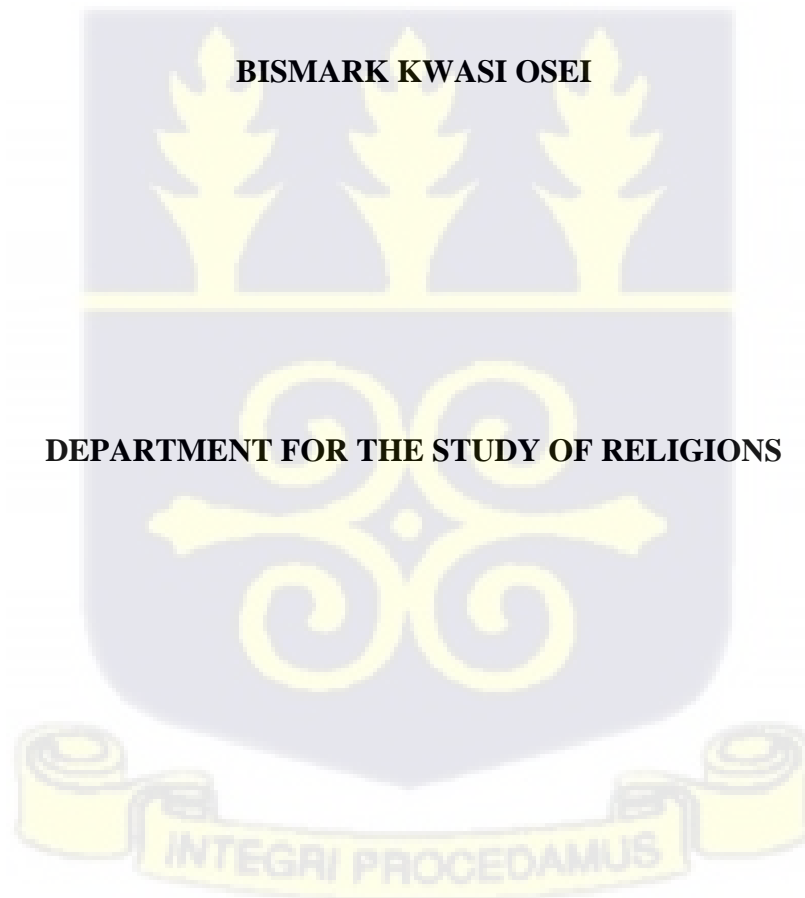


UNIVERSITY OF GHANA
COLLEGE OF HUMANITIES

**INDIGENOUS RELIGIO-CULTURAL PRACTICES AND MANAGEMENT OF THE
VOLTA RIVER IN AKWAMU TRADITIONAL AREA, GHANA**



DECEMBER 2023

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VOLTA RIVER IN AKWAMU TRADITIONAL AREA, GHANA**

BY

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(10508453)

**THIS THESIS IS SUBMITTED TO THE UNIVERSITY OF GHANA, LEGON IN
PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF
DOCTOR OF PHILOSOPHY IN STUDY OF RELIGIONS DEGREE**

DEPARTMENT FOR THE STUDY OF RELIGIONS

DECEMBER 2023

DECLARATION

I hereby declare that this thesis, with the exception of scholarly works cited, which have been duly acknowledged, is the result of my own research work carried out in the Department for the Study of Religions, University of Ghana, Legon, under the supervision of Dr. Harry Lawson Kwaku Agbanu and Dr. Lawrence Boakye.



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ABSTRACT

Indigenous water resource management in Ghana is deeply rooted in the indigenous religio-cultural practices that govern the use of rivers, lakes and other water bodies. This research sought to examine the indigenous religio-cultural practices and management of the Volta River in Akwamu traditional area, Ghana. The research was underpinned by ecocentric ethics, which according to Aldo Leopold in his *Land Ethics* prioritises the well-being and sustainability of the natural environment over human interest and therefore, urges humans to be stewards and caretakers of the natural environment in its intrinsic value. As a phenomenological study, it used qualitative methods such as in-depth interview, focus group discussion and observation for data collection and analysis. Participants, comprising traditional leaders, members from the riparian communities and environmental officers from the Volta River Authority (VRA), Environmental Protection Agency (EPA), National Disaster Management Organization (NADMO) and Environmental Health and Sanitation Unit of Asuogyaman District Assembly in Akwamu traditional area were purposively selected for the study. The study revealed that Akwamu people have a set of traditional laws based on their religio-cultural beliefs and practices for the management of the Volta River. The research also revealed that migration and resettlement, as a result of the construction of the Akosombo Dam, non-collaboration between state institutions and traditional authorities, negative attitudes of traditional authorities, Christianity and over-population are factors militating against the enforcement of traditional laws in the management of the Volta River in Akwamu Traditional area. Again, the study revealed that incorporating indigenous knowledge systems into modern methods will foster a sense of shared responsibility between traditional authorities and the state institutions to work as a team to enhance the conservation efforts of the Volta River in

the Akwamu traditional area. Among other things, the research recommended that traditional authorities, policymakers, state institutions and community members should foster partnership to engage a participatory decision-making process that involves indigenous knowledge and modern approaches for a sustainable management of the Volta River. The study concluded that if indigenous knowledge practices are used alongside the modern methods, it will lead to a long-term sustainability of the Volta River with the aim of benefiting both current and future generations in the Akwamu traditional area and Ghana as a whole.



DEDICATION

I dedicate this thesis to my wife, Mrs. Patricia Osei Kwarteng and my children, Sandra Osei Amoyaw, Lynette Osei and Phoebe Afua Gyaubea Osei, who have always been my greatest source of love, support and encouragement throughout this academic journey.



ACKNOWLEDGEMENTS

I would like to express my deepest gratitude and acknowledgement to God for His constant support, guidance and blessings throughout my journey in completing my PhD thesis. Throughout this journey of pursuing my PhD, I encountered various challenges, moment of uncertainty and doubts. However, it is through God's guidance, strength and inspiration that I have persevered and achieved this significant milestone in my academic journey.

It is essential to recognise individuals who have helped me to shape and improve my research work. In this regard, I owe a debt of gratitude to my supervisors, Dr. Harry L.K. Agbanu and Dr. Lawrence Boakye from the Department for the study religions for their unwavering commitment and expert guidance. Their profound knowledge in ethics and philosophy, as well as their constructive feedback and insightful suggestions, have played a significant role in enhancing the overall quality of my thesis.

I would like to extend my heartfelt appreciation to Rev. Professor Ossom Batsa, the chairman of graduate research committee and Professor Rose Mary Amenga-Etego, the Head of Department for the Study of Religions, University of Ghana for their instrumental role in organizing series of seminar presentations for PhD students for earlier completion of our thesis.

Special thanks also go to all my respondents, particularly Nana Kwafu Akoto III, the paramount chief of Akwamu and the president of Akwamu traditional council and other traditional leaders such as Nana Otuaben, Nana Samanyia, Nana Tete Amoh, Nana Kwaku Budu Akomea, Nana Dabehene, Nana Okrukata and Agya Awuah for providing me with valuable data which were instrumental in deriving meaningful conclusions for decision-making.

I will like to express my sincere gratitude for the invaluable support and assistance that the environmental experts from VRA, EPA, NADMO and Asuogyaman District Assembly provided throughout the course of my PhD research.

To Mr. Saviour Kwaku Woanya, I extend my heartfelt gratitude for your generous assistance and your willingness to dedicate your time and expertise out of your busy schedule during my field work activities which have been invaluable. Finally, I feel obliged to single out my wife and children whose prayers, support and encouragement spurred me on.



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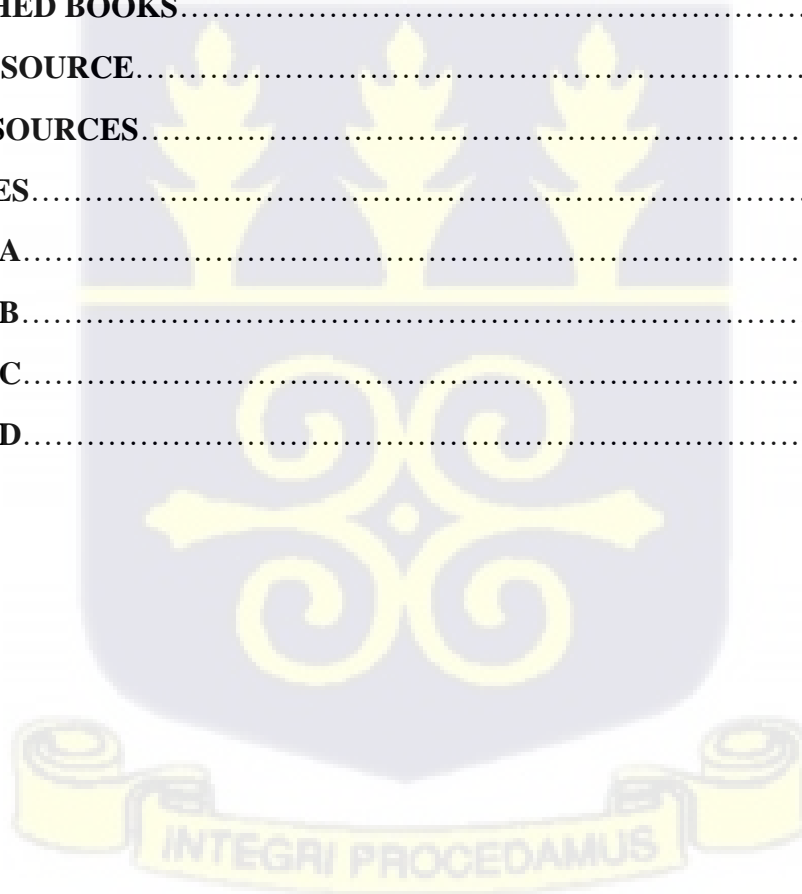


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LIST OF ABBREVIATIONS

ATL	Akosombo Textiles Limited
DDT	Dichlorodiphenyltrichloroethane
EPA	Environmental Protection Agency
ICT	Information Communication and Technology
IKS	Indigenous Knowledge System
IUCN	International Union for Conservation of Nature
MTN	Mobile Telephone Network
NADMO	National Disaster Management Organization
NEAP	National Environmental Action Plan
PURC	Public Utilities Regulatory Commission
SMS	Short Message Service
TELCOS	Telecommunication Companies
UNCED	United Nations Conference on Environment and Development
UNDRIP	United Nations Declaration on the Rights of Indigenous Peoples
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
VRA	Volta River Authority
WIPO	World Intellectual Property Organization
WRI	Water Research Institute

CHAPTER ONE

INTRODUCTION

The introduction of this thesis discusses the background to the study, statement of the problem, objectives of the study, research questions, scope of the study, conceptual framework and the methodology. It also discusses the literature review, organisation of the study and significance of the study.

1.1 Background to the Study

Water resource constitutes an integral part of the ecosystem, supporting human lives, flora and fauna in various land surfaces across the world. Water resource is also essential for a wide range of economic activities which include hydropower generation, transportation and production of fish.¹ According to United Nations Environmental Programme (UNEP), water is necessary to all forms of human, animal and plant life. It is essential for overall human well-being and supports all aspects of human livelihoods. Furthermore, water resource plays an essential role in supporting productive human activities such as agricultural, energy and industrial production, sanitation, transportation services, fishing and tourism.² Following the essential nature of water to humankind, goal 6 of United Nations' agenda 2030 for sustainable development is to ensure availability and sustainable management of water and sanitation for all.³

¹ Van der Molen and A. Hilderling, 'Water: cause for conflict or co-operation? ISYP', *Journal on Science and World Affairs* 1, no. 2(2005), 133-143.

² UNITED NATIONS ENVIRONMENTAL PROGRAMME(UNEP), 'Water Conservation: A Guide to Promoting Public Awareness', [http://www.unep.org/training/programmes/Instructor%20Version/Part_2/Activities/Interest Groups/s/Public_Awareness/Supplemental/Water_Conservation_A_Guide_to_Promoting_Public_Awareness.pdf](http://www.unep.org/training/programmes/Instructor%20Version/Part_2/Activities/Interest%20Groups/s/Public_Awareness/Supplemental/Water_Conservation_A_Guide_to_Promoting_Public_Awareness.pdf) (assessed January 20, 2022).

³ UNITED NATIONS, *Transforming Our World: The 2030 agenda for sustainable development*,

With the increasing human population around the globe, with a current population of about seven billion people and the growth of technology, Karr suggests that human society is required to devote more attention to the protection of adequate supplies of water.⁴ Most parts of the world are surrounded by water resources, but they lack accessibility to these resources required to meet the fundamental needs such as food production, health, sanitation and sustainable development. Even though water covers about 70% of the earth's surface, only about 2.5% is readily available for human use.⁵ This means that competition for water use is likely to increase across the globe and the need to find pragmatic ways to manage water resources wisely is highly appreciated.

In Ghana, there are numerous water resources such as the Volta River, Densu, Pra, Tano and Ankobra. Yet, these water resources have become a major problem because they are exposed to serious pollution problems as a result of anthropogenic activities related to agriculture, human settlement, industrial and other commercial activities. Describing the crisis state of water resources in Ghana, Awuah-Nyamekye argues that inadequate industrial and domestic wastewater management has resulted in the pollution of most surface water resources in and around urban areas in the country. He contends that some inland fishermen use poisonous chemicals such as dichlorodiphenyltrichloroethane (DDT) in their fishing expedition, thereby endangering many aquatic lives and water quality in the country.⁶

[www.sustainable%20development%20goal.pdf](http://www.sustainabledevelopmentgoal.pdf) (assessed September 18, 2021).

⁴ J. R. Karr, (1991). 'Biological integrity: A long-neglected aspect of water resource management. *Ecological Applications*', 1, 66–84. <http://dx.doi.org/10.2307/1941848>

⁵ O.P. Asantewaa, S. Asumadu-Sarkodie, & P. Ameyo, *A review of Ghana's water resource management and the future prospect* (Sri Lanka: International water management Institute, 2016), p. 2.

⁶ S. Awuah-Nyamekye, *Salvaging Nature: The Akan Religio-Cultural Perspective* (Koninklijke Brill NV: Leiden, 2009), p. 257.

In the south-western parts of Ghana, Ampomah observes that about 60% of water bodies were polluted with most of them in critical condition as a result of industrial waste, illegal mining, farming and household disposals.⁷ This water resource crisis is also evident in other parts of the country. In the central region, some water bodies particularly in Cape Coast have been polluted by illegal mining activities. The situation is not different in Sunyani as residents have been blocking the course of the river at definite intervals to prevent water from flowing into some areas in the region to irrigate farms. Again, the Enu River which serves residents at Konongo in the Ashanti region is polluted due to illegal mining activities. In the northern region, the basic activity causing pollution of water bodies is sand winning and illegal mining activities. For instance, the Nawuni River in the region has experienced massive sand winning activities which have continuously altered the colour of the river.⁸

To explore what might have caused the numerous challenges facing water bodies in Ghana, Agbanu argues that most African countries like Ghana are anxious to modernise their communities and expand their economic base in order to provide for both social and economic needs of the people. To ensure socio-economic development and to bridge the gap between the developed and developing nations, governments have resorted to the exploration and exploitation of their natural resources to generate the huge capital needed to meet the set targets without due regard for the environmental consequences.⁹ Agbanu's observation is supported by Nortey Darko who also argues that prior to the advent of colonialism and the subsequent introduction of the capitalist corporate economy, Western education and foreign

⁷ Ampomah, B. 'Ghana's water bodies Polluted' Water Resources Commission. Executive Secretary of the Commission at a workshop in Ho, GNA, May 13, 2007.

⁸ S. J. Cobbina, E. Yeleliere & A. B. Duwiejuah, 'Review of Ghana's water resources: the quality and management with particular focus on freshwater resources', *Applied Water Science* 8, no. 93 (2018): 7.

⁹ Harry, L.K. Agbanu, 'Environmental Ethics in Mafi-Eve indigenous culture', PhD thesis (University of Ghana, Legon, 2011), 1.

religions, indigenous communities in Ghana and the rest of Africa operated within their own philosophies that guided their relations with the environment. This unique relationship to the land and its resources enabled indigenous people to live harmoniously with the environment for many years. However, colonialism, through its many agencies, succeeded in obliterating many of these philosophies and knowledges, which in the course of time changed the interdependent nature of indigenous people and their surroundings. For this reason, indigenous interconnections within natural surroundings were interrupted, so as to position humans as independent and superior, which subsequently ascribed power to humans to exploit the environment to their advantage.¹⁰ Other studies have also confirmed that rapid population growth, urbanisation, industrialisation and climate change are contributing factors undermining the sustainability of water resources in Ghana.¹¹

In their exposition on water resource crisis in Ghana, Kessey and Arko opine that Ghana has a standing history of small scale mining of gold, popularly called '*Galamsey*' as far back as the eighth century as a household economic activity. It was legalised when the Small Scale Mining Law (PNDCL 218) was passed in 1989. Since then, the industry has become a major contributor to the total quantity of gold produced in Ghana and an employer to a lot of the rural labour force. In spite of its contribution, the industry has many negative effects on the environment and most significantly water bodies. The water bodies which are the main sources of water for drinking, household chores and other activities have all been polluted as a result of these *Galamsey* activities and subsequently caused more deaths daily to those who engage in these activities. All the oozing chemicals from the mercury-gold

¹⁰ Isaac Nortey Darko, 'Environmental Stewardship and Indigenous African Philosophies: Implications For Schooling, And Health Education in Africa: A Case of Ghana', PhD thesis (Institute for Studies in Education of the University of Toronto, Toronto, 2014), p.6-7.

¹¹ Ministry of Water Resources, Works and Housing, National Water Policy, June, 2007, p. 1.

amalgamation process is dumped back into the river bodies and that affects the quality of these water bodies for human use.¹²

With the widespread public concern about the destruction of the environment in general and water bodies in particular, many African states have established legislation, ministries, departments and agencies with the task to respond to water resource crisis by looking for the most efficient ways to use water resources with the least negative impact to salvage the situation. In Ghana, the 1992 constitution paved way for the establishment of legislative instrument out of which Water Resource Commission was birthed to see to the management of water resources in Ghana.¹³ Other institutions mandated to manage water resources in Ghana are Environmental Protection Agency (EPA), National Environmental Action Plan (NEAP) and Public Utilities Regulatory Commission (PURC).¹⁴

Despite the introduction of institutional framework by government to manage and protect water resources in Ghana to meet the current and future needs, the country still faces numerous challenges in respect of the management of water bodies. Cobbina *et al* argued that the existing water laws do not provide mechanisms to reconcile customary law and practices with statutory laws in the constitutional discourse. Thus, the enactment of these acts has dully denied traditional authorities the mandate to prosecute or apply customary laws and practices in the water resources management.¹⁵ Further, lack of involvement of the community in decision making, because the top-down approach in decision making is still more prevalent

¹² K. D. Kessey & B. Arko, 'Small scale gold mining and environmental degradation, in Ghana: Issues of mining policy implementation and challenges' *Journal of Studies in Social Sciences*, 5, 2013.

¹³ S.J. Cobbina, E. Yeleliere, S. J. & A. B. Duwiejuah, 'Review of Ghana's water resources: the quality and management with particular focus on freshwater resources', *Applied Water Science* 8, no. 93 (2018): p. 8.

¹⁴ Cobbina, *Review of Ghana's water resources*, p. 9.

¹⁵ Cobbina, *Review of Ghana's water resources*, p. 9.

than the bottom-up approach where community members as well as traditional authorities can take part in decision making regarding water resources management.¹⁶

Despite the establishment of government's agencies in the water resource management which are believed to have relegated indigenous beliefs and practices in the management of natural resources in Ghana, several studies confirm that since time immemorial, indigenous belief systems have been used successfully to promote natural resource management including water. Ntiamo-Baidu argues in her article that there exist locally well-informed traditional belief systems that help in conserving natural resources. She indicates that, taboos exist in all cultures in Ghana which represent informal institutions where traditional religiously governed norms define human behaviour towards natural resources.¹⁷

Miller also contends that indigenous institutions in Ghana have played key roles in the management of natural resources and those who break natural resource management rules and norms are punished. These collective actions in natural resource management are expressed through religious beliefs and moral sanctions, and the resilience of these beliefs and practices have stood the test of time in natural resource management.¹⁸ Further, it is also evident that before the introduction of formal institutions in the management of natural resources such as water in Africa, indigenous societies had developed elaborate natural resource management systems which were based on their religious beliefs.¹⁹ Again, Osei argues that despite the contributions of formal institutions in the sustainable water resource management which seem

¹⁶ Cobbina, *Review of Ghana's water resources*, p. 9.

¹⁷ Y. Ntiamo-Baidu, 'Indigenous Beliefs and Biodiversity Conservation: The Effectiveness of Sacred Groves, Taboos and Totems in Ghana for Habitat and Species Conservation'. *Journal for the Study of Religion, Nature and Culture* 2, no 3(1991):309-326.

¹⁸ D. Millar, *Shrines and Groves: Bio-cultural Diversity and Potential Environment Management. Communication and Media for Development* (Cantonments, Accra, Ghana, 2004).

¹⁹ O.P. Asantewaa, S. Asumadu-Sarkodie & P. Ameyo, *A review of Ghana's water resource management and the future prospect* (Sri Lanka: International water management Institute, 2016), P. 14.

to have relegated indigenous beliefs and practices in the management of natural resources in Ghana, indigenous societies continue to cling on to their belief systems in the management of natural resources such as water.²⁰ Awuah-Nyamekye also asserts that Ghana's indigenous religions and cultures are potential resources which if well managed, could complement government's efforts to deal with Ghana's contemporary environmental problems.²¹

With the motivation from the available literature on the role of indigenous beliefs and practices in natural resource management in Ghana, this study contributes to the discourse, using the Volta River in Akwamu traditional area as a case to form basis for advocacy in indigenous water resource management practices in Ghana.

1.1 Statement of the Problem

Traditional Ghanaian societies, like many indigenous societies around the world have developed rich and complex sets of experiences relating to their environment and this locally based knowledge systems have not only fostered a deep appreciation for nature, but have also served as guiding principles for daily decision-making within these indigenous societies.²²

Among the Mafi-Eve people in Ghana for instance, Agbanu points out that the conservation of natural resources is anchored on their indigenous culture and these beliefs, practices, customs and traditions have had enormous influence on their attitudes towards nature.²³ Osei also argues that the indigenous people of Akwamu traditional area have

²⁰ B.K. Osei, 'Relevance of Taboo Practices in Contemporary Akwamu Traditional Society', *Journal of Social Sciences and Humanities* 5, no 3 (2019): 260-273.

²¹ S. Awuah-Nyamekye, *Salvaging Nature: The Akan Religio-Cultural Perspective* (Koninklijke Brill NV: Leiden, 2009), p. 257.

²² Isaac Nortey Darko, 'Environmental Stewardship and Indigenous African Philosophies: Implications For Schooling, And Health Education in Africa: A Case of Ghana', PhD thesis (Institute for Studies in Education of the University of Toronto, Toronto, 2014), p.4-5.

²³ Harry L.K. Agbanu, 'Environmental Ethics in Mafi-Eve indigenous culture', PhD thesis (University of Ghana, Legon, 2011), p. 124.

continued to cling on to their belief systems in the management of natural resources since time immemorial.²⁴ This is evident in a personal interview with Abusuapanyin Kwabena Awuah who pointed out that in the life and thought of the indigenous people of Akwamu traditional area in history, management of water bodies is enforced through religio-cultural beliefs and practices which have been in place over the years to protect river bodies in a sustainable way, long before formal institutions in charge of managing natural resources were established by the government.²⁵ These practices reflect a profound connection between Akwamu people and the river, because they do not only view the river as a physical resource, but they also view it as a spiritual entity with maximum reverence and protection.

Despite the existence of indigenous conservation practices related to water bodies in Akwamu traditional area, it has been observed in recent times that, the Volta River which is one of the main sources of livelihood for the people in Akwamu traditional area is threatened by increasing pollution and exploitation as a result of indiscriminate human activities associated with fishing, farming and human settlement, posing serious threat to the lives of the people and the river's ecosystem. This situation raises serious concerns about the sustainability of the river if it continues to be exploited and polluted. It is against this background that this study was carried out to seek answers to the underlying factors militating against the enforcement of the indigenous conservation practices of the Volta River. This is the vacuum the study seeks to fill.

²⁴ B.K. Osei, 'Relevance of Taboo Practices in Contemporary Akwamu Traditional Society', *Journal of Social Sciences and Humanities* 5, no 3 (2019): 260-273.

²⁵ Abusuapanyin Kwabena Awuah, interview, 30th June, 2021, Akwamu-Gyakiti.

1.2 Objectives of the Study

The main objective of this study is to examine the indigenous religio-cultural practices and the management of the Volta River in Akwamu traditional area. The specific objectives are to:

1. examine the indigenous beliefs and practices that exist in the management of the Volta River in Akwamu traditional area.
2. investigate factors which undermine the enforcement of indigenous conservation practices of the Volta River in Akwamu traditional area.
3. explore stakeholders' perceptions on the possibility of integrating indigenous and modern conservation practices of the Volta River in the Akwamu Traditional Area.

1.4 Research Questions

The following research questions were raised to guide the study.

1. Which indigenous beliefs and practices exist in the management of the Volta River in the Akwamu traditional area?
2. What factors undermine the enforcement of indigenous conservation practices of the Volta River in Akwamu traditional area?
3. What are stakeholders' perceptions on the possibility of integrating indigenous conservation practices of the Volta River in Akwamu traditional area?

1.5 Scope of the Study

Akwamu traditional area is made up of many communities. These include old Senchi, new Senchi (Akrade), Dzidzokope, Atimpoku, Glover, Powmu, Mangoase, Kokontekpedzi, Adume, Akosombo, Adjena, Adumasa and Gyakiti. Others include Akwamufie, Mamewata, Adome, Nudu, Aboasa, Apegusu, Mpakadan, Anyaansu and Survey Line. However, the study

focused on only the riparian communities which are situated along the Volta River. These include New Senchi, Dzidzokope, Atimpoku, Abume, Kokontekpedzi, Mamewata, Adome and Akwamufie.²⁶ These communities were chosen because they are situated along the Volta River, so vital information concerning their contributions and actions that have impact on the Volta River could be sought. Also, the study focused on traditional leaders and officers from state institutions, including the Volta River Authority (VRA), Environmental Protection Agency (EPA), National Disaster Management Organization and the Environmental Health Department of Asuogyaman District Assembly.

As custodians of indigenous knowledge and customs, choosing traditional leaders offered the researcher valuable insights into the indigenous religio-cultural practices related to the Volta River. Also, officers from the state institutions were chosen because their perspectives offered valuable information on the need to integrate indigenous knowledge and modern statutory laws for a sustainable management of the Volta River. The study was a qualitative research which sought to examine the role of indigenous religio-cultural practices in the management of the Volta River in Akwamu traditional area. Although there are other river bodies in the study area, the study was restricted to only the Volta River because of the anthropogenic activities that continually threaten the quality of the river and the fact that it is the only river which serves the livelihood of the indigenes of Akwamu traditional area.

1.6 Theoretical Framework

The theoretical framework which underpins this study is ecocentrism which draws inspiration from the ideas of Aldo Leopold in his *Land Ethics*. According to Leopold,

²⁶ Ghana Statistical Service, *Population and Housing Census: Asuogyaman District Analytical Report* (Accra: Sakoa Press Ltd., 2010), 3.

ecocentrism is a philosophical perspective that emphasises the intrinsic value of the ecosystems and the role of humans as stewards or caretakers of these ecosystems. Leopold argues that, ‘A thing is right when it intends to preserve the integrity, stability and beauty of the biotic community; it is wrong when it tends otherwise’.²⁷ Ecocentrism, which recognises that all elements of the environment have inherent worth, regardless of their utility to humans contrasts with anthropocentrism, which prioritises human interests and well-being over the well-being of other species and ecosystems.

Leopold’s Land Ethics is an appeal for the moral responsibility to the natural world, where ethics directs all members of a community to treat one another with respect, and that all communities include not only humans, but also soils, waters, plants and animals or what he calls ‘the land’.²⁸ Ecocentrism, as used in this study is seen as a useful framework to guide this study, because it provides a basis for understanding the indigenous religio-cultural practices which constitute the ecocentric ethics of the people in the Akwamu Traditional Area in the sustenance of the Volta River.

1.7 Methodology and Methods of Data Collection

This section presents the research methodology and the methods of data collection for the study.

1.7.1 Research Methodology

According to Jansen and Warren, research methodology is about how a researcher systematically designs a study to ensure valid and reliable results that address the research

²⁷ Aldo Leopold, *A sand county almanac* (New York: Oxford University Press, 1949). p.262.

²⁸ Aldo Leopold, *A Sand County Almanac*, <https://www.aldoleopold.org/about/aldo-leopold/sand-county-almanac> (assessed January 23, 2022).

aims and objectives.²⁹ For Polit and Hungler, research methodology refers to the overall plan for obtaining answers to research questions.³⁰ A Phenomenological study which uses in-depth interview, focus group discussions and observation was used for data collection and analysis for the study. Phenomenological study is a type of qualitative research approach that enables a researcher to investigate his subjects through its visible aspects by allowing the phenomena to speak for themselves, so that an objective understanding of what is studied can be realised.³¹ It describes individuals in terms of their lived experiences of a concept or a phenomenon where the phenomenologist focuses in describing what all participants have in common as they experience a phenomenon.³²

The basic purpose of phenomenology is to reduce individuals' experiences with a phenomenon to a description of the universal essence, then the inquirer collects data from persons who have experienced the phenomenon, and develop a composite description of the essence of the experience for all of the individuals.³³ For Edward Husserl, phenomenology involves the examination of consciousness, or the way one experiences the world, and individual's experience is the fundamental source of meaning and knowledge.³⁴ He argues that data gathered through phenomenological inquiry are more than an individual's

²⁹ Derek Jansen & Kerryn Warren, What Exactly is Research Methodology, <https://gradcoach.com/what-is-research-methodology> (assessed February 6, 2022).

³⁰ D.F. Polit & B.P. Hungler, *Essentials of Nursing Research Methods, Appraisal and Utilization*, 4th ed. (Philadelphia: Lipinc, 2003).

³¹ J. L. COX, *An introduction to the phenomenology of religion* (London, New York: Continuum, 2010), 28.

³² John W. Creswell, *Qualitative inquiry and research design: Choosing among five approaches*, 2nd ed. (London, New Delhi: Sage Publications, 2007), 57-58.

³³ Creswell, *Qualitative inquiry and research design*, 58.

³⁴ Edmund Husserl, *Logical investigations*, translated by J.N. Finley (New York: Humanities press, 1900), 21.

recounting of the subjective experienc.³⁵ For him, the underlying assumption of phenomenology is that of “going back to the things themselves”.³⁶

One major factor that led Edmund Husserl into the formulation of his view on phenomenology was the reigning idea at that time that, science alone is the ultimate court of appeal. This means that scientific method was seen itself as the only method of achieving the truth of any issue. He was therefore reacting against the scientific methodology which demands that life experiences be thrown to the mud for objective empiricism. Husserl however counters this view by saying that life experiences should be recognised, rather than being a hindrance, and be used as a means through which reality could be explored.³⁷

The phenomenological approach employs two major principles that could be used when a description of a phenomenon is being made by a researcher. These are; the principle of *Epoche* (suspension of judgement’ or ‘bracketing of faith’) and the *Eidetic* intuition (‘that which is seen’ or ‘establishing meaning’). The principle of *epoche* is a cognitive process and a rational state of mind in which one withholds judgements, particularly on issues that require drawing of moral or ethical conclusions. In studying religion, the principle of *epoche* suggests that there must be no concern of preconceived notions. Thus, there should be no prejudices or biases on the part of the researcher in the study of religion. In other words, the researcher should not concern him or herself with the truth or validity of the religious claim. By bracketing one’s faith, one must assume agnostic posture while studying religion. Thus, one should not accept or deny things in the religion under study. Here, the researcher must put all

³⁵ Husserl, Logical investigation, 21.

³⁶ Husserl, Logical investigation, 21.

³⁷ Husserl, E. (1977). “Psychological studies in the elements of logic”. Trans Dallas Willard, The Personalist (LVIII).

personal beliefs and convictions aside so that he or she can view the object under study objectively. The merit of using the principle of epoche is that, it allows the researcher to study religions other than his or her own without committing himself or herself to them or rejecting them. In this case, the researcher becomes fair and objective in the study because it helps him or her to acquire more knowledge.³⁸

With regard to eidetic vision, Smart explains that it is the capacity to grasp the essence of religious phenomena by means of empathy and intuition. This means that, the researcher must put him or herself into the position of the believer. This enables him or her to feel like the believer, see things in the religion like the believer and understand the religion as the believer would. Eidetic vision calls on the researcher to search for the essentials of the religion to discover the very nature of the religion under study.³⁹

The notion that, in using phenomenological method, there should be no prejudices or biases when a description of a phenomenon is being made by a researcher has received some criticisms. Lester contends that recent humanist and feminist researchers refute the possibility of starting without preconceptions or biases, therefore, it is practically impossible to completely apply the principle of epoche(suspending or doing away with all preconceptions about the phenomenon being studied) as suggested by Husserl.⁴⁰ According to other critics, no pure descriptions of the phenomena separable from the subjective observer are attainable.⁴¹

³⁸Epoché: Meaning, Object, and Existence in Husserl's Phenomenology, https://link.springer.com/chapter/10.1007/978-94-007-0473-2_10(assessed February 6, 2022).

³⁹ N. Smart, *The science of religion and the sociology of knowledge: Some methodological Questions* (Princeton: Princeton University Press, 1973).

⁴⁰ S. Lester, *An introduction to phenomenological research*. Taunton UK, Stan Lester Developments, <http://www.sld.demon.co.uk/resmethy.pdf> (accessed January 10, 2022).

⁴¹ C. J. Bleeker, *The Sacred Bridge: Research into Nature and structure of Religion* (Leiden: Brill, 1971), 11.

In spite of these criticisms, James Cox argues that the phenomenological method still represents a fundamental approach within mainstream thinking among scholars of religion, and retains an essential place in the academic study of religion.⁴²

The phenomenological study adopted by the researcher was useful for this research because it helped him to understand from the participants' own point of view, the religio-cultural practices related to the management of the Volta River in Akwamu traditional area. Being an indigene (insider) of Akwamu traditional area, the eidetic aspect of the phenomenological method offered the researcher the opportunity to engage the participants through observation, focus-group discussion and an in-depth interview and this enabled him to understand the cosmological beliefs systems that the indigenous people of Akwamu traditional area use in managing water bodies, including the Volta river.

1.7.2 Methods for Data Collection

Research methods refer to the strategies, processes or techniques utilised in the collection of data or evidence for analysis in order to uncover new information or create better understanding of a topic.⁴³ Research methods can be either qualitative, quantitative or mixed. In this research, qualitative research methods were employed to guide the study. Myers argues that qualitative methods are tools used in understanding and describing the world of human experience.⁴⁴ For Holloway and Wheeler, qualitative methods deal with matters relating to

⁴² J. L. COX, *An introduction to the phenomenology of religion* (London, New York: Continuum, 2010), 28.

⁴³ University of Newcastle Library Guides, *Research Methods: What are research methods*, URL: <https://libguides.newcastle.edu.au/researchmethods> (assessed February 6, 2022).

⁴⁴ M. MYERS, *Qualitative research and the generalizability question: Standing firm with proteus*, *The Qualitative Report*, 4(3/4), <http://www.nova.edu/ssss/QR/QR4-3/myers.htm> (accessed February 6, 2022).

people and their lives seeking to understand human thought and behaviour in general.⁴⁵ Morse indicates that qualitative methods seek to elicit meaning, experience or perception from the point of view of the respondent (emic perspective/insider) rather than from the perspective of the researcher (etic perspective/ outsider). That is, qualitative methods seek to understand people in their socio-cultural environment and to lessen the imposition of the researcher's perspective onto the participants.

The qualitative methods employed by the researcher became useful in this study, because they offered him the opportunity to gather firsthand information about the lived experiences of indigenous water resource management related to the Volta River from the participants' point of view in their natural setting.

The qualitative methods adopted in this study were in-depth interview, focus group discussion and observation. The interview and the focus group discussion guides were made up of questions pertaining to the research objectives. Apart from the primary sources employed for the study, relevant information from documentary sources which were related to the study were also employed to guide the study. The primary sources in particular helped the researcher to explore the religio-cultural practices which the indigenous people of Akwamu traditional Area adopt to manage the Volta River. Strict ethical considerations such as informed consent, confidentiality and anonymity were followed in the data collection. In view of this, an introductory letter was obtained from the Department for the Study of Regions, University of Ghana by the researcher to assure participants that all ethical standards of research set by the university were followed.

⁴⁵ I. Holloway and S. Wheeler, *Qualitative research for Nurses* (Oxford, Cambridge, Mass: Blackwell Science, 1996).

The following section discusses how the research methods were used to gather data from the participants for analysis.

1.7.2.1 In-Depth Interview

A qualitative interview guide was used for data collection for the study. According to Kvale and Brinkmann, interviews are conversations with structure and purpose that are defined and controlled by the researcher.⁴⁶ The interview guide had both structured and unstructured questions. The structured questions sought to find out the indigenous religio-cultural practices in place for the management of the Volta River in the Akwamu traditional area. Here, the participants were restricted to answer specific questions that were related to the management of the Volta River. The unstructured questions on the other hand were informal conversational interviews that sought to elicit participants' views about the challenges and factors that undermine the effective management of the Volta River in the Akwamu Traditional Area. Using the unstructured interview guide gave the participants the freedom to operate and speak confidently and openly, and also to give the participants the freedom to answer questions in an unrestricted manner. In general, the interviews were necessary as they provided the researcher the opportunity to direct respondents' answers to specific questions in case they derailed during the interactions.

In using the interview guide, a digital recorder was used to record personal interviews with traditional leaders, the chief priest, officials from state's institutions and fishermen. The information gathered from the participants were transcribed, translated and analysed as prescribed by the research questions.

⁴⁶ S. Kvale & S. Brinkmann, *Interviews: Learning the craft of qualitative research Interviewing* (Thousand Oaks, CA: Sage Publications, Incorporated, 2009).

In all, 34 participants were purposively selected to take part in the study. Purposive sampling is a technique through which the researcher deliberately selects his or her informants on the basis of the knowledge or experience that they possess with the aim of securing information that will be able to provide the relevant answers to the researcher's questions.⁴⁷ The participants were made up of 20 traditional leaders who have deep understanding of traditional knowledge related to the management of the Volta River, the chief priest responsible for the spiritual aspects related to the Volta River, 5 officers from state's institutions who have professional knowledge and policies related to the management of the Volta River and 8 fishermen who rely on the Volta River for their livelihoods.

1.7.2.2 Focus Group Discussion

Two separate focus group discussions were organised for traditional leaders and fishermen. The first meeting was organized for traditional leaders, while the second one was organised for fisherman. Here, participants with similar background were grouped to seek their opinions based on the research questions. This helped the researcher to gain insight into different opinions about the subject matter from the participants' point of view.

In each session, the focus group discussion lasted between 60 and 75 minutes. The researcher decided to engage the participants within this time space to give ample opportunity for the participants to share their perspectives and have sufficient discussions on the subject matter. The focus group discussions were recorded on digital recorder and were later transcribed, translated and analysed accordingly. Like the interview, the purpose of the focus group discussion was to find out the participants' knowledge and understanding about the

⁴⁷ H.R. Bernard, *Research methods in Anthropology: Qualitative and quantitative Methods*, 3rd ed. (Walnut Creek, California: AltaMira Press, 2002).

indigenous religio-cultural practices in the management of the Volta River in the Akwamu traditional area.

1.7.2.3 Observation

Like interview and the focus group discussion, the researcher made use of observation as a data gathering technique. According to Darko, observation is necessary for studying social actions, behaviour, interactions, emotions, relationships and events within social settings.⁴⁸ Observation, as described by Cohen and Crabtree is a method that provides researchers the opportunity to observe and engage in what is happening in a social setting as they interact with participants.⁴⁹ Observation can take the form of photographs, audio and visual recording and can either be carried out in a participatory or non-participatory approach while the participatory approach combines engagement in the activities and lives of the people being under studied while maintaining a professional distance that allows adequate observation and data recording,⁵⁰ Cohen *et al* argue that the non-participatory approach is interaction with limited engagement with the people's activities.⁵¹

Observation method was useful in this study because it gave the researcher a first-hand information as he physically saw events that took place. In this regard, the researcher personally visited the banks of the Volta River to observe the state of the river to give him first-hand information where photographs were taken. Also, he attended Akwasidae festival at Akwamufie to observe environmental experts and traditional leaders who spoke about the

⁴⁸ Isaac Nortey Darko, 'Environmental Stewardship and Indigenous African Philosophies: Implications for Schooling, And Health Education in Africa: A Case of Ghana', PhD thesis (Graduate Department of Humanities, Social Sciences and Social Justice Education, Ontario Institute for Studies in Education of the University of Toronto, 2014), 123.

⁴⁹D. Cohen and B. Crabtree, 'Qualitative Research Guidelines Project', <http://www.qualres.org/HomeEval-3664.html>(assessed January 16, 2023).

⁵⁰ D.M. Fetterman, *Ethnography: Step by Step* (Applied social research methods series; v. 17), Sage publications, 1998.

⁵¹ Cohen, 'Qualitative Research Guidelines Project' (assessed January 16, 2023).

current state of the Volta River and the need for its protection. The observation technique adopted by the researcher enhanced the quality of the research because it provided a more accurate picture of events on the basis of data gathered at any given point. Indeed, the observation was carried out in a non-participant fashion as the researcher observed the phenomena of interest during the fieldwork.

1.7.2.4 Secondary Sources

Relevant information from documentary sources which are related to the study were employed. These included reviewing of books, articles and sources from the internet. The reason for using secondary sources was to help the researcher to access the work of scholars whose studies are related to the topic under investigation. Research carried out by scholars such as Harry K. Agbanu, Ben-Willie Kwaku Golo, Lawrence Boakye, Samuel Awuah Nyamekye and Isaac Nortey Darko, among others related to the topic under investigation were consulted to guide the study.

Due to the qualitative nature of the study, the data collected were checked for consistency and sorted manually along identified themes for discussion based on the research objectives. The voices of the participants were used to present their fears, hopes and aspirations. It is evidently clear that the method adopted by the researcher gave him the opportunity to gather the required information from the respondents for better analysis.

1.8 Literature Review

This section reviews scholarly works related to the study. The essence of the literature review is to provide empirical review on indigenous religio-cultural practices and water resource management from global perspectives. The literature review was guided by the research objectives so that the discussions would be engaged within context. The religio-

cultural practices which constitute the indigenous knowledge system of local people which are embedded in their culture are effective tools in the conservation of natural resources such as water bodies. For instance, Wilder et al argue that culturally relevant species of flora and fauna as well as their habitats have been conserved using indigenous knowledge systems, because these species have been culturally intertwined with the customs and beliefs of the people.⁵² Over the years, initiatives have begun to promote the inclusion of indigenous knowledge in water resource management across the globe. The Indigenous Peoples' Kyoto Water Declaration in 2003 prepared by native participants at the 3rd World Water Forum in Japan, for instance, supported the inclusion of indigenous knowledge in water protection issues. Section fifteen (15) of the declaration outlines the role of indigenous knowledge in water resource management in addressing global water issues. The essence of the declaration was to affirm the Aboriginal people's relationship to Mother Earth and their responsibilities to future generations.⁵³ In the declaration, it was argued that, traditional practices are dynamically regulated systems and are based on natural and spiritual laws, ensuring sustainable use through traditional resource conservation. Long-tenured and place-based traditional knowledge of the environment is extremely valuable, and has been proven to be valid and effective.⁵⁴

Series of internationally developed documents have also supported indigenous peoples' call for increased recognition of the importance of indigenous knowledge in resolving environmental crises, including those involving water. For instance, the

⁵² B.T Wilder, C. O'meara, L. Monti and G.P. Nabhan, (2016). 'The Importance of Indigenous Knowledge in Curbing the Loss of Language and Biodiversity'. *Bioscience* 66 no 6(2016): 449-509.

⁵³ R. Boelens, M. Chiba & D. Nakashima, *Water and Indigenous peoples, knowledge of nature* (UNESCO: Paris, 2006), 108-115.

