didn't realise that

WD: Yeah, it is not often that you get to be a part of a world class project, and it is far less often that you get to be a part of it, lose it and then get it back.

KF: Well that's interesting. I knew that you and Mr Pianim were acquaintances but not that you were part of Dedeso.

WD: Obviously I don't have the same leadership role that I had in the earlier incarnation but a founding partner and significant part of it just the same.

KF: Well I think you must be invaluable to them because when you think about what they can learn from you in terms of their social responsibility that's going to be really key for them, to make sure that they don't make the same mistakes twice.

WD: Well, thank you for that and I agree although there's also the team I put together had a lot of great expertise. It was a great team on the ground it was just unfortunately not utilised by Triton when they took it over. So basically I've just put the same team and much of the same approach back together. Triton was left with a very solid social license that had survived two years of insolvency and two years of the company being unable to meet our commitments to communities and organisations because of the financial market crash and our own financial position. Yet at the end of that time we still had very solid support across the board for the project and when we did the community consultation, when Triton

did the community consultations as part of renewing the revised project, they went well. It's just that they had no, as a company, had no appreciation for the importance of and the ability to work effectively with the communities. And that coupled with probably some unfortunate choices of leaders of the project just led to a total erosion of the good will that we had developed and created a larger good will liability of the project.

KF: So as you just said, do you think that with the leadership breakdown in terms of the leadership and community communication, do you think that was more a problem than the environmental issues of the fish leaving. Do you think those environmental issues played into it or more that there was a break down of communication?

WD: I mean it comes from a breakdown of communication, the other things come from, Triton actually did a very good job, the technical aspects of environmental management and reporting and monitoring they did very well. You can go on their files and that work was done to a very high standard. But they were of the opinion that they had zero responsibility to engage with the communities other than to tell the fishermen to get their nets out of wherever they were going to be harvesting. The reality is that business today is increasingly expected that it should deliver social value along with shareholder value and when it doesn't, it ends up running risk and often being punished as a result. That's what happened with Triton.

It's simple, the project is not a big project with a lot of money, so it's not the project that's going to change the world or any organisations or communities but it can be part of it. We are working with other organisations and projects trying to act as a catalyst to bring other projects in. I've got an ongoing conversation with the Agriculture Support Sector and development people here in Canada to see if there might be some ways the fishing industry can be supported to look at some transitions. Not that we would do it, but we can be a part of that. When I was there a couple of months ago, there's a US based organisation that does development projects around the world and a lot of the ones they do are funded by corporate foundations. They were looking for a location for a project that is essentially fully funded by a major international businesses foundation. So I met with them, I brought them out and showed them how this was a great location for the project, to look at child labour and education and community infrastructure and how we would be able to support them.

The reality is that there is a reasonably regulatory framework for the fishing industry on Volta Lake, the reality is its not enforced. So you have illegal fishing, bamboo fishing, you have small mesh nets. That is causing this serious decline in the fisheries industry on the Lake and it's not going to get better, it's going to continue to get worse.

Now our little underwater logging project isn't causing that and we're not going to fix it all on our own but we are also in a prime position to be blamed for it. So being smart we want to see how we can engage in that and help to bring other

resources to bear on it because it's a significant development issue and we bring some expertise and capacity and to the extent we're able to leverage that to help bring projects and activity. So that's the approach we take. Whereas Triton took the approach that, these communities aren't our issue, if we were making 100's of millions of dollars we would support them but we're not making that profit so we won't do anything.

KF: That is exactly what interests me so much about this project, it has such an ability to really reach out and impact other parts of Ghanaian society and development. I'm interested in the infrastructure, as you said and I'm wondering if at the moment there are any plans for you to charter the lake. It seems to make sense to me to, while you're salvaging, to charter simultaneously across the lake.

WD: When you say charter, do you mean develop navigable routes?

KF: Yes, exactly that

WD: Ok well that has always been part of, I made a commitment that we would work with the Ghanaian Government and other stakeholders to recognise that that was an important issue. We made a commitment that we would work towards it. Part of the challenges here, there's a perception challenge and just by your comments, it may be a language issue but I think you're thinking the same thing that somehow that should be the companies responsibility to do that and that would be akin to saying 'ok you have a timber concession outside of Kumasi so you need to build a road from Kumasi to Tamale because people travel there and they're having too many accidents' If you take that same thinking, and put it on a land based operation, it's ludicrous. There's no connection. Where this comes in and where we're engaged on it is this in an important issue and we recognise it's an important issue, the successful operation of our salvation project on the Lake for the first time ever puts the technological and operational capacity on the Lake to be able to open up those water ways and create navigable transportation channels. That's never been there before. It couldn't be done without the advanced equipment that we bring to the Lake. We have offered to work with the Government and VRA and others to put a charting project together and to help them finance it. That's going to take many millions of dollars of financing because, I wish logging was profitable enough that we could afford to do that, but it's not and the reality is Triton did a little bit of channel clearing and most of the trees you cut when clearing the channels are not viable to harvest. So you're right to highlight it, you're right that it's important and you're right that we want to be part of it but we need to work to help people understand that no it's not our responsibility.

KF: Perhaps I'm ignorant because I am not a logger, but it seems different to the example you made about Kumasi because you are already on the water. So if you were driving the produce from Kumasi to Tamale yourselves, why not clear the road when you're on it. That's the difference for me.

WD: But we don't, I mean we're logging with a 10mile radius from our mill site in the Afram arm. At the present that's the only place we're harvesting from at the moment, over time that will expand. The transportation corridor needs are important but they don't coincide with the transport needs that we have and we are going to make the transport work for our logs. Our operation is not widely profitable, it needs to be managed carefully and if there was a community near by where we were working and a day or two to clear up something for them and it was important to them, I could see us going in and perhaps doing something like that on a one off basis. But transportation is an important issue but a public issue, it's the responsibility of the government. We're happy to work with them, I've developed a framework for thinking about transportation sector development on Volta Lake and advocated it for 10 years, I developed it back when I was running the project, so we're there but the mechanism has to work, the responsibility has to be allocated properly. We are willing to play leadership roles where it's appropriate in developing and helping to find financing, we just don't have the capacity to play a leadership role in the actual financing of it. Any project to aid transportation on the Lake would go through the Ministry of Transportation and would probably involve some kind of World Bank funding also. One of the problems with Triton was that they wouldn't even have that conversation; they'd say 'no, we're not here to do that, that's government's responsibility.' We recognise that important social issues in our areas of influence and issues that we should understand to the extent that makes sense given our capacity. We should be engaged in it, we don't have to own the issues but we can play roles in them.