⁵⁴ S. Jackson and J. Altman, 'Indigenous rights and water policy: Perspective from tropical northern Australia', *Australia Law review*, 13 no 2(2009): 27-48.

collaborative research between the Rovina Lagoon indigenous groups of the Solomon Islands and marine scientists conducted in response to the local sea-tenure system resulted in the formulation of techniques for protecting endangered species of fish.⁵⁵

At the Lower Songkhram River Basin in North-east Thailand, one of the most notable places is the wetland called Nhongchaiwan which is an important part of a unique ecosystem which provides food and herbs to the community. It is also an important site for the culture and identity of the indigenous people because it is a place for social activities, and generates income for the whole community. In the wetland, an island exists within a floating forest which is an important place for fish breeding, and a shelter for fish to lay eggs when they migrate in the flood season from the Mekong River, which is useful for the indigenous people and other communities. In view of the unique nature of the wetland, Kettate argues that the indigenous people respect the spirit of the wetland and conserve the sacred area respectfully.⁵⁶

United Nations Convention on Biological Diversity and the United Nations' principles and guidelines for the protection of the heritage of indigenous people recognises the vital role indigenous knowledge play in helping to protect environmental resources. The Indigenous Peoples' Kyoto Water Declaration in 2003 supported the implementation of strong measures to allow the full and equal participation of indigenous peoples to share their experiences, knowledge and concerns. In the same vein, Kgosietsile and Jeremy supported the declaration

⁵⁵ S. Aswani and R. Hamilton, 'Integrating indigenous ecological knowledge and customary sea tenure with marine and social science for conservation of Bumphead Parrotfish in the Roviana Lagoon, Solomon Islands', *Environmental Conservation*, 31 no 5(2004): 69-83.

⁵⁶ Boonyong Kettate, The Ancestral Spirit Forest (Don Pu Ta) and the Role Behavios of Elders (Thao Cham) in Northeastern Thailand. *J. Siam Soc.* 2000, 88, 96–110, [https://d1wqtxts1xzle7.cloudfront.net/60506290/sustainability-10-0284220190906\(Assessed, 17/05/2022\).](https://d1wqtxts1xzle7.cloudfront.net/60506290/sustainability-10-0284220190906(Assessed, 17/05/2022).)

and asserted that, the indiscriminate and narrow application of modern scientific tools and technologies have contributed to the loss and degradation of water.⁵⁷

In Africa, Agboro argues that environmental ethics is derived from a worldview that is strongly theistic. He argues that majority of Africans conceive humans and their environment to be two inseparable entities that cannot be divorced from each other.⁵⁸ Agboro's assertion is supported by Nwosu who contends that many Africans believe that without the environment, human life may not be sustained, and that African cosmology conceives of the existence of human beings as being tied up with their environment which has spiritual underpinning.⁵⁹ Ontologically, traditional African people believe that human beings did not just happen to be in this world, but rather they were designed to live in the world and designed in relation to their environment(s). This implies that environmental consciousness is embedded in the traditional African worldview which is shaped by their religious beliefs.⁶⁰ Abayie-Boaten has also stressed that as a result of human's relation to the environment, many traditional African societies conceive of themselves as stewards of the environment, with social and moral obligations to manage and conserve it for posterity.⁶¹

Traditional Akan people view rivers and other water bodies such as sea, lagoons and lakes as sacred entities. Awuah Nyamekye argues that strict religious taboos are put in place

⁵⁷ V. Kgosietsile and S.P. Jeremy, *Integrating Indigenous Technical Knowledge and Modern Scientific Knowledge for Biodiversity Conservation and Human Livelihoods* (Southern Kalahari: Botswana, 2008).

⁵⁸ O.P. Agboro, African environmental ethics: 'A creation of distorted values' <http://www.scribd.com/doc/12529433/African-Environmental-Ethic-A-Creation-of-Distorted-Values-By-OMAM-PAT-AGBORO> (assessed November 19, 2022).

⁵⁹ P.U. Nwosu, 'The Role of Okonko society in Preserving Igbo Environment', *Journal of Human Ecology*, 31(1:2010), 59-64.

⁶⁰ Samuel Awuah-Nyamekye, 'Salvaging Nature: Akan religio-cultural perspective. Worldview: Global Religions', *Culture and Ecology*. 13 (3:2009a), 251-282.

⁶¹ A. Abayie-Boaten, 1998. 'Traditional conservation practices: Ghana's example'. *Institute of African Studies Research Review*, 14, (1:1998), 42-51.

to regulate the use of these water bodies. He asserts for instance that it is a taboo to defecate near a water body particularly a river basin or for a menstruating woman to cross or fetch water from a river or to farm close to the source of a river.⁶² He points out that perhaps a taboo preventing menstruating woman to cross or fetch water from a river is meant to prevent pollution from the menstrual blood. Similarly, a taboo to farm close to the source of a river is meant to prevent the river from drying up.

Research conducted by Awuah-Nyamekye in Cape Coast traditional area revealed that fishermen living along the seashore and revering the Sea goddess (Bosompo) as a sacred entity, observe the taboo of not fishing on Tuesdays, since this day is reserved as her sacred day. Apart from the religious implication of the day, this act is seen as a way of giving the sea a breathing space to replenish its fish. All those fishermen who flout the traditional rule are severely punished.⁶³ Citing cases of rivers Tano and Koraa in the Brong-Ahafo region of Ghana, Awuah-Nyamekye opines that fishing is strictly banned in these rivers because these fish are considered to be the children of the spirit dwelling in the water bodies. All these measures are put in place to ensure the natural quality of water bodies for now and the future generations.⁶⁴

Despite the significant role of indigenous knowledge in nature conservation such as water bodies, available literature on environmental problems in Africa argues that indigenous strategies for addressing environmental problems are under threat. That is to say that people's attitudes towards the conservation of the environment is deteriorating at a faster rate. For instance, chieftaincy is the main institution responsible for supervising the use and

⁶² Awuah-Nyamekye, *Salvaging Nature: Akan religio-cultural perspective*, 266.

⁶³ Awuah-Nyamekye, *Salvaging Nature: Akan religio-cultural perspective*, 266.

⁶⁴ Awuah-Nyamekye, *Salvaging Nature: Akan religio-cultural perspective*, 266.

enforcement of the indigenous means of nature conservation, as the chiefs are the overall custodians of lands in the local communities.⁶⁵ Boafo-Arthur however notes that the institution of chieftaincy is steadily losing its grip among many traditional societies in Africa as a result of the paradigm shifts in the system of governance resulting from the influence of Western culture.⁶⁶ In Zimbabwe for instance, Byers et al observed that the repealing of the Tribal Trust Lands Act of 1979 and the enactment of the Communal Lands Act of 1982 shifted land allocation authority from traditional political leaders to District Councils. In this regard, traditional leaders had no legal means to compel modern leaders to respect traditional land use, and also, the chiefs had no legal power to create and enforce rules on natural resource management in communal lands.⁶⁷

In an investigation to find out the spirituality of forests and conservation among Akan communities in the transitional agro-ecological zone of Ghana, Sarfo-Mensah and Oduro observe that the traditional belief in supernatural power engrossed in nature by the Supreme creator deity, called ‘tumi’ and the awesome reverence and fear called ‘suro’ which are usually attached to nature, are waning, partly as a result of changes in perceptions and attitudes of local people in relation to their worldviews as far as Christianity and Western type of education are concerned.⁶⁸ Nwosu also argues that until the arrival of Christianity and Islam on the African religious landscape, the African lived in harmony with the environment.

⁶⁵ A. Ephirim-Donkor, *African religion defined: A systematic study of ancestor worship among the Akan* (Lanham, Boulder, New York, Toronto, Plymouth, UK: University of America Inc., 2010).

⁶⁶ K. Boafo-Arthur, ‘Chieftaincy and politics in Ghana since 1982’, *West Africa Review*. 1 no 3 (2001), 13-17.

⁶⁷ B.A. Byers, R.N. Cunliffe, And A.T. Hudak, ‘Linking the conservation of culture and nature: A case study of sacred forests in Zimbabwe, *Human Ecology*, 29 no 2(2001),187-218.

⁶⁸ P. Sarfo-Mensah and W. Oduro, *Traditional Natural Resources Management Practices and Biodiversity Conservation in Ghana: A Review of Local Concepts and Issues on Change and Sustainability*, <http://www.feem.it/Feem/Pub/Publications/WPapers/default.htm>(assessed May 16, 2022).

However, the arrival of Christianity and Islam in south-eastern Nigeria led to an increase in the rate of environmental degradation. Basing his claims on his studies in the Okonko society of south-eastern Nigeria, he observes that the Okonko recognises and appreciates the beauty of nature and have made conscious efforts to put mechanisms in place for checking deforestation, assortments and pollution to the land, air, and water. However, efforts to conserve nature have deteriorated with the introduction of foreign religious traditions, particularly Christianity.⁶⁹

Despite the increasing pressure of Christianity, Islam, Western education, among others that seek to relegate indigenous culture to the periphery as far as the conservation of the environment is concerned, an encouraging finding, however, is that some of the natural resources such as water bodies which are protected by indigenous knowledge have managed to survive. For instance, Sarfo-Mensah and Oduro disclose that River Bosompra that runs through Kwahu in the Eastern Region of Ghana is still revered and protected because it is regarded as the source of life and fertility where barren women go to bathe with the hope of being fertilised.⁷⁰ Osei and Dankwa also argue that the river Volta which runs through Akwamu traditional area is still being revered and protected by an institution of sacred grove along the river and observing taboos associated with it.⁷¹ It is important to note that these rivers are highly revered to the extent that ardent Christians believe in the protective powers of the goddess

⁶⁹ P. U. Nwosu, 2010. 'The Role of Okonko society in Preserving Igbo Environment', *Journal of Human Ecology*, 31 no 1(2010), 59-64.

⁷⁰ Sarfo-Mensah and Oduro, *Traditional Natural Resources Management Practices and Biodiversity Conservation in Ghana*, 7.

⁷¹ B. K. Osei and S. Dankwa, 'Rationale of Taboo Practices in Akwamu in the Eastern Region of Ghana', *Journal of Social Sciences and Humanities*, 5 no 3(2019) :282.

Summary of Literature Review

The foregoing review has pointed out that long before the introduction of Western culture, such as formal education, Christianity, Islam, the market oriented economic paradigm, among others, traditional African societies already had complex indigenous environmental ethics which were embedded in their religious practices for nature conservation. In view of the huge impact of indigenous knowledge systems in biodiversity conservation in the past, several scholars have advocated for a renaissance as well as the factorisation of the conservation ethics that underpin the indigenous knowledge of African societies. For instance, Golo and Yaro (2013) posit that a very pragmatic, constructive and sustainable biodiversity conservation strategy is the one that succinctly blends the indigenous knowledge systems which reflect the beliefs, hopes and aspirations of the people with the scientific knowledge and technological innovation to solve contemporary biodiversity depletion.⁷²

This same sentiment has been expressed by Sinclair et al that indigenous knowledge or scientific knowledge when used in isolation may not be enough to combat the biodiversity menace, due to the weaknesses associated with each of the knowledge systems. Their argument is that it is not every indigenous knowledge or scientific knowledge that may be reliable to provide solution to peculiar biodiversity depletion canker in a jurisdiction.⁷³ This suggests that indigenous knowledge and modern or scientific method need a mutual inclusivity to address our environmental challenges. It is for this reason that this study is carried out to propose the possibility of integrating indigenous and modern methods of nature

⁷² B.K Golo and J.A. Yaro, 'Religion and climate change in Ghana: Religious Actor perspectives and sustainable climate change policy', *Nature and Culture*, 8 no 3 (2013): 282-300.

⁷³ J. R Sinclair, L. Tuke and M. Opiang, 'What the Local Know: Comparing Traditional and Scientific Knowledge of Megapodes in Melanesia'. In: Tidemann S., Gosler, A., and Gosford, R. (eds). *Ethno-ornithology: Global Studies in Indigenous Ornithology: Culture, Society and Conservation* (London: Earthscan, 2010).

conservation to address the current water resource problems in Ghana with particular reference to the Volta River in Akwamu traditional area.

1.9 Organisation of the Study

The research is organised into six (6) chapters. Chapter One gives an introduction to the study, describing the context within which the problem occurs, the objectives of the study, research questions to address, the scope of the study, the conceptual framework which underpins the study and the methodology adopted to answer the research questions. Literature review which evaluates existing literature or documents related to the study is also presented in this chapter.

Chapter Two discusses conceptual and theoretical issues of indigenous water resource management in Ghana. This includes conceptualisation of indigenous knowledge; relevance of indigenous knowledge of natural resources; traditional leadership, indigenous knowledge and natural resources; beliefs and nature conservation; water and spirituality in indigenous Akan Philosophy; water conservation practices in indigenous Ghanaian society; indigenous' water conservation practices in contemporary Ghanaian societies and indigenous-modern water resource conservation practices in Ghana.

Chapter Three discusses the indigenous conservation practices of the Volta River in Akwamu traditional area. This looks at among other things the origin and history of Akwamu people, the overview of the Volta River in Akwamu traditional area and Akwamu relationship with the Volta River.

Chapter Four examines factors which undermine the effective implementation of the religio-cultural practices in the management of the Volta River in Akwamu traditional area. This explores the underlying factors influencing the inability of Akwamu people to utilise

their indigenous belief systems to manage the Volta River as the major water resource in Akwamu traditional area. Chapter Five examines the perceptions of stakeholders on the integration of indigenous and modern methods of water resource management in Akwamu traditional area, Chapter Six which is the final chapter presents the summary of major or key findings from the study, recommendations based on the findings and conclusion emanating from the study.

1.10 Limitations of the Study

In the course of the study, the researcher encountered the following constraints. First and foremost, the traditional leaders, particularly the paramount chief from whom available information about Akwamu culture, history and local practices related to the Volta River could be sought were not available due to their busy schedules, involvement in community affairs and ceremonial duties. This eventually caused delays in the data collection, because the researcher had to travel multiple times before securing an interview with the traditional leaders.

Again, the researcher was required to obtain official permission from the environmental departments of all the state's institutions within the study area before conducting interview with their officials who had available information related to the Volta River. In fact, an introduction letter from the University of Ghana sent to VRA to obtain permission to interview their officials took almost one month which delayed in the data collection.

Also, logistical challenges in traveling to the riparian communities of the Volta River in the Akwamu traditional area hindered the researcher's data collection process. The riparian communities along the Volta River are situated in difficult-to-reach areas with unreliable

transportation because of bad roads and unreliable communication networks to reach out the respondents on time. Hiring of vehicles to these remote communities to collect data increased the overall cost of the research project.

It is noteworthy that, with patience, perseverance, ingenuity and the use of diplomacy as guiding principles, the researcher was able to triumph over the limitations encountered during the study in Akwamu traditional Area.

1.11 Significance of the Study

The study is significant because it will publicise Akwamu traditional area beyond Ghana. This will encourage the people, particularly the custodians of the indigenous knowledge system to feel recognised, and also to ensure the full protection of this knowledge system which is now under the threat of extinction. Additionally, the study will serve as an archive for Akan Traditional societies in general and Akwamu Traditional society in particular who are all in danger of losing their culture as a result of modernity.

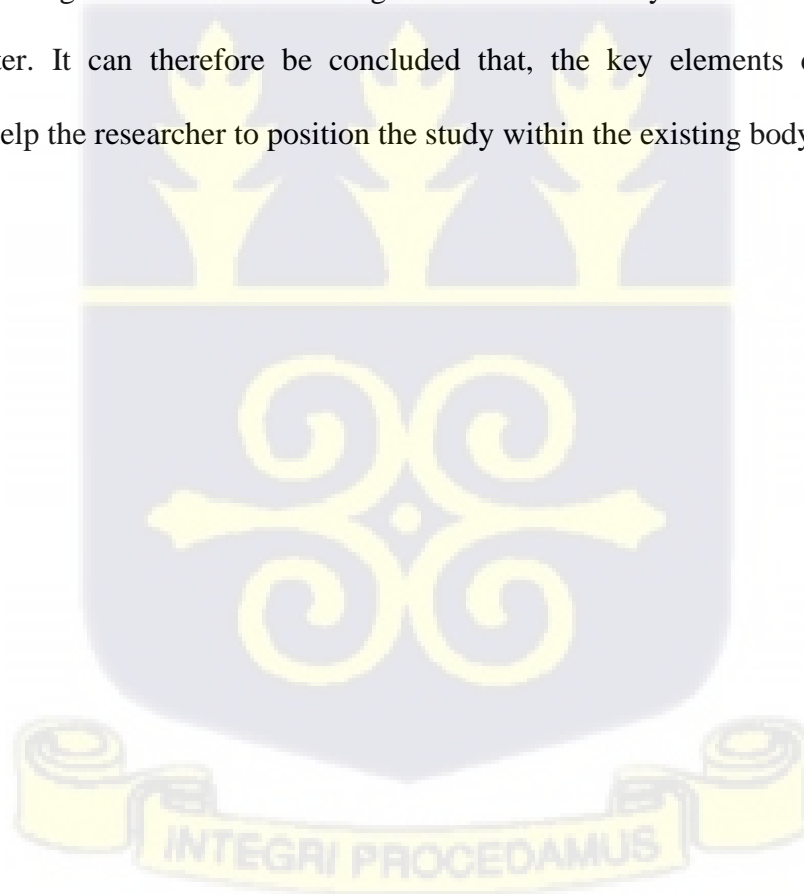
Also, the study will add to the existing knowledge of traditional and indigenous people with regard to nature conservation. This may serve as a point of reference for academics, researchers, students and eco-friendly non-governmental organisations, in their quests to explore the means of salvaging the natural World. Thus, it will serve as a documented material to what has been done already in relation to this study which will go a long way to add to knowledge in the academic field.

Again, the study will be beneficial to policy-makers in Ghana in particular, and in Africa in general, especially in relation to their future policy-making decisions concerning natural resource management and the fight against the destruction of the natural environment.

Finally, the study will help the people of Akwamu traditional area to understand the interconnections between religio-cultural practices and sustainable river management, while providing insights for policy-makers and conservationists seeking to integrate traditional wisdom into contemporary environmental initiatives.

1.12 Conclusion

This chapter has examined the background to the study, statement of problem, research objectives, research questions, and the methodology of the study. It has also examined the theoretical framework and literature review which underpin the study. Potential constraints encountered during the research and the significance of the study have also been highlighted in this chapter. It can therefore be concluded that, the key elements discussed above collectively help the researcher to position the study within the existing body of knowledge.



CHAPTER TWO

INDIGENOUS WATER RESOURCE MANAGEMENT IN GHANA

2.1 Introduction

In Ghanaian indigenous societies, indigenous water resource management is shaped by indigenous knowledge systems handed down by the forebears. These knowledge systems are promulgated by the numerous conservation ethics which are embedded in the cultural beliefs and practices of the people. These repositories of indigenous knowledge systems are resilient in monitoring the judicious usage of Ghana's biodiversity resources.⁷⁴ In order to put the discussions in context, it is imperative to devote this chapter to discussing concepts and theories which have bearing on indigenous water resource management in Ghana. These include the conceptualisation of indigenous knowledge; relevance of indigenous knowledge of natural resources; traditional leaders, indigenous knowledge and natural resources; beliefs and nature conservation; water and spirituality in Akan philosophy; water conservation practices in indigenous Ghanaian society; indigenous water conservation practices in Ghanaian society as well as indigenous and modern water conservation practices.

2.2 The Concept of Indigenous Knowledge System

There is an ongoing debate regarding the place of indigenous knowledge systems in environmental stewardship. These knowledge systems serve as an effective tool for the conservation of the environment. For instance, indigenous people around the world who are natives or born within a given geographical area and belong to a group of people through self-identification and recognised and accepted by the group have used indigenous knowledge

⁷⁴ A.K. Awedora, *Cultural and Development in Africa with special reference to Ghana* (Legon, Accra: Institute of African Studies, University of Ghana, 2002).

systems pertaining to their local environment to sustain themselves and to maintain their identity.⁷⁵ This means that indigenous people all over the world have developed knowledge system over time to guide their conduct in the society. It is an original form of knowledge which cultures have evolved out of the sheer need to survive. The definition of indigenous knowledge is viewed from different perspectives. According to Fernandez, indigenous knowledge is the unique knowledge confined to a particular culture or society. It is also known as local knowledge, folk knowledge, people's knowledge, traditional wisdom or traditional science which is generated and transmitted by communities, over time, in an effort to cope with their own agro-ecological and socio-economic environments.⁷⁶ Indigenous knowledge is passed from generation to generation, usually by word of mouth and cultural rituals, and has been the basis for agriculture, food preparation and conservation, health care, education, and the wide range of other activities that sustain a society and its environment in many parts of the world for many centuries.⁷⁷

According to Warren, indigenous knowledge is a knowledge that is unique to a given culture or society which forms basis for local-level decision-making in all facets of their lives which is passed down from generation to generation by word of mouth.⁷⁸ Warren further reiterates that indigenous knowledge is the knowledge used by local people to make a living in a particular environment. For Kothari, indigenous knowledge generally refers to the long-standing information, wisdom, traditions and practices of certain indigenous people or local

⁷⁵ Seth Appiah-Opoku, 'Indigenous Beliefs and Environmental Stewardship: A Rural Ghana Experience. *Journal of Cultural Geography* 24, no. 2 (2015):79-98.

⁷⁶ M.E. Fernandez, 'Gender and indigenous knowledge' *Indigenous Knowledge & Development Monitor* 2, (1994): 6-7.

⁷⁷ S.G.J.N. Senanayake, 'Indigenous knowledge as a key to sustainable development', *Journal of Agricultural Sciences – Sri Lanka* 2, no. 1(2006): 87.

⁷⁸ D. Warren, *Using indigenous knowledge in agricultural development* (Washington, DC: World Bank, 1991).

communities which has been orally passed for generations from person to person through stories, legends, folklore, rituals, songs, art and laws.⁷⁹ Noyoo defines indigenous knowledge as a complex set of knowledge, skills and technologies existing and developed around specific conditions of populations to a particular geographic area.⁸⁰ Similarly, Matsika argues that indigenous knowledge encompasses the traditional and local knowledge of a local community that originated and developed incorporating the experiences of the community in managing the everyday life of individuals.⁸¹

According to Opuni-Frimpong, indigenous knowledge refers to the traditional wisdom of a people in which they can claim ownership of its evolution and development. He argues that indigenous knowledge is a knowledge system of the Akan people before their encounter and adoption of Western patterns of knowledge and education. Thus, indigenous knowledge represents the unique set of practices, skills, norms, beliefs, etc. developed by communities in Africa and specifically Ghana prior to the advent of the Europeans. It is a shared wisdom of indigenous people which is embedded within their cultural categories, such as taboos, totems, language, proverbs, songs, stories, festivals, leadership institutions and the like.⁸² The United Nations Conference on Environment and Development (UNCED) defines indigenous knowledge as the holistic traditional scientific knowledge of a people's lands, natural resources and environment developed over many generations as a result of their

⁷⁹ A. Kothari, *Traditional knowledge and sustainable development*. International Institute for Sustainable Development (Winnipeg, Manitoba: Canada, 2007).

⁸⁰ N. Noyoo, 'Indigenous knowledge systems and their relevance for sustainable development: A case of Southern Africa'. *Tribes and Tribals*, 1 (2007): 167-172.

⁸¹ C. Matsika, *Traditional African education: Its significance to current education practices with special reference to Zimbabwe* (Gweru: Mambo Press, 2012).

⁸² K. Opuni-Frimpong, *Indigenous Knowledge & Christian Missions: Perspectives of Akan Leadership Formation on Christian Leadership Development* (Accra, Ghana: Sonlife Press, 2012), p. xv.

interrelationship with the natural environment towards cultural, social, economic and physical wellbeing of the indigenous people.⁸³

According to the United Nations Educational, Scientific and Cultural Organisation (UNESCO) indigenous knowledge refers to the understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings.⁸⁴

The World Intellectual Property Organisation (WIPO) defines indigenous knowledge as the knowledge, know-how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity.⁸⁵

From African context, Matowanyika states that indigenous knowledge systems are localised African systems, developed over long periods and whose patterns are based upon local knowledge systems and expressed in local languages.⁸⁶ According to Maurial, indigenous knowledge is the people's cognitive and wise legacy.⁸⁷ Maurial categorizes indigenous knowledge into three basis. Firstly, indigenous knowledge is an everyday interaction among indigenous families and communities. This knowledge is immersed in the whole culture and is recreated through generations by daily oral stories, symbols, songs, riddles, myths, arts, and idioms constructed in local languages to reflect their daily agrarian work in the land, the curative powers of their local plants, as well as the celebration of special

⁸³ UNCED, Agenda 21, Chapter 26: *Recognizing and Strengthening the Role of Indigenous People and their Communities, United Nations Conference on Environment and Development* (Rio de Janeiro, Brazil, June 3-14, 1992).

⁸⁴ UNESCO, Local and Indigenous Knowledge System (assessed August 30, 2022).

⁸⁵ WIPO, Traditional Knowledge and Intellectual Property (assessed August 30, 2022).

⁸⁶ J. Matowanyika, "What are the issues on indigenous knowledge systems in southern Africa?" *In Indigenous Knowledge Systems and Natural Resource Management in Southern Africa. Report of the Southern Africa Regional Workshop, Harare, Zimbabwe, 20-22 April 1994.* IUCN-ROSA: Zimbabwe.

⁸⁷ M. Maurial, *Indigenous knowledge and schooling: A continuum between conflict and dialogue.* What is indigenous knowledge, 59-77.

events. The most important thing about indigenous knowledge is that it is alive in indigenous peoples' culture, but the distinction between indigenous and Western knowledge is that indigenous knowledge is neither archived nor stored in the laboratories, and is not separated from political and daily life of the indigenous people. The implication is that it makes indigenous people the actors of their own knowledge and not passive repositories of a knowledge that is separated from their everyday lives.

Secondly, indigenous knowledge is holistic and relational in the sense that it is expressed through oral traditions, especially through indigenous people's mythical narrations and symbolic works. Such an exposition presents local people as theorists of their lived experiences. Unlike Western classrooms, where theorising of lived experiences remains the privilege of those in the academia, indigenous knowledge is rooted and grounded in the local people's everyday practices. The local people theorise through their daily interactions with one another. This explains why indigenous knowledge is experientially based and relies on the subjective experience and the inner workings of the self to make sense and meanings to social interactions.

Finally, indigenous knowledge is transmitted through oral tradition in societies that did not invent or incorporate originally written expressions in their culture. These societies maintained a complex oral tradition repeated daily from parents to children and elders to youngsters. Through oral tradition, indigenous people transmit their holistic culture through proverbs, songs, riddles, storytelling, fables, myths and practices to foster a relationship among themselves, and between themselves and nature.

Appiah-Opoku also identified three main categories of indigenous knowledge systems that served as the basis for the belief systems of communities. First, he identified the

knowledge of biotic materials, which involved an extensive understanding of the different plants, animals and other physical experiences. The second one involved the development and the use of appropriate technologies for primary resource utilisation, use of biotic materials, and human environmental conservation practices. The third one comprised of the various customary norms, practices, taboos, myths, belief systems and principles.⁸⁸ With these categories, Appiah-Opoku sought to show the distinction between indigenous knowledge and indigenous beliefs, arguing that indigenous beliefs constitute part of indigenous knowledge, and both have similar characteristics.⁸⁹

Ghana, like many African countries is home to several indigenous ethnic groups who had lived on the land for many years prior to the advent of Europeans. The individual groups had their communities distinctly organised in relation to the spiritual, social, economic, political and cultural needs of their people. These forms of organisation promoted peaceful coexistence among individuals, communities and ethnic groups. Most importantly, these communities' long habitation and exposure to nature facilitated the development of their own knowledge systems. Through this long occupancy, indigenous people developed meanings, relations, explanations, accountabilities and responsibilities to the land.⁹⁰

According to Appiah-Opoku, indigenous knowledge often took the form of an intimate and detailed knowledge of the environment, including plants, water, animals and natural phenomena development and use of appropriate technologies for resource utilisation, including uses of biotic materials and human environmental conservation practices and

⁸⁸ S. Appiah-Opoku, 'Indigenous beliefs and environmental stewardship: A rural Ghana Experience', *Journal of Cultural Geography* 24 no 2(2007): 79-98.

⁸⁹ Appiah-Opoku, 'Indigenous beliefs and environmental stewardship', p. 82.

⁹⁰ G. J. Dei, 'Indigenous knowledge studies and the next generation: Pedagogical possibilities for anti-colonial education'. *Australian Journal of Indigenous Education*, 37(2008), 5-13.

cultural beliefs, norms, taboos and a holistic worldview. Many of these indigenous communities developed their norms and cultures from lessons and interactions they had had with their surroundings. This situates indigenous peoples' understanding of the environment to mean the totality of how local people interact and respond to their surroundings, which in turn produces cultural norms; laws, practices and rules that govern relationships within the community.⁹¹

Battiste argues that indigenous knowledge system has outlived its usefulness in this contemporary societies, because it reaffirms the knowledge of our past forebears and that, it is incapable of projecting into the future. Thus, in humans search to find solutions to curtail future problems, indigenous knowledge is handicapped because instead of moving forward in developmental agenda, it rather retrogresses backwards.⁹² Wilder *et al* concur Battiste's assertion by saying that, because most of the indigenous knowledge systems in Africa dwell on spiritual variables, some scholars feel that they are satanic, primitive, uncivilised and even inferior when compared with the Western or academic science.⁹³ Golo and Yaro also contend that indigenous knowledge in several contemporary developmental projects around the world are been sidelined, because biodiversity conservation strategies look more to the Western scientific knowledge than indigenous knowledge.⁹⁴

This researcher disagrees with the assertions raised by the above scholars against the viable nature of indigenous knowledge and considers those allegations as based on either

⁹¹ S. Appiah Opoku, *The Need for Indigenous Knowledge in Environmental Impact Assessment: The Case of Ghana* (New York: Edwin Mellen Press, 2005).

⁹² M. Battiste, *Indigenous Knowledge and Pedagogy in First Nations Education. A Literature Review with Recommendations. National Working Group on Education* (Canada: Indian and Northern Affairs, 2002)

⁹³ B.T. Wilder, C. O'meara, L. Monti and G.P. Nabhan, 'The Importance of Indigenous Knowledge in Curbing the Loss of Language and Biodiversity', *Bioscience* 66 no. 6(2016): 449-509. doi:10.1093/biosci/biw026

⁹⁴ B.K. Golo, & J.A. Yaro, 'Religion and climate change in Ghana: Religious Actor perspectives and sustainable climate change policy', *Nature and Culture* 8, no 3(2013): 282-300.

misinformation, ignorance or sheer prejudice against this sustainable knowledge system. For instance, in indigenous societies, conservation projects that failed to factorise indigenous knowledge systems have significantly failed. This is evident in Abdullahi *et al* research finding in Nigeria which revealed that due to the failure on the part of agencies and bodies to incorporate indigenous knowledge and practices in conservation strategies, those projects failed and did not achieve any successes.⁹⁵ The argument here is that if the Western scientific knowledge of conservation is robust than the indigenous knowledge systems as some scholars claim, why is it that the Western scientific knowledge is unable to solve our environmental conservation problems? This researcher suggests that incorporating indigenous knowledge systems with the modern methods will rather aid in the fight to combat the huge canker of biodiversity degradation, because according to Iyoro and Ogungbo, researchers who have rigorously and patiently analysed the indigenous knowledge systems have gained the enlightenment that indigenous knowledge systems have an adaptive integrity and are thus valid for usability for nature conservation.⁹⁶

From Warren's perspective, indigenous knowledge is a unique type of knowledge, developed within the local community over years, to meet or address challenges faced by the community which has become the basis for local level decision making in natural resource management, and many other activities in rural communities, and are mostly passed on from generation to generation through localised systems of information dissemination.⁹⁷

⁹⁵ J. Abdullahi, I. Usman, G. Sumaila, & A. Zuni, 'Importance of Indigenous Knowledge in Biodiversity Conservation: A case study of communities surrounding Kpashimi Forest Reserve', Niger State, Nigeria. *Journal of Environmental Science, Toxicology and Food Technology*, 5 no 6(2013): 10-17.

⁹⁶ A. O. Iyoro & W.O. Ogungbo, 'Management of Indigenous Knowledge as a Catalyst Towards Improved Information Accessibility to Local Communities: A Literature Review. Chinese Librarianship: *An International Electronic Journal*, 35 (2013), URL: <http://www.iclc.us/cliej/cl3510.pdf>

⁹⁷ D. M. Warren, Indigenous knowledge, biodiversity conservation and development. Sustainable Development in Third World Countries: *Applied and Theoretical Perspectives*, 2006, 81-88.

2.3 Indigenous Knowledge of Natural Resources

According to Darko, several scholars still believe that indigenous knowledges are inherently primitive, narrow centred, inefficient, archaic and irrelevant to modern civilization, therefore indigenous knowledges do not qualify to be called knowledge.⁹⁸ Sillitoe disputes the above assertion, arguing that the mere existence of indigenous communities is a definite proof of the validity and success of these knowledges that held these communities together for many years. In addition, the ongoing discourse on indigenous knowledges and their significant roles in creating sustainable and balanced development is a significant indication of the value and essence of indigenous knowledges.⁹⁹ According to Stern *et al*, if scholars, especially in the Western academy, would be objective to the course of intellectual discourses, instead of being dismissive and limiting in their outlook, they would testify to the immense contribution indigenous knowledges can make to modern development especially on the environment and ecosystem; for it is an undeniable fact that the so called developed nations are the worst culprits in terms of environmental degradation.¹⁰⁰

Research into series of biodiversity related areas in Ghana shows that indigenous knowledge has the potential to contribute to the conservation of natural resources, because it is seen as a great form of wealth, which helps governmental agencies in saving considerable amounts of money to curtail the moral decadency that raids off the environment of its precious biodiversity resources that supports life¹⁰¹ Ajani et al are of the view that indigenous

⁹⁸ I. N. Darko, 'Environmental Stewardship and Indigenous African Philosophies: Implications for schooling, and Health Education in Africa: A Case of Ghana', PhD Thesis (University of Toronto, 2014), p. 23.

⁹⁹ P. Sillitoe, 'The Development of Indigenous Knowledge: A New Applied Anthropology', *Current anthropology*, 39 no 2 (1998): 223-252.

¹⁰⁰ D.I. Stern, M.S. Common & E.B. Barbier, 'Economic growth and environmental degradation: the environmental Kuznets curve and sustainable development', *World development* 24 no 7(1996): 1151-1160

¹⁰¹ Luc Hens, 'Indigenous Knowledge and Biodiversity Conservation and Management in Ghana', *Journal*

knowledge systems can be very beneficial to conservationists and planners of biodiversity conservation strategies. They mention the cost-effective nature of indigenous knowledge, its participatory as well as sustainable values. To them, indigenous knowledge is participatory in that it is the foundation for making decisions in local communities, and also advocates for the highest level of local participation, helping in the sustenance of conservation projects.¹⁰² Battiste also contends that indigenous knowledge promotes the spirit of communalism in the conservation of biodiversity.¹⁰³ In view of the role being played by indigenous knowledge system, Wilder *et al* argue that scientists and conservation planners need to incorporate indigenous knowledge systems in biodiversity conservation policies and strategies while teaming up with the local people in its planning or development.¹⁰⁴

Elaborating on the cost-effectiveness and faster implementation of indigenous knowledge system, G'Nece argues that hiring scientific experts on biodiversity projects is expensive, because they are paid on hourly basis making their services very expensive. However, indigenous knowledge is easily tapped from the local people which attracts less or no monetary reward. He cites how indigenous farmers through the observation of the ratio of clay to sand and moisture as well as the level of decayed matter can easily determine the level of soil fertility which would be carried out by technical experts for months at a very high cost.¹⁰⁵

of Human Ecology 20, no. 1(2006): 21-30.

¹⁰² E.N.Ajani, R.N. Mgbenka & M.N. Okeke, 'Use of Indigenous Knowledge as a Strategy for Climate Change Adaptation Among Farmers in Sub-Saharan Africa: Implication for Policy', *Asian Journal of Agricultural Extension, Economics and Sociology* 2 no 1(2013): 23-40.

¹⁰³ Battiste, *Indigenous Knowledge and Pedagogy in First Nations Education*.

¹⁰⁴ Wilder, 'The Importance of Indigenous Knowledge in Curbing the Loss of Language and Biodiversity', 449.

¹⁰⁵ J. G'Nece, *The Importance of Indigenous Knowledge and Good Governance to Ensuring Effective Public Participation in Environmental Impact Assessments* (Maryland, USA: ISTF New, 2012).

In recent times, research has found that indigenous knowledge offers new models for development that are both ecologically sound and that development activities that work with and through indigenous knowledge have several advantages over projects that operate outside them. One classic example is the reverting back to “nonscientific” polyculture (mixed cropping) from “scientific” monoculture. The characteristics of traditional polycultures that make them desirable were ignored by agricultural researchers in developing countries with the introduction of concept of green revolution into those countries. But recently, research concerning polycultures has blossomed and some of its benefits are becoming clear.¹⁰⁶

The views of the scholars above challenge the notion that indigenous knowledge has outlive its usefulness, arguing that indigenous knowledge, accumulated over generations, is a valuable resource for addressing contemporary environmental challenges, and therefore advocating for the need to integrate it into the modern development and environmental policies.

In some Ghanaian traditional societies, indigenous knowledge systems have been robust in the management of flora and fauna. This is because, these species have been culturally intertwined with the customs and beliefs of the people. For instance, Diawuo and Issifu observed that the Sankana community in the Upper West region of Ghana does not kill pythons because it is their totem. It is an oral tradition believed among the local people in the Sankana community that it was a huge python which turned itself into a log and helped their ancestors cross a river that saved them from their enemies. Owing to this, the area is populated with different species of pythons with diverse genetic makeups. This myth which is an

¹⁰⁶ Senanayake, ‘Indigenous knowledge as a key to sustainable development’, 90

indigenous knowledge system has helped in conserving the great diversities of pythons in the area.¹⁰⁷ Similarly, Diawuo et al argue that one other area where indigenous knowledge plays important role is the conservation of water bodies. They argue that many rivers and streams that provide drinking water for Talensi people in northern Ghana are considered sacred because of the presence of crocodiles. The surrounding forestlands are protected on the basis that the lesser gods and other living spirits reside in the trees found in and around the Tengzuk shrines. As the crocodiles are intended to protect water bodies from being mismanaged, plants and animals including fishes living in the water bodies are not cultivated indiscriminately.¹⁰⁸

With regard to indigenous knowledge systems and their relevance to nature conservation, Osei *et al* contend that among the Akwamus, a bush-pig which is their totem saved and protected them against their enemies across the Volta River and safely brought them to their present settlement. It is for that reason that taboos associated with the bush-pig cannot be underestimated, and whoever goes against the taboos is deal with severely. The culprit will be asked to offer seven sheep and seven bottles of schnapps for purification rituals to appease the anger of the ancestors and the gods. Again, the bush-pig is treated with religious respect due to the belief that it is connected with the gods.¹⁰⁹

In the Ashanti region of South-Western Ghana, trees which were regarded as housing spirits should not be felled without performing rituals. This custom had a protective effect on trees like *odum* (*Chlorophora excelsa*), Africa mahogany (*Khaya ivorensis*) and tall palm trees (*Elaeis Guineensis*) and *osese* (*Funtumia*). Also, shea butter (*Butyrospermumparkii*) and the

¹⁰⁷ F. Diawuo & A.K.Issifu, 'Exploring the African Traditional Belief Systems in Natural Resource Conservation and Management in Ghana,' *The Journal of Pan African Studies* 8, no. 9 (2015): 121

¹⁰⁸ Diawuo, 'Exploring the African Traditional Belief Systems in Natural Resource Conservation and Management in Ghana', 127.

¹⁰⁹ B.K. Osei, G. Ahorto & B.W.K. Golo, 'Relevance of Taboo Practices in Contemporary Akwamu Traditional Society', *Journal of Social Sciences and Humanities* 5, no. 3 (2019): 260-273.

Dawadawa (*Parkia clappertoniana*) trees in the northern savannah zone of Ghana are subject to the same traditional protection system. Animals in a particular habitat may be regarded as sacred and are therefore protected from hunting. This applies to the Black and White colobus (*Colobus polykomos*) and the mona monkey (*Cercopithecus mona*) in the Boabeng- Fiema wildlife sanctuary of Central Ghana. A similar situation is reported for the bats of Wli in the south-eastern part of the country. The overhanging rocks of the mountains that form the border with Togo, house an impressive colony of large bats that are said to be conserved by the local community. Also, many wildlife species are regarded as totems due to their historical or socio-cultural significance. Totem animals vary significantly among tribes and clans. They include merely mammals (leopard, elephant, lion, monkey, and buffalo) and birds (falcon, raven, parrot). Also, turtles, crocodiles, snakes (python), scorpions, crabs and fishes are totems. There is a belief that an intimate relationship exists between the totem animals and the tribe, therefore, the members of the tribe not eat, kill or trap these animals.¹¹⁰

In Ghana, sacred groves are scattered all over. They are pieces of land set aside for spiritual purposes. An example is the sacred grove of Sefwi Wiaswo, near the border with Cote d'Ivoire. This hill is a classic example of a virgin tropical forest surrounded by the city of Sefwi Wiaswo and its deforested hinterland. Apart from the collection of medicinal herbs and their use as burial ground, the sacred grove areas are untouched. Farming, hunting, burning, tree cutting and firewood gathering are prohibited there. Coastal ethnic groups have specific days when they do not fish so that the people and the ecosystem can have some days to rest which normally happen on Tuesdays and Fridays depending on the tribe. This resting

¹¹⁰ Hens, 'Indigenous Knowledge and Biodiversity Conservation and Management in Ghana', 23

period coincides with the period which is linked to the procreation of the fishes including the youngsters to mature.¹¹¹

Agbanu has also identified the importance of indigenous knowledge in biodiversity conservation. He noted that ecological ethics of indigenous people is portrayed in several ways. These include food and medicine, resource management, shifting cultivation, water, soil and land management.¹¹² With regard to food and medicine, Agbanu explained that indigenous people are highly dependent on nature for their food and medicine and through experiment, they are able to distinguish between edible and poisonous plants, knowing exactly which parts of the plant are edible and which plants possess medicinal properties or quality for specific types of illness.¹¹³ In relation to the relevance of indigenous knowledge in natural resource management, Agbanu argues that in Mafi-Eve culture in Ghana, the institution of sacred groves does not only protect members of the biotic community, but rather the entire ecosystem. He cited example of two sacred groves in the Mafi-Eve community which are regarded as the abodes of the divinities responsible for security, protection and the general welfare of the Mafi-Eve people, therefore hunting, logging and fetching of firewood are prohibited in them.¹¹⁴

Furthering his argument on the importance of indigenous knowledge systems in development, Appiah-Opoku used case studies of researches conducted among farmers and nomads from Sudan, Tanzania and parts of West Africa. In these studies, it was evident that the various intervention measures introduced to help farmers and nomads to improve their

¹¹¹ Hens, 'Indigenous Knowledge and Biodiversity Conservation and Management in Ghana', 24

¹¹² Agbanu, 'Environmental Ethics in Mafi-Eve indigenous culture', 73.

¹¹³ Agbanu, 'Environmental Ethics in Mafi-Eve indigenous culture', 73.

¹¹⁴ Agbanu, 'Environmental Ethics in Mafi-Eve indigenous culture', 105.

yields and efficiency failed because indigenous belief systems and existing practices were not taken into consideration.¹¹⁵

It can thus be deduced from the discussion that, indigenous knowledge and its relevance to the environment is extremely valuable, and has been proven to be valid and effective in the conservation of natural resources. It is therefore not surprising that series of internationally developed documents support indigenous peoples' call for increased recognition of the importance of indigenous knowledge in resolving environmental crises.¹¹⁶

2.4 Traditional Leadership, Indigenous Knowledge and the Environment

Traditional leaders play significant role in the social, political and economic lives of citizens in countries throughout Africa. They are defined as local elites who derive legitimacy from custom, tradition, and spirituality. Traditional leaders refer to people who are by custom ascribed or elected to provide the necessary leadership which ensures that the norms, practices, and values of the community are respected. It is a form of leadership whose authority is largely tied to tradition or custom.¹¹⁷ In Akan indigenous societies in Ghana, indigenous knowledge is enforced by traditional leaders and is passed on to the next generation. This means that traditional leaders are the fulcrum around which indigenous knowledge systems revolve. Through ceremonies, stories, taboos and totems, traditional leaders are able to control access to and use of natural resources. Traditional leaders who are the agents of indigenous knowledge include chiefs, clan heads, opinion leaders, fetish priests,

¹¹⁵ Appiah-Opoku, 'Indigenous beliefs and environmental stewardship', p.79-98.

¹¹⁶ R. Boelens, M. Chiba, & D. Nakashima, *Water and Indigenous peoples, knowledge of Nature* (UNESCO, Paris, FR: 108-115, 2006).

¹¹⁷ J. Mohammed-Katerere, 'Participatory Natural Resource Management in the Communal Land of Zimbabwe: What Role for Customary Law?' *African Studies Quarterly*, 5 no.3 (2004), <http://web.ufl.edu/asq/vsi3a7.htm>.

soothsayers or diviners and rainmakers. In discussing indigenous knowledge systems in natural resource management like water, it is imperative to give an overview of some key traditional leaders who enforce natural resource management policies in indigenous societies.

2.4.1 Chiefs

Chieftaincy has been important in state governance since the colonial period when chiefs were incorporated into local administration, given powers over land administration and allowed to create local byelaws. The importance of chiefs is articulated within the 1992 National Constitution, which recognises chiefs as the legal custodians of land and natural resources, with rights to transact and gain specified shares of royalties from market sales of these resources.¹¹⁸ Katerere argues that before the colonial era, each tribe in Ghana had a traditional chief who was the central figure responsible for community organisation and natural resource management.¹¹⁹ The lands were vested in the chiefs before the colonial masters came into our country. He was regarded as the highest figure in the community and held various positions which he did not exercise as an individual but in collaboration with his elders. The functions of these traditional leaders, particularly the chiefs encompass regulating access to land, holding land in trust on behalf of the people as well as mediating disputes over land, thefts of crops, and misconduct. Furthermore, sacrifices as well as mobilising people to participate in community activities are spearheaded by indigenous institutions. Chiefs, for instance, assume key leadership roles in the traditional authority structure in the management of natural resources in their communities. Involvement of chiefs is needed for effective and

¹¹⁸ K.S. 'Amanor, Land Administration, Chiefs, and Governance in Ghana', https://link.springer.com/chapter/10.1007/978-981-16-4725-3_2 (assessed November 18, 2022).

¹¹⁹ Katerere, Participatory Natural Resource Management in the Communal Land of Zimbabwe: <http://web.ufl.edu/asq/vsi3a7.htm>

efficient management of Ghana's lands and natural resources. Another role of the chief is to support the government's quest to manage the exploitation of the country's natural resources.

From the above perspective, the chief is described as someone who rules the land - religious priest, leader of a community, or ruler of a clan who serves as the middleman between community members and the gods, as well as a link between the government and any other person who may have an interest in the community. He is responsible for the general wellbeing of all community members; this includes their spiritual, physical, emotional and material good. The chief has jurisdictions, and all the resources within that jurisdiction are under his control.¹²⁰ This shows that traditionally, chiefs are not only stewards of people and properties in Ghanaian indigenous societies, but they are stewards of cultural beliefs, practices, including natural resources in trust of the gods, ancestors and posterity.

2.4.2 Clan Heads

According to Nukunya, a clan is a group of people who are believed to have descended from a common ancestor.¹²¹ Clans are associated with plants and animals which become their totems. According to Gyamfi Adu, the term totem refers to animals that are revered by individuals, particularly group of people as holy.¹²² According to him, totems are used by different groups of people for different reasons including the conservation of natural resources. For this reason, Alun contends that people who believe themselves to be of one blood, descendants of common ancestors, and are bound together by common obligations to

¹²⁰ Darko, 'Environmental Stewardship and Indigenous African Philosophies', p. 263.

¹²¹ G. K. Nukunya, *Traditional and Change in Ghana, and Introductory to Sociology*. 2nd ed (Accra: Ghana Universities Press, 2003), 50-54.

¹²² Gyamfi Adu, 'Indigenous beliefs and Practices in Ecosystem Conservation: Response of the church', *Scripture* 107 (2011): 145.

each other by common faith revere that totem.¹²³ Alun further posits that totemic animals serve as identity to families or clans who are related to those totemic animals and therefore it is a taboo to kill or have sexual relations between members of those clan. This according to him suggests that totemic objects are believed to be ancestrally related to an ethnic group, clan, or family as a tutelary spirit which they attach deep feelings to.

Ntiamoa Baidu argues that totems associated with clans play significant roles in the conservation and management of natural resources. In her work, ‘traditional and indigenous methods of conserving biodiversity’, she identifies totems as the key indigenous methods for conserving biodiversity. She indicates that totems represent traditional institutions where religiously governed norms define human behaviour.¹²⁴

2.4.3 Traditional Priests

Traditional priests play significant roles in the conservation and management of natural resources. In Ghana, traditional priests/priestess are special individuals within communities believed to be chosen and possessed by river deities who act as the mediators between the people and the deities. The roles of these priests/ priestess include liaising with customary authorities in managing the day to day political, cultural and social aspects of the community. In essence, they are part of the core political structure and leadership of these communities. In times of tragedy or uncertainty, the people and chiefs seek answers from priests/ priestess who consult the river gods and deities on their behalf.¹²⁵

¹²³ R. J Alun, *The Secret of the Totem* (New York: Colombia University Press, 2005), 117.

¹²⁴ Y. Baidu-Ntiamoa, “Conservation of coastal lagoons in Ghana: The Traditional approach”. *Landscape and urban planning*, 20 (1991):46.

¹²⁵ Alesia Ofori Dedaa, ‘The way we know our rivers: reflecting on river management in Ghana (part i)’ <https://envhistnow.com/2021/03/23/the-way-we-know-our-rivers-reflecting-on-river-management-in-Ghana-part-i> (assessed November 18, 2022).

Traditional priests/priestess see to it that taboos governing river deities are adhered to. For example, menstruation is Tano's taboo, and no woman who goes through menstruation is allowed to go near Tano's shrine. Also, due to Tano being guarded by Baboons, eating, killing or even harming them is an unforgivable offense and leads to death or great punishment to the person's society. The same rules apply for crocodiles and any wildlife that lives in or near the Tano River, such as mudfish and antelopes.¹²⁶

Apart from the political and cultural roles being played by traditional priests, one important function is their role as rainmakers who invoke the assistance of deities associated with weather and fertility to ensure an adequate and timely supply of rain. In Akan culture, the term "rainmaker" typically refers to a person who is believed to have the ability to influence or control the weather, particularly the occurrence of rain. These individuals are considered intermediaries between the community and the spiritual forces believed to govern natural phenomena, including rainfall. The rainmaker's role is to perform ceremonies that are believed to appease or invoke the deities associated with rain, ensuring favourable weather conditions for agriculture and other essential aspects of life.

Mbiti observed that rainmakers are regarded as having major status in almost all African societies. They are described by various names that translate as, for example, the shepherds of heaven, implying that they shepherd men, cattle and the society for God.¹²⁷ The underlying idea is that rainmakers shepherd the society into a harmonious relationship with nature, therefore they are the compass which determines whether the society is retracting from its unity with nature. They provide the ecological ethics to which the society must adhere in

¹²⁶ E.Dada Adelowo, 'Perspectives in Religious Studies'
[https://en.wikipedia.org/wiki/Tano_\(Tano_Akora\)](https://en.wikipedia.org/wiki/Tano_(Tano_Akora)) (assessed November 18, 2022).

¹²⁷ N. Penxa Matholeni, G.K Boateng & M. Manyonganise (eds). *Mother Earth, Mother Africa & African Indigenous Religions* (Stellenbosch: African Sun Media, 2020), p. 58.

order to receive the abundance of the blessing of the land. According to Mbiti, those who engage in the art of rainmaking are well versed in weather matters. With this, they obtain knowledge by studying the habits of trees, insects and animals, through the use of common sense. They spend hours studying environmental behaviour and teaching the traditional ecological ethics to their communities. Furthermore, they closely observe the behaviours and practices within their communities to enable them to offer wise counsel on how the land should be treated and also prescribe the necessary remedies to heal the environment when it has been harmed by misuse.¹²⁸

In Ghanaian traditional society, management of natural resource is key and relevant to rainmakers. Their spiritual role in stopping and making rains can impact negatively or positively on the available natural resources. An impending calamity of a community such as the failure of a particular plant/crop in a particular season could be foreseen by a rainmaker and the necessary action taken. This could be a wrath of the gods for certain offence which can be averted through sacrifices made to appease the gods.¹²⁹

2.5 Indigenous Beliefs and Nature Conservation

Attuquayefio and Gyampoh contend that before modern natural resource conservation methods came into being, traditional societies functioned in a complex religious and cultural belief systems by means of elements such as superstitions, myths, taboos, totems and closed seasons to preserve, conserve and manage natural resources.¹³⁰ In Ghanaian indigenous societies in particular, this cosmological belief system which constitutes the indigenous

¹²⁸ Penxa Matholeni, *Mother Earth, Mother Africa & African Indigenous Religions*, 59.

¹²⁹ Zakaria Shanunu, 'The Role of Traditional Institutions in the Management of Natural Resources in the West Gonja Traditional Area', M.Phil. thesis (University for Development Studies, Tamale, 2012), 14.

¹³⁰ Attuquayefio & S. Gyampoh, 'The Boabeng-Fiema Monkey sanctuary, Ghana: a case for blending traditional and introduced wildlife conservation systems'. *West African Journal of Applied Ecology*, 17(1).

knowledge of the people have over the years helped them to regulate their interactions harmoniously with the natural environment. According to Millar, the resilience of these belief systems have stood the test of time in natural resource management.¹³¹ To Millar, the spiritual world is the major driving force that regulates the performance of all traditional institutions in their quest to manage natural resources.¹³²

Cosmological belief systems play significant roles in the conservation of natural resources in traditional African societies of which Ghana is no exception. It is a system of beliefs and practices of a people which enjoin them to command respect for nature.¹³³ Since time immemorial, traditional African societies in general and Ghanaian societies in particular firmly hold on to the idea that there are a host of spirits who live amongst humans and consistently shape their worldviews towards nature.¹³⁴ These worldviews of the people determine their beliefs and the strong belief that the cosmos is full of spiritual beings impact greatly on the attitudes and obligations of the people towards the environment. Kehinde argues that the inhabitation of the cosmos by spirits has much weight among traditional African societies and has been the source of nature conservation.¹³⁵

The indigenous communities in Ghana strive very hard to care and sustain nature's resources because of the reverential fear, awe, and respect they have towards the spiritual dimensions of nature. Grim argues that even in the era of globalisation and westernisation, the belief that nature and its resources are abodes of spirits still exert significant influence among

¹³¹ D. Millar, *Traditional African worldviews from a cosmovision perspective*. New Life Good News Bible (Ghana jubilee edition; Bible society resource ltd, 2004).

¹³² Millar, *Traditional African worldviews from a cosmovision perspective*, 2004.

¹³³ E. Reichel, Cosmology. In: B. Taylor, J. Kaplan (Eds.): *The Encyclopedia of Religion and Nature* (London: Thoemmes Continuum, 2005), 420–425.

¹³⁴ J.R. Chalk, 'Genesis 1–11 and the African Worldview: Conflict or Conformity', PhD Thesis (University of South Africa, Pretoria, 2006), 278.

¹³⁵ O.Kehinde, 'African Religion and Environmental Dynamics', *Journal of Studies in Social Sciences* 4, no. 2(2013): 199-212.

Africans of which Ghanaian traditional societies are no exception.¹³⁶ The cosmological belief systems, including the belief in a Supreme Deity (God), ancestors, spirits, animism, sorcery and witchcraft, among others highly impact on the attitudes of many Ghanaians regarding nature. Due to the strong belief that natural resources are the abodes of spirits, Adom opines that among the Asantes in Ghana, it is very rare to see people lustfully destroying natural resources. This is due to the strong prevailing influence of their traditional cosmological belief systems. Among the Kumawu people in the Ashanti Region of Ghana, they believe that the angered spirits would vent their wrath on them in the form of untimely and disgraceful death, strange illness, impotence and the like if nature's resources are abused.¹³⁷ This clearly shows that living in harmony with nature has constantly been perpetuated by the stringent traditional cosmological belief systems held by many ethnic societies in Ghana. Thus, the traditional belief in the spiritual properties and uses of natural resources has effects on the protection and improvement of the environment.

In this section, the cosmological belief systems which are associated with nature conservation are discussed. These include belief in Supreme Deity (God), belief in ancestors, belief in spirits/divinities, belief in animism, belief in sorcery and witchcraft, belief in taboo, belief in sacred groves and belief in totems.

2.5.1 God and Nature

The belief in a Supreme Deity is ancient to Ghanaian culture right from the primordial times. He is said to be the creator of all the things, hence the title *Oboade* (Creator of things). According to Taringa, the Supreme Deity or God is believed to be the first and great ancestor.

¹³⁶ J.A. Grim, (Ed.), *Indigenous Traditions and Ecology: The Interbeing of Cosmology and Community* (Cambridge: Center for the Study of World Religions, 2001), 824.

¹³⁷ A. D. Boamah, *Akan Indigenous Religio-Cultural Beliefs and Environmental Preservation: The Role of Taboos*, Master's Thesis (Canada: Queens University, 2015), 59.

His power is unmatched and as such, He comfortably occupies the topmost position in the hierarchy of spirits that are believed to exist in the cosmos.¹³⁸ This is reflected in the titles ascribed to Him by various ethnic societies in Ghana. For instance, He is called *Tumfoɔ Onyankopɔn* (The Almighty God). He is distinct from the other gods. It indicates that He is the greatest amongst all gods and spirits believed to reside in the cosmos. This resonates with what Amponsah in his classic work said of Him that He cannot be placed in the rank and file of the lesser gods.¹³⁹ As Awuah-Nyamekye highlight, the Supreme Deity always requires that His creatures honour and care for the things that He has created. Any form of abuse unbridled usage and wanton destruction of plants, animals, river bodies and the other precious things in nature would provoke His full displeasure and wrath.¹⁴⁰ The reverential fear and respect for the Supreme Deity therefore holds Ghanaians back, especially when they are about to undertake any foul act. This is expressed in the common saying, '*Onyame nti*' (Because of God). Thus, because of the fear of displeasing the Supreme Deity which would bring bad luck and curses, people exhibit good moral behaviour, especially towards nature.

According to Gyekye, the Supreme Deity is the Great Judge, meaning, individuals would account to Him the way they led their lives here on earth including his their attitudes towards nature.¹⁴¹ Opoku is of the view that a person's good account, void of any abuse or wanton depletion of nature's resources would mean a qualification as an ancestor and a good dwelling place with the Supreme Deity. On the other hand, a bad account cluttered with any

¹³⁸ N.Taringa, 'How Environmental is African Traditional Religion?' Exchange 35, no.2 (2006): 191–214. DOI: 10.1163/157254306776525672

¹³⁹ K. Amponsah, *Topics on West African Traditional Religion* (Accra: Adwinasa Publication Limited, 1977), 14.

¹⁴⁰ S. Awuah-Nyamekye, 'Managing the Environmental Crisis in Ghana: The Role of African Traditional Religion and Culture- A Case Study of Berekum Traditional Area'. Doctoral Thesis(Leeds, UK: University of Leeds, 2013) 249.

¹⁴¹ K. Gyekye, *African Cultural Values: An Introduction* (Accra: Sankofa Publishing Company, 1996), 194

traces of selfish usage or abuse of the bio-resources in nature would mean a total destruction of an individual with no hope of spiritual life enjoyed after life with the ancestors and the Supreme Deity.¹⁴² It is worthy to note that the belief in the Supreme Deity as the Creator and as the Great Judge has ecological ramifications for the sustainability and conservation of biodiversity in Ghana.

2.5.2 Ancestors

In Ghanaian societies, it is believed that the good deeds of an individual while on earth are handsomely rewarded by the Supreme Deity. This is reflected in the belief regarding the ancestors. An ancestor is someone who led good or exemplary life while on earth and has been rewarded by the Supreme Deity with spiritual life after the earthly existence. All ancestors are believed to be residing in the spiritual world and they constantly police the activities of man on earth.¹⁴³ As policing agents of the lives of man, Taringa opines that ancestors are active in bestowing blessings or calamity which is dependent on how one leads his/her life.¹⁴⁴ Ghanaians highly revere the ancestors because they were their elders and predecessors who live close to the Supreme Deity because of their virtuous lives. The belief in ancestors is so strong in Ghana such that some households desist from sweeping at nights to avoid hurling dust on the ancestors visiting the family members.¹⁴⁵

As advocates of environmental sustainability and the owners of the land, the ancestors reward anyone who treads their footsteps and punishes severely, all those who abuse nature's resources. There are certain taboos that the ancestors require the people to observe in the usage

¹⁴² K.A. Opoku, *West African Traditional Religion* (Singapore: FEP International Private Ltd, 1978), 182.

¹⁴³ Gyekye, *African Cultural Values*, 194

¹⁴⁴ Taringa, 'How Environmental is African Traditional Religion', 199.

¹⁴⁵ Opoku, *West African Traditional Religion*, 182.

of the biodiversity resources in the environment. For instance, the felling of trees within 30 metres radius of streams or rivers is highly detested by the ancestors.¹⁴⁶ There are instantaneous punishments believed to issue from the ancestors to defaulters of unfriendly environmental practices. These include epidemics, drought, and infertility amongst others.

In some societies in Ghana, Adom *et al.* note that the reduction of proceeds in economic activities is attributed to the ancestors displeasure when the society is not living in consonance with the stringent laws and regulations of the ancestors. In citing the residents of Abono in the Ashanti region of Ghana where Lake Bosomtwe is located for instance, they contend that the elders in the community lamented that the smaller sizes of fishes caught as well as the massive reduction in the quantities of catches are misfortunes brought on them by the ancestors because most of the young residents are living contrary to the dictates of the ancestors.¹⁴⁷

2.5.3 Divinities

Divinities, sometimes called smaller gods unlike the Supreme Being operate within shrines. According to Nukunya, most of these divinities live in or are associated with nature objects like rivers, ponds, lagoons, forests, rocks and the sea.¹⁴⁸ Among the Akans, river Bosompem is regarded as a sea god and Tuesday is dedicated to it, therefore fishing in the river on this day is taboo. Among the Akans of Ghana, Boamah argues that the spirits detest the use of poisonous chemicals in fishing as well as defaecating or farming near water bodies

¹⁴⁶ A. Rim-Rukeh, G. Ierhiewwie & I.E. Agbozu, 'Traditional Beliefs and Conservation of Natural Resources: Evidences From Selected Communities in Delta State, Nigeria', *International Journal of Biodiversity and Conservation* 5, no. 7(2013): 426–432. DOI: 10.5897/IJBC2013.0576.

¹⁴⁷ D. Adom, S. Kquofi & E.A. Asante, 'The High impacts of Asante Indigenous Knowledge in Nature Conservation Issues in Ghana: The Case of the Abono and Es- sumeja Townships in Ashanti Region', *British Journal of Environmental Sciences* 4, no. 3(2016): 63–78.

¹⁴⁸ G.K. Nukunya, *Tradition and change in Ghana: An introduction to Sociology*(Accra, Ghana: Woeli Publishing Service, 2016), 71.

and rivers. Defaulters are punished with strange diseases, instant death or even drowning. These stringent sanctions serve as a restraining factor against the abuse or wanton depletion of nature's resources.¹⁴⁹ Kehinde admits that because the divinities inhabit the resources in the environment, they are carefully handled with deep respect and awe, therefore the belief in spirits in the cosmological belief systems can be a latent conservation strategy that can enhance the moral values of Ghanaians to monitor their relation to the natural environment.¹⁵⁰

In many African cultures such as Ghana, the earth is viewed as a living entity with a soul of its own. It has religious and material relevance and occupies a very high place in many African societies. The earth in its material form as land is held in high esteem for its generous support of human, plant and animal life while in its spiritual form it wields supernatural powers which make it an object of worship. Several cults and taboos have emerged around the Earth Spirit for veneration and protection. Belief in the powers of the earth and its deity defines the terms and conditions under which relationships are forged and maintained. In Akan societies, the Earth goddess is referred to as *Asase Yaa* in Twi-speaking areas and *Asase-Efua* among the Fante. Her day of rest is Thursday where she is called *Yaa*, while Friday is devoted to her where she is known as *Efua*. These days are sacred days for the Earth goddess and as a result, tilling of the land is forbidden on these days.¹⁵¹

According to Awuah Nyamekye, certain things which are considered as taboo or hateful to the earth goddess include tilling the land on her sacred days, sexual intercourse in the bush, not offering a libation prayer before a grave is dug to bury a corpse, etc. A breach of any of the above acts is considered as defilement, and is seen as a serious sin against the

¹⁴⁹A.D. Boamah, 'Akan Indigenous Religio-Cultural Beliefs and Environmental Preservation: The Role of Taboos', Master's Thesis (Canada: Queens University, 2015), 59.

¹⁵⁰ Kehinde, 'African Religion and Environmental Dynamics', 199-212.

¹⁵¹ Nukunya, *Tradition and change in Ghana: An introduction to Sociology*, 72.

Earth goddess.¹⁵² It is believed that a breach of any of the above acts is considered as defilement, and is seen as a serious sin against the Earth goddess and it is through purification rites that the severed relation can be restored, or else misfortunes will follow the perpetrator and, in some cases, all the members of the community may suffer through strange diseases or poor crop yields.¹⁵³

In Ghanaian societies, human's dependence on the Earth is portrayed during libation prayers which is offered before he cultivates any piece of land. These libation prayers are the result of the realisation of man's close relationship with nature. This relationship with nature is clothed in religion, which tries to guide man's behaviour in his environment. A farmer portrays this attitude through the following libation prayer:

It is now farming season.
I am going to start weeding after which planting.
Please, let me have bountiful harvest this season.
Protect me and my labourers from cutlass wounds.
Let me be at peace any time I am here.
This is your drink ooo!¹⁵⁴

It is noteworthy that people trained in Western ways of life have misunderstood the African and his way of life and have described these attitudes in derogatory terms such as ignorance and superstition. Today, however, there is the realisation that these beliefs rather imply knowledge that human beings are caretakers of nature, whose very existence depends on the maintenance of what Opoku calls "cosmic harmony with nature." He argues that nature

¹⁵² Awuah-Nyamekye, *Managing the Environmental Crisis in Ghana: The role of African Traditional Religion and Culture with Special Reference to Berekum Traditional Area*, 113.

¹⁵³ Awuah-Nyamekye, *Managing the Environmental Crisis in Ghana: The role of African Traditional Religion and Culture with Special Reference to Berekum Traditional Area*, 114.

¹⁵⁴ B. Abayie Boaten, 'Traditional Conservation Practices: Ghana's Example', *Research Review* (Ns) 14, no. 1 (1998), 46.

should be safeguarded if the people are to continually live and enjoy its benefits, through the utilisation of its resources. It is precisely for this reason that the Africans regard the earth as Mother and therefore, should not be prostituted. Therefore, in order to safeguard the sanctity of the Earth and the phenomena in it, man instituted laws and regulations.¹⁵⁵

2.5.4 Animism

According to Taringa, some aspects of the natural resources are believed to possess powers emanating from the Supreme Being.¹⁵⁶ Awuah-Nyamekye describes this as belief in *sasa -tumi* (spirit) believed to be living in certain plants and animals.¹⁵⁷ Among traditional Akan people of Ghana, certain species of flora and fauna are perceived to be sacred, believing them to possess *tumi* (spiritual power). As indicated by Awuah Nyamekye, those trees and animals that are believed to have light *sasa* are perceived to be harmless to humans, but those with heavy *sasa* are perceived to be dangerous, as they are seen as having the capacity to be vindictive and as such, people tread cautiously with such plants and animals.¹⁵⁸ These trees include *Odum* (*Chlorophora excelsa*), *Esa* (*Celtis mildbraedii*), *Abeko* (*Tieghemella heckelii*), *Tweneboa* (*Entant drophragma*), *Onyina* (*Cuiaba pentandra*), *Homakyem* (*Dalbergia saxatalis*) and *Odi* (*Okuobaka aubrevillei*).

Diawuo et al strongly posit that the powers of these plants and animals can be tapped by man through ritualistic performances to prevent certain mishaps in the society. For instance, the barks of trees, the furs of certain birds, the teeth of some animals are used for ritualistic healing. Also, crocodiles, snakes, and birds are believed to possess fertility powers

¹⁵⁵ Opoku, *West African Traditional Religion*, 182.

¹⁵⁶ Taringa, 'How Environmental is African Traditional Religion', 199.

¹⁵⁷ Awuah-Nyamekye, *Managing the Environmental Crisis in Ghana*, 151-152.

¹⁵⁸ Awuah-Nyamekye, *Managing the Environmental Crisis in Ghana*, 151.

to rid of sterility in men and women.¹⁵⁹ Msuya and Kideghesho claim that the use of some parts of the trees and animals to prepare concoctions for healing aided the conservation and sustainable use of these resources in nature.¹⁶⁰

2.5.5 Sorcery and Witchcraft

In traditional Ghanaian culture, it is strongly believed that there are evil spirits called witches or sorcerers in the communities to cause pain and misfortune.¹⁶¹ It is worthy to note that any person shielded by the powers of the Supreme Deity, ancestors or divinities cannot be harmed or inflicted with any form of bad luck issuing from the witches or sorcerers. In this regard, any benefactor who wants to be shielded by the powers of the Supreme Deity, ancestors or divinities must live according to the virtues and laws of the higher spirits in the cosmos. Thus, the person is mandated to live in harmony with nature so as to enjoy such spiritual protection from the Supreme Deity, ancestors or divinities. Some artifacts like wristlets, anklets and rings prepared with the images and parts of some plants and animals in the form of amulets and talisman are believed to ward off the attack of sorcerers and witches. Animals like dogs, cats, and eagles are said to have spiritual powers to combat the evil attack of witches. Their presence in the households of Ghanaian communities helps a lot in spiritual protection. Also, their skin, furs, or teeth are fashioned into protected gadgets by medicine men and traditional priests to be worn on the body for spiritual protection. Moreover, some plant species like the basil, garlic, ginger, and palm in Ghana are believed to possess spiritual

¹⁵⁹ Diawuo, 'Exploring the African Traditional Belief Systems in Natural Resource Conservation and Management in Ghana', 115-131.

¹⁶⁰ T.S Msuya, J.R. Kideghesho, 'The Role of Traditional Management Practices in Enhancing Sustainable Use and Conservation of Medicinal plants in West Usambara Mountains, Tanzania,' *Tropical Conservation Science* 2, no.1 (2009): 88–105. DOI: 10.1177/194008290900200109.

¹⁶¹ Boamah, 'Akan Indigenous Religio-Cultural Beliefs and Environmental Preservation', 59.

powers to ward off bad spirits.¹⁶² Also, the barks of the *Nufutene* flora species is used to prepare concoctions for drinking and bathing to ward off any evil attack. These species according to Rattray are deliberately planted in the compound of homes and farms to protect inhabitants from witches and sorcerers. At the entrances of homes of extended families in Ghana, the leaves of such plants placed in pots are hanged to drive away any influence of witchcraft and sorcery. The foregoing indicates that belief in witches and sorcerers is a potential strategy for nature conservation in Ghanaian culture.

2.5.6 Taboos

In Ghana, traditional authorities utilise taboos for regulating the ethical use of the environment in view of its resources for the ecology and sustainable development. Etymologically, taboo is a derivation of the Polynesian term “*tapu*” which means “forbidden”. It is comparable to the word “*akyiwade* or *mmusuo*” in the indigenous Akan language of Ghana.¹⁶³ As Kwame Gyekye puts it, taboo includes any sort of prohibition regarding certain times, place, actions, events and people but not exclusively for religious reasons.¹⁶⁴ Among the Akan in Ghana, taboos have been embedded in traditional religion to promote peace and harmony in the Community. The Akan term for taboo is *akyiwade*, meaning something that is forbidden or prohibited. It is also connected to *mmusu*, which refers to prohibitions against severe offences such as incest, murder, and suicide.

¹⁶² C.Yronwode, *Hoodoo Herb and Root Magic: A Materia Magica of African-American Conjure*, 4th ed. (California: Lucky Mojo Curio Company, 224).

¹⁶³ B.K. Osei, ‘The Place of Taboos in Contemporary Akwamu Traditional Society, MPhil thesis (University of Ghana, Legon, 2017), 16.

¹⁶⁴ K. Gyekye, *Political Corruption: A Philosophical inquiry into moral problem*(Accra: Sankofa Publication, 1997), 112.

Taboo can be applied into narrower and broader perspectives. The narrower perspective represents the cultic or purely religious usage, whilst the broader perspective represents its usage in socio-economic and political situations.¹⁶⁵ In the narrower perspective, taboo is a set of cultic or religious prohibitions established by traditional religious authorities as instruments for moral motivation, guidance, and means for protecting the sanctity of shrines and nonetheless the wellbeing of their worshipping communities. On the broader perspective, taboos are made applicable to any sort of social prohibition imposed by the heads of a community regarding certain times, places, actions, events, and people particularly, but not restricted to religious reasons and the well-being of the society.¹⁶⁶

In Akan traditional society, there are taboos related to cleanliness, for respect, for good conduct in office, and for sexuality, among others. They believe that breaking any of the taboos is followed by the performance of a purificatory rite to avert a possible disaster from the supernatural being. Taboo is therefore considered as a sacred institution which is instituted to regulate the conduct of individuals in the community. This view of taboos among Akans corroborates an argument raised by Cecilia Odejobi that taboo is a sacred term for a set of cultic or religious prohibitions instituted by traditional religious leaders as instruments for moral motivation, guidance and objectivity for protecting the sanctity of their shrines and the well-being of their worshipping communities.¹⁶⁷

Apart from the role taboo plays in economic, political, social and religious spaces in traditional Ghanaian societies, it also plays important role in nature conservation. In a study

¹⁶⁵ D.A. Boamah, 'Akan Indigenous Religio-Cultural Beliefs And Environmental Preservation: The Role of Taboos', <http://www.queensu.ca/religion/sites/webpublish.queensu.ca.rlgnewww/files/files/rels/grad/Daniel%20Asante%20Boamah%20MRP.pdf> (assessed November 21, 2022).

¹⁶⁶ 'Boamah, Akan Indigenous Religio-Cultural Beliefs and Environmental preservation' (assessed November 21, 2022).

¹⁶⁷ Cecilia Odejobi (2013) "An overview of Taboo and superstition among the Yoruba of South West Nigeria," *Mediterranean Journal of Social Science* 4, no.2 (2013):11

conducted by Eshun among the Asante in Ghana, it was observed that those who abused taboos related to the felling down of some trees believed to be inhibited by powerful spirits were stricken with infertility.¹⁶⁸ The punishment given by the ancestors and deities sometimes could extend beyond the individual culprit to the entire society. This usually happens when the primary offender is not brought to book or not asked to perform the pacification rites to appease, subsidise and soften the wrath of the gods and ancestors.¹⁶⁹ The punishment levelled against culprits served as traditional checks, deterring people against wantonly destroying the biodiversity resources in the environment.

Boateng observes that, among the Asante there are taboos against cutting down of highly economic trees like *Dawadawa* plant (*Parkia clappertoniana*), *Shea* butter (*Butyrospermum parkii*), palm trees such as *Betene* (*Elaeis Guineensis*), *Osese* (*Funtumia* sp.), *Odum* (*Chlorophora excelsa*), Mahogany (*Khaya ivorensis*) and other indigenous plant species. These trees are believed to house powerful and vengeful spirits and as such considered distasteful for felling by indigenous Asante. It is only to be cut down when granted permit by the traditional authorities and even with this, extravagant ritualistic performances are carried out before the cutting is carried out. This ensures the judicious use of these precious trees, conserving them for posterity reasons. Also, bad farming practices such as farming near watersheds, selling plots of land, destroying sacred forests and bushes are tabooed among the Asantes.¹⁷⁰

¹⁶⁸ E.K. Eshun, 'Religion and Nature in Akan Culture: A Case Study of Okyeman Environment Foundation', Master's Thesis (Ontario, Canada: Queens University Kingston, 2011), 56.

¹⁶⁹ Awuah-Nyamekye, 'Managing the Environmental Crisis in Ghana', 151-152.

¹⁷⁰ B.A. Boateng, Traditional conservation practices: Ghana's Example. *Institute of African Studies Research Review* 14, no.1 (1998):42-51.

Tribes that are located in the forest zones of Ghana forbid hunting and farming in the forest at certain days and periods of the year. It is a taboo for a hunter or a farmer to kill game that is young, pregnant or feeding their young one. It is believed that the Earth's goddess, literally known as the *Asaase Yaa* would strike defaulters instantly to death. It is believed that such persons might not have children or lose their children if they kill the pregnant animals or the young ones.¹⁷¹ Among almost all the tribes along the coast of Ghana, Acheampong argues that it is forbidden to go fishing on Tuesdays because the sea is believed to be a goddess and worshipped by these communities. They believe that Tuesdays are days which the goddess has time with her children which are the fishes. In order not to disturb the goddess and her children, it is a great taboo to go fishing that very day and those who disobey the directives are drowned among other calamities. It is a taboo to go fishing at certain periods of the year. This is apparently an initiative to enhance fish production and to protect the fingerlings from being caught. It is also a taboo to eat certain types of fish and even when they were caught by fishermen, they are freed because they are regarded as beloved children of the goddess. The rationale behind this taboo is that such fishes have low productivity rate and immense harvesting may cause their extinction.¹⁷² It can be concluded from the above that in the absence of scientific knowledge, taboo is an effective tool for community-based natural resource management over the centuries.

2.5.7 Sacred Grove

¹⁷¹ Elvis Acheampong, 'The Role of Ghanaian Culture And Tradition in Environmental Sustainability' [://www.modernghana.com/news/306123/the-role-of-ghanai-an-culture-and-tradition-in-environmental.html](https://www.modernghana.com/news/306123/the-role-of-ghanai-an-culture-and-tradition-in-environmental.html) (assessed November 21, 2022).

¹⁷² Acheampong, 'The Role Of Ghanaian Culture And Tradition in Environmental Sustainability' (assessed November 21, 2022).

The concept of sacred groves is well-known in traditional African societies in general and among the Akan traditional societies of Ghana in particular. According to Awuah Nyamekye, sacred groves are the indigenous reserves that have been strictly protected for many centuries ago due to their religious and cultural significance.¹⁷³ He contends that the institution of sacred groves continues to thrive in the Akan society because of the religious underpinning attached to them, and it is the belief of the Akan that, such groves are the habitat of the gods, ancestors and other spirit beings. In his view, for any sacred grove, there is a reigning deity that oversees and controls all forms of vegetation and waters of the grove. He reiterates that only qualified members such as priests, priestesses, chiefs, and family heads are permitted to enter the sacred groves to undertake official rituals on behalf of the entire community.¹⁷⁴ Sarfo-Mensah argues that the creation of sacred groves was informed by religious and cultural motives, but recent studies among indigenous people including those of the Akan have shown that the concept of sacred groves is also underpinned by conservationist motives.¹⁷⁵

According to Nyamekye, different Akan communities have different local names for sacred groves and prominent among them include “*nananom mpow*”, “*mpanyin pow*” and “*nsaman pow*” which are literally known as ancestral groves, ancestral forest and burial grounds respectively. To him, within the Akan traditional society, forests are regarded as essential natural resource for humanity therefore influenced by their religion and culture, they have established certain measures to preserve their forests in order to guarantee their

¹⁷³ S., Awuah Nyamekye, “Salvaging Nature: Akan Religio-Cultural Perspective. *Worldview: Global Religions*’, *Culture and Ecology* 13, no 3 (2009): 25.

¹⁷⁴ Awuah Nyamekye, ‘Salvaging Nature: Akan Religio-Cultural Perspective’, 25.

¹⁷⁵ P. Sarfo-Mensah, “The Spirituality of Forests and Conservation: The Dynamics of Change and Sustainability of Scared Groves in the Transitional Zone of Ghana”, PhD. Thesis (University of Greenwich, UK, 2001).

sustainable use, hence the institution of sacred groves. He observes that, while the histories of most sacred groves had spiritual or religious underpinning, the primary motivation is to conserve nature.¹⁷⁶ In a study conducted by Osei among the Akwamus in Ghana, it was revealed that apart from the religious role being played by the sacred grove situated in the area, it also plays conservationist role for medicinal purposes.¹⁷⁷

Internationally acclaimed bodies such as the United Nations Educational, Scientific and Cultural Organisation (UNESCO) and the International Union for Conservation of Nature and Natural Resources (IUCN) endorse the role of sacred grove in the conservation of natural resources. According to Asante Boamah, in 1996 UNESCO's report on biodiversity found out that sacred groves serve as important reservoirs of biodiversity, preserving unique species of plants, insects, and animals. UNESCO has therefore proposed that sacred and taboo associations attached to particular species of trees, forest groves, mountains, rivers, caves, and temple sites should continue to play an important role in the protection of particular ecosystems by local people.¹⁷⁸

Similarly, Article 12 of United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) provides significant political leverage for developing appropriate policies for the protection and recognition of sacred natural sites. It states that:

Indigenous peoples have the right to manifest, practice, develop and teach their spiritual and religious traditions, customs and ceremonies; the right to maintain, protect, and have access in privacy to their religious and cultural sites; the right to the use and control of their ceremonial objects; and the right to the repatriation of their human remains.¹⁷⁹

¹⁷⁶ S. Awuah-Nyamekye, *Managing the Environmental Crisis in Ghana: The role of African Traditional Religion and Culture with Special Reference to Berekum Traditional Area* (United Kingdom: Cambridge Scholars Publishing, 2014), 101.

¹⁷⁷ B.K. Osei, 'The Place of Taboos in Contemporary Akwamu Traditional Society', 78

¹⁷⁸ Daniel Asante Boamah, 'Akan Indigenous Religio-Cultural Beliefs And Environmental Preservation: The Role of Taboos', Master's thesis (Queen's University, 2015), 37.

¹⁷⁹ UNDRIP, 'Declaration on the rights of indigenous peoples, United Nations', General Assembly, 61st session, agenda item 68, Report of the Human Rights Council, 2007.

It could be deduced from the declaration that indigenous societies all over the world have the fundamental freedom to apply their indigenous knowledge systems to solve specific local problems of which sacred groves become relevant. It is therefore significant to note that sacred groves play significant role in promoting sustainable utilisation and conservation of flora and fauna in Ghanaian indigenous societies, and it is for this reason that a holistic understanding of the current status, structure and function of sacred grove is essential for assessing their ecological role and formulating strategies for their conservation.

2.5.8 Totems

The concept of totem has varied definitions. Adom defines totem as a special animal, bird, plant or object which an ethnic society, family or clan reveres as sacred because it might have provided a special assistance to that particular ethnic society or clan that ensured its survival.¹⁸⁰ Freud defines totem as an animal, either edible or harmless, or dangerous and feared which stands in a peculiar relation to the whole clan. The totem is first of all the tribal ancestor of the clan, as well as its tutelary spirit and protector; it sends oracles and, though otherwise dangerous, the totem knows and spares its children.¹⁸¹ To Gyamfi, totem refers to animals that are revered by individuals, particularly group of people as holy. He contends that totems are used by different group of people for different reasons including the conservation of natural resources, and for that reason people who believe themselves to be of one blood,

¹⁸⁰ Dickson Adom, 'Asante Indigenous Knowledge Systems: Repositories of Conservation Ethics for Ghana's Biodiversity', *Proceedings of the Academic Conference of on Interdisciplinary Approach* 7, no.2 (2016):13.

¹⁸¹ S. Freud, *Totem and Taboo* (New York: Moffat, Yard & Co., 1913), 6.

descendants of common ancestors, and are bound together by common obligations to each other by common faith revere that totem.¹⁸²

Alun maintains that totemic animals serve as identity to families or clans who are related to those totemic animals and therefore it is a taboo to kill or have sexual relations between members of those clan. This according to him, totemic objects are believed to be ancestrally related to an ethnic group, clan, or family as a tutelary spirit which they attach deep feelings to.¹⁸³ Among some Akan tribes in Ghana, family members who are related to a totem do not eat, kill or trap such totemic animals. Thus, when a totemic animal dies, members of that group show respect by mourning and burying it as in the case of a human being.

In Ghana, totems play significant roles in the conservation and management of natural resources. Ntiamao Baidu identifies totems as the key indigenous methods for conserving biodiversity.¹⁸⁴ According to Nukunya, it is interesting to note that in Akan communities, clans, families and traditional leaders recognise the need to protect certain animals, fishes and birds, thus using them as their totems with the application of taboos and other supernatural beliefs. Citing example among the coastal Akan areas, he states that it is a taboo to eat certain kinds of fish, and even if they are caught by the fishermen, they are freed because of their totemic status.¹⁸⁵ While taboos associated with these fishes may have religious explanation, Acheampong argues that recent scientific investigation has shown that such fishes have low

¹⁸² Gyamfi Adu, "Indigenous beliefs and Practices in Ecosystem Conservation: Response of the church, *Scripture* 107 (2011): 14.

¹⁸³ R. J. Alun, *The Secret of the Totem* (New York: Colombia University Press, 2005), 117.

¹⁸⁴ Baidu-Ntiamao Y. "Conservation of coastal lagoons in Ghana: The Traditional approach". *Landscape and urban planning*, 20 (1991):46

¹⁸⁵ G.K Nukunya, *Tradition and Change in Ghana: An Introduction to Sociology* (2nd Ed). (Accra: Ghana University Press).

productivity rate and immense harvesting may cause their extinction.¹⁸⁶ The concept of totem and its relevance in nature conservation is evident in biblical perspective.

In Genesis 2: 16-17, God placed man in the Garden of Eden to cultivate and guard it. In the garden, the tree of life served as God's totem and He declared it as sacred, tabooing it from touching or eating it. God thus said, 'you may not eat from the tree that gives knowledge of what is good and bad'. However, human desire to explore led to a break in this covenant and God pronounced a curse, and finally banished them from the garden. This is an indication that prohibitions such as totems and taboos are important and have been part of human life since creation for the conservation of nature. This biblical illustration is eminent in indigenous societies where prohibitions such as taboos and totem play significant role in natural resource management of which a break of these traditional rules is a sin and tantamount to punishment.¹⁸⁷

Ecologically, the idea of conserving totemic animal, plant or object as well as their habitats has ensured their preservation in a large number species (high taxas) in Ghanaian communities. Thus, in Ghanaian communities, the respect accorded to certain plants and animals grounded in their belief in totemism, does not only serve as concrete ways for conserving variety of species, but have positive ecological values.

2.5.9 Folklore

Long before the coming of the Europeans, indigenous Ghanaian societies devised methods that protected their natural habitats through the enforcement of customary laws,

¹⁸⁶ E.A. Acheampong, "The Role of Ghanaian Culture and Tradition in Environmental Sustainability", [http://www.modernghana.com/news/306123/1/the- Role-of-Ghanaian-culture-and-Tradition-inenvi.html](http://www.modernghana.com/news/306123/1/the-Role-of-Ghanaian-culture-and-Tradition-inenvi.html) (assessed September 5, 2022).

¹⁸⁷ Osei, B.K. *New Approach to Christian Religious Studies for Senior High Schools* (Koforidua: Ghana, Chiczay Press, 2015), 4

taboos, stories, songs, riddles, proverbs and ritual performances collectively referred to as folklore.¹⁸⁸ According to Alidza, folklores include beliefs, customs, superstitions, proverbs, riddles, music/songs, myths, legends, tales, ritualistic ceremonies, magic, witchcraft, and all other manifestations and practices of primitive and illiterate people.¹⁸⁹ There exists intrinsic relationship between folklore and traditional ecological knowledge. According to Agbanu, folklores reflect values observed in nature which humans aspire to.¹⁹⁰ As indicated by Berkes, the relationship between folklore and traditional ecological knowledge of indigenous people, having partnership features, can put forth constructive impact on the conservation of environment.¹⁹¹

With regard to folk songs and the environment, Alidza, points out that folk songs project the ideologies, histories and the identity of ethnic groups in the traditional societies of Ghana. Since the songs are avenues through which communities teach and transmit ecological knowledge, they are sung directly or incorporated into play games and storytelling for especially the youth who gather by the fireside after supper to listen. The elders create awareness during the narration of the stories of the natural environment, its origin and relationship with humans, plants and animals. Emphasis is, therefore placed on ecological lessons that are drawn from song texts that talk about the benefits which human beings derive from co-existing with animals and plants for survival, hence, the need for humans also to reciprocate by protecting them.¹⁹²

¹⁸⁸ Martin Q. Amlor & Matthew Q. Alidza, 'Indigenous Education in Environmental Management and in Ghana: The Role of Folklore', *Journal of Environment and Ecology* 7 No. 1(2016): 38.

¹⁸⁹ Alidza, 'Indigenous Education in Environmental Management and in Ghana', 39.

¹⁹⁰ Agbanu, 'Environmental ethics in Mafi-Eve indigenous culture', 113.

¹⁹¹ F. Berkes, *Sacred ecology. Traditional ecological knowledge and resource management* (Taylor, Philadelphia and London, 1999).

¹⁹² Alidza, 'The Repository of Indigenous Knowledge', 39.

Besides folk songs in nature conservation practices, legends or traditional stories also play significant role in the conservation of natural resources such as water bodies. In a story about Lake Bosomtwe and the Antelope god, among the Asantes of Ghana, a shot and wounded antelope evaded capture by a hunter and fell into a small pond. The pond expanded its banks mysteriously to the amazement of the hunter; causing him to believe that the antelope was a spirit. He therefore named the pond “*Bosomtwe*” meaning “Antelope god”. The pond was protected traditionally by taboos and customs because it provides water and fish for the communities that surrounded it.¹⁹³ The essence of this story is to educate the youth’s action for the sustainable management of Lake Bosomtwe and its catchment resources through cultural belief systems. It is also meant to stimulate behavioural change, through culture and folklore by effectively communicating the values and importance of the lake including its ecosystem services, threats to sustainability and actions needed to protect it.

2.5.10 Festivals in Ghana

One of the indigenous practices that can be effectively utilised for sustainable biodiversity conservation is festival. Africa in general and Ghana in particular have been tagged a festival continent because year in year out, festivals are held almost in every part of Ghana. Festival is an occasion for celebrating a day or time of religious or cultural significance that recurs at regular intervals. It is a time people do something that they would normally not do; they abstain from something they normally do; they carry to the extreme behaviours that are usually regulated by measure; they invert patterns of daily social life.¹⁹⁴

¹⁹³ Rocha Ghana, 'Caring for God's Creation, Sankofa II: Using Culture and Folklore to Conserve Lake Bosomtwe', <https://ghana.arocha.org/projects/sankofa-using-culture-and-folklore-to-convert-lake-bosomtwe/> (assessed November 21, 2022).

¹⁹⁴ B. A Mathias, 'Socio-Religious Significance of Ikoro and Ekpe Festivals in Akwete Ndoki Community of Abia State, Nigeria', *International Journal of Social Science and Humanity*, 4, no.5 (2014).

Traditional festivals in Ghana are cultural events that are primarily organised to venerate the ancestors while remembering iconic events in the history of ethnic societies. However, due to the deleterious condition of the environment and its biodiversity resources, there is a great potential of tactically tailoring these traditional festivals to halt this wanton destruction while ensuring the sustainable development of biodiversity.¹⁹⁵ Traditional festivals are mostly linked to planting, harvesting and environmental cleansing basically aimed at honouring the ancestors as a bait for their blessings in return. Again, traditional festivals help in revitalising the indigenous knowledge which has been unjustly negated but are valuable tools for natural resource management. This might explain the often much emphasis placed on the development and conservation of the environment and its biodiversity resources. This is to say that traditional festivals promote the ideologies linked to the preservation of the environment and its natural resources.

Local people hold the strong belief that the ancestors visit their homeland during festivals to inspect the environment and its natural resources they left in the care of the present generation and punish or reward members of the society based on how judiciously or wantonly the biodiversity resources in their environment are used.¹⁹⁶ During festival commemoration, Asante et al contend that environment- friendly activities are undertaken such as tree planting exercises and removal of all forms of refuse and debris to develop the society while appeasing their deities and ancestors.¹⁹⁷ Traditional festivals celebrate issues that border on occupation like fishing, hunting and farming. Some other traditional festivals are built around the

¹⁹⁵ D. Adom, 'Adaptation of Traditional Festivals for the Sustainable Development of the Biodiversity of Local Communities in Ghana', *Open Journal of Social Sciences* 5 no 11(2017): 69-94.

¹⁹⁶ Adom, 'Adaptation of Traditional Festivals for the Sustainable Development of the Biodiversity of Local Communities in Ghana', 69-94.

¹⁹⁷ L. Lyck, P. Long, and A.X. Grige, *Tourism, Festivals and Cultural Events in Times of Crisis* (Denmark, Copenhagen Business School Publications, 2012), 190.

preservation of the sanctity of sacred natural sites like land, mountains, forests and rivers. Traditional festivals sustain existing cultural beliefs and social practices that include sacred groves/forest, water, land, wildlife conservation, resource utilisation taboos, folktales and traditional religion in most Ghanaian societies. Through such beliefs and practices, traditional knowledge and indigenous environmental wisdom which is part of African indigenous knowledge system is passed on from generation to generation. Traditional festivals epitomise indigenous people's respect and reverence for and pragmatic understanding of their natural environment. For instance, annual festivals are organised to honour the deity believed to be inherent in river bodies. The quest of conserving biodiversity for sustainable development, therefore, calls for the integration of traditional festival in the sustainable resource management framework.¹⁹⁸ The foregoing tells us that festivals are not only used as fora to plan, make exchange visits and learn best practices alone, but they are also avenues to disseminate traditional policies and programmes on natural resource management.

2.6 Water and Spirituality in Akan Philosophy

In indigenous Akan philosophy, people have strong spiritual connection with water as a living being with its own spirit.¹⁹⁹ Because water is recognised as a living spiritual force, one's relationship with it is based on respect and an ethics of thanksgiving. Apart from the land being regarded as sacred, indigenous people of Ghana perceive water as a gift, which has been passed down from the higher powers, and are therefore treasured and respected as sacred and life-sustaining, their own health is directly related to water.

¹⁹⁸ C. S. Negi, *Traditional Culture and Biodiversity Conservation: Examples from Uttakharan* (Central Himalaya, International Mountain Society, 2010).

¹⁹⁹ Rhett Larson, 'Water, Worship, and Wisdom: Indigenous Traditional Ecological Knowledge and the Human Right to Water', *ILSA Journal of International & Comparative Law* 19(2012): 43.

In traditional African societies like Ghana, water is believed to have originated from God to make life easy for man. Therefore, there is a divinity present in all water bodies including lakes, streams, lagoons, ponds, the sea and rivers. Ghanaian cultures characterise water, by virtue of its life-giving nature, as both physical and spiritual in essence, and even of greater spiritual utility than physical. Water is used in important prayer forms in various acts of libation. It is used in ritual acts of purification, socialisation, reparation and revitalisation – and both for blessing and cursing. Water is used in social interactions, and in the making and breaking of social relationships. Water bodies also play significant roles in rites of individual and collective transitions from the profane to the sacred state.²⁰⁰

In the thought of Ghanaian tradition, Hagan asserts that drought, unfavourable patterns of rainfall and famine are the consequences of moral and spiritual offences that humans commit against water gods. Calamities such as droughts and famine bring communities to reflect on their state of spiritual pollution, degradation and weakness due to various acts that offend the water gods. Despite modernity and foreign religious beliefs' attack on African culture, Hagan maintains that African cultural spirituality in water persists. He explains that lack of rain, dying rivers and lakes, collapse of eco-systems and the spreading desertification due to the impact of human activity yearly keep reminding Africans that they need to take care of nature so that nature might take care of them.²⁰¹

To further demonstrate the spirituality of water, Busia's work on Asante's myth has it that river Tano, Bea, Lake Bosomtwe and the sea are all children of the Supreme Being. The

²⁰⁰ Healing Earth, 'Water and Spirituality', <http://healingearth.ijep.net/chapters/water/water-and-spirituality/> (assessed September 5, 2022).

²⁰¹ G. P. Hagan, 'Water and spirituality in some African Cultures and tradition', <https://www.water+and+spirituality+in+ghanaian+culture&sxsrf> (assessed September 5, 2022).

Supreme Being decided to send these children to the earth so that they might receive honour from men, and in turn might confer benefits on mankind. The Supreme Being himself planned where he would send each of his children. The goat, being a friend of Bea got to know of the plans, so he told Bea that whenever their father sent for them he should go quickly so that he would arrive before his brothers. One day, the Supreme Being sent for his children and Bea ran quickly and got there first; so the father assigned him the cool and shady forest country which had been intended for Tano, the favourite son. Tano was therefore sent to the grassy plains, and each child in turn was given a place different from the original plan, owing to the goat having revealed the plan to Bea. For this reason, all the worshippers of Tano as well as those of the other sons avoid the goat as a hateful creature.²⁰² A good lesson that can be derived from the above myth is that, as spirit beings, river bodies were created by God to be located at a sound natural environments.

Spirituality of water in Ghanaian thought is also evident in the rules governing water bodies. Among the Akans for instance, there are taboos regarding rivers, streams and lakes. Some rivers cannot be fished, while fish from some rivers cannot be fried. It is taboo to cross lakes and rivers with dead bodies, and so at each river crossing, those transporting the dead person must pour libation to the spirits of the rivers to permit the crossing. Women in their menstrual period cannot go near water bodies or cross them, because they are considered unclean before the river gods.²⁰³

²⁰² K.A. Busia, *The Ashanti of the Gold Coast*, *African Worlds* (Daryll Forde, I.A.I. OUP., 1954), 193.

²⁰³ Ministry of Education, <https://theirworld.org/news/girls-banned-crossing-river-to-school-ghana-Menstruation-periods/> (assessed September 5, 2022).

In Ghana, like all African communities, the bond between the community and water bodies is a spiritual one without which neither humans nor plants and animals can survive. Eva Meyerowitz presents a beautiful image of the spirituality of water in the primary domain of life among the Akans of Ghana.

According to Meyerowitz,

‘Every compound, apart from the Queen-mother’s, always contained an altar dedicated to the Supreme Being, called ‘*Nyame Dua*’, literally, ‘God’s tree’. It was simply a wooden post planted in the earth with three branches lopped short. In the fork of these three branches stood a vessel containing water and a neolithic celt, called ‘*Nyame akuma*’, (God’s axe), a symbol of strength and power. The people in the compound bless themselves with this water, praising Nyame, and also give her thanks-offering as protectors of their dwelling’.²⁰⁴

This implies that sprinkling the water from the vessel on the ‘*Nyame dua*’, and on them are meant to purify, protect and bring them good fortune, because the water comes directly from God and has spiritual and divine power.

In Akan indigenous thought, spirituality of water is demonstrated during naming ceremony. During the outdoor of the child, the grandmother or an elderly woman of the household has to bring the baby out of confinement into the light of day. With the baby in her arms, she has to step across the doorway three times, praying for long life, good health and prosperity for the child. And three times as she does this, she throws water on the roof of the house to drop on the child like dewfall or rainfall, with the prayer that the elements receive the newborn child and make no illness attack it. During the naming ceremony, the spiritual value of water is equally demonstrated. This is where the officiator dips his middle finger into the water and touches the tongue of the child saying, *Kwesi Otu*, or *Esi Otuwa*, ‘when you say it is water (*nsu*), it is water’. He next dips his finger into the gin and touches the tongue of the

²⁰⁴ L. R. Eva Meyerowitz, *The Akan of Ghana, Their Ancient Belief* (Faber and Faber: London, 1958), 12.

baby and says ‘Kwesi Out’ or ‘Esi Otuwa’, when you say it is alcohol (*nsa*), it is ‘alcohol.’ According to Akan tradition, the connection between water and spirituality associated with naming ceremony is that, water does not only represent the values of truthfulness and goodness, but it also stands for higher spiritual state and responsibilities.²⁰⁵

Describing the relationship between water and spirituality during nubility rites (bragoro) among the Akan, Peter Sarpong posits that during the rites, *yaawa* (a brass basin) is filled with water, in which the leaves of the ‘*adwira* plant’ (Hyssop), an egg, and a dry okro fruit are put and placed near her. Into this basin are thrown any oncoming gifts in the form of coins. Another woman sitting next to the basin dips her right hand into it each time a donor’s money falls into it and taking out the leaves, sprinkles the initiand with water. After the rite, the initiand is taken to a stream for a ritual bath at a riverside. At the riverside, the girl is given a piece of rag to cover her genitals. An elderly person then dips her three times into the river and says that, “Let no mishap come her way. If a man has intercourse with her, let her be pregnant at once.”²⁰⁶

In Ghana, the spirituality of water is evident in the ritual washing of adherent in Christianity and Islam. Among the Roman Catholic for example, water can be ritually blessed and served as a spiritual symbol of God’s protection over a person or group touched by the Holy Water. In Christian liturgies, Adegas states that one of the most significant importance of water is its usage in baptism. According to him, John the Baptist baptised men and women in the River Jordan as a sign of repentance, and therefore, when immersed in the water of baptism, the person presumably dies with Christ and resurrects with him so that the person

²⁰⁵ Peter Sarpong, *Girls’ Nubility Rites in Ashanti* (Accra: Ghana Publishing Corporation, 1977), 22

²⁰⁶ Sarpong, *Girls’ Nubility Rites in Ashanti*, 30.

becomes a new person (washed anew). The person washed anew becomes a child of God and by extension, a follower of Christ.²⁰⁷

In biblical accounts, the penitent woman washed the feet of Jesus with her tears and Simon Peter who tried to scold the woman was rebuked by Jesus for interfering (cf. Lk. 7: 44). At the last supper, Jesus washed the feet of his disciples symbolizing Jesus' courtesy and humility (cf. Jn. 13: 2-20). Water can also be medicinal as can be seen in the cure of Naaman, the commander of the Aramean Army in the River Jordan which cleansed him of his leprosy following Prophet Elisha's directive to him to bath in that river (Cf. 2Kings 5: 1 ff). In Islamic tradition, ablution with water, or *wudu*, is an obligatory preparation for daily prayer.²⁰⁸ This means that in Islam, salat (the five daily prayers) are performed after washing certain parts of the body using clean water in the ritual observance or practice of *wudu*/alwala ablution.

The foregoing clearly points to the fact that Ghanaian's conception of water as a divine creation with intrinsic value informs their attitude towards water bodies, bearing in mind that they are the source upon which all life forms depend. It is from this premise that indigenous Ghanaians cultures relate harmoniously with cosmic forces associated with water with much respect and decorum. This corroborates Parrinder's expression that:

Water is generally considered sacred by Africans. It is used in many rites/rituals. Purification is by water and it is associated with the production of life... it is used for medicinal purposes. Africans consider that medicinal water must come from a spring, river or well and not from tap or boiled, because boiling actually kills the spirit in the water.²⁰⁹

²⁰⁷ Andrew, Philips Adeg, Water as an essential ingredient in the performance of religious rituals: The need for conservation, A paper for the 34th Annual National Conference and Fellowship Award Ceremony of the Nigerian Association for the Study of Religions (Nasr), p.8.

²⁰⁸ Healing Earth, 'Water and Spirituality', <http://healingearth.ijep.net/chapters/water/water-and-spirituality/> (assessed September 5, 2022).

²⁰⁹ Parrinder, Geoffrey. African Traditional Religion (London: SPCK, 1969), 79.

2.7 Water Conservation Practices in Indigenous Ghanaian Society

Indigenous water conservation practices are the product of accumulated knowledge, practices and traditions which have evolved over many generations of experimentation and adaptation. In Ghana, customary water rights are often rooted in customary land law, i.e., the body of rules and practices which govern access to and tenure of land. Customary water rights in Ghana were regarded as part of land rights until the enactment of the Water Resources Commission Act of 1996.²¹⁰ Agyenim argues that in an attempt to attract customary law and rights within the fold of statutory law, ownership of water resources was vested in the state by the lawmakers and directed the holders of water rights to stake their claim within twelve months of the coming into force of the Water Resources Commission Act 1996. The result is that customary water law and rights coexist alongside the statutory water law and rights, as two separate systems and bodies of law. In reality, these two systems do cross each other and interact, in space and time.²¹¹

Under customary or indigenous laws in various communities Ghana, management of water resources often falls under the jurisdiction of chiefs, elders, and priests.²¹² Common rules being used are; the prohibition of the use of dirty bucket to fetch water; women are not to fetch water when they menstruate; specific days of the week, months or certain occasions when one cannot go into some water bodies. These rules are normally backed by traditional religious beliefs and are also attempts to control pollution and water quality within the limit

²¹⁰ J. B. Agyenim, 'Investigating Institutional Arrangements for Integrated Water Resource Management in Developing Countries: The Case of White Volta Basin, Ghana', PhD Thesis (Research and graduation internal, Vrije Universiteit Amsterdam, 2011), p. 149.

²¹¹ Agyenim, 'Investigating Institutional Arrangements for Integrated Water Resource Management in Developing Countries', 149.

²¹² K. Mensah, 'Water Laws, Water Rights and Water Supply (Africa)'. Ghana- Study Country Report, DFID Kar Project R7327 (1999).

of traditional knowledge. According to Odame-Ababio, sanctions for disobedience include sacrifice of sheep, provision of schnapps or payment of some amount of fines to the elders of the community.²¹³

In the North Eastern part of Ghana, Derbile reports the success of indigenous institutions in the management of water resources. He indicates that the management of community-based irrigation schemes strongly draws on the supportive roles of indigenous institutions, particularly traditional authorities through their direct participation in operational and management functions such as land allocation, water resource management and mobilisation of labour for project maintenance activities.²¹⁴ Similarly, in the West Gonja traditional area in Northern Ghana of Ghana, Zakaria argues that traditional practices and beliefs as well as norms have over the years played an important role in the management of natural resources.²¹⁵

Prior to the colonial era, traditional leaders managed water resources and they did a good job to maintain and manage these resources. This was achieved by ploughing, contouring, clay pots in storing water, dug wells, homestead ponds, rainwater harvesting, taboos etc. For example, in some communities, water bodies were not to be visited or to be disturbed on a particular day within a week, because water bodies are termed to be “spirits”. Also, livestock were not to graze along streams and river bodies; no cutting of trees along

²¹³K. Odame-Ababio, ‘Putting IWRM into practice-Ghana’s Experience’. Proceedings of the African Regional Workshop, Nairobi Kenya, 8-10 October 2003. Food and Agricultural Organization of the (United Nations: Rome, 2005).

²¹⁴E.K. Derbile, ‘Water users’ associations and indigenous institutions in the management of community-based irrigation schemes in north-eastern Ghana’, *European Scientific Journal* 8, No. 26 (2010): ISSN: 1857 – 7881.

²¹⁵ S. Zakaria, (2012). “The role of traditional institutions in the management of natural resources in the West Gonja Traditional Area”, Unpublished Master thesis (University for Development Studies, Tamale, 2012), p. 50.

river banks as well as the pollution of river bodies. Again, fishing activities were not allowed in any river bodies on certain days. These methods and practices epitomised the practices of ethnic groups and it helped to minimise deforestation, soil erosion and also was allowed the ecosystem replenish.²¹⁶

Similarly, Abayie opines that each locality, or community or traditional area has its own sets of taboos to manage water resources. There was a taboo against the clearing of the vegetation right up to the edges of streams and rivers. Farmers were enjoined to leave a strip of land of *Abasafa aduasa*, (which literally means "about 30 metres"), which should not be cleared at both sides of streams and rivers. The benefit of this conservation method is quite obvious to any environmentalists. The people were aware that this could check excessive evaporation from the rivers and streams. Abayie reiterated that the coastal ethnic groups also had their taboo days such as Tuesdays during which fishing was prohibited. The essence was to give the sea god to rest. In addition to this was a long period during which no fish was expected to be harvested in the lagoons. This resting period coincided with the period when the fishes in the lagoons lay their eggs. Such knowledge about the seasons connected with the various taboos was a well-known phenomenon among the indigenous people.²¹⁷

Abayie also points out that apart from the apparent fear which these taboos instilled in the people, there were also physical sanctions attached to them. Since the sanctions had to ensure the propitiation of the spirit(s) involved, the culprit who infringed on any of the taboos had to offer a sheep plus two bottles of schnapps. The charge was deterrent enough to scare

²¹⁶ P. A. Owusu, S. Asumadu-Sarkodie & P. Amayo, A review of Ghana's water resource management and the future prospect, *Cogent Engineering* 3, no 1(2016): 11.

²¹⁷ Bafuo Abayie Boaten, 'Traditional conservation practices: Ghana's example', *Research review* 14, no.1 (1998), 47.

people from infringing or breaking the taboos. In addition to this, the people were convinced of the sanctity of the taboos, therefore, they did not deliberately break them.²¹⁸ Amongst most ethnic groups in Ghana, Rattray asserts that there exist beliefs that regard the majority of water bodies as deities.²¹⁹ According to Sarfo-Mensah and Oduro, rivers sometimes assume the role of god of the state *Omanbosom* (state god), ruling over the various functions of the state. Such designated rivers are very common amongst the Akan and are protected and worshipped at several spots along their courses. This tradition has been used to protect the headwaters of several river bodies, especially those that serve as potable water sources for a community or group of communities. They cited example that River Tano, which runs through Brong Ahafo region, and River Bosompra that runs through Kwahu in the eastern region of Ghana are revered and protected because they are regarded as the source of life and fertility, where barren women take their bath in these rivers in the hope of being fertilised.²²⁰

Rivers and their immediate surroundings, especially forest are protected on the basis that the spirit of the river resides in the area. Consequently, there are a variety of rules and regulations which prevent human contact with sacred groves such as taboo days. Other regulations and controls are available on the exploitation of fisheries and other aquatic resources, and the use of adjacent lands for farming and logging. For example, there exist taboos against the clearing of vegetation for farming right up to the edges of streams and rivers, where farmers are encouraged to leave *Abasafa aduasa* (a strip of land, about 30 metres). Other taboos, such as disallowing of menstruating women from fetching water from

²¹⁸ Abayie, 'Traditional conservation practices: Ghana's example', 47.

²¹⁹ R.S. Rattray, *Ashanti* (New York: Negro University Press, 1923).

²²⁰ P. Sarfo-Mensah & W. Oduro, 'Traditional Natural Resources Management Practices and Biodiversity Conservation in Ghana: A Review of Local Concepts and Issues on Change and Sustainability', <http://www.feem.it/Feem/Pub/Publications/WPapers/default.htm> (assessed June 13, 2022), p.7.

rivers prevents the defilement of river deities and gods. The issue of menstrual blood in traditional beliefs has been treated extensively in anthropology as a source of potent force.²²¹

Amongst the Akan, for instance, menstruation has been emphasised as a source of impurity to gods and deities, because a woman during her menstrual period is believed to possess bad spirit. It is believed that women, who were considered to be the most frequent users of water were prohibited from entering the vicinity of rivers when they were menstruating to prevent degradation and conserve these vital resources.²²² Conservation of marine resources is managed on the basis of religious beliefs and superstitions which are enforced by taboos. For example, coastal ethnic groups have Tuesdays as taboo days during which there is no fishing, because these days are regarded as the sacred days of *Nana Bosompo* (the sea god).²²³ Enstua et al have observed that the effect of giving both the fishermen and the fish day of rest is to assist village cohesion if the rest day is observed. In addition, the resting period coincides with the time when fish lay their eggs.²²⁴

Traditionally, Sarpong has posited that customary law has developed rules for reasonable or equitable use of water resources among communities through which a river or stream flows. The use of implements for fetching water is regulated by rules determined by the competent local authority, usually fetish priests and priestesses. Calabashes and buckets are usually the prescribed or acceptable vessels for fetching water. The drinking part of the river is often located upstream from the swimming or bathing part or the part reserved for

²²¹ M. Douglas, *Purity and Danger: An Analysis of the Concept of Pollution and Taboo* (London: Routledge & Kegan Paul, 1996).

²²² M.D. McLeod, *The Ashanti* (British Museum Publication Ltd., 1981).

²²³ Sarfo-Mensah, 'Traditional Natural Resources Management Practices and Biodiversity Conservation in Ghana', 7.

²²⁴ M. Entsuaah-Mensah, N.G. Willoughby & H.R. Dankwa, 'Ghana's coastal lagoon fisheries: Is Traditional management sufficient?' Unpublished Manuscript submitted to *Coastal Management Journal* (Washington DC: USA, 1998).

watering animals. Violation of these rules is an offence punishable by fines- in money or in kind-payable to the local chief or the priests or priestesses.²²⁵

Sarpong further clarifies that religious beliefs served as potent sources of ensuring compliance with customary rules on water usage. The protection of the environment including rivers was the responsibility of the entire society in traditional societies. Pronouncements of priests and priestesses, as part of customary beliefs, were scrupulously adhered to, and disobedience of such edicts had grave consequences including death for the offender. To avert the ancestors and the earth- goddesses punishing the entire society for violations, every member of the community was enjoined to refrain from acts that would endanger the environment. As the custodian of the environment and the occupant of the ancestral stool, the chief, assisted by the fetish priests and priestesses, could mete out appropriate sanctions to offenders. Hence, through customary beliefs, enforceable rules were evolved for the conservation and management of water.²²⁶ Sarpong concludes that any disputes arising out of the use of water were resolved by the chiefs and elders in line with the prevailing rules or practices and edicts handed down by the fetish priests and priestesses. The awards of these tribunals were adhered to owing to the fear for the fetish priests and priestesses and the potent powers of enforcement wielded by the chiefs, including the power to ostracise a person from the community for non-compliance with such a judgment or award.²²⁷

Among the indigenous people of Berekum Traditional Area in the Bono Region of Ghana, it is a taboo to defaecate near water bodies, particularly rivers, or to farms close to

²²⁵ Sarpong, Customary Water Laws and Practices: Ghana, https://www.fao.org/fileadmin/templates/legal/docs/CaseStudy_Ghana.pdf (assessed June 14, 2022).

²²⁶ Sarpong, Customary Water Laws and Practices: Ghana, 4.

²²⁷ Sarpong, Customary Water Laws and Practices: Ghana, 4.

river channels. According to Awuah Nyamekye, Berekum people believe that rivers, lakes, lagoons, springs, and ponds as sacred entities, and are considered to be *nsuo abosom* (river/water deities). For instance, Asuo Koraa, (The River Koraa) which is the principal river in the area is considered to be female, and the fishes in it are seen as her children, therefore fishing is strictly banned in Asuo Koraa and those who flout this injunction are punished.²²⁸ He narrated a story about a Syrian timber contractor who violated the injunction associated with river Koraa and ate some of the crabs. After that he felt that something like one of the hands of the crab has choked his throat. He went to hospital for treatment, but the problem persisted. He was even sent out of the country for medical operation but could not get well. There were series of operations but the medical doctors could not diagnose the source of the problem. Finally he came back to Ghana to confess eating a crab from the river Koraa. He had to pacify the river god before he got healed.²²⁹

2.8 Indigenous Water Conservation Practices in Contemporary Ghanaian Societies

Many communities in Ghana have transitioned from being local communities to modern towns characterised by growth in cities, cash economies, expanded infrastructure, migration, urbanisation, spread of Western education, individualisation, growth of information communication and technology (ICT) and the presence of Christianity, Islam and other foreign religions. The introduction of Western ideologies into Ghanaian communities has unquestionably affected values, norms and practices of local people. Although modernity is credited with the expansion of social amenities, and virtually connected local communities to the international world, it has created a vacuum in the social, political and economic setup

²²⁸ Awuah-Nyamekye, 'Managing the Environmental Crisis in Ghana', 145.

²²⁹ Awuah-Nyamekye, 'Managing the Environmental Crisis in Ghana', 145.

of indigenous communities in Ghana. It has sharply affected beliefs, practices, customs and the general socialisation process of local communities. Industrial capitalism for instance has transformed the once community-owned societies to individual property owning economies. For these reasons, communal properties such as lands, groves and plants which were previously not sold can now be owned by the rich in the society. The introduction of a capitalist economy has widened the inequality gaps and changed the social fabric of communities. Power and authority have shifted from chiefs and traditional leaders to government appointees, the influential, rich and the formally educated. This has unquestionably affected the traditional people's view of respecting authority within their communities; one of the major tenets of environmental stewardship. The introduction of industries and commercialisation of natural resources on a large scale has also transformed societies. Water bodies, sacred groves, plants, and animals which previously were revered entities have now become commodities for export and profit.²³⁰

African Traditional Religion which fosters the core value on environmental stewardship has been branded fetish and implicated in countless cases evil. Important practices that have been instituted for many centuries have been outlawed and classified as sinful. Traditional ideas on the environment such as being stewards in honour of the ancestors and gods have now become abominable in many Ghanaian communities. This is partly due to Christianity, Islam and other foreign religions with seemingly different ontological and epistemological bases which contradict the fundamental beliefs, practices and customs of indigenous Ghanaian communities. Before colonial rule, indigenous societies were instructed through folktales, proverbs, myths, arts, adages etc. These were the methods through which

²³⁰ Darko, 'Environmental Stewardship and Indigenous African Philosophies' p. 32-33.

knowledge was passed from one generation to the other. Knowledge about the environment was fashioned in such a way that it was implicit in the culture and livelihood of local people. Thus, the younger generations were instructed on how to relate to their surroundings through these socialised techniques. Conversely, the introduction of Western socialisation and its idea of modernization have greatly affected the indigenous level of awareness of environmental issues.²³¹ With the highly Christianised and Islamised nature of many Ghanaian communities, some have argued over how to convince the hunter not to use bush burning as a strategy for hunting purposes especially in the dry season because the god of fire easily gets angry during this period, without being seen as evil or an idol worshipper?²³²

The advent of modernity, science and technology, and more so, Christianity and Islam has had adverse effect on the thinking of Ghanaians to the extent that their approaches towards the environment now lacks the adequate traditional or indigenous spiritual principles needed for the preservation of water resources. Before the advent of modernity, Ghanaians related well with the cosmic forces associated with water which established an attitude of respect for water bodies. Gradually, this attitude has been replaced with modern knowledge system, resulting to the misuse and exploitation of the physical environment including water bodies.²³³

Atampugre et al contend that prior to the colonial era, water resources were managed by traditional methods which were embedded in their worldview.²³⁴ McGregor et al. also

²³¹ Darko, 'Environmental Stewardship and Indigenous African Philosophies' p. 35.

²³² Darko, 'Environmental Stewardship and Indigenous African Philosophies' p. 37.

²³³ I. A Kanu, 'Ecological Significance of Mmuo Mmiri (Water Spirits) in Igbo Philosophy and Religion', <https://acjoi.org/index.php/jassd/article/download/1860/1838>(assessed November 23, 2022)

²³⁴ Gerald Atampugre, N.Y.M. De-Verana Botchway, Kobina Esia-Donkoh & Stephen Kendie, 'Ecological Modernization and water resource management: a Critique of institutional transition in Ghana', *Geojournal* 81 no. 3(2016): 367-378.

opine that indigenous people and local communities have long histories of traditions which have been passed down from generation to generation through oral transmission, expressive culture and rituals which were aimed to maintain their natural resources like water.²³⁵ Others have also argued that in the past, a culturally acceptable environmental management which resulted from taboos related to water bodies helped to save the water bodies from pollution. However, with the advent of Christianity, Islam, Westerv civilisation and its accompanying technology in Ghana, many of these beliefs, taboos, customs and traditions have been relegated to the background and are regarded by many as fetish and useless, though they played a key role in environmental protection.²³⁶

Anane also observes that the missionaries and colonial masters who flocked Ghana and other parts of Africa saw some traditional religious practices as a hindrance to development. They discouraged traditional practices which they described as idolatry and heathen. Consequently, indigenous knowledge and beliefs that preserve the environment such as water bodies are being lost as more and more traditional societies become assimilated into Western culture and religions.²³⁷ Anane's observation corroborates Agbanu's submission that in Ghana, the near extinction of traditional knowledge in general, and environmental knowledge in particular is because, the beneficiaries of Western education who converted to Christianity were encouraged to disregard traditional norms, values and knowledge systems

²³⁵ D. McGregor, J. P. Restoule, & R. Johnston (eds.), *Indigenous Research: Theories, Practices, and Relationships* (Toronto, Canada: Canadian Scholars' Press, 2018).

²³⁶ P. Appiah-Sekyere, 'Environmental Care in Ghana: A Moral Duty for Ghanaian Christians', *International Journal of Humanities Social Sciences and Education (IJHSSE)* 3, no. 11(2016): 55-61.

²³⁷ M. Anane, 'Religion and Conservation in Ghana', in Alyanak, L. and A. Cruz (eds.), *Implementing Agenda 21: NGO Experiences from around the World* (New York: United Nations Non Liaison Services, 1997).

which were preserved in the indigenous religions, because everything African was seen as primitive and superstitious.²³⁸

In an anthropological research conducted by Sarfo-Mensah and Oduro in some selected Akan speaking villages and towns in Ghana, they argued that as a result of Christian and Islamic beliefs, there has been a gradual disregard of the power possessed by the gods' to deal with people who refuse to adhere to taboos associated with nature (water bodies). Their research revealed that although, taboos associated with nature exist, the fear and reverence that was usually attached to nature have gradually eroded. The gradual decline of fear and reverence that was usually attached to nature is because of the perception that the gods and other spirit beings do no longer live in their abodes.²³⁹

It will be recalled that until the advent of colonisation and Christianity, the system of government known and practised in Ghana was chieftaincy. It is a system of governance or political arrangement under which the leader is known as a chief. The system of government was described as theocratic in which chiefs' rule in the name of God or a god.²⁴⁰ In the Akan society, one of the key responsibilities of a chief is to ensure that anything that ensures life becomes everyone's religious duty of which protection of water bodies is no exception. This explains why the chiefs and elders of the Akan do not take kindly to any action that tends to destroy water bodies. It is important to note that things took a different dimension when the colonial masters gained ground in the affairs of Ghanaians, where all legislations passed by the colonial administrators were influenced by Christian principles which granted limited

²³⁸ Agbanu, 'Environmental ethics in Mafi-Eve indigenous culture', 91.

²³⁹ Paul Sarfo-Mensah & William Oduro, 'Changes in Beliefs and Perceptions about the Natural Environment in the Forest-Savanna Transitional Zone of Ghana: The Influence of Religion', https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1557119 (assessed June 18, 2022).

²⁴⁰ Samuel Awuah-Nyamekye, "Salvaging Nature: The Akan Religio-Cultural Perspective", *Worldviews* 13, (2009): 251-282.

powers to the chiefs to preside over cases. The reduction of the powers of the chiefs affected indigenous religion, since the chiefs were the embodiment or the custodians of the indigenous religion. Sadly, the encounter between Christianity and the indigenous religion gradually replaced the traditional system of government which weakened the authority of the chief. The direct consequence of this was that taboos, totems, the institution of sacred groves and others, which thrived on traditional religion for nature conservation were undermined.²⁴¹

In recent times, it is observed that the use of the gods as police to protect the natural environment, as it used to be in the past is not working because many of the youth who have received Western education and are mostly Christians disregard the power of the gods and the ancestors with impunity. It is against this background that Awuah-Nyamekye contends that traditional religion, which forms the basis of traditional society, has been shaken to its very foundation, and as a result, the ideas of sacred groves and water bodies which hitherto could not be entered by ordinary people on sacred days is now being frowned upon without fear.²⁴² Around the coastal areas in Ghana, Ntiamao-Baidu has noted that traditional beliefs and taboos for the conservation of coastal lagoons are no longer respected. She indicated for instance that fishing activities continue in Sakumono lagoon daily, and despite the prohibitions of sacred days and closed seasons, draw-nets of varying mesh sizes are used regularly which do not conform to the rules stipulated by the traditional authorities.²⁴³ She notes that factors which were believed to contribute to the breakdown of the traditional beliefs included the introduction of Christianity, Western influence and education, as well as immigration of people from other ethnic groups who neither believed nor respected the local

²⁴¹ Awuah-Nyamekye, "Salvaging Nature: The Akan Religio-Cultural Perspective", 272

²⁴² Awuah-Nyamekye, "Salvaging Nature: The Akan Religio-Cultural Perspective", 272.

²⁴³ Y. Ntiamao-Baidu, *Conservation of coastal lagoons in Ghana: the traditional approach* (Amsterdam: Elsevier Science Publishers B.V., 1991), 41-46.

fetishes and taboos. The result is that most of the rules and regulations associated with the beliefs are ignored and the lagoon resources are heavily exploited, leading to a reduction in individual size and abundance of some lagoon organisms.²⁴⁴

An introduction of the Western culture has paved the way for a new culture and a modern approach of viewing the world that has apparently alienated Ghanaians from the sacred earth. Western education has contributed to a new technological awareness, which has equipped people to exploit the resources in the environment. This is an integral part of Western education, capitalist ideologist has propagated and implemented, resulting in the weakening and destruction of traditional knowledge and values.²⁴⁵ With this, the capitalist ideology, which is driven by profit motive has caused individuals to exploit our natural resources such as water bodies for their selfish gains. This behaviour is evident in the havoc caused by galamsey and fishing activities which introduce toxic waste into water bodies. Barlow and Clarke observed that while activities of galamsey cause drying up and inaccessibility of water bodies, it also pollutes the few ones that are accessible. They contend that inaccessibility becomes a problem due to huge pits that have been dug by illegal miners around water bodies. Also, when vegetation near water bodies are cleared to make way for mining activities, evaporation increases and causes water bodies to dry quickly.²⁴⁶

The marginalisation of indigenous knowledge in conservation of natural resources like water is as a result of Ghana's adoption of the Western perspective of development. This perspective according to Ojomo does not only perceive humanity as superior and in charge of

²⁴⁴ Ntiamao-Baidu, Conservation of coastal lagoons in Ghana: the traditional approach, 46.

²⁴⁵ Agbanu, 'Environmental ethics in Mafi-Eve indigenous culture', 91

²⁴⁶ M. Barlow & T. Clarke, 'Blue Gold: the fight to stop the corporate theft of the world's water', *Hum. Ecol. Rev.*, 11 no1 (2004): 67-71.

creation, but also sees indigenous knowledge of conservation as “savage superstition” and counter-productive.²⁴⁷ With the adoption of Western perspective of development, government places economic growth high on its developmental agenda at the expense of preserving natural resources. To achieve government’s developmental agenda means full exploitation of natural resources by mining companies and timber industries. It is evident that this Western perspective of development is in conflict with indigenous knowledge of nature conservation. While the former seeks to exploit natural resources for economic development now, the latter seeks to preserve it for the future generation through measures such as the institution of sacred grove, totems and taboos.²⁴⁸

In African traditional societies in general and Ghana in particular, Western scientific knowledge on the environment in many instances have come into conflict with indigenous people’s traditions, norms and practices. Goldin Rosenberg observes that ecological harm can be traced to modern patriarchal, cultural and scientific domination, beginning with the age of the enlightenment, during which both women and nature were perceived as passive, worthless and dispensable, and therefore to be controlled and exploited. This has resulted in situations where humans refuse to consider the plight of other entities such as animals, plants, stones, river bodies and the atmosphere.²⁴⁹

Next in consideration is that the idea of stewardship which promotes an anthropocentric view of the natural world, in which humans have the ability and right to

²⁴⁷ P. A. Ojomo, 'Environmental Ethics: An African Understanding', *Journal of Pan African Studies*, 4, no.3 (2011): 101-113.

²⁴⁸ D. Asante Boamah, “Akan indigenous religio-cultural beliefs and environmental preservation: The role of taboos”, Masters’ Thesis (Queen’s University, Canada, 2015), p. 51.

²⁴⁹ D. G. Goldin Rosenberg, “Toward Indigenous Wholeness: Feminist Praxis in Transformative Learning and Health and the Environment, In *Indigenous knowledge in global contexts: Multiple readings of our world*, ed. B. L. Hall, G. J. S. Dei, & D. G. Rosenberg (Toronto: University of Toronto Press, 2000),

control God's other creations, both living and non-living. The teachings of environmental stewardship have been a dominant force in shaping how humans' relationship with the environment has developed. Stewardship's notion that humans have the ability and right to control God's other creations has been used to justify the exploitation of natural resources. The ability and right to control God's other creations has also caused followers of Judeo-Christian religion to develop the attitude that they are superior to their environment, both living and non-living. Early Christian fathers believed that the mind and hands of humans gave them a capacity to create their own environment through inventiveness and necessity.²⁵⁰ This notion of superiority over their surroundings resulted in human's sense of entitlement over the environment.

According to Lynn White, our daily habits of action that are dominated by an implicit faith in perpetual progress are rooted in Judeo-Christian theology. White further states that certain elements within Judeo-Christian theology, particularly the idea of human dominion over nature as expressed in Genesis, has contributed to a mindset that facilitated the exploitation of the environment for human ends. This anthropocentric worldview, coupled with a belief in perpetual progress and technological innovation, was seen by White as influential in shaping Western attitudes toward the natural world and contributing to environmental challenges. This pursuit of progress was met through the development of technology geared at advancing society and improving daily life. The desire to improve living conditions also resulted in the use of resources for the betterment of humans. Therefore,

²⁵⁰ Williams, Michael. *The Medieval World. Deforesting the Earth: From Prehistory to Global Crisis* (Chicago: University of Chicago Press, 2003), 102-142.

because of the Judeo-Christian's promotion of an unending need for improvement, resources were overexploited.

Lynn White contends that Saint Francis of Assisi has proposed that changing the lens through which the world is viewed can change attitudes towards the environment. White therefore suggests that instead of accepting the anthropocentric views, he tried to depose man from his monarchy over creation and set up a democracy of all God's creatures. He also proposed that stewardship must be reinterpreted to address human degradation of the environment. For example, using our power over nature to establish national parks as a method of conserving land would reduce exploitation. Therefore, shifting to view mankind as the protectors, rather than exploiters of the environment, can improve humans' relationship with the natural world.²⁵¹

An important point worth noting as far as erosion of indigenous knowledge is concerned is the idea of constitutional right of Ghanaian citizenry. Chapter 5 Article 26 (1) of the 1992 Constitution of Ghana states that: "Every person is entitled to enjoy, practise, profess, maintain and promote any culture, language, tradition or religion subject to the provisions of this constitution". This article supports United Nation's "Declaration on the Elimination of All Forms of Intolerance and Discrimination Based on Religion or Belief." Article 1(1) of the Declaration reads that:

Everyone shall have the right to freedom of thought, conscience and religion. This right shall include freedom to have or to adopt a religion or belief of his choice, and freedom, either individually, or in community with others or in public or private, to manifest his religion or belief in worship, observance, practice and teaching.²⁵²

²⁵¹ Lynn White Jr. ' The Historical Roots of Our Ecologic Crisis', <https://www.science.org/doi/10.1126/science.155.3767.1203> (assessed November 24, 2022).

²⁵² United Nations High Commissioner for Human Rights, "Declaration on the Elimination of All Forms of Intolerance and of Discrimination Based on Religion", http://www.unhcr.ch/html/menu3/b/d_intole.htm (assessed June 19, 2022).

However, Chapter 22 of the 1992 Constitution which gives the legal backing to chiefs in enforcing traditional laws infringes upon people's fundamental human right to freedom of worship. Moreover, Chapter 26(2) states that all customary practices which dehumanise or are injurious to the physical and mental well-being of a person are prohibited. This constitutional mandate of the chiefs to enforce traditional laws and the rights of citizens to profess a tradition of their choice creates a conflict between Christians and Traditionalists of Article 26 and Chapter 22 of the 1992 constitution which raises human right issues. This is because the Constitution both supports the enforcement of traditional laws by chiefs (Chapter 22) and guarantees individual rights to religious freedom and protection from harmful customs (Article 26). This dual mandate creates tension, particularly when the enforcement of traditional laws interferes with an individual's right to practice their chosen religion freely.

One would then argue that this constitutional conflict has been an impediment towards a successful implementation of customary laws in the Ghanaian society which as a result among other things has led to many clashes between Christians and traditional leaders. For instance, there have been clashes between charismatic or Pentecostal churches over the imposition of a ban on drumming and the use of musical instrument during the ban on drumming and noise making by Ga traditional leaders.²⁵³

From the foregoing discussions, it is clear that the introduction of modern methods of managing natural resources has eroded indigenous knowledge systems that stood the test in conserving our environment in the past. It can therefore be argued that indigenous and modern

²⁵³ K. A. Dickson, *Freedom of Religion and the Church* (Accra: Ghana Universities Press, 2003), p. 3.

methods should run side by side in conserving the environment as far as water resources are concerned.

2.9 Indigenous-Modern Water Resource Management

Many countries have established a range of policy frameworks to address water resource management challenges. One such formal policy arrangement is the 'Revised Protocol on shared watercourse systems in the Southern Africa Development Community'.²⁵⁴ Despite the existence of such formal arrangements, Kambu argues that we continue to face an array of water-related problems of contamination, unfair access and allocation, and degradation of aquatic biodiversity and ecosystems. According to Kambu, why do we continue to face water issues when we already have formal rules, institutions and actors to deal with them? This is an indication that these formal rules, institutions and actors are not responding effectively and adequately to the water crisis.²⁵⁵ He indicates that lack of capacity of implementing institutions in terms of administration, technical, financial and human resources are some of the underlying challenges contributing to water resource management.

As a result of the inadequacy of formal water governance system to respond to water conservation crises, Kambu has suggested the existence of indigenous water resource management system to run parallel with the modern frameworks to provide a holistic approach in addressing contemporary water resource management challenges. He pointed out that indigenous water management system has been part of the informal water governance regime for many centuries and continues to occupy a crucial place in the informal governance

²⁵⁴ Alphonse Kambu, 'Bridging formal and informal governance regimes for effective water management: The role of traditional knowledge', in *Suneetha M. Subramanian and Balakrishna Pisupati eds. Traditional knowledge in policy and practice: Approaches to development and human well-being* (Tokyo, New York, Paris: United Nations University Press, 2010), p.255.

²⁵⁵ Kambu, 'Bridging formal and informal governance regimes for effective water management: The role of traditional knowledge', p. 255.

regime.²⁵⁶ He again points out that water, being a fundamental life-supporting resource makes it natural for indigenous and local communities to develop a specific body of knowledge systems to manage water resources. According to Kambu, indigenous and local communities are part of the ecosystems, and in the event of change in their environments, they would be the first ones to be affected, and it can sometimes be a life-and-death situation for them. In order to prevent such risks and to nourish their livelihoods, they have to develop methods to address the environmental challenges facing them. It is against this background that Kambu proposes a synergy between indigenous and modern systems of water conservation, arguing that the synergy between the two systems would be seen to complement each other for effective management of water resources. Besides, when synergies are built, some of the resources existing in the informal sector can be mobilised and used to the benefit of public policy, such as water resources management. This can be seen in the governance and management practices of indigenous and local communities, where all or most of the activities associated with water resources management is personalised and where no costs except for time and human capital can be invested in the water resources management exercise.²⁵⁷

The integration of indigenous and modern systems of water conservation is well expressed among some scholars in Ghanaian indigenous societies. In the work of Golo et al among the Akan of Ghana, it was observed that religious ontology about the natural world provides a formidable resource and framework for managing the environmentally destructive tendencies of the human being. These ontologies about the natural world contain strong environmental ethical norms and values worth resourcing for environmental sustainability in

²⁵⁶ Kambu, 'Bridging formal and informal governance regimes for effective water management: The role of traditional knowledge', p. 257.

²⁵⁷ Kambu, 'Bridging formal and informal governance regimes for effective water management: The role of traditional knowledge', p. 262.

Ghana. It is against this backdrop that the authors contend that significant attention ought to be paid to these religious ontologies (beliefs, norms and practices) as an effective means of achieving environmental sustainability.²⁵⁸ As a result of the effectiveness of these religious ontologies for nature conservation, they argue that religious ontologies on the natural world can be combined with scientific knowledge for nature conservation. In this regard, they maintain that indigenous religious beliefs and practices can inform public policies towards a pragmatic policy which makes use of all the scientific knowledge of nature and associates it at the same time with the deepest insights of religious traditions about the place of man in the universe and his responsibility towards this world which he is now able to destroy but not to rebuild.²⁵⁹

For indigenous Akan people in Ghana, water is a living entity and this is evident in the spiritual significance, honour and respect given to water bodies. Marginalising indigenous knowledge in relation to water resources has contributed to the degradation of freshwater systems, and this has adversely affected the capacities of indigenous people to maintain their relationships with water, land and other natural resources, thereby eroding their cultural identities, health and wellbeing. This means that the contemporary approaches to water conservation in Ghana which are characterised by formal rule-based institutional governance have failed to form adequate solutions to environmental problems such as desertification, flooding and water scarcity. In order to mitigate these problems, scholars have proposed that integrating indigenous knowledge and values is one way to seek new solutions for sustainability. According to Roba, integration of indigenous and modern knowledge systems

²⁵⁸ B.W.K Golo, H.M. Majee & N.O. Myle, 'Akan Religious Ontology and Environmental Sustainability in Ghana', *Worldviews* (2022) 1–29. ORCID: 0000-0002-9141-6866.

²⁵⁹ Golo, 'Akan Religious Ontology and Environmental Sustainability in Ghana', ORCID: 0000-0002-9141-6866.

is a process of blending these knowledge systems resulting into rational decision making, sharing of information and understanding of different viewpoints between the indigenous communities and the scientifically trained technicians.²⁶⁰ Similarly, integration of indigenous and scientific knowledge systems is not only seen as a process of equal sharing of power and responsibilities between scientists and indigenous people, but it is the application of indigenous knowledge system in its own forms of knowing and doing in a reciprocal relation with the scientific knowledge system without any form of subordination.²⁶¹

A synergetic relationship between indigenous and modern knowledge systems is widely accepted and relatively well documented. For example, a study carried out in Southwest China from 1993 to 1999 revealed that reduction of taboos practices resulted in decline in revered plant species, despite the legislations for their conservation.²⁶² In Ghana, a study carried out around the Ankassa, Bia and Kakum forest conservation areas revealed that neither the modern knowledge system nor indigenous knowledge system alone conserved biodiversity, rather their combination achieved what neither could alone.²⁶³ It is against the foregoing that a blend of the indigenous and the modern methods of natural resource management as suggested by many scholars becomes relevant. According to Awuah-Nyamekye, indigenous knowledge has scientific underpinnings that are comparable and agreeable to the scientific strategies for biodiversity conservation. He argues that neither

²⁶⁰ H. Roba, Global goals, local actions: A framework for integrating indigenous knowledge and ecological methods for rangeland assessment and monitoring in northern Kenya. PhD thesis (Noragric Norwegian University of Life Science, 2008), 60.

²⁶¹ Sosthenes Ruheza and Zuena Kilugwe, “integration of the indigenous and the scientific knowledge systems for conservation of biodiversity: significances of their different worldviews and their win-loss relationship”, *Journal of Sustainable Development in Africa* 14, No.6 (2012):161

²⁶² Sosthenes and Zuena, “integration of the indigenous and the scientific knowledge systems for conservation of biodiversity”, 164.

²⁶³ Sosthenes and Zuena, “integration of the indigenous and the scientific knowledge systems for conservation of biodiversity”, 164.

modern (scientific) nor traditional modes of addressing current ecological problems are individually adequate, and therefore a synergy of the two modes is necessary in order for such problems to be tackled fully.²⁶⁴ Mapira and Mazambara argue that even before encountering Western knowledge through colonisation, Africans used indigenous knowledge systems in managing their environmental challenges that they faced. These unique biodiversity conservation strategies embedded in the indigenous knowledge systems were environmentally friendly and had high impacts in biodiversity conservation and sustainability. According to them, how can the natural environment be preserved without taking into account the human cultures that have shaped it since the dawn of time. They realised that certainly, no proactive conservation strategy can be effectively function if it is void of indigenous knowledge which reflects the culture of the indigenous people.²⁶⁵

Wuver and Attuquayefio have also advocated that indigenous knowledge must be incorporated into modern biodiversity conservation strategies and sustainable conservation programmes through rigorous engagement of the local people and their cultural practices. They argue that, most of the high taxa areas of biodiversity in Ghana have been protected using indigenous knowledge systems such as taboos, myths, folklores, proverbs, festivals and cosmological beliefs.²⁶⁶ Golo and Yaro also posit that a very pragmatic, constructive and sustainable biodiversity conservation strategy is the one that succinctly blends the indigenous knowledge systems which reflects the beliefs, hopes and aspirations of the people with the

²⁶⁴ S. Awuah-Nyamekye, “Managing the Environmental Crisis in Ghana: The Role of African Traditional Religion and Culture- A Case Study of Berekum Traditional Area” PhD Thesis, University of Leeds, United Kingdom. <http://etheses.whiterose.ac.uk/5780/1> (assessed June 23, 2022).

²⁶⁵ J. Mapira and P. Mazambara, “Indigenous Knowledge Systems and their implications for Sustainable Development in Zimbabwe”, <https://jsd-africa.com/Jsda/Vol15No> (assessed July 3, 2022).

²⁶⁶ A.M. Wuver & D. K. Attuquayefio, “The impact of human activities on biodiversity conservation in a Coastal Wetland in Ghana”, <https://journals.ug.edu.gh/index.php/wajae/article/view/1086> (assessed June 27, 2022).

scientific knowledge and technological innovation to solve contemporary biodiversity depletion. They argue that most of the conservation policies that have failed are as a result of singlehandedly looking to Western science for solving the biodiversity crisis. To them, just a one-faced approach cannot fully combat the biodiversity decline today.²⁶⁷

Sinclair et al have indicated that indigenous knowledge or scientific knowledge when used in isolation may not be enough, and cannot combat the biodiversity menace, due to the weaknesses associated with each of the knowledge systems, because it is not every indigenous knowledge or scientific knowledge that may be reliable to provide solution to peculiar biodiversity depletion canker in a jurisdiction. They passionately add that it makes sense to integrate both forms of knowledge since this is likely to yield better results.²⁶⁸ According to Attuquayefio and Fobil, such a multidisciplinary approach as against the truncated approach of looking into one lens widens the prospects of the biodiversity conservation strategy, making it more flexible and holistic to address the divergent phases of the biodiversity crisis in our environment.²⁶⁹

Boersema and Reijnder argue that environmental problems are more of social issues and thus, scientific knowledge alone cannot entirely provide the breakthrough that we earnestly seek to avert the biodiversity degradation problem. Incorporating indigenous knowledge systems with the modern system is therefore the perfect key to help in the implementation and realising the successes of every biodiversity conservation strategy.²⁷⁰

²⁶⁷ B.K. Golo & J.A. Yaro, "Religion and climate change in Ghana: Religious Actor perspectives and sustainable climate change policy. *Nature and Culture* 8, no. 3 (2013): 282-300.

²⁶⁸ J. R. Sinclair, L. Tuke, & M. Opiang, "What the Local Know: Comparing Traditional and Scientific Knowledge of Megapodes in Melanesia", in *Ethno-ornithology: Global Studies in Indigenous Ornithology: Culture, Society and Conservation*, ed. S. Tidemann, A. Gosler, and R. Gosford (London: Earthscan, 2010).

²⁶⁹ D.K. Attuquayefio, & J.N. Fobil, "An overview of Biodiversity Conservation in Ghana: Challenges and prospects", *West African Journal of Applied Ecology* 7 (2005): 1-18.

²⁷⁰ Jan J. Boersema, Lucas Reijnders, *Principles of Environmental Sciences* (Springer: Boston, 2009).

Adom also argues that a very thoughtful, systematic synergy of indigenous knowledge systems with Western scientific systems will aid in formulating time-tested and reliable biodiversity conservation strategies that can holistically address the biodiversity degradation menace.²⁷¹

2.10 Conclusion

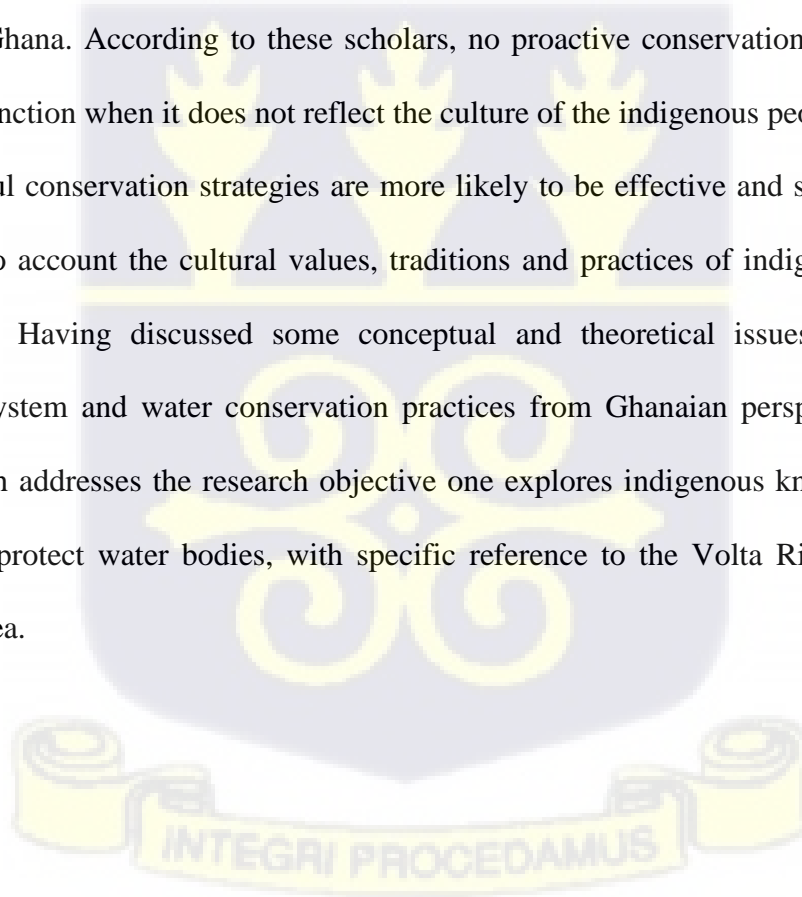
This chapter has reviewed conceptual and theoretical issues which underpin the study. With regard to the concept of indigenous knowledge in Ghanaian culture, it was indicated that indigenous people around the world including Ghana have used indigenous knowledge systems pertaining to their local environment to sustain themselves and to maintain their identity. The chapter also discussed the relationship between indigenous knowledge and nature conservation and it was established that there are numerous cosmological beliefs which have existed over the years to help Ghanaian traditional societies to regulate their interactions with the natural environment. These beliefs relate to the Supreme Deity, the ancestors, the divinities, animism, sorcery and witchcraft, taboos, sacred groves and totem.

The chapter further highlighted the concept of water and spirituality in indigenous Akan philosophy. It was pointed out that indigenous people of Ghana have a strong spiritual connection to water bodies, because they see it as a divine from whom they find solace. It was also established that water serves as a spiritual protection in many of the world's religions, including Christianity and Islam. It was further established that the spirituality of water is demonstrated during naming, puberty, marriage and death rites to impart the values of society and demands of personal spirituality.

²⁷¹ Dickson Adom, "Asante Indigenous Knowledge Systems: Repositories of conservation ethics for Ghana's Biodiversity", *Proceedings of the Academic Conference on interdisciplinary Approach*, 7 no. 2(2016): 10.

On the issue of the role of water conservation practices in indigenous Ghanaian society, the review indicated that there are robust traditional systems of water management which existed prior to colonial era, where in many communities, water bodies were not to be visited or disturbed at certain periods. The review further revealed that the indigenous water resource management systems are at risk of erosion as a result of numerous factors which included foreign religious traditions and education, Western perspective of development, Judeo-Christian tradition and constitutional rights.

Finally, this chapter discussed proponents who support integration of indigenous and modern methods as the best and efficient ways for the conservation and management of water resource in Ghana. According to these scholars, no proactive conservation strategy can be effectively function when it does not reflect the culture of the indigenous people. This means that successful conservation strategies are more likely to be effective and sustainable when they take into account the cultural values, traditions and practices of indigenous and local communities. Having discussed some conceptual and theoretical issues of indigenous knowledge system and water conservation practices from Ghanaian perspective, the next chapter which addresses the research objective one explores indigenous knowledge system instituted to protect water bodies, with specific reference to the Volta River in Akwamu traditional area.



CHAPTER THREE

INDIGENOUS CONSERVATION PRACTICES OF THE VOLTA RIVER IN AKWAMU TRADITIONAL AREA

3.1 Introduction

This chapter presents and discusses data gathered from informants to address the first research objective of the study which aims to examine the indigenous conservation practices of the Volta River in Akwamu traditional Area. These conservation practices include; the Akwamu's conception of the Volta River as a sacred entity, ecological taboos (sacred grove, totem, sasa trees), institution of taboos and traditional festivals. This chapter however begins with a historical perspective of Akwamu traditional society as well as Akwamu relationship with the Volta River. The essence of the historical perspective of Akwamu traditional society is to explore how religion permeates into their culture and how this influences their behaviour towards natural resources management such as water bodies. Also, the historical perspective of Akwamu traditional society is examined to give us a fair idea about the origin of the people of Akwamu and the various places of their settlement up to the present day. Akwamu relationship with the Volta River is also examined to understand how the indigenous people of Akwamu relate to the river which makes them give it a reverential respect.

3.2 Historical Overview of Akwamu Traditional Society

In this section, a brief historical overview of Akwamu people, their traditional and religious life, as well as their socio-economic life are discussed.

3.2.1 Historical Overview of Akwamu People

Akwamu traditional area is bounded by districts on the north by Kwahu Afram plains, south by Lower Manya, east by Ho and to the west by Upper Manya. Its traditional capital is Akwamufie which is about 88 kilometres from Accra and lies between latitude 5° 44' in the north and longitude 0° 44' in the west. Akwamu traditional area accounts for about 55% of the total population of 98,046 of Asuogyaman District in the Eastern Region of Ghana.²⁷² The administrative district capital Asuogyaman lies within the dry equatorial climate zone which experiences substantial amount of precipitation. This is characterised by a double maximum rainfall which reaches its peak period in May - July and the minor season occurs in the period of September -November. Annual rainfall usually starts in April with the peak month in June and ends in November. The dry season sets in November-December and ends in March. The annual rainfall is between 67m and 1130mm. Temperatures are warm throughout the year with maximum monthly mean of 37.2°C and a minimum of 21.0°C. Relative humidity is generally high ranging from the highest of 98% in June to 31% in January.²⁷³

Some of the major towns in Akwamu traditional area are Akosombo, Atimpoku, Senchi, Akwamufie, Gyakiti, Adjena and Akrade. The population of the area is heterogeneous in terms of ethnicity and religion. The predominant ethnic group is the Akan followed by the Ewe and the Ga-Adangbe. Other ethnic groups make up the remaining portion of the population. The dominant religion is Christianity (89%), followed by Islam (3.7%) and Traditional Religion (2.4%) respectively. There also exist smaller groups of people who

²⁷² Ghana Statistical Service, Population and Housing Census: Asuogyaman District Analytical Report (Accra: Sakoa Press Ltd., 2010), 3

²⁷³ Ghana Statistical Service, Population and Housing Census, 4.

adhere to other religions or have no religion.²⁷⁴ The current chief and queen mother of Akwamu Traditional area are Nana Kwafu Akoto III and Nana Afrakomaa II respectively.

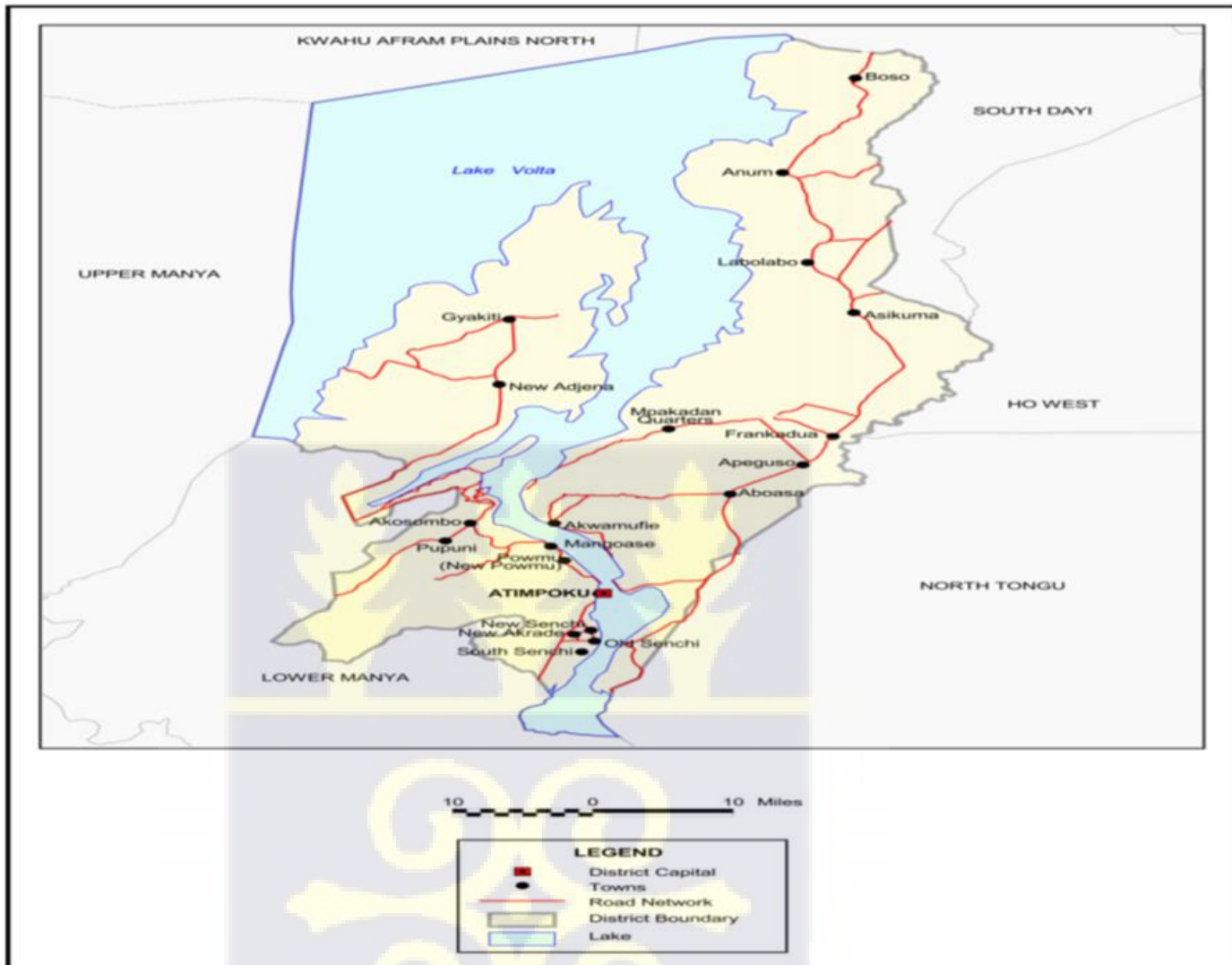


Figure 1: Map of Asuogyaman showing Akwamu Traditional Towns

The Akwamu State according to the Abrade or the Aduana clan, originated from Kumbu Saleh, the capital of the ancient Ghana Empire in the Western Sudan. W.E.F. Ward indicates that as a result of introduction of Islam in the Western Sudan and the zeal of the Muslims to impose their religion, they left for Kong which is the present day La Cote d'Ivoire.

²⁷⁴ Ghana Statistical Service, Population and Housing Census, 5.

From Kong, they proceeded to Wam and then to Dormaa, both in the present day Brong-Ahafo Region of Ghana before finally arriving at Twifo-Hemang.²⁷⁵ When Otumfo Agyen *Kɔkɔbo*, king of Twifo-Hemang died in 1520, Otumfo Asare moved with some of the Abrade people to stay in Abakrampa and later moved to settle at Asamankese. Ward further indicates that from Abakrampa to Asamankese, they went through several Fante towns and villages and the Fantes were surprised at their large number. This made them remark *Nnipa na wɔdɔɔso see; wohwe wɔn a, na wokɔn abu*. This literally means, “These people are numerous; even merely looking at them breaks one’s neck”.²⁷⁶ The emigrants were from that time on called *Akɔnbufo*, meaning “neck-breaking people” which was corrupted to *Akwamufo* and the new state they established was named *Akwamu*. This shows that the name Akwamu was derived long before their settling at Nyanoase. Meanwhile, before they adopted the name of Akwamu, they were called *Twiforo* (Ethnic group from Twifo-Hemang).

The Akwamus found the land of Asamankese uninhabited and offered part of it to the Akyems. It is interesting to note that because of a favour offered to the Akyems by the Akwamus, they were given the name *Kyebi* which means, “offer me a part”. When Otumfo Asare died, the Akwamus went to settle at Nyanoase near Nsawam and the famous Accra market of Abonse under the leadership of Otumfo Akotia. The reason was to give the Akwamus the advantage to prevent themselves against their enemies. At Nyanoase, the Akwamus organised themselves into a powerful state under personalities like Ansa Sasraku I, II and II, Basua Addo and Akonnor in the 17th Century.²⁷⁷ Nyanoaso was located on the Nyanoaso Mountain. Gyase protected the king and the Queen Mother who resided at the hill

²⁷⁵ W.E.F. Ward, *A History of Ghana* (London: Allen and Unwin Ltd., 1958), 55.

²⁷⁶ D.E.K. Amenumey, *Ghana, A concise History from Pre-Colonial Times to the 20th Century* (Accra: Woeli Publishing Services, 2008), 58.

²⁷⁷ Nkansah K. Kyeremanteng, *The Akans of Ghana, their history and culture* (Accra: Macmillan, 1996), 7.

top and bottom respectively.²⁷⁸ The tolls collected from the Akyem people by the Akwamus were made possible due to their proximity to River Densu. The Abonse market was managed by the King of Akwamu with permission from the King of Accra. With time, the Akwamu king could choose to close the trade way at any time due to his authority.²⁷⁹

Akwamu State's expansion started between 1629 and 1710 when they migrated into the Akuapem area, including Kyerepon and Larteh, Denkyera, Ga-Adangbe; and the Ladoku states of Agona, Winneba, Afram plains, Southern Togoland and finally Ouidah in present-day Benin. The powerful king Nana Ansa Sasraku I annexed the Guans and took over the traditional areas of the Kyerepon. He ruled over them until Asonaba Nana Ofori Kuma and his followers, after a succession dispute in an effort to form their own state, engaged them in a fierce war. The Akwamus were driven away from the mountains.²⁸⁰ According to Wilks, the Akwamus began with the domination of Akuapem Hills, now the Akuapem State in the middle of the 17th Century. This includes the Guans and the Kyerepons. Berekuso, Aburi, Awukugua, Dawu and Larteh. Some Southern Akan groups near the Guan communities and the foothills of the Kwahu Scarp were also brought under Akwamu suzerainty. From 1677 to 1681, Akwamu decided to attack and conquer Accra.²⁸¹ Kwabena-Poh asserts that Akwamu domination over Akuapem State was not complete until its conquest of Accra in 1681 under the headship of King Ansa Sasraku II.²⁸²

Under the leadership of King Okai Kwei. Accra became a jurisdiction of the Akwamus for about 50 years and this helped them to enjoy economic benefits. For instance, the tributes

²⁷⁸ Amenumey, Ghana, 59.

²⁷⁹ Amenumey, Ghana, 59.

²⁸⁰ Ivor Wilks, *Akwamu, 1640-1750: A study of the Rise and Fall of a West African Empire* (Trondheim: Vide Back, 2001), 51.

²⁸¹ Wilks, *Akwamu, 1640-1750*, 51.

²⁸² Kwamena M.A. Poh, *Government and politics in the Akuapem State 1730-1850* (London, 1973), 53.

paid into the royal treasury by the vassal states and the rents and tolls imposed on European traders during the period when Ga-Adangbe came under the control of the Akwamu and added much to the state revenue. The wealth of Akwamu did not only boost her power and prestige but also helped the rulers to maintain an effective system of administration and an efficient army. One warlord of Akwamu, Asomani in 1693 registered his displeasure at the invasion of the market by European traders instead of blacks by attacking European traders and the Osu Christiansburg Castle which then housed the Danish colonist of Gold Coast government.²⁸³

Among the early Akan states, researchers describe Akwamu state as wealthy and powerful. Politically, Akwamu made significant role to the kingship scheme. In this case, the kingship stool could be ascended by people of the Abrade fraternity. It was for this reason that gave chance to King Akoto I of Obomeng-Kwahu to rule after the demise of Kwafo Akoto I of Akwamu.²⁸⁴ According to Wilks, Akwamu state adopted the *Atumpan* and *Fontonfrom* drums in its sovereignty. This indicates that the Akwamus were the first to establish *Atumpan* and *Fontonfrom* with the skulls of human beings and human jaw-bones. Again, it was the Akwamus who introduced the *Asesedwa* stool into the kingship organisation and this extended to the Akan and non-Akan tribes.²⁸⁵ According to Agyekum Bafo, the Akwamus made several contributions to traditional dancing in the fields of *Adowa*. He indicates that *Adowa* spread from Akwamu to Ashanti and to the Ga people. To Agyekum, all the Akan tribes celebrate *Adae* festival, but the Akwamu claims to have instituted the *Akwasidae*, *Awukudae* and *Odwira* festivals. He claims that Ansa Sasraku I invented Akwamu military organisation which was copied by the Akan and non-Akan. It consists of *Adonten* (Central wing); *Nifa*

²⁸³ F.K. Buah, *History of Ghana* (Accra: Macmillan, 1998), 98.

²⁸⁴ Wilks, *Akwamu 1640-1750*, 18.

²⁸⁵ Wilks, *Akwamu, 1640-1750*, 20.

(Right wing); *Benkum* (Left wing); *Kyidom* (Rearguard); *Gyase and Twafo* (Household and Bodyguard) and the *Krontihene* (Commander in chief).²⁸⁶

Akwamu State collapsed in 1730 as a result of a combination of several factors. According to Agyekum, the empire grew beyond its optimum size and it was difficult for the resources of the empire to meet the organisational demands. Also, the rules of succession were not very clear and this led to several patricidal struggles, most of which occurred in 1730 when Prince Amu joined forces of Akuapem and Akyem to defeat the Akwamu. Again, power was abused where rulers began to engage in illegal enslavement of men and women. The Akwamu rulers did not check this abuse and became guilty of it. For instance, King Akonnor employed his own people to raid and kidnap the neighbouring territories. His successor, Ansa Kwao also went further to send people to enslave his own subjects and to kidnap people from the Akuapem hills. It was against this background that in 1729, the Ga people launched a war and joined forces with the Akuapems against the Akwamus, but the Ga people were defeated by the Akwamu.²⁸⁷

According to Agyekum, when the forces realised that they could not match the Akwamus, they looked elsewhere for assistance. The Akuapems sent a delegation to the chief of Akyem Abuakwa called Ofori Panin who ordered his relative called Sefori to go to their aid and as a result, he raised a large army to fight side by side with the Gas, Akuapems and the Fantis until July 1730 when the Akwamus were totally defeated. The Akwamus were finally evicted from Nyanoase and sought refuge across the Volta River. A divisional chief called Bekai led the Abrade group across the Volta River. On reaching the shore of the river,

²⁸⁶ A. B. Agyekum, *A History of Akwamu* (Accra: Pacesetters Publishers, 2014), 272.

²⁸⁷ Agyekum, *A History of Akwamu*, 273.

the people were led by a “Warthog”, popularly called *Kɔkɔte* by the Akwamus to cross the River Volta to their present day territory of Akwamufie.²⁸⁸

The defeat of the Akwamus by the Akuapems, the Gas and the Akyems saw a total take-over of all the Akwamu lands up to the Densu River. These lands were incorporated into the Akuapem and Akyem Abuakwa traditional Area. Up to the present day, there are social ties between Akwamus and the communities which were absorbed into Akyem Abuakwa. At every *Akwasidae* festival of the Akwamu, delegations from the old Akwamu State are invited to attend. More so, whenever a new chief is installed in any of the old Akwamu towns, the Akwanuhene is informed. The Akwanuhene is also the arbitrator in dispute among the ancient Akwamus. It is worthy to note that through wars and settlements, the Akwamus have scattered all over Ghana such as Kumasi, Kwahu, Aburi and Akropong among others and now there are Akwamu chiefs in some of these traditional areas.

3.2.2 Traditional and Religious Life of Akwamu People

Religion is one of the notable aspects of Akwamu culture which manifests in their everyday lives. This confirms Mircea Eliade’s assertion that while contemporary people believe that their world is entirely profane or secular, they still at time find themselves connected unconsciously to the memory of something sacred.²⁸⁹ This shows that the profane and the sacred lives of the people of Akwamu are inseparable. Prior to Akwamus’ encounter with the Western world in the latter part of the 19th Century, their indigenous religion, which is now known as African Traditional Religion, was the only religion known to them. This faith

²⁸⁸ Agyekum, A History of Akwamu, 274.

²⁸⁹ Mircea Eliade, *The Sacred and the Profane: The Nature of Religion* (New York: Hacourt, Brace & World Inc., 1959), 20.

has profoundly influenced their lives and thought.²⁹⁰ Akwamu people believe in a host of spirit beings, with *Onyame* or *Onyankopɔn* being the Supreme Being, creator, controller and sustainer of the universe. They regard the Supreme Being as the one who brought the world into existence and in recognition of this, He is given attributes such as the creator or *ɔboadee* and owner of the world as *asaase wura* and He is believed to be active in the lives of mankind.²⁹¹

Among the Akwamus, the name of God is mentioned in their everyday speech. Thus, what one frequently hears is *Onyame ma ade pa kye me a*, thus “if God grants me a good day”; *obi nkyere akwadaa nyame*, meaning “nobody needs show God to a child”. These sayings show clearly that the Akwamus consider the knowledge of God to be an innate quality of man. Also, the knowledge of God by the Akwamu like the Akan is portrayed in traditional songs and verses frequently heard on drums to praise His name. One of such verses as Peter Sarpong puts it is as follows:

From time immemorial
The dependable God bids us all.
Abide by His injunctions
Then shall we get whatever we want
Be it white or red
It is the God Creator, the Gracious one
Good morning to you, God, Good morning
I am learning, let me succeed.²⁹²

It may therefore be pointed out that among the Akans in general and the Akwamus in particular, the knowledge of God is revealed through poetry, designs, drum languages, among others. This reason made Peter Sarpong conclude that “in fact, it will require only very casual

²⁹⁰ Agyekum, A History of Akwamu, 275.

²⁹¹ Nana Samanhyia, interview, January 2017.

²⁹² Peter Sarpong, *Ghana in Retrospect: Some Aspects of Ghanaian Culture* (Accra: Ghana Publishing Corporation, 1974), 9.

observation of the Akan people to discover their deep and continual awareness of the presence of God among them”²⁹³

The Akwamus also believe in deities called *abosom* as personified spirits. They have family gods and community gods that they make prayers to for protection and prosperity. The *abosom* are believed to be the children of God. They are believed to inhabit images, rocks, mountains, caves, trees, rivers, and other natural objects and this belief makes the people treat such natural objects with a form of reverential respect. In Akwamu traditional society, there is a community deity called *abosom Ayesu* and a totemic animal called *Kɔkɔte*. These gods are said to have protected the Akwamus in various ways. The latter for instance is said to have led the Akwamus to cross the Volta River from Nyanoase to Akwamufie, being their present settlement. The former on the other hand is responsible for combating any negative influence of witches on individuals or on the entire Akwamu community. The gods abhor actions which upset the harmony of the community or ruin family life and are believed to administer punishment to those who infringe upon the moral code. The Akwamus therefore comply with all taboos which are associated with these spirit beings to avoid being punished.²⁹⁴

The Akwamus have a very special place for the ancestral spirits and as such, the ancestors occupy a very unique position in their lives. Ancestral spirits are the spirits of the dead who have departed from the land of the living and are believed to be in the land of the dead known in Akan as *asamando*. As Parrinder puts it, the Akwamus believe that the departed one are not so far away and are believed to be watching over their families like a cloud of witnesses.²⁹⁵ There are certain qualities that one must assume while alive before qualified to

²⁹³ Sarpong, Ghana in retrospect, 10.

²⁹⁴ Nana Samanyia, *interview*, 10th December, 2016.

²⁹⁵ E.G. Parrinder, *West African Religions: A study of the beliefs and practices of Akan, Ewe, Yoruba, Ibo and kindred peoples* (London: The Epworth Press, 1961), 58.

be called an ancestor after his death. The person must have led a life worthy of emulation, died a natural death at a good ripe age and must have been given a proper burial and funeral rites.²⁹⁶

According to Nana Samanyia, the Akwamus believe that through the ancestors, they are able to communicate with God and through that they petition them on peoples' behalf when they do something wrong against the Supreme Being through libation. Nana Samanyia reiterates that people are of the view that the Akwamus worship the ancestors and in his reaction, ancestors are rather respected because of the exemplary lives they led on earth. The respondent's claim is echoed by Peter Sarpong who concludes that "As I do not believe that ancestors are worshipped, I prefer the term ancestor veneration"²⁹⁷. Among the Akwamus, they believe that the ancestor has a continual existence and may possess the ability to influence the fortune of the living. The ancestors always watch the behaviour of family members and they punish those who are evil with diseases and reward those who are good. It is for this reason that the people of Akwamu live life worthy of emulation.²⁹⁸

The Akwamu people use the chieftaincy system of governance, and chiefs are selected through maternal lineage. According to a respondent, a chief in Akwamu is usually considered as the first citizen of the village, town or state. He is viewed as the source of all traditional authority, because he is regarded as representing the founding fathers of the state. This makes the office of the chief a sacred one, as he is regarded as the earthly representative of the ancestors. According to the respondent, the institution of a chief is normally preceded by divination and other rituals such as the offering of prayers and sacrifices which are meant to

²⁹⁶ Sarpong, *Ghana in Retrospect*, 34.

²⁹⁷ Sarpong, *Ghana in retrospect*, 33.

²⁹⁸ Nana Samanyia, interview, 16th December, 2016.

help the kingmakers in selecting a candidate that is acceptable to the people and the ancestors. Hence, the chief is accorded the greatest respect and obedience in traditional society. As in other Akan traditional societies, a chief in Akwamu has a council that assists him in the day-to-day administration of the area. The highest traditional authority is vested in the *Dmanhene* or the Paramount Chief who is the supreme ruler of the traditional area. He is followed by the *Dhema* (queen-mother), then the *Asafohene* (wing or divisional chiefs) who are followed by the *Adikro* (town or village chiefs). The next in line are the clan or lineage heads with the household heads occupying the bottom space in the hierarchy.²⁹⁹

According to Nana Samanyia, the chief is the political, social, economic, legal and military head of Akwamu traditional state. As a political head, he is responsible for the maintenance of good order in his state. He is the guardian of the fundamental values of his people and mediates between them and the spiritual forces. He administers court fines, market tolls, and other revenues. He is also the final arbiter in the administration of justice in Akwamu society. The chief also administers stool lands, holding them in trust for the people and arranges the celebration of traditional festivals. He is also the custodian of traditional beliefs and customs, passed on from one generation to another. The traditional authority also has court which adjudicates on matters relating to stool lands, lineage and family lands, chieftaincy title disputes, violations of traditions and disputes between localities, lineages.³⁰⁰ The foregoing suggests that the traditional and religious life of Akwamu people are not different from other Akan tribes in Ghana.

²⁹⁹ Nana Samanyia, interview, 16th December, 2016.

³⁰⁰ Nana Samanyia, interview, 16th December, 2016

3.2.3 Socio-Economic Life of the Akwamu People

Majority of the people in Akwamu traditional area engage in agriculture and related trades. There are three prominent types of agricultural activities in the area. These are livestock rearing, food cropping and cash cropping. However, most of the farming activities in the district are focused on the production of food crops. The major food crops produced are maize, cassava, plantain, yam and vegetables. Most of the farmers who engage in crop farming also engage in livestock. The main farming areas are Mpakadan, Gyakiti, Ankyease and Survey Line. There are large tracks of land for commercial farming and other agro business in these areas. Fishing which is mainly done in some communities constitutes an important segment of the agriculture sector in Akwamu traditional area. These communities include New Senchi, Dzidzokope, Atimpoku, Abume, Kokontekpedzi, Mamewata, Adome and Akwamufie.³⁰¹

The Volta River Authority (VRA) and Akosombo Textiles Limited (ATL) form the major industries employing a major proportion of the population. Major hotels and tourist sites such as Volta Hotel, Benkum Motel, NP Plaza, Senchi Royal Hotel, Akosombo Continental Hotel, Afrikiko River Front and Sajuna Beach Park also contribute to the economy by attracting tourist from all parts of the world. Atimpoku is a major commercial centre due to its central location where communities in parts of Volta and Eastern meet to trade. The *Abollo* and 'One Mouth Thousand' are common commodities coupled with other small to medium sized commercial entities.³⁰²

³⁰¹ Nana Samanyia, interview, 16th December, 2016.

³⁰² *Abollo* is a local steamed food made from corn dough, traditionally prepared by young women from Atimpoku and Kpong in the Eastern Region of Ghana. 'One man thousand,' on the other hand, refers to tiny finger-sized fish that are commonly eaten with *Abollo*.

The brisk business activities at Atimpoku, a suburb of Akwamu is as a result of the presence of the Adomi Bridge. For instance, vehicles which cross the bridge stop before and after the bridge as petty traders mostly young and elderly ladies outclass one another to reach vehicles to either sell *abollo*, “one mouth thousand”, shrimps, iced water or bread, while electronic stores and drinking bars are alive with music to attract potential customers.³⁰³

The Akwamu community is made up of the *Abrade* or the *Aduana* clan system and bound together by totems and taboos. They place very high premium on communal life. Their obligations to family and the wider community supersede personal needs. Major decisions are made communally and so individualism is despised, meaning that membership of a community is emphasised more than individuality. This is reiterated by Mbiti who points out that, to be human is to belong to the whole community and to do so involves participating in the beliefs, ceremonies, rituals and festival of that community.³⁰⁴

Like other Akan tribes in Ghana, a respondent held that the calendar year of the Akwamus is divided into nine cycles of 40 days called *adae*. The *Adae* is observed as a special day of worship when the chief and his elders visit the sacred stools. These sacred stools contain the spirits of the departed chiefs who are part of the ancestors. They blacken the stools with soot and eggs' yolk to make them last long. According to the respondent, only chiefs who do well in office are honoured with stool when they die.³⁰⁵ Even though, there are two types of *Adae*, namely, *Akwasideae*, and *Awukudae*, the one mostly celebrated by the Akwamus is the *Akwasideae* festival.³⁰⁶ According to the respondent, the *Akwasideae* festival is part of the cultural arrangement of the Akwamus which is celebrated on every 40 days and the ninth

³⁰³ Nana Samanyia, interview, 16th December, 2016.

³⁰⁴ John S. Mbiti, *African Religion and Philosophy* (Oxford, U.K: Heinemann international, 1990), p. 2.

³⁰⁵ Nana Samanyia, interview, 16th December, 2016.

³⁰⁶ Nana Dabehene, interview, 21st December, 2022.

Akwasidae is noted as the *Akwasidaekese* in every year to honour the departed chiefs who died fighting for the Akwamu State.³⁰⁷

According to the Akwamus, children born on *Adae* days are called *Adae*. The *Akwasidae* begins on Saturday which is called *Memeneda dapaa*. On this *Dapaa* day, all the items such as drinks and sheep required for the celebration of the *Adae* are made ready. Again, on the *Dapaa* day, no one is supposed to work or travel because, it is meant for tidying the surroundings. Also, on the *Dapaa* day, all sub-chiefs meet to ensure that their stool rooms are cleaned before the Sunday which is *Akwasidae*. Between the hours of 6:00a.m. and 8:00a.m. on early morning on Sunday which is the *Adae*, all the chiefs meet to pour libation and give food at their various stool rooms to the ancestors. While placing the food on the stools, the chief remarks as follows:

Nananom nsamanfo,
Enne ye *Adae*;
Mommra mmèdidi
Na momma yiye mmra yenso;
Momma yenwo nnore;
Momma yen apomden;
Momma ÷henmaa apomden; na ensae ÷man no.
Mommma mmusu mma ÷man no so; na nea ÷mpɛ ÷man no yie no, mongya ne kwan.³⁰⁸

This is translated below:
Spirits of my grandsires,
Today is *Adae*;
Come and receive this food
And visit us with prosperity;
Permit the bearers of children to bear children;
Grant health to your servants;
Grant health to the Queen Mother; Grant health to the Nation.
Let no evil come upon the town; To him, who wishes evil
Let evil fall upon himself.

³⁰⁷ Nana Dabehene, interview, 21st December, 2022.

³⁰⁸ Nana Samanyia, interview, 16th December, 2016

After the ritual, the sub-chiefs get prepared to the paramount chief's palace upon hearing a drum beating for three times. The essence is to go to the paramount chief's stool room to perform rituals to the ancestors which is done by the chief linguist. During this time, the paramount chief is carried to the *banmu*, where chiefs who died were buried to pour libation. When all rituals have been performed, the paramount chief now mounts his palanquin and rides to one end of the town amidst the boisterous noise of drums, horns, musket firing, singing and shouting to display all treasuries left by the ancestors to the public. After the ritual, the chief moves to the durbar ground to receive congratulatory messages from his sub-chiefs, his subjects and state protocols. The public is entertained with traditional, contemporary and gospel songs throughout to the evening to bring the celebration to an end.

This festival has a three-fold significance. First, it is a period of remembrance, thus a time when the people are reminded of the warrior kings who helped them to find their present state. It is also a time when the chiefs and their people bring sacrifices to their gods as thanksgiving for the mercies of the past and to ask for protection for the future. Again, it is an occasion when the people come together to renew their family and social ties. The paramount chief, the sub-chiefs and the elders also use the occasion to discuss major issues affecting the welfare of the community. The paramount chief renews his oath of office and pledges his service and protection to the state and all those who hold him as their ruler.³⁰⁹

3.3 Akwamu's Relationship with the Volta River

The Akwamu were a large, military-organised people with territories expanding vastly to the west and later to the east of the Volta River in modern-day Ghana, Togo and Benin.

³⁰⁹ Nana Dabehene, interview, 21st December, 2022.

However, due to historical military defeats, the Akwamu now claim ownership over a much smaller area of land north and south of the Akosombo Dam around Lake Volta and the Volta River.³¹⁰ For many of the communities in the Akwamu traditional area, residents consist of Akwamu people, previously settled people, and migrants who have come for socio-economic livelihood opportunities after the post-Akosombo Dam construction. The Volta River has been dammed at Akosombo, a suburb of Akwamu traditional area for the purpose of generating hydroelectricity and other multi-purpose functions such as transportation, fishing, tourism and irrigation. The River is crossed by the Adome Bridge at Atimpoku which is also a suburb of Akwamu traditional area that creates some sort of tourist attraction to people from all walks of life.³¹¹

The Volta River is a source of fishing activity for the livelihood of the riparian communities along the river. It is a year-round activity which is usually undertaken by men using either manual or motorised canoes. Apart from the natural fish activities in the river, caged fish production has become popular on the Volta River. Fresh fish is landed on daily basis and is either sold wholesale for cash or given on credit to women fish processors and traders. In other cases, especially on market days, fishermen may sell off their own fresh catch. The principal processing methods are smoking, salting, sun-drying and fermentation. Processing is done predominantly by women. Wholesale traders travel to riparian communities to purchase processed fish to the urban centres to sell. The clients of the fish farmers are market women, the general public, hotels and restaurants. The most significant

³¹⁰ A.B. Agyekum, A Short History of Akwamu Traditional Council Rituals performed at the Akosombo Dam. Monthly Report Covering May–July 2015.

³¹¹ B. Barry, E. Obuobie, M. Andreini, W. Andah & M. Pluquet, ‘The Volta River Basin: Comprehensive Assessment of Water Management in Agriculture’, <https://www.iwmi.cgiar.org/assessment/files> (assessed January 5, 2023).

industrial development along the Volta River is the Akosombo Textiles Limited located at Akosombo in the Akwamu traditional area. The factory uses large quantity of the river for processing, and it is worthy to note that majority of employees in the factory are indigenes from Akwamu traditional area.

Unlike Akwamu neighbours, mostly the Ewe, who heavily rely on the Volta River for fishing for their livelihoods, the Akwamu tend to focus on the river for ritual purposes. They believe that supernatural forces are deeply rooted in the Volta River, known locally as *Asuo Firaw*. According to Agyekum, Akwamu history and their continued identity are tied to a privileged relationship with the Volta River which is traced to a conflict with the Akyem people in 1729 and 1730 which triggered the Akwamu's original crossing of the Volta River.³¹² During the conflict, Wilks points out that when the defeated Akwamu army retreated eastwards and were pursued by a rebel force of the hill peoples, they arrived at the Volta River near Senchi only to find that there were no canoes available for the crossing. When all seemed lost, a bush pig was seen making its way to the opposite bank, and the whole army was able to follow.³¹³ When Akwamu people successfully crossed the Volta river, the river apparently flowed high and the stepping-stones got submerged, so the Akyem people could not trace their journey³¹⁴. It is because of this historical relationship with the river god, that the Akwamu people give much reverence to the Volta river which granted them safety and separation from their enemies to their present settlement.³¹⁵

³¹² A.B Agyekum, *A Short History of Akwamu*, Atimpoku: Agyekum (self-published). Akwamu Traditional Council. Rituals performed at the Akosombo Dam. Monthly Report Covering May–July, 2015.

³¹³ I. Wilks, *Akwamu 1640-1750: A Study in the Rise and Fall of a West African Empire* (Norway: Trondheim, 2001).

³¹⁴ Agyekum, *A Short History of Akwamu*, 2015.

³¹⁵ Kirsty Wissing, 'Assistance and resistance of (hydro-)power: Contested relationships of control over the Volta River, Ghana', *Politics and Space*, 37 no 7(2019): 1161–1178.

Among the indigenous people of Akwamu traditional society, the Volta River is a divine gift from God as well as a sacred deity which sustains human life and for that reason, they revere the river with ultimate attention. The Akwamus have the notion that the Volta River is a spirit being inhabited gods in it. These spirit beings are worshipped through the shrine priest who is in charge of the river. All rituals associated with the river are done by the shrine priest on behalf of the river gods. They believe that the river gods protect the river for the benefit of the Akwamu communities. One of the participants made a remark about his view of the Volta River that:

A certain man went to defecate at the shore of the river and when he finished and wanted to cover the toilet with the sand, it could not cover and when he did this for several times and could not succeed, he started feeling cold and reported the matter to his wife. The wife quickly came to me at the palace and confessed the offence committed by her husband. When a libation was poured to appease the gods of the river, the man got recovered.³¹⁶

Another respondent expressed his worldview about the Volta River this way:

The Volta River is a spirit, because, before the Akosombo dam, the Adomi Bridge and the current railway were constructed on the Volta River, rituals were performed by the shrine priest of the river to ask permission from the river gods. Again, when the Volta River started drying up somewhere in 2019, the river priest was consulted by nananom to perform some rituals to appease the gods and after that there was a heavy rainfall and the river became full to its capacity.³¹⁷

In a focus group discussion, some farmers who have farms around the river admitted that the Volta River is an abode of spirit beings. One of them had this to say:

I was told by an old lady in this community that in those days, when a lady in her menses entered the river, a crocodile would come up from the river to frighten her and she would run away with serious sickness until a purification rite is performed to appease the river god before the sickness will go away. Besides, the old lady's story, I, myself is an eye witness to what happened to me when I was travelling to Afram Plains some time ago. One day, I was travelling to Afram plains, and on the Afram River, the engine of the boat stopped suddenly. An elderly woman on the boat suspected that one of the women in her menstruation was on the boat. Indeed, the

³¹⁶ Nana Kwaku Budu Akomea V, *interview*, 23rd September, 2022.

³¹⁷ Opanyin Kwabena Awuah, *interview*, 23rd September, 2022

menstruating woman confessed and when libation was poured to appease the river gods, the engine started working for a safe travelling.³¹⁸

To further demonstrate the spirituality of the Volta River, the shrine priest said that after the construction of the railway across the Volta River at Senchi in 2022, he was invited to perform a ritual. Items provided for the ritual were one goat, one sheep and seven eggs. Initially, the chief priest requested for a cow for the ritual, but the Indian contractors rather provided a sheep and explained that because they worship cow as their god in their home land, it would not be possible to use the cow for the ritual. According to the chief priest, when the items were thrown into the river, he called the river seven times, and after that three crocodiles (a huge one with a heap of grass at its back and two small ones) appeared from the river and moved towards where the ritual was being performed. They stood there for a while and mysteriously, all of them disappeared. The priest then said that: ‘In fact, our belief in the river as a god has increased today because of what we have seen today’.³¹⁹

In an exclusive interview with the paramount chief of Akwamu traditional area, Nana Kwafo Akoto III at his palace in Akwamufie to share his worldview about the Volta River, he stated that he strongly believes that the Volta River is not just a physical body of water, but it is inhabited by spirits or deities which are considered as having originated from God. According to the chief, because there are spirit beings in the river, Akwamu people have put in place protective by-laws against any activity that could disturb the gods of the river and also to ensure that the river is treated with respect and reverence. In view of that days are set aside for no activity on the river in order to allow the river gods to have some rest. He said

³¹⁸ Kwasi Odosu, *interview*, 20th September, 2022.

³¹⁹ Nana Tete Amoh, the shrine priest of the Volta River, *interview*, 27th September, 2022

that occasionally, rituals are performed by the shrine priest in charge of the river to offer sacrifice in the form of sheep and schnapps to feed the gods, because they believe that when the gods are hungry, they will not allow fishermen to harvest more fish. He said that there is a god called *Kwadiakwa* residing in the river at Akrade where annual rituals are performed to the god for protection and abundant harvest. Nana said that:

I believe that the Volta River is a spirit that is why a ritual was performed before the Adomi-Bridge was rehabilitated in 2015 to ask permission from the river god. Also, when I was enstooled onto the throne, I was told that one day the river flooded over its bank towards Akwamu township and when it reached a spot called 'Makatapi,' a powerful chief stepped in the river three times and after that the river returned to its original position. Similarly, when the Volta River got dried up some time ago, the shrine priest performed a ritual to appease the river gods to give enough water to power the dam. In fact, I was shocked about what I saw that day because as a Christian, I don't normally believe certain things, but what I saw that day is an indication that we need to understand certain things beyond ordinary. I must also say that the Akwamus believe that it was the river that facilitated the Akwamu crossing of the Volta River which enabled their survival and continued existence. Because of this, I don't downplay the spirituality of the Volta River at all.³²⁰

With regard to the Volta River being perceived as a sustenance of human life upon which the indigenous people of Akwamu depend, the participants claimed that because the Volta River provides drinking water, electricity, fishing and employment to both the community and non-community members, it is for these reasons that they revere the river greatly. The maximum reverence giving to the river was expressed by the shrine priest of the river, Nana Tete Amoh who asserted that:

Because the Volta River is a means through which we the Akwamu people sustain our lives, we perform all the necessary rituals to the river gods so that we can get what we need from the river, because when it is angry, we will lose all the benefits that we get from the river. The reason why we don't normally get electricity and abundant fish from the river is because we don't obey the rules governing it. Can you imagine that in 2006 when the river got dried up, and the dam could not produce enough electricity to serve Akwamuman and the entire nation, I was invited to perform a ritual to appease the river gods to cause rain into the river? The items needed for the ritual were provided by the former president of the Republic of Ghana, His Excellency John Agyekum Kufuor. Just after the ritual, there was a severe rainfall to fill the river. I then

³²⁰ Nana Kwafu Akoto III, Paramount chief of Akwamu traditional area, interview, 2nd October, 2022.

advised the paramount chief that there must be a regular ritual to be performed to the gods to satisfy them before it is too late.³²¹

The excerpt above corroborates Nwosu's argument that many Africans believe that without the environment, human life may not be sustained, and that African cosmology conceives of the existence of human beings as being tied up with their environment which has spiritual underpinning.³²²

For Akwamu people, the respondents admitted that, while the Volta River provides drinking water, electricity trade, farming, fishing and other physical contributions, it is also a means for adjudication of disputes. They said that swearing and cursing on the Volta is a means to gather evidence for or against people's claims in a dispute. An advisor to the Akwamu traditional court had this to say:

You can't lie and swear to the river and go scot free because, for instance, if a person wants to avoid court processes at traditional level, but seeks to uncover the truth of the matter, then such a person would take someone they suspect of doing them wrong to the river to swear, and if the person is guilty, it will not even take three days for the offender to walk into the river and die. Also, it is rare to hear of an Akwamu person drown into the river. Why? because, we respect and revere the river, but it is common to hear non-Akwamu people, especially the fishing communities drown into the river, because they normally defecate into the river or fish on forbidden days.³²³

It is evident from the foregoing responses that, among the indigenous people of Akwamu traditional area, aside from their ontological worldview about the Volta River as a sacred nature which is governed by deities, and a source upon which people's livelihood revolves, it is also seen as a fair and unbiased avenue through which human disputes are resolved. Based on the various material and spiritual benefits the Akwamu people enjoy from the Volta River, they revere it with decorum for fear of spiritual offences. This finds expression in Hagan's assertion that in the thought of African tradition, spirituality in water

³²¹ Nana Tete Amoh, *interview*, 27th September, 2022.

³²² Nwosu, 'The Role of Okonko society in Preserving Igbo Environment', 59-64.

³²³ Nana Samanyia, *interview*, 26th September, 2022.

persists and that is more reason why drought, unfavourable patterns of rainfall and famine are the consequences of moral and spiritual offences that humans commit against water gods.³²⁴

3.4 Taboos and Conservation of the Volta River

Among the indigenous people of Akwamu traditional Area, there is a strong attachment to taboos associated with natural objects because of their spiritual underpinning constitutes ecocentric ethics for the management of natural resources such as the Volta River. According to them, taboos are traditional laws emanating from the gods or the ancestors. Therefore, when these rules are broken, whether deliberately or accidental, the resulting damage is social and religious. They believe that when taboo laws are broken, the cordial relationship between the offender and the members of the community, between him and the gods and between him and the ancestors are damaged. When taboo violation occurs, the offender becomes contaminated and ritually unclean together with his community, and until something is done to bring back the harmony between the sacred beings and the offender on the one hand, and the community on the other hand, one misfortune or the other will strike. According to the informants, when a taboo law is broken, the whole community undergoes a ritual cleansing to mend the broken relationships between them and the gods or the ancestors to reinstate the offender to his normal condition in the community.³²⁵

3.4.1 Sacred Grove

On the issue of the sacred grove, the informants disclosed that, it is an institution which is highly respected among the people of Akwamu traditional area because of its religious underpinning. They disclosed that in Akwamu traditional area, a sacred grove is located close

³²⁴ Hagan, 'Water and spirituality in some African Cultures and tradition' (assessed September 5, 2022).

³²⁵ Nana Samanhyia, interview, 1st November, 2022.

to the Volta River known as *abosom mpɔ*, meaning, ‘the dwelling place of the gods’. It is located near the Volta River which is about 100 metres away from Akwamufie, the traditional seat of Akwamu State. It comprises objects such as animals, trees, stones and a stream which flows into the Volta River. According to the informants, the sacred grove is a place where the paramount chief and other sub-chiefs perform rituals during *Akwasidae* festivals. It is also a place where all Akwamu spirits and powers live. These spirits move across the breadth of the communities to protect the people. One of the informants remarked that:

Because of the belief we have in the spirits that live in the sacred grove, we the people of Akwamufie do not have police station, because we believe that the spirits can ensure law and order in the community. Even, when any enemy tries to enter Akwamufie with any bad intention, the gods in the sacred grove will disclose it to the traditional leaders through the chief priest for action to be taken.³²⁶

Nana Samanyia recounted that there was a conflict between the Akwamus and the Ewes over a piece of land and the Ewes decided to flock Akwamu with their weapons, but they were not able to enter Akwamu community because a big tree from the sacred grove mysteriously fell to block the road to prevent the Ewes from entering the town. When the Ewes returned, the tree moved back to its original position. According to him, the Akwamus believe that the fear of repercussions including barrenness and even death plays a role in the continued preservation of the sacred grove in Akwamu traditional society.³²⁷ In view of the sacred nature of the sacred grove, it is a taboo for non-royal members of Akwamu to enter the sacred grove; it is a taboo to shoot gun in the sacred grove; it is a taboo to cut trees in the sacred grove and also, it is a taboo to harvest snail and other animals in and around some parameters of the sacred grove. Only royal members such as the paramount chief, sub chiefs and executioners qualify to enter the sacred grove for ritual purposes. If a non-royal member

³²⁶ Nana Samanyia, interview, 15th November, 2022.

³²⁷ Nana Samanyia, interview, 15th November, 2022

enters the grove, he or she faces serious punishment such as offering seven sheep and seven bottles of schnapps to pacify the gods. A respondent said that in the past, no one could harvest snails from the grove and whoever violated the law would get missing for three days walking in the grove. He said that the mysterious aspect of it is that, the person would be seen carrying the snails by the roadside but he or she could not see anybody passing by the road. According to the respondent, the snails are edible but anyone who wanted to harvest them should be granted permission from the palace for a ritual to be performed for the gods before one could not harvest them. He noted that the sacred grove is where the royals offer sacrifices to the gods, therefore the place is protected from misuse by unauthorized individuals, but snails that move along the street and in front of the grove can be harvested.

With regard to the rationale for the institution of the sacred grove at Akwamu traditional area, it was disclosed through a focus group discussion that formally, the sacred grove was motivated by only religious purposes, because it was an abode, meant to protect the gods who were believed to protect the inhabitants against their enemies, but today, like other sacred groves in Ghana such as Tano sacred grove in Kumasi which play conservationist role by protecting water bodies and also serve medicinal purposes, the sacred grove at Akwamu plays both religious and conservation purposes. One of the informants had this to say:

The trees in the sacred grove protect the stream in the grove and the Volta River and that is why the stream and the river look fresh all the time in this area, because during harmattan seasons, the rivers don't dry. Also, the trees in the grove have rich medicinal values; it is used to prepare concoction to heal various sicknesses.³²⁸

³²⁸ Nana Samanhyia, interview, 15th November, 2022.

The above extract is supported by an assertion raised by Awuah-Nyamekye that, while the histories of most sacred groves have spiritual or religious underpinning, the primary motivation is to conserve nature.³²⁹

3.4.2 Totemic Taboo

Totemic taboo is one of the ecological taboos associated with the conservation of the Volta River in Akwamu traditional society. In an exclusive interview with Nana Samanhyia, the chief of staff for Akwamu traditional paramountcy on how the warthog or the bush-pig became a totem for the Akwamus, he explained that in 1732, a great war occurred at Nyanoase between the Akwamus on one hand and the Akuapems, the Guans, the Gas and the Akyems on the other hand. The Akuapems and their allies thought that their freedom had been curtailed by the Akwamus, therefore all those tribes rose against the Akwamus. Nana Samanhyia further explained that when the war between the Akwamus and the Akuapems became intensive, the Akwamus ran away to Akwamufie, and on their way, they were pursued by the Akuapems and their allies until they got to a spot between the present day Senchi and Atimpoku on the West bank of the Volta river. When they got to the bank of the river, one of the river's gods changed into a bush-pig which is called by the Akwamus as *Kɔkɔte* and created a safe way for the Akwamus to cross over the River Volta. He explained that, when the bush pig had crossed over the Volta River, it went to settle at a spot and that spot became the present day Akwamufie. The informant explained that because the bush-pig saved the Akwamus from their enemies to cross the Volta River, it became their totem therefore, all royal indigenes of Akwamu are forbidden to eat it.³³⁰

³²⁹ Awuah-Nyamekye, 'Managing the Environmental Crisis in Ghana'. 101.

³³⁰ Nana Samanhyia, interview, 5th February, 2017.

As a god with supernatural powers, the Akwamus believe that the bush-pig should be accorded much respect, and that to kill a bush-pig is considered as a murder which is tantamount to killing a human being and therefore, whoever violates that custom is visited with a disaster. The disaster could be in form of drowning in the Volta River or the victim is attacked with a severe sickness. In a personal experience of dangers associated with breaking a taboo associated with the bush-pig, an informant said that his daughter developed a severe measles when she unknowingly ate from a plate which had been used to serve bush-pig meat. The girl was taken to different hospitals, but the sickness did subside and so, the deity of the community called *Obosom Ayensu* was consulted and it was disclosed that she had eaten from a plate that was used to serve bush-pig meat. A purification ritual was performed before she was relieved.³³¹

In recognition of the bush-pig's role as a deity that protects the Volta river on behalf of Akwamu people, practices and activities that could exploit or pollute the river are restricted through traditional norms and taboos. These indigenous conservation practices have helped to maintain a strong relationship between Akwamu people and the Volta River. According to the informant, the rationale underpinning traditional laws associated with the bush-pig (warthog) is to protect the Volta River. Ntiamoah Baidu shares a similar view with the Akwamus as she indicates that totems are key indigenous methods for conserving biodiversity.³³²

In Akawamu philosophy, an informant said that if a person drowns in the Volta River and the corpse is bloated with water, it is believed that the body will come out from the river on its own accord at the spot where the drowning took place without any ritual ceremony, because the drowning is accidental. On the other hand, if the corpse is not bloated with water

³³¹ Nana Samanhyia, interview, 5th February, 2017.

³³² Baidu-Ntiamoah, 'Conservation of coastal lagoons in Ghana: The Traditional approach', 46.

when the victim drowns in the river, and the corpse is found at another place, it is believed that a spell has been cast on the victim by the river gods, because he has violated a taboo law against the river. The informant explained that when the victim's corpse is found, a ritual ceremony is performed by the shrine priest of the river deity called *mfodwo* to appease the deity of the river. Here, the family of the victim is asked to provide seven sheep and seven bottles of schnapps for a purification ritual to pacify the deity of the river, otherwise the victim's family will suffer from calamities such as drought and mysterious deaths.³³³ In a personal communication with Nana Samanyia, he said that people are rewarded or punished by the Volta River according to their good deeds or bad deeds respectively by remarking that: 'Even if you fall into the river and you do not know how to swim, people will save you, but if there is something wrong with you, no matter what, you cannot be saved'.³³⁴

3.4.3 Planting of Sasa Trees

Planting of trees to protect the environment is a common indigenous practice among the indigenous people of Akwamu traditional area in history. The paramount chief said that it was a welcome news when the president of the Republic of Ghana, Nana Addo Dankwa Akofo-Addo initiated the 'Green Ghana Tree Planting Day in 2021 to replenish the degraded forest and the environment.³³⁵ Apart from trees being planted along the principal roads and school compounds as noticed by the researcher during his observation tour to Akwamu traditional Area, the researcher also noticed that there were different species of trees such as mango trees (*Mangifera indica*), palm trees (*Areaceae*), coconut trees (*Cocos nucifera*), *odum* trees (*Milicia excelsa*), orange trees (*citrus sinensis*), mahogany trees (*Swietenia*

³³³ Nana Tete Amoh, interview, 10th October, 2022.

³³⁴ Nana Samanyia, interview, 5th February, 2017.

³³⁵ Odeno Kwafu Akoto III, interview, 1st November, 2022.

mahagoni), onyina trees (*Ceiba pentandra*) and bamboo trees (*bambusoideae*) planted along the Volta river.

When the researcher asked what makes planting of trees an indigenous practice, he was told that the indigenous Akwamu people believe that certain kinds of trees have spirits residing in them called *sasa*, and these trees are planted along the Volta river to prevent stones and sand from getting into the river and also, makes it difficult for flooding from the community into the river. Nana Kwafu Ako III, emphasised that when the bank of the river is left bare, waste materials will be pushed into the river when it rains and this will make the river gods to become angry. In view of that they leave about 100 metres of land along the river where *sasa* trees are planted to prevent erosion into the river. He said that when they were planting the trees along the river, they poured libation to *Asaase Yaa* (The Earth goddess) and the spirits of the trees and indicated that if people fell those trees, the spirits should deal with them. According to the informants, the common practice among fishermen along the Volta River is that, they normally cut trees along the river and throw them into the river to get rotten so that fishes can hide under them. When it happens like that, all the pregnant fish get trapped under the rotten trees for fishermen to catch them. This practice has become a great concern not only to Volta River Authority (VRA) and Water Research Institute (WRI), but Akwamu people in general because, they entertain fear that, with time, there will be no fish in the river for feeding. An environmental officer from the department of VRA had this to say:

When the fishermen catch the pregnant fishes like this, they go away with thousands of eggs released by the fishes, and so if a fisherman catches fifty pregnant fishes for example, he goes away with fifty thousands of fishes. 'You can imagine if there are ten fishermen fishing on that day'. Fishermen complain that they don't get enough fishes from the river, but it is because they catch the fishes and their babies.³³⁶

³³⁶ Mr. Bafo, Environmental officer, VRA, *interview*, 20th September, 2022.

According to Akwamu tradition, because tree planting along the river has religious underpinning, any infringement is viewed as a taboo which goes with a severe punishment by *Asaase Yaa* and the spirits in the trees. This is evident in a reservation made by a traditional leader who shared his experience that, one day, a fisherman felled some trees along the river and put them in the Volta river so that when they get rotten, plenty fish will come and gather under the rotten trees, because they are cool places for fish to rest. Surprisingly, the fisherman never caught any fish in the river for so many months and when he went to consult a fetish priest in that area, he was told that the trees that he felled had spirits in them and that was why he could not catch fishes again. He was asked to go and confess his sins at Akwamufie where he was made to provide a ram, a specified quantity of schnapps and amount of money and when a ritual was performed to appease the gods, he enjoyed bumper harvest.³³⁷ One farmer who was an informant said that:

One day, when the chiefs of Akwamu were planting trees along the river, I saw them pouring libation to the gods and I heard them say that, whoever fells any tree here should be dealt with, and when I heard nananom saying this, I decided not to farm close to the river again because of punishment by the gods.³³⁸

A similar position to the above extract has been expressed by Abayie, who asserts that for conservation purpose, each farmer in a locality or community is enjoined to leave a strip of land of about 30 metres at both sides of streams and rivers.³³⁹

In finding out other benefits the indigenous Akwamu people derive from planting *sasa* trees for the conservation of the Volta River, all the informants through focus group discussion confirmed that apart from the conservation motive behind planting of *sasa* trees, it also provides economic purpose. One of the informants said that, in collaboration with VRA, Volta

³³⁷ Nana Otuaben, interview, 12th December, 2022.

³³⁸ Kofi Antwi, *interview*, 12th December, 2022.

³³⁹ Abayie, *Traditional conservation practices*, 47.

gorge land owners' association has been formed by traditional authorities who own land along the river. According to the informant, when the association was formed, VRA supplied them with cash crop trees such as mango seedlings, orange seedling, palm nut seedlings and small bamboo plants to generate income for themselves. One other informant expressed that:

I am also aware of a community based groups in every community along the Volta River who have been supplied plant seedlings by VRA to plant them along the river to protect it and also to generate income for the people.³⁴⁰

Another informant also remarked that:

We the chiefs enjoy 'payment of environmental services' in the form of money from VRA to compensate those of us whose lands are close to the river, so that plants can be planted on that land to protect the river. An interesting aspect of it is that, apart from the money given to compensate us by VRA, they also supply the seedlings to us, therefore we get two benefits, money benefit and benefit we get from selling the products we get from the plants.³⁴¹

From the foregoing analysis, it can be concluded that apart from the conservative motive behind planting of trees to conserve the environment, the practice also has economic benefits as far as indigenous Akwamu people are concerned.

3.4.4 Menstruation

Among the Akwamu people, the Volta River is believed to be associated with a god or *ɔbosom* called *Mfodwo*. This god or *ɔbosom* relays taboo rules associated with the river to the local folks through a fetish priest called Nana Tete Amo, who is the mouthpiece of the god. According to the deity's priest of the river is that; it is a taboo for a woman in her menstruation to fetch or bath in the Volta River. According to the priest, when a woman undergoes *sakyima* or is in her menstrual period, she is considered unclean, therefore she is not supposed to enter the river, otherwise she will pollute the sacredness of the river. The priest said that failure to adhere to this taboo is tantamount to serious punishment, where the

³⁴⁰ Nana Odeneho Kwafu Akoto III, interview, 1st November, 2022

³⁴¹ Nana Samanhyia, interview, 1st November, 2022.

victim could be in her menses for more than one year, until a ritual sin is performed to restore the bond between the god and culprit, and also to integrate or renew the broken bond between her and the god. In an eye witness account of a woman who violated the taboo law and was punished by the river god, the priest had this to say:

A certain woman in her manses went to fetch water from the Volta River and when she was heading towards her house, something occurred to her as if she had left something at the river side. When an elderly man saw the woman going up and down carrying the water, he suspected that something mysterious was happening to the woman and when the community deity was consulted, it was discovered that she had offended the river god. For her punishment, she was asked to provide a ram, a schnapp and a prescribed amount, and when a ritual sin was performed to appease the river god called 'Mfodwo', the woman came back to her normal life.³⁴²

In finding out the philosophy underpinning menstrual taboo in relation to the river, the priest explained that Akwamu people have scientific knowledge in the protection of their water bodies and this practice is based on their belief systems to provide a hygienic condition for the people. According to the priest, menstruation is considered a filthy thing, so a woman in her menstrual period is considered unclean and must not go to sacred places. This shows that in their attempt to teach personal hygiene, the Akwamus have embedded this idea into taboos to prevent menstruating women from polluting the river. This finding supports similar research conducted by Awedora that indigenous water resource management is shaped by indigenous knowledge systems which are embedded in the cultural beliefs and practices of the people.³⁴³ Similar expression is also made by Awuah Nyamekye who argues that environmental consciousness is embedded in traditional African worldview which is shaped by their religious beliefs through taboo laws.³⁴⁴

³⁴² Nana Tete Amoh, interview, 10th October, 2022.

³⁴³ Awedora, *Cultural and Development in Africa*, 2002.

³⁴⁴ Awuah-Nyamekye, *Salvaging Nature: Akan religio-cultural perspective*, 251-282.

3.4.5 Fishing

Related to taboos associated with the Volta River is a taboo forbidding inhabitation of Akwamu traditional society to go fishing on Sundays on the river. The Akwamus believe that the Volta River is a goddess and Sundays are sacred days when the goddess has time with her children which are the fishes. In order not to disturb the goddess and her children, it is forbidden to go for fishing that very Sunday. However, in the case of cage farmers who feed the fingerlings on daily basis in the river, they are permitted to work on the river on Sundays, but in this case, libation is poured to seek permission from the river god called *Mfodwo*, before they can work on the river. Nana Tete Amoh who is the deity priest of the river called *Mfodwo* said that formally, two days were reserved as taboo days for the river, but the fishermen complained that the two days without going to fish brought fish shortages in the community and as a result, prices of fish started increasing. When libation was poured to the deity, the two days were reduced to one day which was Sunday. Sunday became a sacred day for the deity so it is taboo to fish on this sacred day.³⁴⁵ According to the priest, those who disobey these directives either get drowned in the river or do not harvest enough fish from the river.

Those who have broken the taboo and have been taken through rituals confirm that they saw a crocodile when they visited the river for fishing on one Sunday. Sometimes those who visit the river on Sunday never come back to the house. Others also testified that they never get good yield of fish when they go to fish on Sundays. Breaking of this taboo affects the fishing communities negatively because of low catch of fish, making cost of living very high. As a result of breaking the taboo law, the river god takes away its protection from the community and a ritual is performed to renew the bond between the community and the god.

³⁴⁵ Nana Tete Amoh, interview, 10th October, 2022.

When the researcher enquired about how the ritual is performed when one commits an offence, the priest of the river deity, *Nana Tete Amo* explained that the ritual process includes a presentation of two sheep, five bottles of foreign schnapps and an amount of money by the perpetrator. The chief priest is then informed to perform the necessary rites to appease the river god called '*Mfodwo*.' Two rituals are performed. The first ritual is performed at the paramount chief's palace where libation is poured to ask for pardon for the victim. After the libation, one sheep is slaughtered to offer sacrifice to the ancestors for forgiveness. The second ritual is where the victim is taken to the riverside where the second sheep to be used is offered sacrifice to the river god to forgive the victim. At the riverside, a final libation is poured by the chief linguist to ask the river god to pardon the victim to restore him to be fully accepted into the community. Bumper harvest then follows after the bond between the victim and the river god has been sealed.

3.4.6 Building Houses

Another taboo associated with the Volta River is that it is a taboo to build houses close to the Volta River. According to Abusuapanyin Agyawua, he noted that before government laws were enacted to protect our river bodies, our chiefs had traditional laws which came from the ancestors to protect our water bodies. He said that the chiefs leave about 200 metres of land between the river and the community to grow into forest to prevent erosion of waste materials into the river and also to cover the river from drying up. He explained further that in an effort to minimise water pollution from household waste and to reduce the quick spread of water-borne disease, communities are often situated far away from the river. It is believed that the river god is highly endowed with divine powers and will strike defaulters dead

instantly. Because of fear of being struck by the river god, they adhere strictly to these directives and thereby protect the river.

3.4.7 Cutting Trees

Another means by which the Volta River is protected by Akwamu people is through a taboo that forbids them from felling trees along the river. If one is caught felling trees around the river, the perpetrator is made to pay a fine in the form of money, drinks and sheep to perform rituals to appease the gods. When asked why money is used as part of the ritual process, the informant explained that the money is shared among the elders who sat in the case before the ritual was performed. The informant explained that if one wants to fell a tree along the river, he has to seek permission from the chief in the community for libation to be poured to the river deity before the tree can be felled. He said that a man fell a tree around the river without asking permission, and the tree fell on him and died. When a deity in the community was consulted, it was revealed that he was killed by the river god because of flouting the taboo law. The chief priest responsible for the Volta River said that the rationale behind this taboo is to protect the river retain enough water to power the turbine of the Akosombo dam to produce electricity to benefit Akwamu communities and Ghana as a whole.³⁴⁶

3.4.8 Open Defaecation

The perception of indigenous people of Akwamu traditional society is that keeping the surroundings of the Volta River clean is an effort to avoid many water related diseases which may affect the health of the people. In view of this, it is a taboo to engage in open defaecation along the river bank. They believe that since the river is regarded as the dwelling

³⁴⁶ Nana Tete Amoh, *interview*, 10th October, 2022.

place of *Mfodwo*, the river god, anyone who defaecates along the river bank is said to have offended not only the community, but also the river god and will not go unpunished. An informant said that, a certain young man defaecated along the river bank and for one month, he could not defaecate and he personally reported himself to the *Guantuahene*. A *Guantuahene* is one of the sub-chiefs in Akwamu traditional Area to whom people can turn for shelter and mercy when an offence has been committed. The *Guantuahene* told the victim that, by this offence, he had polluted himself and the river god, and hence a ritual rites had to be performed to atone for his sin in order to be integrated into the community. When the fetish priest was consulted, two bottles of foreign schnapps together with one ram and one white fowl were provided and upon receiving the items, a day was proposed for the ritual to be performed. Sunday was appropriate for the performance of the rituals because it was *Akwasidea* when all the community members were supposed to be present to witness the occasion.

On the day of the ritual cleansing, the victim was taken to the forecourt in front of the chief palace for the necessary rituals to be performed. Libation was poured to invoke the presence of the ancestors and other divine spirits. The ram was slaughtered and the traditional priest smeared some of the blood all over the victim's body. The rest of the blood was sprinkled all over the community to clean the community which had been polluted by the victim. The next stage of the ritual was that the white fowl was killed and the victim was made to sprinkle the blood on the spot where he had defaecated. After that, the victim was made to pronounce publicly that he would not repeat the act and that he would report to the palace if he found someone in the same act. This was done to encourage individuals to be watchdogs

of the preservation of the river. Finally, the victim was made to pay a fine which was shared among the elders present for the ritual, and after that he was declared cleansed.³⁴⁷

3.4.9 Other Taboos

Other taboos associated with the Volta River in Akwamu traditional area are farming at the upstream of the river, washing clothes near the river and washing cooking utensils in the river. For instance, among the Akwamus, it is a taboo to farm at the upstream of the Volta River, because it is believed that the upstream is the abode of the river god. The rationale is to prevent debris channelled into the river to cause any health hazard to the communities situated at the downstream of the river. Other related taboos for hygienic purpose as indicated by the informants with regard to the Volta River are taboos related to washing clothes near the river and washing cooking utensils in the river. All these taboo laws are put in place to prevent unhygienic conditions that may affect the health of the people and the aquatic lives of the river.

3.5 Traditional Festivals

Apart from taboos which are used to preserve the Volta River among the indigenous people of Akwamu traditional society, traditional festival has become one of the means through which awareness is created about the need to protect the river. In one of the *Akwasiidae* festivals at Akwamufie which is the traditional seat of Akwamu traditional council, the researcher was present to observe proceedings. During the festival, the traditional council invited dignitaries from Asuogyaman District Assembly including the District Chief Executive, directors from National Disaster Management Organisation (NADMO), Water

³⁴⁷ Opanyin Kwabena Awuah, interview, 23rd September, 2022

Research Institute (WRI), Volta River Authority (VRA) and farmers and fishermen selected from the various riparian communities.

After all rituals had been performed and the paramount chief had received homage from his sub-chiefs at the forecourt of his palace, the chief executive in his keynote address called on chiefs to support government's efforts in protecting the environment, especially the Volta River which is one of the biggest sources of revenue to Ghanaian economy. He also advised the riparian communities, especially the farmers, fishermen and hotel owners to tread cautiously so that their activities would not negatively affect the river. The paramount chief, Odenho Kwafo Akoto III expressed his gratitude to the environmental department of VRA for supplying the traditional authorities with tree seedlings to plant along the Volta River for its sustenance. Odenho urged the fishermen to obey the traditional laws that govern their operations on the river so that the river god would give them bumper harvest as far as fishing is concerned. The chief remarked that:

Nowadays, during 'Memeneda dapaa', which is a day in preparation of the coming Akwasidae, we have incorporated planting of tress along the Volta River at Akwamufie as part of activities observed before Akwasidae. I implore all chiefs present here to do same at your various jurisdictions so that we can sustain the river which is the main source of our livelihood.³⁴⁸

It can be deduced from the foregoing that, aside from the core purpose of using *Akwasidea* festival to promote the cultural heritage among Akwamu people, it has also become an avenue to promote environmental awareness in this contemporary times as it epitomises their respect and reverence for and pragmatic understanding of their natural environment. The worldviews of Akwamu about festivals and natural resource management find expression in Adom's view that due to the injured condition of the environment and its

³⁴⁸ Odenho Kwafo Akoto III, *interview*, 1st November, 2022

biodiversity resources, traditional festivals have become a means to halt this wanton destruction.³⁴⁹

3.6 Conclusion

Chapter three has examined the indigenous conservation practices of the Volta River in Akwamu traditional area. The essence was to answer research question one of the study, dubbed, “What indigenous conservation practices exist in the management of the Volta River in the Akwamu traditional area?” The indigenous conservation practices associated with the Volta River which the study revealed were; how their worldview about the Volta River as a sacred deity influences their attitude towards the management of the river, and how their belief in sacred grove, totem and sasa trees becomes effective tool in the management of the Volta River. Other indigenous conservation practices for the management of the Volta River which the study revealed were the institution of taboos and the adoption of traditional festivals. This chapter also explored the historical perspective of Akwamu traditional society as well as their relationship with the Volta River. This was done to understand how the religious life of Akawamu people intensifies their relationship with the Volta River to which reverence is given.

With respect to Akwamu’s conception of the Volta River and how it influences their attitudes towards its conservation, it was found out that, the Akwamu people strongly believe in the sacred nature of the Volta River which is governed by deities, and a source upon which the livelihood of Akwamu people revolves, which is seen in its fair and unbiased ways through which human disputes are resolved. It is on this premise that the Akwamu people revere the

³⁴⁹ Adom, ‘Adaptation of Traditional Festivals for the Sustainable Development of the Biodiversity of Local Communities in Ghana’, 69-94.

river with utmost dignity. On the issue of ecological taboos which include sacred groves, totemic animals and *sasa* trees and how they relate to the conservation of the Volta River, it was argued that, even though the ecological taboos as practised by Akwamu people have religious underpinning, they are mainly concerned with the preservation of the Volta River. It is also significant to note that Akwamu people have a set of taboos which is culturally acceptable to the management of the Volta River. These include taboos associated with menstruation, fishing on sacred days, building houses close to the river, felling trees around the river, open defaecation along the river bank, farming at the upstream of the river, washing clothes near the river and washing cooking utensils in the river. One thing about these taboos, as the findings revealed is that violating them attracts punishment from the river gods and it takes a ritual cleansing to be performed to reunite the offender and the river deity. The discussion also touched on the relevance of traditional festivals in the conservation of the Volta River. It was found out that aside from the core purpose of using *Akwasidae* festival to promote the cultural heritage among Akwamu people, it is also an avenue to promote environmental awareness among Akwamu people as far as the Volta River is concerned.

Based on the foregoing conclusions, it suffices to say that Akwamu people have a set of ecocentric ethics which are motivated by religio-cultural beliefs and practices in the management of the Volta River. However, this tradition appears to be abating, considering the polluted condition of the river which leaves much to be desired. The researcher's six months stay at Akwamu to conduct his research noticed that, most of the traditions for the management of the Volta River were being violated. The question that came to mind was to find out the factors that have undermined the effective implementation of the traditional laws in the management of the Volta River. This is what the next chapter seeks to explore.

CHAPTER FOUR

FACTORS MILITATING AGAINST INDIGENOUS CONSERVATION OF THE VOLTA RIVER IN AKWAMU TRADITIONAL AREA

4.1 Introduction

In chapter three, the indigenous conservation practices of the Volta River which are enshrined in the religious beliefs and practices among the indigenous people of Akwamu traditional area were discussed. It was discovered that, Akwamu people have a set of traditions such as taboos, totems, sacred grove and other traditional practices which have religious underpinnings for the conservation of the Volta River. It was also discovered that aside from their ontological worldview about the Volta river as a sacred entity and a source upon which the livelihood of Akwamu people revolves, for which reverence is given for its use, it is also seen as a fair and unbiased avenue through which human disputes are resolved, hence the Volta River is a source of morality. It is however significant to note that the religio-cultural conservation practices of the Volta River among the indigenous Akwamu people seem to be abating which leaves much to be desired.

During the researcher's fieldwork to the riparian communities to observe the nature of the Volta River on one Akwasidae, he saw that some fishermen were fishing on the *Akwasidae*, he also saw that a huge refuse dump had been deposited close to the river with people engaging in open defecation. Besides that, residential houses including hotels had been built close to the river. Also, many household gutters opened to liquid and solid wastes are channelled into the river and more importantly, the sacred grove at Akwamufie which protects the Volta River had been destroyed by hunters and timber dealers, endangering the safety of the river. Based on these observations, the researcher decided to explore the factors which had

undermined the effective implementation of the indigenous conservation practices of the Volta River in Akwamu traditional area in order to generate appropriate recommendations to safeguard the ecological and the cultural significance of the river for the well-being of Akwamu people.

4.2 Migration and Resettlement of Non-Indigenous Group of Akwamu Traditional Area

One of the factors which was pointed out by the informants that undermines the effective management of the Volta River is non-compliance of traditional laws governing the Volta river by non-indigenous groups of Akwamu traditional area as a result of the construction of the Akosombo Dam which led to the migration and resettlement of these people to Akwamu traditional area. The Akosombo Dam is a hydro-electric dam on the Volta River in Ghana. It is located on the territory of Akwamu traditional area at Akosombo and is the largest hydro-electric project catering to national and international energy needs. The primary purpose for the construction of the Akosombo Dam was to provide electricity for the aluminum industry in Tema. Other research also indicates that the discovery of bauxite in commercial quantities at Mpraeso and Yenahin which needed a reliable energy source for smelting the bauxite necessitated the construction of the Akosombo Dam.³⁵⁰ Since the completion of the dam, it has remained the major source of energy for industrial, agricultural, institutional and domestic purposes in Ghana and some neighbouring countries such as Togo and Benin. The construction of the dam has also contributed to accelerating Ghana's economic development through industrial and mining sectors as well as providing cheap electricity for

³⁵⁰ Agbanu, 'Environmental Ethics in Mafi-Eve indigenous culture', 187.

domestic and commercial consumption. Apart from that, fishing, transportation and tourism are positive benefits from the dam.³⁵¹

It is true that the construction of the Akosombo Dam brought major benefits to the economy of Ghana, however, it can nonetheless be said that the construction of the dam also brought some detrimental effects on many communities, which lived in the immediate vicinity of the Volta River. After the construction of the Akosombo Dam, it caused a severe flooding which rendered an estimated total population of about 80,000 people who lived in an area close to the dam homeless. The 80,000 people displaced were resettled in new resettlement townships along the Volta River in Akwamu traditional area. The unfortunate aspect was that the construction of the dam brought about a sharp decline in regular flow of the river which negatively affected fishing activities among the communities at the downstream. This led to the migration of many fisher folks, especially from the Tongu District, to the Volta River in Akwamu traditional area to seek better fishing opportunities.³⁵²

The indigenous system of managing the Volta River came along with its cultural structures and institutions in place to develop access to the use of the river by the Akwamu communities. In order to ensure proper conservation practice of the river, the traditional laws which are enshrined in the religious beliefs of Akwamu people spell out when, where and how the river is used. However, following the construction of the Akosombo Dam, Nana Samanhyia asserted that non-indigenous groups found their way to Akwamu territory for fishing, farming and trading activities along the river. The influx of these non-indigenous groups into Akwamu territory posed a very serious challenge to the people of Akwamu in

³⁵¹ Kirsty, 'Assistance and resistance of hydro-power: Contested relationships of control over the Volta River, Ghana', 1161–1178.

³⁵² Chris Gordon & Julius K. Amatekpor, eds., *The sustainable integrated development of the Volta basin in Ghana* (Legon, Accra: Volta Basin Research Project, 1999), p. 122.

terms of ensuring adherence to customary laws related to the river. With the increasing diverse ethnic groups into Akwamu territory, the attitudes of the immigrants changed towards Akwamu customs and traditions, particularly those associated with fishing on the Volta River, therefore they began to violate the customary taboos associated with the river.³⁵³ Nana Samanhyia noted that:

Before the construction of the Akosombo dam, majority of the people in Akwamu traditional area were indigenes of Akwamu, with their unique customs and tradition for protecting the Volta River, but today, the population of Akwamu is mixed up with non-Akwamu residents because of resettlement, employment, trade and displacement. Because these people came with their customs, they always violate the taboo laws related to the Volta river and this has been a big challenge to us.³⁵⁴

One other informant said that:

As a result of the influx of non-indigenes of Akwamu into Akwamu territory because of the construction of the dam, people do no longer adhere to the traditional laws that protect the river. In fact, if you have the chance to visit most of the communities along the Volta river, you will see that open defecation, sewage and all manner of things are channeled into the river. Apart from that you will see people fishing on taboo days. We have educated the people severally about the need to obey the rules governing the river, yet it falls into deaf ears. No wonder people die mysteriously in these communities without knowing the cause of their death.³⁵⁵

The responses of the informants corroborate with similar findings of a research carried out by Ntiamoa-Baidu among the riparian communities along the Sakumono lagoon in the Greater Accra which revealed that as a result of migration of non indigenes into Sakumono community, traditional beliefs and taboos for the conservation of coastal lagoons are no longer respected, as fishing activities continue on daily basis despite the prohibitions of sacred days.³⁵⁶

³⁵³ Nana Samanhyia, interview, 18th November, 2022.

³⁵⁴ Nana Samanhyia, interview, 18th November, 2022.

³⁵⁵ Ahenemmahene, interview, 20th November, 2022.

³⁵⁶ Ntiamoa-Baidu, Conservation of coastal lagoons in Ghana: the traditional approach, 41-46.

The foregoing analysis shows that even though the construction of the Akosombo Dam has remained a major source of energy for industrial, agricultural, domestic and a source of employment for Akwamu people as well as the non-indigenes of Akwamu traditional area, it has also led to the erosion of the traditional laws that seek to protect the Volta River, particularly among the non-indigenes of Akwamu traditional area, as a result of economic hardship as well as cultural differences leading them to prioritise their livelihoods over conforming to the traditional norms which are related to the Volta River.

4.3 Non-Collaboration between State Institutions and Traditional Authorities

One other factor which has undermined the effective implementation of indigenous conservation practices of the Volta River in Akwamu traditional area is non-collaboration between the states institutions and the traditional authorities in the management of the Volta River. According to Nganje, contemporary approaches to water management through formal rule-based institutional governance in many places have failed, because of non-collaboration between indigenous knowledge and formal systems.³⁵⁷ In order to mitigate these problems, Cobb argues that there is the need to integrate indigenous knowledge and state laws for sustainable management of natural resources, because the two knowledge systems complement each other in their strengths and weaknesses, and their combination may achieve what neither would achieve alone.³⁵⁸ This supports the local parlance that says, ‘unity is strength’, meaning, when people work together, they are more potent than when they work individually. This means that equal sharing of power and responsibilities between state actors

³⁵⁷ M. Nganje, *Harnessing Traditional Ecological Knowledge for Conservation of Forestry and Biodiversity*. XVII World Forestry Congress, Buenos Aires, Argentina 18 -23, October 2009.

³⁵⁸ A. Cobb, *Incorporating indigenous knowledge systems into climate change discourse*. Colorado conference on earth system Governance: Crossing boundaries and Building Bridges, 2011.

and indigenous people can enhance effective conservation of water resources. It is however unfortunate that the collaboration between the state institutions and the traditional authorities in the management of natural resources such as the Volta river in Akwamu traditional area is missing.

In Akwamu traditional society, the marginalisation of indigenous knowledge in water resource management as a result of the introduction of state laws has contributed to a dreadful condition of the Volta River which has adversely affected the capacities of the indigenous people to maintain their relationships with the river, thereby, eroding their cultural identities. In a focus group discussion with some traditional leaders in Akwamu traditional area to find out how the state institutions collaborate with them in the management of the Volta River, they noted that the state institutions do not collaborate with them to effectively enforce the traditional laws to protect the river. They lamented that in recent times, the quality of the river has been taken for granted as a result of anthropogenic activities along the river which have posed serious threat to people whose livelihood revolves around the river.

In an interview with the discussants, they indicated that before state institutions in Asuogyaman districts were established to protect the Volta river in Akwamu traditional area, management of the river was based on customary laws which included taboos and other codes of conduct that had been handed down to them by their ancestors which prohibited fishing activities on sacred days as well as farming and building close to the river. They noted that despite the introduction of state institutions such as Environmental Protection Agency (EPA), the District Assembly and the Volta River Authority to protect the river, anthropogenic activities continue to threaten the quality of the river, because these institutions do not incorporate traditional laws into their water resource management policies. They cited an

example that Volta River Authority has developed a policy document for Aquaculture Development on the Volta River to ensure strict compliance with aquaculture operators for effective utilisation of the Volta River. In the said policy document, traditional laws were not incorporated into it. Among other things, the policy specifies that aquaculture operators cannot commence operations of aquaculture activities on the Volta River without express approval from VRA. Again, no applicant shall be allowed to acquire land within the Volta Gorge Protected Area without explicit approval from VRA.³⁵⁹

In an interview with an environmental officer of VRA to find out why traditional laws are not incorporated into their water management policies, he explained that:

Water management policies are enacted by government for VRA to implement them at their jurisdiction and so as far as I am concerned, I haven't seen any of such government policy that makes provision for traditional laws relating to the river. What I know is that VRA does not prevent the traditional authorities from enforcing their traditional laws to protect the river and that is more reason why we have collaborated with them by providing them with economic trees to plant along the river for its sustenance.³⁶⁰

In finding out the sort of anthropogenic activities threatening the quality of the river, the participants noted that Akwamu traditional laws forbid people to build or farm close to the river, but nowadays, several human activities along the river seem to violate the traditional laws, thereby endangering the sustenance of the river. One such human activity according to the participants is cage aquaculture fish production which has become a hub of Tilapia (*Oreochromis niloticus*) business among cage farming organisations such as Tropo Farms, Lee Farms, West African Fish farm and Crystal Lake which are located close to the Volta River in Akwamu traditional area. In response to some of the attitudes of the cage farmers that negatively affect the river, the participants noted that in the course of their activities, cage

³⁵⁹ Volta River Authority, 'Framework for Aquaculture Development on the Volta Lake: Implementation Guidelines Document', [https://www.vra.com/resources/others\(assessed\)](https://www.vra.com/resources/others(assessed)) 18th November, 2022.

³⁶⁰ Mr. Bafo, Interview, 18th November, 2022.

farmers destroy many trees that have been planted along the river to protect it, thereby exposing the river to all kinds of materials such as tiny bits of soil and other solid particles that are washed or blown into the river by rain. In buttressing the cage farmers' negative attitudes to the river, one traditional chief had this to say:

One of the challenges we are facing in respect to the governance of the Volta River is that the cage farmers have built close to the river and they end up destroying the banks of the river by felling the trees along the river which were provided by VRA to the chiefs to plant along the river to protect it. In fact, we the chiefs have summoned cage farmers who violate our traditions that protect the river, yet the problem remains unchanged.³⁶¹

The discussants noted that when the state institutions are issuing permit to cage farmers for their activities on the river, they do so without consulting the traditional council. Apart from that they do not go to the field for inspection before the permits are granted to the cage farmers, so they end up exposing the river to all kinds of materials. One participant said that:

When these cage farmers are arrested and sent to court for violating our traditional laws governing the river, they are freed because they are able to hire lawyers to defend them.³⁶²

According to the informants, before the state institutions such as EPA and NADMO were established to protect the environment in general and the Volta river in particular at Akwamu traditional area, indigenous traditions were used to regulate economic activities which were close to the river. As indicated by the informants, it was forbidden to engage any human activity close to the Volta River and it was for this reason that 100 metres of land were left between the river and the community to prevent erosion of waste materials from any other source into the river. The informants however indicated that the 100 metres rule instituted by the traditional authority in safeguarding the river has been violated by owners of commercial

³⁶¹ Nana Kwafo Akoto III, interview, 21st November, 2022,

³⁶² Nana Samanhyia, interview, 1st November, 2022.

farms, industries and residential houses situated close to the Volta River. They indicated that inorganic plant nutrients used by commercial farmers is washed into the Volta River when it rains. Also, domestic wastes from most of the hotels and abatoir are discharged into the Volta River, and also, the sewage from the toilet roll factory in one of the communities is discharged into the river. They indicated that as the untreated sewages from the hotels and the factories are emptied into river, they cause diseases like typhoid and cholera. According to one of the chiefs, a white man who visits him occasionally from Europe told him that the excessive water hyacinth growing along the Volta River is as a result of nutrients being carried from septic tanks, animal wastes and farms into the river, and in 20 years to come, if care is not taken, the Volta River will dry up completely because of the presence of water hyacinth which absolves the water. The chief said that:

When traditional laws were adhered to, you would not see any water weeds along the river because people could not farm, build or put factories close to the river to provide nutrients into the river, but today, all these traditions are being violated and their corresponding result is what we are witnessing. Environmental Protection Agency has introduced aquatic weed project to remove aquatic weeds from the Volta River in Akwamu traditional area, but they are unable to do substantial work because of lack of funds and so the water hyacinth continues to multiply in their numbers in the river.³⁶³

The participants blamed the District Assembly for not collaborating with them to enforce the traditional laws to protect the river. According to the paramount chief of Akwamu Traditional Area, the District Assembly does not collaborate with the traditional authorities for anything about the environment. He indicated that sometimes, the District Assembly organises sensitisation programmes for the riparian communities through the assemblymen in those communities on the need to protect the environment without informing the chiefs, not forgetting that the chiefs are the custodians of the environment. When the paramount chief

³⁶³ Ahenemahene, interview, 18th December, 2022.

was asked whether the chiefs are consulted by the District Assembly before they granting permit to people to undertake any economic activity near the Volta River, he said that:

Under normal circumstances, that is what the assembly should have been doing because the person needs land title from the traditional council before the assembly will grant them permission to build. However, the assembly does not contact the traditional council, so before they realize, the land permit has been given to the buyer. The District Assembly is only concerned about the fees they charge and as a result of that people take this advantage to build close to the river without taking into consideration the approved 100 meters away from the river. Nana said that sometimes he has to call the assembly to order to do the right thing.³⁶⁴

The non-collaboration between state institutions and traditional authorities in the management of the Volta River in Akwamu traditional area confirms Boafo-Arthur's position that the institution of chieftaincy is steadily losing its grip among many traditional societies in Africa as a result of the paradigm shifts in the system of governance resulting from the influence of Western culture.³⁶⁵

4.4 Attitudes of Traditional Authorities

An important factor that undermines the enforcement of indigenous knowledge in the conservation of the Volta River in Akwamu traditional area is the attitudes of some sub-chiefs who release their lands to investors for various projects without complying with the traditional norms. According to the paramount chief of Akwamu traditional area, the Volta River Authority in collaboration with the traditional chiefs has implemented various watershed management interventions aimed at protecting the Volta river environment in order to improve the livelihoods of the communities and protect the dam. One of these water management interventions is the formation of Volta Gorge landowners' association. The rationale underlying the formation of this association is that the Volta River environment is being

³⁶⁴ Nana Kwafo Akoto, interview, 5th December, 2022

³⁶⁵ Boafo-Arthur, 'Chieftaincy and politics in Ghana since 1982', 13-17.

degraded and deforested on daily basis through livelihood activities such as farming, fishing, biomass energy production (firewood and charcoal) and housing. It is against this background that VRA collaborated with the traditional leaders who are the custodians of the lands to release their lands which are close to the river to VRA for planting trees to protect the river. Under this programme, VRA pays a lump sum of money to the chiefs so that instead of farming close to the river, they are given money to compensate them so that VRA can use the affected lands to plant trees to protect the river. An interviewee noted that:

The most interesting thing is that when VRA gives the money to the chiefs, they also supply tree seedlings in addition for them to plant along the river. If I am not exaggerating, in 2020, 28,800 forest tree seedlings were supplied by VRA to most of the riparian communities for planting along the river.³⁶⁶

According to the chief, the partnership between VRA and the traditional leaders in forming the Volta Gorge landowners' association has been successful for so many years until recently when the chiefs decided to release their lands to other investors who are ready to pay huge sums of money more than what VRA gives to them. The unfortunate aspect is that people who buy land from the chiefs do not go to the traditional council for proper documentation to be issued, so they give money to the sub-chiefs and they allow them to either put up their houses close to the river or farm close to the river. The interviewee said thus:

The chiefs who are supposed to educate investors on the need to comply with the traditional laws governing the river by leaving 100 meters' distance between the river and their houses along the river are only interested in the money they collect from the investors. In fact, I personally stopped a man who was building close to the river and when I asked him to produce his permit, he said that the chief who sold the land to him asked him to start building and he would facilitate the permit process for him. Again, I asked my task force to stop a businessman who was building close to the river, but as I speak to you, the project is still ongoing. I have reported the case to the police and the chief executive, yet the project is ongoing, so you see, this is the problem we are facing in our quest to protect the river. The issue is that some chiefs are behind all this.³⁶⁷

³⁶⁶ Nana Kwafo Akoto, interview, 5th December, 2022.

³⁶⁷ Nana Kwafo Akoto, interview, 5th December, 2022.

4.5 Non-Compliance of Traditional Customs by Fishing Communities

In Akwamu traditional society, taboos have existed in the fishing communities to regulate fishermen in their fishing activities to conserve the Volta river from overexploitation. Some of these taboos are that; it is forbidding to use illegal fishing methods for fishing, and also, it is forbidden to go for fishing on Sunday which is the sacred day of the Volta river. In an interview with some of the chiefs, it appeared that the fishermen do not comply with these traditional customs governing the river which has been a great concern to the traditional rulers.

With regard to the methods of fishing, all the chiefs unanimously said that most of the fishermen use fishing nets that have not been sanctioned by the traditional authorities for fishing. According to them, the fishermen are supposed to use a sizeable net approved by the traditional authorities for fishing, but due to their selfish interest, they resort to the use of unapproved nets with the aim of increasing their catch. They noted that when the fishermen use the unapproved nets, they indiscriminately trap the fingerlings and this practice has contributed to a total depletion of fish stock in the river, resulting in high cost of fish in the area. One of the chiefs said that:

Traditionally, we believe that the fingerlings in the river are the children of the river god, and so we expect that they are not tempered by the fishermen until they have grown. That is why we have taboos that restrict the fishermen to use the smaller mesh sizes to catch fishes, but because of the parochial interest of these fishermen, they flout this law and when the river gods punish them by not getting any catch, they blame we the traditional leaders.³⁶⁸

Another bad method being used by the fishermen for fishing as noted by the chiefs is called *atigya* which is a fishing method where fishermen fell trees around the river and dump them into the river to create a cool or a conducive environment for the fishes to live. The main

³⁶⁸ Nana Samanhyia, interview, 1st November, 2022.

purpose for this method is that when such cool environment is created by the fishermen by dumping the trees, it attracts more fishes including the fingerlings and the female ones carrying eggs so that they can be trapped and harvested by the fishermen. A participant noted that:

As the trees around the river are depleted by this method of fishing, all kinds of fish, including the fingerlings and female ones carrying eggs are also trapped and harvested by fishermen. Moreover, these trees dumped into the river cause sedimentation, siltation and evaporation, resulting into low level of the river. We traditional leaders believe that dropping such things into the river pollutes the river because it adds dirt into the river which we consider it as a forbidden act. In fact, most of the trees that were planted by VRA have been destroyed by these fishermen because of this bad method of fishing. We only need the District Assembly's support to deal with these fishermen, but they refuse, and according to them, they don't have funds to recruit task force to patrol on the river.³⁶⁹

In a related development, the discussants indicated that the fishermen have resorted to the use of chemicals such as Dichlorodiphenyltrichloroethane (DDT) and carbide for their fishing activities. According to the discussants, these chemicals are used to harvest more fishes by applying them into the river. Apart from poisoning the fishes by using these chemicals, the participants indicated that when these chemicals are used, they indiscriminately kill large number of fishes in the river, and apart from that the poisonous gases from these chemicals are emitted into the water body, making the water unwholesome for human consumption. One of the discussants noted that:

Some years back, we used to have bumper harvest for fishes because the approved method prescribed by traditional leaders were adhered to, but today that is not the case which has been a big worry to us. When fishermen are caught and brought to us here in the palace for flouting the law, they say, that is the order of the day, because if you don't do that you will go hungry because there is not much left in the river.³⁷⁰

Another discussant also said that:

These fishermen go out on the river in the night and disturb the river gods. They apply the carbide to bubble the water so that fishes become very weak for catching. The continuous

³⁶⁹ Ahenemmahene, *interview*, 11th December, 2022.

³⁷⁰ Nana Samanhyia, *interview*, 1st November, 2022.

use of these chemicals has caused the fish level in the river to reduce drastically. They kill the big, small and the single fishes. The disturbing aspect is that when the fishes are caught, the little ones are thrown away. 'It is unfortunate that all the powers of we the chiefs have been taken away from us because of democracy. In the olden days, these fishermen would have been killed by executioners.'³⁷¹

Another method which is being used by fishermen for fishing according to the informants is bamboo fishing. In this method, the fishermen fix bamboo sticks which have holes in them to an enclosed area in the Volta River to enable them to catch more fishes. When the fishes enter into the holes, they are unable to swim out from the hole so they get stuck to be caught by the fishermen. In this case, both small and bigger fishes are trapped by the fishermen. According to the informants, all the fingerlings which are believed to be the children of the river gods are destroyed. Besides that, the river gets dried up, because all the bamboo tress planted along the river have been felled by the fishermen, exposing the river to a severe sunshine. In a focus group discussion with some fishermen to ascertain their reasons for not complying with the traditional laws forbidding them to use illegal methods of fishing, various responses were gathered. A fisherman stated as follows:

We have wives and children to cater for in so many ways. We have to pay school fees and hospital bills because the National Health Insurance (NHIS) does not cover all sicknesses. For us, fishing is our main source of income, therefore using these illegal methods is the only means to catch more fishes to cater for the family.'³⁷²

The other traditional custom which is not being obeyed by the fishing communities along the Volta River is the taboo days. In Akwamu traditional society, the sacred day for river Volta is Sunday which is Akwasidae wherein no fishing activity is carried out on the river. However, in the case of cage farmers, because they are supposed to feed the fingerlings on daily basis, they are exempted, but in this case, libation is poured to seek permission from the river god called *mfodwo* before they can work on the river. The traditional leaders reported that this

³⁷¹ Nana Samanhyia, interview, 1st November, 2022.

³⁷² Samuel Golagbanu, interview, 12th October, 2022.

sacred day is set aside for the river god to rest, hence *Akwasidae*. According to the traditional leaders, these sacred days are guiding principles of moral conduct towards the exploitation of the Volta River. The chiefs interviewed noted that, the taboo day is set aside because it is believed that the river god used that day to rest and meet her children which are the fishes. According to the chiefs, the essence of this taboo day is meant to leave the river to rejuvenate after being used by the community members for a period of time. Apart from that these taboo days are meant to make members of the community to have a day rest to prepare for the days ahead. This shows that taboos days are meant to protect the Volta River and also to preserve the wellbeing and health of Akwamu people. It is against this background that perpetrators who violate these sacred days face various punishments such as low catch, get drown in the river or being made to pay specified fine, drinks and sheep to offer sacrifice to the river gods. One of the interviewees said that if someone fishes from the river and is not caught by the traditional authorities, it is believed that curse will befall the person and their entire households.

In a focus group discussion among traditional leaders to seek their views on how fishermen comply with of taboo days associated with the Volta River. The traditional leaders were emphatic that the sacred days are being violated by the fishermen every now and then. They emphasise that some fishermen flout the taboo day, perceiving this taboo day as irrelevant because they deprive them of fishing at certain periods, hence affecting their fishing stock. One of the participants said that:

One day when a fisherman was warned fishing on a sacred day, he told me that the Volta River was created by God for human beings, therefore anyone could use it without any restriction. In fact, many of the fishermen here often participate in illegal fishing activities, even though it is against the rules. We have dealt with this matter many times, but it is the

same. The rules and penalties do not always work as we expect. People are caught and left free.³⁷³

The above extract supports Williams' assertion that in the name of stewardship, humans have the ability and the right to control God's creations, leading to the exploitation of natural resources.³⁷⁴ The respondents reported that nowadays, the fishermen are prepared to face the required sanctions if they are caught fishing on sacred days. They attributed the behaviour of the fishing communities to the failure of the District Assembly to support them to enforce the traditional laws to regulate the activities of the fishermen and as a result, it is very difficult to punish culprits who flout the rules as compared to the olden days when they had overriding powers over the Volta River.

4.6 Introduction of Christianity in Akwamu Society

Among the indigenous people of Akwamu traditional area, they view the Volta River as a gift from God. As a result, they hold the river in deep reverence which is demonstrated through their beliefs and practices to ensure the river's conservation and responsible management for the well-being of Akwamu people. It is from this background that strict norms are put in place for its sustenance. These traditional practices have existed for a very long time and have helped the indigenous Akwamu people to live harmoniously with the Volta River throughout history. However, it is important to acknowledge that the introduction of Christianity into Akwamu society has brought about changes in the traditional beliefs and practices associated with the conservation of the river, which have subsequently contributed to a gradual erosion of the customary methods that are employed to manage and protect the Volta River.

³⁷³ Nana Otuaben, *interview*, 12th October, 2022.

³⁷⁴ Williams, *the Medieval World. Deforesting the Earth*, 102-142.

The 2010 population and housing census conducted in Asuogyaman District where Akwamu traditional area is situated indicated that the dominant religion in the area is Christianity followed by Islamic and Traditional religions making up 89 per cent, 6 per cent and 5 per cent respectively.³⁷⁵ The statistics clearly shows that majority are Christians with a relatively small proportion still professing the traditional religion.

During a focus group discussion involving traditional leaders, it came to light that there exist three distinct categories of Christians within Akwamu traditional area. These comprise the indigenous Akwamu people who have converted to Christianity, and still maintain a deep connection to their traditional beliefs and practices associated with the Volta River. According to the participants, the indigenous Christians are tolerant of the traditional beliefs and practices which are associated with the Volta River. They contend that the indigenous Christians hold the belief that their Christian principles guide them to obey the traditional authorities, because these authorities are ordained by God, and rebelling against them would equate to rebelling against what God has ordained. As a result of this belief, the indigenous Christians adhere to all regulations set forth by the traditional authorities, especially those aimed at protecting the Volta River. One respondent orated:

I am a Christian and at the same time, I obey the traditional laws which are put in place to protect the Volta River. I recognize that the Volta River is a gift from God and just as I go to church to worship God, I also believe that I have a duty to take care of the river which was created by God by adhering to the traditional laws that protect it.³⁷⁶

The second category of Christians which the focus group discussion revealed are indigenous Akwamu individuals who have converted to Christianity, but they distance themselves from the traditional beliefs and practices associated with the Volta River. For these

³⁷⁵ Ghana Statistical Service, Asuogyaman District Population and Housing Census, 2010.

³⁷⁶ Agyawua, interview, 21st November, 2022

individuals, the values and teachings of Christianity have taken precedence over the religious cultural practices which are related to the river. According to the discussants, these Christians view the traditional beliefs and practices that govern the Volta River as primitive, fetish and superstitious and as such, they do not feel obligated to adhere to the traditional norms governing the Volta River. As noted by a respondent, a Christian even said:

To observe certain days as taboos associated with the Volta River will amount to bowing to other gods which is in conflict with our Christian teachings in Exodus 20:3, which admonish us not to worship any other god apart from Almighty God.³⁷⁷

According to the discussants, Christian teachings, combined with Western education have led the indigenous Christians in Akwamu to believe that there is no scientific evidence to support the existence of lesser gods in the Volta River. As a result of that, these Christians tend to downplay the significance of the powers attributed to these lesser gods, resulting in lack of respect and seriousness towards the gods. The discussants' views seem to suggest that the impact of traditional beliefs and practices on the Volta River have eroded due to the influence of Christianity and Western education. This finding confirms Agbanu's assertion that the introduction of Western education and Christian religious orientation have greatly alienated beneficiaries from their cultural heritage.³⁷⁸

The third category of Christians according to the participants are the non-indigenous Christians who have migrated to Akwamu traditional area with their primary focus on engaging in economic activities which take precedence over traditional practices related to the Volta River. Concerning, the non-indigenous Christians' relationship with the norms governing the Volta River, the discussants noted that these Christians have been violating the taboos associated with the river which forbid people from fishing on Sunday which is a sacred

³⁷⁷ Nana Mamfe Otuaben III interview, 1st November, 2022.

³⁷⁸ Agbanu, 'Environmental Ethics in Mafi-Eve indigenous culture', 176.

day for the river. According to the respondents, one would have expected that because Sunday is worship day for Christians, they will not go for fishing, but the situation is different among the non-indigenous Christians. One of the respondents said:

The last time perpetrators were summoned to the palace for fishing on a sacred Sunday, majority of them were non-indigenous Christians of Akwamu. When they were asked why they went for fishing on Sunday, they unanimously said that throughout the week, they were unable to catch enough fishes which they needed to feed their family, and also, their inability to adhere to the traditional laws governing the river is as a result of economic hardship.³⁷⁹

The discussants further noted that all the taboos that forbid people from building houses close to the Volta River, farming at the upstream of the river, as well as washing clothes and cooking utensils in the river are being violated by most Christians. One of the respondents noted:

I am aware that day in and out, farming activities are going on at the upstream of the river. I have been seeing with my naked eyes that people wash their clothes and cooking utensils and throw the dirty water into the river. I am sure that this unacceptable behaviour is coming from our non-indigenous Christian brothers and sisters who live along the river, because for the indigenous Christians, they believe that if they offend the river gods, they will be punished.³⁸⁰

The foregoing narratives show that Christians within Akwamu traditional area hold a range of perspectives when it comes to religious beliefs and practices associated with the Volta River. These diverse viewpoints are influenced by various factors such as cultural background, religious influence and economic opportunities. For instance, while a section of the Christians desires to preserve their cultural heritage, others prioritize Christianity over traditional practices as a result of their belief in the exclusivity of their Christian faith. Yet, others, as a result of economic motivation view the Volta River in a more utilitarian way, focus on its practical benefits rather than its religious significance.

³⁷⁹ Agyawua, interview, 21st November, 2022

³⁸⁰ Nana Otuaben, interview, 21st November, 2022

Another area where Christianity has contributed to erosion of indigenous conservation of the Volta River in Akwamu traditional area is abandoning of ritual performance by Christian chiefs who perform rituals to appease the river god when one violates the traditional norms that govern the Volta River. According to the participants, traditionally, when one is caught for offending the river's god of the Volta River called *mfodwo*, a chief or an elder is expected to perform a ritual to offer sacrifice to appease the river god to prevent calamity upon the individual and the entire Akwamu society. The participants indicated that in recent times, most of the elders and chiefs who are in charge of the rituals have converted to Christianity, claiming that it is against their Christian beliefs and practices to take part in ritual performance. For this reason, they delegate their powers to other sub-chiefs to perform their religious duties on their behalf. This according to the participants has resulted in several adversities among the people in Akwamu traditional society, because the elders and the chiefs who are supposed to perform rituals to avert any calamity from the river god when an offence is committed have been converted to Christianity. According to the participants, the Christian chiefs are of the view that rituals involving Christian chiefs are unchristian because it amounts to serving two masters. To these Christian chiefs, it is no longer useful to perform any ritual to appease the gods when taboo is violated because according to the Bible in Hebrew 7:27, man has been once and for all reconciled to God by the death of Christ. An opinion leader who was worried about the devastating state of Akwamu tradition lamented:

The enforcement of traditional laws in our community these days has deteriorated significantly because our elders and chiefs who are supposed to enforce the laws have converted to Christianity, therefore when people break the laws, we don't get people to sit on the matter to give appropriate punishment as used to be in the past.³⁸¹

³⁸¹ Abusuapanyin Awuah, interview, 16th October, 2022.

Due to the high awareness of the need to engage in water preservation for the future generation, the participants explained that Akwamu people are meticulous about the relevance of the sacred grove situated at Akwamufie as one of the main sources for the conservation of the Volta River. The participants noted that because the sacred grove is close to the Volta River, the trees in the grove are meant to protect the river from drying. According to the participants, the sacred grove is where the spirits and the powers of Akwamu are believed to live and for that matter, only the paramount chief and the sub-chiefs have the moral and religious rights to enter the grove for ritual performance during *Akwasidae* festivals to the gods for supplication. The respondents explained that in the past, non-royal members who entered the sacred grove would get missing for three days walking in the grove until they were caught and killed by the executioners for sacrifice or faced serious punishment such as offering seven sheep, seven bottles of schnapps and “a fine”. These modalities put in place by the traditional authorities were strictly observed to by non-royal members in the community. The respondents were emphatic that as a result of civilisation, the human sacrifice and the huge “fine” attached to those who violate the sacred grove have been modified. One of the respondents remarked that:

In the olden days, the non-royal members who would violate the rules governing the sacred grove were killed by executioners or were fined with huge sum of money together with seven sheep and seven foreign schnapps, but today, we have abolished the human sacrifice and have also reduced the items to one sheep and two schnapps with no money attached to it. We have modified some of our customs, because Akwamu is a civilized society and we have to do things right.³⁸²

It is important to note that in recent times, the Akwamu sacred grove has significantly reduced in size due to indiscriminate felling of trees and also due to houses built close to the grove. According to the respondents, the non-royals and Christians in Akwamu traditional

³⁸² Nana Samanhyia, interview, 30th November, 2022.

area have taken advantage as a result of the modification of the punishments that are meted out to those who violate the laws governing the sacred grove. The respondents recalled that in recent times, all perpetrators caught for violating the laws governing the sacred grove are mostly Christians who go in for firewood. Fishermen Christians in particular fell the trees in the grove and dump them into the river to trap more fishes. In this case, not only does this bad method expose the river to dry weather, but also, the method adopted by these fishermen affects the fingerlings which are pre-maturely trapped. It is important to note that nowadays, some church leaders in Akwamu area have resorted to harvesting herbs from the grove without permission from traditional leaders. According to a participant, a Christian leader who was caught harvesting herbs from the sacred grove remarked that:

I am aware about the norms that govern this sacred grove, but I cannot leave people to die than to harvest herbs in the grove to cure God's people. I think that human's life is more important than tradition. Besides, the law was made for man and not man for the law and I am prepared to pay the fine for violating the norms so that I can save the lives of my congregation.³⁸³

Another observation made by the respondents is that the Christian youths who are jobless have resorted hunting animals in the grove to sell in order to raise money for the church and other activities. As a result of this, they end up causing bushfire which has destroyed a large portion of the grove and has further endangered the sustenance of the Volta River. According to the participants, perpetrators who are caught chasing animal in the grove claim that they do the hunting to raise money for fund raising in their church. The statements made by the respondents clearly show that the reverential treatment which used to be given to the gods in the sacred grove has reduced as a result of Christianity whose followers recognise only God as a Being worthy of worship.

³⁸³ Senyo Governor, interview, October 19, 2022.

Another point worth exploring is the respondents' perception of Christians' attitudes towards the sacred nature of the Volta River. According to the respondents, there were divided opinions among Christian followers in Akwamu traditional area. These include the indigenous Christians who are royals of Akwamu society and non-indigenous Christians who have come to settle on Akwamu land for economic activities. According to the respondents, the indigenous Christians believe that the Volta River is a god which provides them with fish seasonally to ensure their well-being. They also admit the sacred nature of the river, because of its spirituality. From the indigenous Christian perspective, the Volta River was created by God to provide spiritual needs for people. According to the indigenous Christians as reported by the respondents, when their members are being baptised, they are being taken to the shore of the Volta River for the ritual to be performed. Again, the indigenous Christians who are Roman Catholics maintain that water from the Volta is ritually blessed by their priests as a spiritual symbol of God's protection against all evils. They reiterate that as Micah 7:19 indicates, 'And You will hurl all our sins into the depths of the sea', it is understood that water is an important tool for maintaining a good relationship with God through covenants, purification practices, and self-purification in a physical and moral sense, therefore water is both a gift from God and a medium through which one can connect with Him. From the foregoing, it is understood that, the bond between the indigenous Christians in Akwamu society and the river Volta is a spiritual one, and this has resulted them to obey the spiritual forces that are associated with the river with respect. According to the interviewees, the indigenous Christians maintain that they are ever ready to subscribe to traditional laws governing the Volta River, except those inimical to their wellbeing. It can be concluded here that, in spite of Christianity that has gained access to Akwamu traditional society, the

indigenous people who have converted to Christianity still subscribe to the conservation practices of the Volta River which are greatly influenced by traditional beliefs and practices.

With respect to the non-indigenous Christians, the respondents reported that these days, most of the non-indigenous Christian fishermen do not regard the Volta River as sacred or holy, therefore all the reverential treatments expected to be given to the Volta River are being violated. First of all, the non-indigenous Christians have replaced the traditional libation which was poured to the river god for bumper harvest before one would go to the river for fishing by Christian prayers. Again, the non-indigenous Christians do go for fishing on Sunday, which is a sacred day for the river. Aside from that, the law that forbids the fishermen to use unapproved nets to catch fishes is disregarded by the non-indigenous Christian fishermen, and the idea that the fingerlings in the river are the children of the river god is considered superstitious.

In an interview to express his views on why the non-indigenous Christians of Akwamu disregard the sacredness of the Volta River and frown upon the cultural beliefs and practices for its conservation, Nana Budu Akomea V of Atimpoku and the chairman of the chieftaincy ministry of the Church of Pentecost in Agomanya noted that lack of education on the relevance of Akwamu tradition on the environment has been the basis for non-indigenous Christians of Akwamu violating the environmental taboos of the Volta River. Elucidating on lack of education on the relevance of Akwamu tradition, the chief noted that as Christians, they think that nothing will happen to them if they violate the traditional laws that govern the Volta River in Akwamu society. He recalled that before he became chief, he was one of the Christians who described the traditional laws of Akwamu, particularly those for the conservation of the Volta River as primitive because of his Christian background. He noted that during the

confinement period of his enstoolment, he was educated on traditional beliefs and practices on the conservation of the Volta River. The chief remarked that:

Due to lack of education on the traditional laws governing the Volta River, these non-indigenous Christians disregard taboos that govern it in order to prove their so-called authority invested in them by God against anything cultural. I don't blame these Christians because they don't attend Akwasidae festivals and other traditional events to understand the religious and social implications of Akwamu tradition.³⁸⁴

The chief also noted that, apart from lack of education on the relevance of the traditional laws, the disrespect for indigenous beliefs and practices for the conservation of the Volta River among Christians in general and the non-indigenous Christians in particular in Akwamu traditional society is lack of biblical knowledge which expresses environmental taboos. He stated that the Bible contains taboos from God that are to be observed by his people to save their lives and their environment. In Exodus 23:10, it commands that 'For six years you shall sow your land and gather in its yields; but the seventh year you shall let it rest and lie fallow'. Deuteronomy 5:14 also says that 'but the seventh day is a Sabbath to the Lord your God. On it, you shall not do any work, neither you, nor your son or daughter, nor your male or female servant, nor your ox, your donkey or any of your animals, nor any foreigner residing in your towns, so that your male and female servants may rest, as you do. What can be deduced from the biblical texts above is that the Sabbath gives cultivated fields a chance to rest and return vital nutrients to the soil to enhance quality produce which leads to healthier people and livestock. This assertion corroborates the philosophical underpinning the beliefs and practices among indigenous people of Akwamu traditional society in the management of the Volta River.

³⁸⁴ Nana Budu Akomea V, interview, 15 November, 2022.

It can be concluded from the foregoing analysis that, as a result of too much literal meaning put on traditional values by non-indigenous Christians in Akwamu traditional area, and their refusal to learn about the indigenous beliefs and practices to find out the wisdom behind them, they have ignorantly described Akwamu traditional beliefs and practices as archaic and devilish. It can therefore be argued that, if the significance of the conservation of the traditional beliefs and practices governing the Volta River is well explained to the Christians who judge these traditions as outmoded and fetish practices, it will go a long way to save the river from further infringement and harmful exploitation.

4.7 Over-Population and Akwamu Tradition

This section explores participants' views on the impact of over-population or population growth on the enforcement of traditional laws in the management of the Volta River in Akwamu traditional area. During an interview and focus group discussion with opinion leaders such as chiefs and elders, it was revealed that, over-population is one of the militating factors affecting the implementation of the traditional laws in the management of the Volta river, and this has been a major concern to Akwamu people.

Data gathered from the participants indicated that as a result of over-population in Akwamu traditional area, due to the arrival of non-indigenous groups to explore economic and social opportunities provided by the Volta river has resulted to an intensification of agricultural and other social activities in the river's basin to provide income for people, and this has led to a rapid rise of hotels, tourism, fishing and other agricultural activities in the area. According to the respondents, this population increase has made it difficult to enforce the traditional laws and taboos associated with the conservation of the Volta River in Akwamu communities. One of the respondents said:

As a result of this population increase in our communities here, people have hotels and farming close to the river without following the 100 metres rules that have been stated by the traditional authorities to obey. ‘Look at how the river is full of liquid and solid wastes from the hotels and farms close to the river causing cholera and typhoid to our people’.³⁸⁵

During the focus group discussion, the participants disclosed that due to the population growth, demand for fish in Akwamu traditional area has increased exceedingly. This has attracted many fishermen from many towns to the area for fishing activities in order to make money. The demand for fish has resulted in the use of unauthorised methods of fishing by the fishermen in order to harvest more fish to close the demand gap. This bad methods of fishing according to the participants contradict the best practice of fishing methods in Akwamu traditional area which only allow approved fishing nets to be used to catch fishes so that the fingerlings and the pregnant fishes which are believed to be the children of the river gods would not be destroyed. The participants noted that in order to increase demand for fishes for more profit to be made by fishermen, they fish throughout the week without obeying the taboo that forbids fishing on the Sunday which is reserved for the river god to rest.

With regard to how the impact of over-population has affected the sanctity of the Volta river, the participants noted that as a result of social and economic activities along the Volta river, it has been bedevilled by increased pollution which has desacralised the sanctity of the god of the river. According to Akwamu tradition, the Volta River is believed to be the dwelling place of the river god called *mfodwo*. In order to protect the sanctity of the river, users are not supposed to build or farm close to the river. All these measures were put in place to protect the river from water borne diseases. The participants noted that, population growth with high demand for goods and services in the Akwamu area has led to an influx of hotels and

³⁸⁵ Nana Budu Akomea V, interview, 15 November, 2022.

commercial farms located close to the river, which has exposed the river to severe pollution as a result of waste materials that find their way into it.

Another area where over-population has negatively affected the traditional management of the Volta River according to the informants is indiscriminate felling of trees along the Volta River which is forbidden because of their religious significance. Among the indigenous people of Akwamu traditional area, they believe that some plants and trees such as mahogany, baobab and *onyina* are conserved through taboos and beliefs due to their conservation value to the Volta River. They contend that as a result of the high population growth, people have resorted felling the trees along the river for their livelihood which in effect has led to deforestation, bush fires, poor sanitary conditions and above all a serious threat to Volta River. One respondent had this to say:

The current high population in Akwamu land here is a serious problem to us. All the trees we intentionally planted along the river have been felled to make charcoal, all the land close to the river have been encroached by people for farming. Now, the river is drying. In fact, when the population of our people was less than we have today, there was no pressure on the river, and, so we could manage it well, but today, because of over-population, it has become much difficult for us to manage it.³⁸⁶

During an interview with one of the sub-chiefs, he noted that one of the effects of over-population on the indigenous system for the management of the Volta River is that most of the youths have moved to the cities for employment and better social amenities. In the cities, the informant noted that, due to cultural pluralism, particularly Christianity and Western education, which the youth come in contact with, they are influenced not to take their tradition seriously and are not prepared to listen to the elders in the community, because they consider those traditions primitive, old-fashioned, and ungodly. To justify the above claim espoused by the chief, he remarked that:

³⁸⁶ Nana Afum Aboagye, interview, 20th November, 2022.

During Akwasidae festival, we educate people about the need to conserve the environment, especially our water bodies. It is during this period that we get all those who have travelled to the cities to come home, and we get the opportunity to educate them about the beliefs and practices governing the Volta river, including the various taboos that are associated with it. But nowadays, during Akwasidae festivals, only few people come and when they come too, you only see them in the pubs enjoying themselves. They are only interested in the entertainment aspect of the festival and not the religio-cultural aspect.³⁸⁷

It suffices to say from the foregoing that, profit driven motive by fisher folks, farming and other socio-economic activities in Akwamu traditional area as a result of population explosion has resulted in the violation of the traditional laws that exist to protect the Volta River. The finding from the foregoing is in line with an assertion raised by Barlow and Clarke that with this capitalist ideology, which is driven by profit motive has caused individuals to exploit our natural resources such as water bodies for their selfish gains.³⁸⁸ The finding further corroborates Agbanu's assertion that Western education with technological awareness and capitalism have resulted in the weakening and destruction of traditional knowledge and values.³⁸⁹

4.8 Conclusion

This chapter has discussed the militating factors working against the enforcement of religio-cultural beliefs and practices in the management of the Volta River in Akwamu traditional area. These include migration and resettlement of non-ethnic group as a result of the construction of the Akosombo Dam, non-collaboration between state's institutions and traditional authorities and the attitudes of traditional authorities. Other key factors identified were non-compliance with traditional customs by fishing communities, introduction of Christianity and over-population.

³⁸⁷ Nana Amfo, interview, 28th October, 2022

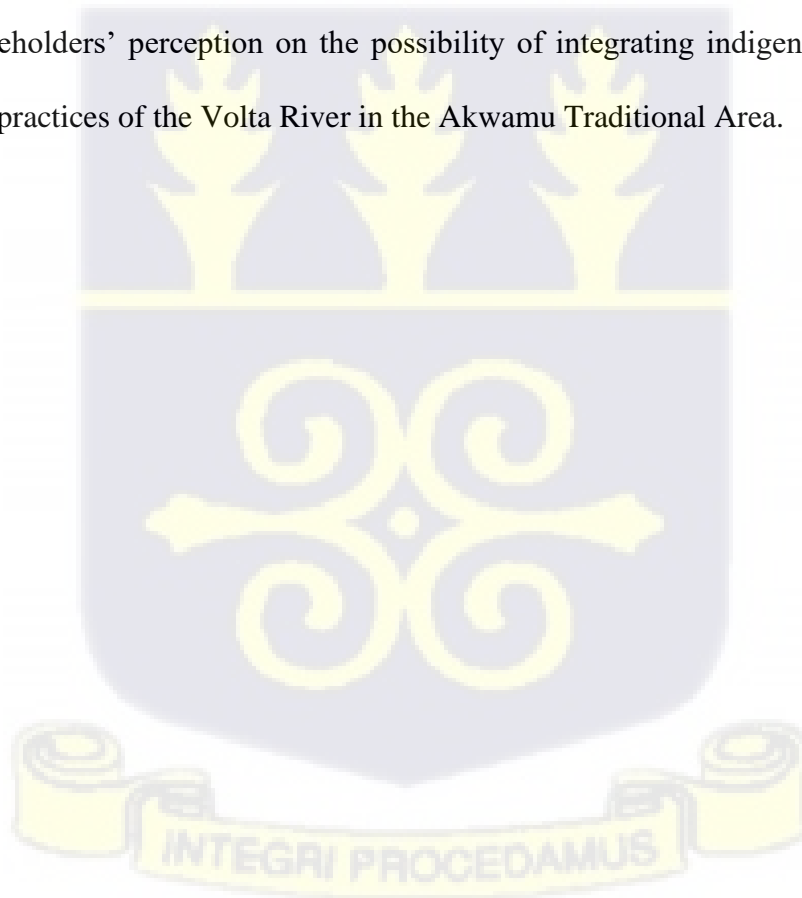
³⁸⁸ Barlow & Clarke, 'Blue Gold: the fight to stop the corporate theft of the world's water', 67-71.

³⁸⁹ Agbanu, 'Environmental ethics in Mafi-Eve indigenous culture', 91.

With regard to migration and resettlement of non-ethnic group as a result of the Akosombo Dam, the study revealed that the construction of the dam has been a major source of livelihood for the Ghanaian economy in general and Akwamu community in particular for various socio-economic benefits. However, the presence of non-ethnic groups in the area with diverse cultural and economic motivations has led to erosion of the traditional laws that seek to protect the Volta River. On the issue of non-collaboration between state's institutions and traditional authorities, the discussion disclosed that the state's institutions do not collaborate with the traditional authorities to effectively enforce the traditional laws to protect the Volta River, and this has weakened the powers of the traditional authorities to enforce the traditional laws. In relation to the attitudes of traditional authorities and their contribution to the erosion of the traditional laws in the preservation of the Volta River, the study found that some of the chiefs sell their lands close to the river to foreigners for economic activities, therefore they end up exposing the river to severe pollution which is deleterious to the gods of the river. In the case of Christianity and its contribution to the erosion of the traditional laws that protect the Volta River in Akwamu traditional area, three issues were raised. The first issue is that, there are a section of indigenous Christians of Akwamu society who are receptive to the traditional laws that govern the Volta River due to their deep connection to the traditional laws that govern the river. With the second issue, there are other sections of indigenous Christians of Akwamu society who are disobedient to the traditional laws, due to their Christian principles that take precedence over the traditional laws that govern the river. Moreover, the third issue concerns non-indigenous Christians in Akwamu society who prioritise economic gains over local customs related to the Volta River as they seek profit and livelihoods.

Finally, the study revealed that over-population has led to water quality deterioration of the Volta River because of intensification of economic activities along the river by immigrants with varied cultural and economic motivations, and more importantly, the youth who are not prepared to listen to the elders in the community as a result of influence of Western culture that makes them deviant to Akwamu traditions.

To this end, it is gratifying to note that our effort to ensure the sustainability of the Volta River in Akwamu traditional area as far as indigenous religio-cultural beliefs and practices are concerned will require a multi-faceted approach involving traditional authorities, government institutions and relevant stakeholders. With this context in mind, the next chapter explores stakeholders' perception on the possibility of integrating indigenous and modern conservation practices of the Volta River in the Akwamu Traditional Area.



CHAPTER FIVE

STAKEHOLDERS' PERCEPTION ON THE INTEGRATION OF INDIGENOUS AND MODERN CONSERVATION PRACTICES OF THE VOLTA RIVER IN THE AKWAMU TRADITIONAL AREA

5.1 Introduction

The perception of stakeholders, particularly traditional authorities and state institutions on the integration of indigenous and modern conservation practices of water resources vary due to their respective values and priorities. Traditional authorities place high value on their indigenous knowledge and practices related to the conservation of the natural resources, including rivers. In this regard, they view modern conservation practices as a threat to their traditional ways of conserving river bodies. However, they recognise the need to adapt to work collaboratively with state institutions to develop conservation strategies that incorporate both traditional and modern practices for water conservation. State institutions on the other hand prioritise modern approaches in conservation, which do not align with the traditional knowledge and practices. They view traditional knowledge and practices as outdated or insufficient to address modern environmental challenges, and therefore inclined to rely on modern approaches to conservation.

Moreover, in recent times, there has been a growing recognition of integrating indigenous knowledge and modern management approaches that recognise national policies, laws and regulations in managing water resources. In 1992, the United Nations' Conference on Environment and Development (UNCED) recognised the contribution of indigenous knowledge to a sustainable management of the environment. In that regard, it advocated for an urgent need for developing mechanisms to protect the earth's biological diversity through

local knowledge systems.³⁹⁰ Similarly, in 1999, the World's Conference on Science made a declaration that scientific and traditional knowledge be integrated in interdisciplinary projects that deal with links between culture, environment and development in areas such as the conservation of biological diversity, management of natural resources, understanding of natural hazards and mitigation of their impact. The declaration affirmed that though, scientific knowledge has led to a remarkable innovations that have been of great benefit to humankind, it is bedeviled by some challenges. The declaration therefore called for a broader collaboration between science and society in meeting the challenges of the future as far as the conservation of the environment is concerned. In this declaration, it is noted that traditional knowledge systems have made a valuable contribution to science and technology, and that there is a need to preserve, protect, research and promote this cultural heritage and empirical knowledge.³⁹¹

It is therefore important to situate the above discussions in Akwamu context to explore the possibility of integrating indigenous knowledge into modern methods in addressing the ecological challenges which are related to the Volta River. It is against this background that this chapter explores stakeholders' perception on the integration of indigenous and modern conservation practices of the Volta River in the Akwamu traditional Area.

In the preceding chapter, it was found that one of the factors which undermine the effective implementation of indigenous conservation practices of the Volta River in Akwamu traditional area is non-collaboration between the state institutions and the traditional authorities in their efforts to complement each other for the management of the Volta River.

³⁹⁰ United Nations Conference on Environment and Development. *Agenda 21 United Conches* (Switzerland: UNCED Secretariat, 1992).

³⁹¹ Budapest (26 June-1 July 1999). World Conference on Science and Traditional Knowledge. Sustainable Development, <https://council.science/wp-content/uploads/2017/05/Science-traditional-knowledge.pdf> (assessed June 12, 2023).

The findings revealed among other things that failure to incorporate the traditional laws into state water resource management policies has rendered the traditional authority less efficacious in their effort to utilise local conservation practices which are embedded in their culture for the conservation of the Volta River. It is against this background that this chapter seeks to ascertain participants' views on the possibility of integrating the indigenous knowledge system and the modern conservation practices towards a successful management of the Volta River in Akwamu traditional area.

Specifically, this chapter seeks to find out from the participants, whether indigenous knowledge system should be abolished, maintained or integrated into the modern methods for the management of the Volta River, and to further seek their views on the nature of conservation strategies which should be adopted to facilitate the integration of the two systems. Through focus group discussions and interviews, traditional leaders and officials from the Volta River Authority (VRA), Environmental Protection Agency (EPA), National Disaster Management Organisation (NADMO), and the Environmental Health and Sanitation department of Asuogyaman District Assembly in Akwamu Traditional Area were selected to seek their views on the subject matter. These stakeholders were chosen because they play key roles related to the sustainable management of the Volta River, therefore seeking their views would help the researcher to gather firsthand information and diverse perspectives for the credibility and reliability of the research findings.

5.2 Integration of Indigenous and Modern Conservation Practices of the Volta River

This section which answers research question three seeks to explore stakeholders' perceptions on the possibility of integrating indigenous and modern conservation practices of the Volta River. The rationale is to find out from the participants, whether indigenous

knowledge should be maintained, abolished or integrated into the modern methods in the management of the Volta River. From the discussion, all the participants from the traditional institution from Akwamu traditional area were in agreement that the indigenous knowledge system should not be abolished, but rather, be maintained and incorporated into the modern approaches for the management of the Volta River. They argued that indigenous knowledge systems which are used to protect the Volta River have been developed over generations, which worked well for the sustenance of the river before the modern systems were introduced, therefore it should be incorporated alongside the modern approaches, and when this is done, it will lead to a more holistic and sustainable management of the Volta River, and also respect the cultural heritage of Akwamu people, while benefiting from the modern approaches.

They stated that they were not in agreement with those who think that indigenous knowledge systems should be abolished in favour of the modern approaches to the management of the river, arguing that the indigenous knowledge systems may not be able to solve contemporary water resource management needs, and that modern methods are more effective in water resource management than indigenous knowledge systems. They added that since the people from Akwamu community are the direct beneficiaries of the Volta River, the decision on how to manage it should involve the indigenous communities in decision-making, so that their cultural values would be recognised in order to create a more sustainable approach to manage the river.

They further reiterated that the involvement of traditional authorities in the management of the Volta River alongside the modern method is a good course that needs to be considered from both sides, because the traditional authorities have been able to govern the river for a long period. A traditional leader shared his opinion:

I strongly support the view that our traditional laws should be maintained and integrated into the modern methods for the management of the Volta River, because Akwamu people have a deep relationship with the river which has sustained us all these years for our livelihood. I think that we should build mutual understanding and respect between the state's institutions and we the traditional authorities through effective dialogue to preserve and incorporate this knowledge into modern methods to ensure the well-being of the river and all Akwamu communities.³⁹²

Another traditional leader who is close to Akwamu paramountcy and also a proponent of indigenous knowledge recounted thus:

I totally support the idea of integrating indigenous knowledge system into modern management of the Volta River, so that our voices will be heard and respected equally alongside the modern system of the management of the Volta River. Indeed, our traditional practices, rituals and spiritual beliefs are deeply connected to the river, therefore we need to ensure that it is respected and protected as a sacred entity so that we can work as a team to manage the river.³⁹³

Eliciting their thoughts on whether to abolish, maintain or integrate indigenous knowledge systems into modern methods for the management of the Volta River, officers from the Volta River Authority noted that their position is to advocate for the integration of indigenous knowledge systems into modern methods for the management of the Volta River. According to them, indigenous communities have a deep understanding of the Volta River and its ecosystems which they inherited from their predecessors, therefore, they think that incorporating their knowledge into modern management practices will enhance their understanding about traditional management practices of the river. They indicated that if indigenous knowledge systems are incorporated into modern system, it will create a more inclusive framework for the sustainable management of the Volta River. According to them, integrating indigenous system into modern approach can enhance environmental stewardship by incorporating traditional practices that promote sustainable resource use. Again, integrating indigenous knowledge into the modern system will foster cultural preservation and

³⁹² Nana Samanhyia, interview, 18th November, 2022.

³⁹³ Nana Otuaben, interview, 12th December, 2022.

community empowerment by recognising and respecting the indigenous knowledge held by the local communities of Akwamu, so that it will contribute to an effective decision-making from diverse perspectives towards effective management of the Volta River. One of the officers noted:

If we incorporate indigenous knowledge into modern system of the management of the Volta River, it will help us to build a stronger partnership with the indigenous communities of Akwamu which will enable us to work as a team leading to a more participatory approaches to the management of the Volta River, because we can learn a lot from them and they will also learn a lot from us. As a state institution, we need to engage the local communities, particularly the traditional leaders and learn from their rich experiences, so that we can build upon that for a successful management of the Volta River.³⁹⁴

From the perspective of the National Disaster Management Organisation (NADMO) officer, he noted that integration of religio-cultural practices with the modern statutory laws for sustainable management of the Volta River should be strongly promoted and obeyed, so that it will bring the state institutions and the traditional authorities together. He emphasised that, since traditional authorities hold a special place in their local communities, it is important to combine their knowledge system with the modern practices, so that they can work collaboratively with the disaster management teams to provide training and capacity-building programmes to both traditional authorities and disaster management teams, and this will enhance their understanding of each other's knowledge systems and practices to protect the Volta River from potential hazards and disasters. He noted:

I strongly believe that the state's institutions and the traditional authorities should be brought into the net so that if you offend the laws governing the river, here will hold you and here will hold you. When it happens that way, it will help the traditional rulers as part of the implementers of the law. More so, the law would be effective than having separated traditional laws from the modern laws.³⁹⁵

³⁹⁴ Mr. Bafo, Environmental officer, VRA, interview, 18th October, 2022.

³⁹⁵ Mr. Saviour Woanya, Deputy Chief Disaster Officer, NADMO, Interview, 31st July, 2023

The Environmental Protection Agency(EPA) is the leading public body for protecting and improving the environment in Ghana. They liaise with government agencies such as the District Assemblies to protect the environment including air, water, land and other forms of environmental pollution like discharge of wastes and the control of toxic substances.³⁹⁶ In an interview with an officer from EPA in the Asuogyaman District Assembly, to elicit her perspective on the possibility of integrating the indigenous and modern conservation practices of the Volta River, she noted that the need for state institutions to collaborate with the traditional authorities to protect the Volta River. She said that the chiefs live with the local people therefore enforcing the traditional laws can help to raise awareness about the need to safeguard the Volta River. She contended that in formal times, the traditional authorities protected the environment through spiritual means and these laws worked very well, because the traditional authorities had full control over their people, but today because of the local government concept, the district assembly has come out with by-laws to protect the environment, while traditional authorities have been put aside. In her opinion:

The reason why people have lost faith in the traditional laws in recent times is because the traditional authorities have failed to explain the rationale behind the traditional laws that protect the river to the local people, so because of civilization, education and Christianity, the people think that nothing will happen to them if they violate the traditional laws. I think that when the traditional authorities are empowered through legal backing and are brought on board with the state's institutions, they can collaborate for ensuring the sustainable management of the Volta River to both Akwamu community and the Ghanaian population.³⁹⁷

On his views about the integration of traditional laws and the modern statutory laws for a sustainable management of the Volta River, the environmental health and sanitation officer of Asuogyaman District Assembly fully supported the idea that the traditional laws

³⁹⁶ EPA, 'History of EPA', <https://epaoilandgas.org/history%20of%20EPA/index.html> (accessed July 2, 2023).

³⁹⁷ Mrs. Sedem Gidiglo, EPA Officer, interview, 2nd August, 2023.

and the modern statutory laws should be brought together to create a unified legal framework for the sustainable management of the Volta River. He was of the view that combining these two sources of law can enhance the river's protection and management. He pointed out that just as the traditional authorities have traditional laws to protect the Volta River, the environmental health and sanitation department of the District Assembly also has by-laws that protect the river. These include dumping of refuse in the river basin, open defaecation, washing clothes and farming close to the river, and cutting trees around the river. He mentioned for instance that the by-law related to dumping of refuse on the river basin prohibits individuals from disposing of waste materials in or around the Volta River basin, because, dumping waste into the river or its immediate surroundings can pollute the water, harm aquatic life, and negatively impact the river's ecosystem.

According to the sanitation officer, for fear of social repercussions, such as being ostracised by the community makes people adhere to the traditional laws as compared to the state's laws, because if people violate the state laws and are processed to court, the perpetrators are able to escape sanctions because they can hire the services of a lawyer. The environmental and the sanitation officer noted:

In those days, the traditional laws governing the Volta River were very effective because of the fear that one would be punished by the gods if he or she violates the traditional laws, but today because of Acts of parliament, 'the police will leave me or the judge will free me' has weakened the enforcement of the traditional laws. I think that when the district assembly gets close to the traditional authorities to express their views regarding their by-laws, while the traditional authorities also express their views regarding how they enforce the traditional laws to protect the Volta River, it will lead to a sustainable management of the river.³⁹⁸

It suffices to state from the foregoing discussions among the traditional authorities and officers from the state's institutions that, the contribution of indigenous knowledge to the

³⁹⁸ Mr. Gordon Amevor, Environmental and sanitation officer, interview, 2nd August, 2023.

sustainable management of the Volta River in Akwamu traditional area is remarkable and as a result, they proclaim their full support for the integration of indigenous knowledge into the modern conservation practices of the river. The findings from the above discussions therefore debunk the views of some researchers who claim that indigenous knowledge system has outlived its usefulness in this contemporary societies due to the introduction of scientific methods. For instance, Wilder et al have argued that, because most of the indigenous knowledge systems in Africa dwell on spiritual variables, they are satanic, primitive, uncivilised and even inferior when compared with the Western or academic science.³⁹⁹ Similarly, Golo and Yaro contend that indigenous knowledge in several contemporary developmental projects around the world has been sidelined, because biodiversity conservation strategies tilt towards the Western scientific knowledge than indigenous knowledge.⁴⁰⁰

The findings from the above discussions also show that, neither indigenous knowledge nor modern method alone is enough to address the current challenges of the Volta River, rather, blending the two systems is a step in the right direction to deal with the contemporary challenges facing the river. The views expressed by the participants seem to have been supported by an assertion raised by Sosthenes and Zuena in their research conducted around Ankassa, Bia and Kakum forest conservation areas, which revealed that neither the modern knowledge system nor indigenous knowledge system alone conserved biodiversity, but rather their combination achieved what neither could alone.⁴⁰¹ Similarly, the participants' views are

³⁹⁹ Wilder, 'The Importance of Indigenous Knowledge in Curbing the Loss of Language and Biodiversity', 449-509.

⁴⁰⁰ Golo, 'Religion and climate change in Ghana', 282-300.

⁴⁰¹ Sosthenes and Zuena, "integration of the indigenous and the scientific knowledge systems for conservation of biodiversity", 164.

in line with Awuah Nyamekye's observation that neither modern nor traditional modes of addressing current ecological problems are individually adequate, and therefore a synergy of the two modes is necessary for such problems to be tackled fully.⁴⁰²

From the foregoing, it can be concluded that the claim that indigenous knowledge is irrelevant for biodiversity conservation due to the introduction of scientific methods is highly contested and misleading, because partnership between indigenous knowledge and scientific methods has shown promising results in achieving effective management of water resources. It is against this background that the management and protection of our water bodies including the Volta River should cover elements that recognise a blend of traditional and modern knowledge systems in achieving a long-term sustainability of the Volta River in Akwamu traditional society.

5.3 Strategies to Facilitate Integration of Indigenous Knowledge and Modern Methods in the Management of the Volta River

This section seeks to ascertain participants' views on the strategies to be adopted to facilitate the integration of indigenous knowledge systems and modern methods in the management of the Volta River. Informants from traditional authorities and the state institutions agreed among other things that, community engagement and decision-making, capacity building, public awareness and sensitisation, formation of Volta River management committee, effective communication and network as well as water policy framework are among the utmost conservation strategies that can be explored to facilitate the integration of the indigenous knowledge and modern system in the management of the Volta River. These are discussed in the following sections.

⁴⁰² Awuah-Nyamekye, "Salvaging Nature: The Akan Religio-Cultural Perspective", 272

5.3.1 Community Engagement and Decision-Making

To ascertain how community engagement and decision-making can help to facilitate the integration of indigenous knowledge and modern approaches in the management of the Volta River, both traditional leaders and the officials from the state institutions were engaged through focus group discussions and personal interviews. Seeking the views of traditional leaders, they unanimously admitted that community engagement and decision making for the management of the Volta River is essential, because it will bring to bear the knowledge and experiences of community members, particularly traditional authorities into the management process for a sustainable use of the river. They argued that their traditional beliefs and practices for the management of the Volta river have been relegated to the background following the introduction of formal institutions, therefore there is the need to ensure that the traditional authorities are involved in decision-making processes alongside the experts from the formal institutions. To them, by integrating local knowledge into the modern system, a more inclusive and sustainable approach can be developed to benefit both the community and the state institutions in the management of the Volta River.

In an exclusive interview with the paramount chief of Akwamu traditional area, Nana Kwafo Akoto III, on decision-making as a way of integrating indigenous knowledge system into the modern method in the management of the Volta River, he emphasised that participation in decision-making about the governance of the Volta River between the traditional authorities and any government institution is a step in the right direction. He pointed out that a continuous face-to-face engagement between the traditional authorities and the government institutions will enhance mutual trust among them which will go a long way to protect the river. The chief reiterated that the Volta River is not only a source of livelihood

for Akwamu community, but also a backbone of Ghanaian economy in diverse ways. It is therefore necessary to blend our indigenous water resource management practices which have sustained the people for so many years with the modern approaches that address our present-day challenges such as climate change and pollution. To achieve this, the chief said that there is the need for a dialogue between traditional authorities and the state institutions to exchange knowledge and ideas to achieve a more comprehensive and sustainable approach to protect the Volta River. In his submission, the paramount chief noted that as a result of population increase and urbanisation, the shores of the Volta River are choked with residential facilities such as hotels and recreational facilities which need environmental impact assessments to be conducted by the state institutions to evaluate the potential impacts on the river before a permit is granted to prospective customers to embark on any development. The chief expressed his displeasure with the way the state institutions do not involve the traditional council when permits are granted to prospective customers to build along the river to ensure that they comply with the traditional law that compels them to leave 100 metres of land between the river and any residential facility to protect the river from pollution. Expressing his displeasure, the chief noted:

The state's officials who have been entrusted with powers to conserve the Volta River think that they are so wise than the traditional authorities. They avoid us anything concerning the river, but they have forgotten that they have to come to us for us to teach them the way we protect the river. The Volta River lying there belongs to Akoto, because he knows the customs and traditions that are used to govern it. Why is it that when the river was drying up some time ago, the state consulted the traditional authorities to perform rituals to address the problem? I think that if the state collaborates with us, we can work as a team to protect the river. They should do their part, whiles we also do our part.⁴⁰³

⁴⁰³ Nana Kwafu Akoto, interview, 19th October, 2022

Seeking the views of the environmental officers from Volta River Authority regarding integration of modern and traditional systems of managing the Volta River, they unanimously argued that the traditional system of water management should be incorporated into the modern system because they recognise that indigenous knowledge holds valuable insights into sustainable water practices and that incorporating such knowledge into the modern system will enhance the effectiveness of overall water management strategies as far as the Volta River is concerned. They contended that a collaboration between traditional authorities and the state institutions would allow the indigenous people to use their local knowledge and experiences to protect the river, because the indigenous water management practices are embedded in the cultural practices of the people which are understood by all the people. An environmental officer from VRA noted:

As for me, I come from a traditional home and believe that felling trees along river bodies is an offence against the gods, because the trees have divine protection from the river gods. That is why we have decided to plant trees along the Volta River to be supervised by the traditional authorities so that they can use the traditional laws to protect the river at the local level.⁴⁰⁴

According to the environmental officers from VRA, community engagement and decision-making among the state institutions and the traditional authorities are important because when the voices of traditional leaders are heard and decisions are made collectively between them and the state institutions, it will lead to more effective and sustainable management of the river. The environmental officer from VRA cited a scenario:

I remember that at *Banso*, where I come from, in the olden days, you will see a big forest around the community where nobody can venture into it, because it is strictly protected by taboos. But today, that state's laws have come to take over the traditional laws, so people enter the forest to fell trees and engage religious activities without fear, so today, the forest is destroyed because of disrespect for traditional laws. I therefore support that we integrate the traditional laws into the modern system to put fear into the people to stop destroying the environment.⁴⁰⁵

⁴⁰⁴ Mr. Mualah, Environmental officer, VRA, interview, 18th October, 2022.

⁴⁰⁵ Mr. Bafo, Environmental officer, VRA, interview, 18th October, 2022.

The environmental officers interviewed indicated that, it is unfortunate that there is no by-laws from their outfit to support the use of indigenous knowledge in managing the Volta River, more especially when people flout traditional prohibitions governing the river, but they acknowledge that indigenous knowledge is a vital means through which the Volta river can be managed and protected, because when the traditional authorities are given the needed support, they can help to manage the river and help to close the gap that formal institutions cannot not address. An environmental officer noted:

We recognize the value of indigenous knowledge systems which local communities have developed over the years to manage the Volta River by restricting fishing activities during certain days to allow the fishes to grow. If we therefore engage these traditional authorities and involve them in our day-to day decision-making and give them the legal backing from the district assembly or a legislative instrument from parliament, we can combine our modern methods with the indigenous knowledge systems to develop strategies for a sustainable use of the Volta River.⁴⁰⁶

From the participants' perspectives, it can be deduced that, indigenous knowledge of water resource management is still relevant in contemporary Ghanaian society of which Akwamu society is no exception, despite the inroad of modernity that undermines the cultural identity of the people. It suffices to say that the indigenous people of Akwamu have developed a unique set of cultural values and beliefs associated with the Volta River, therefore community engagement and decision-making processes between the traditional authorities and formal institutions can help to strengthen the relationship between indigenous knowledge and modern approaches in the management of the Volta River.

5.3.2 Capacity Building

⁴⁰⁶ Mr. Bafo, environmental officer, VRA, interview, 18th October, 2022

Apart from community engagement and decision-making which can be used to facilitate integration of indigenous knowledge and modern system in the management of the Volta River as discussed in the preceding section, the key informants from both informal the formal institutions expressed their steadfast support for integrating indigenous knowledge and modern system in protecting the Volta River through capacity building. Specifically, the researcher sought to find out from key informants, how capacity building could help integrate traditional authorities and formal institutions in their efforts to manage and protect the Volta River in Akwamu traditional area. The traditional leaders argued that capacity building programmes such as workshops and training sessions, where both parties can share their knowledge, experiences and views will provide an avenue for traditional authorities and formal institutions to exchange their knowledge. This will promote mutual understanding between them as they appreciate each other's roles in the management of the Volta River. A key informant from Akwamu traditional council remarked:

I believe that when capacity building programmes are organised for both traditional leaders and the state's institutions on modern as well as traditional knowledge systems, they will acquire new knowledge and skills to enable them work together more effectively to incorporate the traditional knowledge systems into the modern systems that are necessary for managing the Volta River.⁴⁰⁷

Buttressing on how capacity building can help to facilitate the integration indigenous knowledge into modern system in the management of the Volta River in Akwamu traditional Area, traditional leaders argued on focus group discussion that the Volta River has been an integral part of their culture as well as their livelihood in their daily lives which they do not compromise. For that reason, they were of the view that by integrating their indigenous knowledge system into the modern system, they will be empowered to actively participate in

⁴⁰⁷ Ahenemmahene, interview, 20th October, 2022.

the management of the Volta River with available skills they have acquired from indigenous and modern approaches in water resource management. They contend that providing training and education can enhance their skills and knowledge to enable them to effectively contribute to decision-making processes with the state institutions. They suggested that community-based training centres should be established to teach individuals about modern methods alongside traditional knowledge of water resource management for them to develop skills in the conservation efforts related to the Volta River. They additionally indicated that workshops and seminars can be organised where traditional leaders with skills in indigenous knowledge are given the opportunity to share their expertise with officials from government institutions and other stakeholders to exchange ideas on the need to incorporate indigenous knowledge into modern conservation practices of the Volta River.

In an interview with one traditional leader on why he thinks capacity building can help integrate indigenous knowledge into modern approaches for protecting the Volta River, he had this to say:

I strongly believe in preserving our indigenous knowledge, while embracing modern approaches in the preservation of the Volta River, and I think that, capacity building is an essential tool that can help us to achieve this goal, because it involves empowering local communities with the resources, skills and knowledge that they need from both formal and informal knowledge systems to enable them to participate in the conservation efforts related to the management of the Volta River.⁴⁰⁸

In an interview with the traditional priest responsible for the Volta River in Akwamu society to seek his view on how capacity building can help integrate indigenous knowledge into modern approaches in the management of the Volta River, he noted that blending traditional knowledge with modern practices should be appreciated because, it will enhance community members' understanding of the environmental and the religious significance of

⁴⁰⁸ Nana Okrukata, interview, 20th November, 2022.

the Volta River. He advocated that community members should be trained on indigenous fishing practices and afforestation simultaneously with modern environmental laws that govern the Volta River, so that they can make informed decisions that will balance indigenous and modern methods of managing the river. He lamented about the spate of indiscipline towards the Volta River because of non-collaboration between the traditional authorities and the state agencies which are managers of the river. He cited an example that many at times, when perpetrators violate taboos governing the river, and are made to face the law, they are acquitted because there is nowhere in the constitution where one cannot go for fishing on Sunday. The priest therefore suggested that, if traditional authorities and the state agencies are trained on the traditional values and the state laws, they will work as a team with mutual understanding, to protect the river.⁴⁰⁹

Regarding the state officials from Volta River Authority, they also stressed that they recognise the importance of integrating traditional laws and customs into modern laws of managing the Volta River, because the traditional laws and practices of the Akwamu society have played a significant role in the preservation and conservation of the river over the years, therefore, it is crucial to incorporate them into modern laws to achieve a holistic approach in the management of the river. One of the officers who was interviewed said:

Capacity building and education play significant roles if we think of integrating traditional and modern approaches in protecting the Volta River. Through capacity building programmes, we can enhance the understanding of traditional leaders, community members, and even our own officers about the significance of traditional laws and their relevance in the management of the Volta River. This collaborative initiatives can help bridge the gap between traditional and modern knowledge systems of managing the river. In fact, the Volta River Authority is committed to collaborating with Akwamu society and other relevant stakeholders to facilitate capacity building programs and

⁴⁰⁹ Nana Tete Amoh, interview, 17th November, 2022.

educational initiatives by combining the strengths of traditional laws with modern approaches to achieve a holistic approach to managing the Volta River.⁴¹⁰

Corroborating the assertion raised by Mr. Bafo about his view on integrating the indigenous knowledge system into the modern system of managing the Volta River, Mr. Mualah, who is also an environmental officer of Volta River Authority stressed:

Through capacity building and education, we can create a shared understanding and mutual respect between traditional and modern laws that govern the Volta River. This is because, if we blend the two systems, it will help us to develop a comprehensive management approaches that will ensure a long-term sustainability of the Volta River, while respecting the cultural heritage of Akwamu society.⁴¹¹

From the foregoing narratives by the participants, we can infer that a harmonious integration of traditional laws into modern laws for managing the Volta River in Akwamu society requires a collaborative effort between formal institutions, traditional authorities, local communities and other stakeholders through capacity building and education programmes that foster mutual understanding between modern and indigenous water resource management systems

5.3.3 Public Awareness and Sensitisation

In an interview with some traditional leaders of Akwamu traditional area to solicit their views on how public awareness and education can contribute to integrating indigenous knowledge with modern methods for managing the Volta River, they claimed that public awareness and education can play a crucial role in educating people on the importance of traditional knowledge and modern methods for managing the Volta River. They were of the view that if people are made aware of the role of indigenous water resource management practices as well as the role of modern method of managing the river through public education,

⁴¹⁰ Mr. Bafo, Environmental officer, VRA, interview, 18th October, 2022.

⁴¹¹ Mr. Mualah, Environmental officer, VRA, interview, 18th October, 2022.

it will promote a collaboration and dialogue between traditional authorities and the agents of modern institutions toward to effective management of the Volta River. A traditional leader submitted:

Through public awareness and educational campaigns, we can educate members in our communities about the importance of our indigenous knowledge and practices. What I want to say is that, if we show our cultural heritage associated with the Volta River through public education and awareness, it will bring satisfaction to our people. Also, through public awareness campaigns, we can understand some of the modern approaches that are used to protect the Volta River, so that we can collaborate with the state's institutions to use our traditional practices with the modern methods to protect the river.⁴¹²

Another informant elaborated:

Through public awareness initiatives, we can document and transmit our knowledge systems which are associated with the management of the Volta River to the riparian communities. In the same way, through community dialogues and workshops, we can engage with experts from the state's institutions to exchange ideas regarding indigenous knowledge and modern methods of managing the Volta River, and through this dialogue, we can share our traditional practices with the public, including officials from state's institutions.⁴¹³

A similar view was expressed by an interviewee who justified that:

I strongly support that we should integrate our indigenous practice systems into the modern approach to protect the Volta River. We should invite environmental officers from the district assembly and Volta River Authority during our Akwasidae festivals to come and talk to the whole community including those who live along the river on the modern system of managing the river. We shall also use the occasion to educate them about our traditional laws that are associated with the river so that we can work as a team to protect the river from pollution.⁴¹⁴

The participants however indicated that even though public awareness and sensitisation is one of the best ways to conserve the Volta River, it is bedevilled by some challenges which can hinder the integrating efforts in managing the river. They pointed out that access to information is their major concern, because some of the communities lack reliable sources of information, making it very difficult for them to disseminate knowledge of water management practices and initiatives. One informant remarked:

⁴¹² Nana Samanhyia, interview, 1st November, 2022

⁴¹³ Opanyin Kwabena Awuah, interview, 23rd September, 2022

⁴¹⁴ Nana Tete Amoh, interview, 27th September, 2022.

One of the challenges we are facing here is that we find it very difficult to circulate information about water management to the rural communities. Many community members do not have access to the internet or reliable communication channels such as radio programmes and, this has negatively affected the spread of the awareness. We need to find creative ways to improve access, such as community radio programmes which can help to spread the message, otherwise all efforts we are trying to put in place to protect the river will be in vain.⁴¹⁵

5.3.4 Formation of Volta River Management Committee

During a focus group discussion, it emerged from the participants that formation of Volta River management committee is a step in the right direction, because the committee would serve as a platform for bringing together various stakeholders, including traditional authorities and state agencies to put their expertise and knowledge related to the Volta River together for a sustainable management of the river. They argued that through the committee, traditional authorities can contribute their traditional knowledge and practices related to the river, while the state agencies also bring their technical expertise on board. This teamwork will enable them to incorporate both statutory and cultural perspectives together for a sustainable management of the river. Through engagements with the participants, they consented to a number of ways by which traditional authorities and the state institutions can use the committee system to ensure effective management and conservation of the Volta River. According to them, one of these ways is planning and policy development. With this, the committee is supposed to develop and implement plans and policies related to the management and conservation of the Volta River in the Akwamu traditional area. This can be done by setting strategies and guidelines for all users of the river to avoid pollution and siltation. Another way the committee system can help to facilitate the integration of state

⁴¹⁵ Nana Dwomoh, interview, 23rd September, 2022

institution and the traditional authority for effective management and conservation of the Volta River as identified by the participants is through coordination and teamwork.

According to the participants, the committee when formed will facilitate teamwork among various stakeholders involved in the management of the Volta River. This includes traditional authorities, government agencies, community representatives, riparian communities and other relevant organizations. By bringing these stakeholders together, the committee will seek their inputs, concerns and aspirations related to the Volta River through public consultations, workshops and awareness campaigns to encourage public participation and ensure that the management decisions are inclusive and transparent.

Again, the participants indicated that monitoring is an important tool that can be used by the committee to facilitate the integration of formal and informal process. This is where the committee would have to oversee the monitoring and assessment of the ecological health of the Volta River. This would involve conducting regular surveys, research and data collection to ensure informed decision-making and identify any potential issues or threats to the river's ecosystem such as pollution control measures, promoting sustainable fishing practices and raising awareness about the importance of conserving the river. The committee, through their monitoring and control system can help to enforce relevant laws and regulations to prevent degradation and overexploitation of the river. The committee will also serve as a forum for dialogue and the exchange of ideas, ensuring that the concerns and aspirations of both traditional authorities and the Volta River Authority are heard and addressed appropriately. Furthermore, the formation of the Volta River management committee will help the traditional authorities and the Volta River Authority to work together which will lead to an enhanced conservation efforts for the Volta River in the Akwamu traditional area.

Again, by facilitating collaboration and coordination, the committee can ensure that decisions and plans related to the Volta River's conservation are made collectively, considering the diverse perspectives and interests of all stakeholders, including the traditional authorities and the state's institutions. An environmental officer from Volta River Authority with vast knowledge in modern approach for the management of the Volta River reiterated that:

If we form the Volta River management committee, it will bring people with different ideas from government and state's institutions together, so that the government will be closer to the communities as far as the conservation of the river is concerned. We can do this through community interactions, workshops, formal and informal educational programmes related to river conservation. In these activities, officers from government institutions such as Environmental Protection Agency (EPA) and traditional leaders can be brought on board to educate us on environmental impact assessment on the river and traditional methods for conserving the river. We can also collaborate with the law enforcement agencies, like the police and the court so that whoever violates the any law governing the river, both formal and informal can be dealt with.⁴¹⁶

All the traditional leaders unanimously admitted that the formation of a committee is the best way to facilitate the integration of formal and informal institutions in the management of the Volta River. They supported their argument by saying that traditional leaders possess extensive knowledge and understanding of their local ecosystems, including rivers like the Volta River. They therefore appreciate the formation of a committee so that it will recognise the values of their traditional knowledge and incorporate them into the management of the Volta River. In addition, the interviewees reiterated that traditional leaders are often deeply connected to their communities and act as representatives and advocates for their interests. They therefore perceive formation of the Volta River management committee as a means to enhance community engagement in decision-making processes related to the Volta River. By involving traditional leaders and local communities, the committee can ensure that the

⁴¹⁶ Mr. Bafo, Environmental officer, VRA, interview, 18th October, 2022.

concerns of the indigenous people are taken into account as far as the protection of the river is concerned. An informant remarked that:

My opinion about the formation of the Volta River management committee is that it's a great step in the right direction, because it will provide a platform for blending the modern knowledge and traditional ecological knowledge held by the local communities and traditional leaders of Akwamu traditional area for the management of the Volta River. I believe that by combining these different knowledge systems, the committee can develop an all-inclusive understanding of the river and its management needs.⁴¹⁷

5.3.5 Communication and Network

Water bodies in Ghana, including the Volta River play significant roles in the socio-economic development of the country, including agriculture, fishing, transportation and tourism. Effective communication and network between traditional authorities and state institutions are essential to ensure sustainable management and protection of these water bodies. The Volta River which runs through Akwamu traditional area is a significant water resource in Ghana, and its management requires effective communication and collaboration between the state institutions and the traditional authorities.

During focus group discussions with informants from both formal and informal institutions (Traditional authorities and Volta River Authority), it was revealed that traditional authorities, as custodians of local knowledge and customary laws, possess valuable insights about the local practices and customary regulations exemplifying the river, therefore through communication and network, information on traditional methods for managing the Volta River can be shared with the state institutions responsible for the management of the river.

According to the informants, traditional authorities often have a deep cultural and spiritual connection with the Volta River, therefore by collaborating with the state institutions, the traditional authorities can contribute to the development and implementation of indigenous

⁴¹⁷ Nana Dwomoh, interview, 23rd September, 2022.

conservation strategies to prevent pollution and illegal activities that may affect the sanctity of the river. They also added that since traditional authorities in Akwamu traditional area are influential figures within their communities, they can serve as intermediaries between the local communities and the state's institutions to promote awareness about the Volta River to the people, and this can be done through effective communication between the traditional authorities and the state institutions to facilitate community engagement initiatives, including educational programmes, public consultations and participatory decision-making processes. They were of the view that through proper communication networks, the state's institutions and the traditional authorities can ensure that the needs and concerns of both institutions living in Akwamu traditional area are addressed. This participatory approach will foster a sense of responsibility among community members and the state institutions to promote inclusive management of the Volta River in Akwamu traditional Area.

On their views on how communication network as a conservation strategy can be adopted to facilitate the integration of the state institutions and traditional authorities for the management of the Volta River, all the participants noted that radio and television programmes can be used to disseminate information to increase people's knowledge about traditional and state laws that are available for the management of the Volta River. They noted that 'talk shows' and 'panel discussions' on television and local radio stations can be organised occasionally by inviting representatives from the traditional authorities, government agencies and environmental experts to have discussions on the importance of adhering to traditional and state laws, approved fishing practices as well as sanctions available for breaching the traditional and state laws. This platform can facilitate dialogue and encourage community members to actively participate and express their viewpoints. To

effectively engage the general public, particularly the fishing and the farming communities in Akwamu traditional society, the participants indicated that television and radio programmes can be organised in local languages spoken in the area to ensure that messages are delivered in a manner that aligns with local customs and traditions and state laws that contribute to the protection and management of the Volta River.

Another communication network platform that can be used to facilitate integration of state institutions and traditional authorities for the management of the Volta River as noted by the participants is mobile application or SMS service. According to the participants, developing mobile applications or SMS services can help to disseminate information and updates on water quality alerts of the Volta River and tips for efficient use of the river. This can be done by liaising with Telecommunication Companies (TELCOS) such as MTN and Vodafone to send weekly or monthly SMS text messages to the personal phones of community members, traditional leaders, fishing communities and state officials about traditional and state laws for the conservation of the Volta River. According to the discussants, the timely updates and alerts regarding water levels, floods, droughts, or any other critical issues related to the Volta River through SMS communication network will help traditional authorities and VRA to stay informed and take necessary actions promptly to address the situation. This is evident in an interview with the traditional priest of the Volta River, who noted that he was notified through SMS and phone call by the paramount chief of Akwamu traditional area to come and perform rituals when the level of the River went down, and also when the railway line across the river was being commissioned.

In support of social media as an effective communicative tool to facilitate integration of traditional leaders and state agencies for the management of the Volta River, a traditional leader noted:

We can use the social media as an effective means of raising awareness through virtual meetings and online workshops among community members, including fishermen and farmers who are beneficiaries of the Volta River to be aware about the actions being taken by VRA and traditional authorities for traditional and modern conservation practices of the Volta River. This platform will also bring VRA, traditional authorities and community members together to exchange knowledge and jointly develop strategies for the conservation of the Volta River. Also, through this platform, traditional authorities can reach out to VRA and other environmental experts to update them on traditional conservation practices of the Volta River, while these environmental experts also use the same platform to update the traditional leaders on their initiatives, so that they can seek advice and support one another.⁴¹⁸

An environmental officer from VRA who was also in support of social media as an effective communicative tool to facilitate integration of traditional leaders and state's agencies for the management of the Volta River had this to say:

The social media is an effective tool for reaching out to local communities. It provides a platform to share information and raise awareness about the importance of protecting and managing the Volta River. Through community radio for instance, we can educate listeners about sustainable practices such as taboos and prohibitions, and the impact of human activities on the Volta River. This will facilitate dialogue and exchange of ideas between VRA and traditional authorities. Here, we can invite traditional leaders to participate in talk shows or interviews to share their opinions on traditional water resource management. This exchange of knowledge between VRA and traditional authorities can lead to a more inclusive and effective decision-making processes as far as the conservation and protection of the Volta River is concerned.⁴¹⁹

As demonstrated in the above discussions, it can be concluded that, while communication network can be a valuable tool in facilitating the integration of traditional norms and state laws for the management of the Volta River, it is important to develop an all-inclusive social media strategy which is accessible to all stakeholders in the Akwamu traditional area, particularly the Volta River Authority (VRA), traditional authorities and other

⁴¹⁸ Nana Samanhyia, interview, 1st November, 2022.

⁴¹⁹ Mr. Bafo, Environmental officer, VRA, interview, 18th October, 2022.

environmental experts to share relevant information about traditional laws and legal frameworks related to the Volta River, so that it will encourage the riparian communities to treat the Volta River with utmost decorum.

5.3.6 Policy Framework of Water Resource Management

Since the beginning of the 1980s, the Government of Ghana has introduced several policy reforms with the aim of promoting an effective management of all water resources in Ghana. The policy document contains sections on integrated water resources management (IWRM) which is believed to include key stakeholder institutions with a view to integrating and harmonising their various activities for an effective management of water resources⁴²⁰ In this policy document, Tamara argues that little or nothing is mentioned about the role or the responsibilities of traditional institutions who are seen traditionally as the overseers, owners or spiritual leaders of natural resources, especially water bodies, and the reforms tend to concentrate on the use of statutory laws, and give no consideration to the traditional practices of water resource management.⁴²¹

During the focus group discussions and interviews with key informants, it emerged that Akwamu people have historically relied on customary practices which are deeply rooted in their cultural and traditional beliefs to manage the Volta River. According to them, Akwamu people have customary practices such as taboos and prohibitions which they enforce to regulate fishing practices such as restrictions on fishing gear and seasonal fishing bans to allow fish populations to replenish. The informants however lamented that the modern legal frameworks for the management of the Volta River often prioritise rules and regulations which

⁴²⁰ National Water Policy, https://www.gwcl.com.gh/national_water_policy.pdf(assessed June 15, 2023), p.10.

⁴²¹ Tamara Amina Sulemana, 'The role of traditional authorities in water resource management in Binaaba, Bawku West District', MPhil thesis (University for Development Studies, 2013), p.18.

do not adequately recognise the traditional water resource management systems of the Akwamu people. They attributed this to lack of recognition and incorporation of traditional laws into the national legal framework.

It is against the above premise that the informants proposed that, for an effective management of the Volta River, there is the need to integrate the traditional water governance systems into the national policy framework. With regard to some of the benefits for integrating the traditional water governance systems into the national policy framework, the informants noted that, since traditional laws are deeply rooted in the cultural heritage and practices of Akwamu communities, integrating traditional laws into the water policy framework will help to preserve the cultural identity of the people, by ensuring that indigenous knowledge and customary practices of managing and protecting the Volta River are respected and valued.

Another benefit which was pointed out by the participants for integrating traditional laws into the water policy framework is that, it will not only recognise two legal systems that can coexist and complement each other for effective management of the Volta River, but it will also encourage a more inclusive and diverse legal framework that respect the rights and interests of state institutions and traditional authorities.

On their perspectives on what form should the water policy framework should take to facilitate integration the state institutions and traditional authorities for the management of the Volta River in Akwamu traditional area, the informants noted that the policy framework should include provisions that legally recognise the role and authority of traditional authorities in the management of the Volta River in the Akwamu traditional area. This recognition should be supported by the enactment of appropriate legislation or regulations that give formal backing to state institutions and traditional authorities. Again, the informants emphasised that

the water policy framework should outline clear institutional arrangements that define the roles, responsibilities and functions of both state's institutions and traditional authorities in the management of the Volta River. Also, the policy framework should emphasise the need for capacity building and training programmes to enhance the understanding and skills of both state institutions and traditional authorities to create opportunity for knowledge exchange and awareness-creation initiatives on the management of the Volta River.

In an interview with the paramount chief of Akwamu traditional area, to solicit his perspective on the form the water policy framework in Ghana should take to facilitate integration of the state institutions and traditional authorities for the management of the Volta River in Akwamu traditional area, he noted that the policy framework should spell out the roles of traditional authorities in the management of the Volta River. He said that the policy should acknowledge the traditional knowledge, practices and customs as valuable contributions to the governance of the Volta River water. He noted that the water policy framework should ensure meaningful inclusion and representation of traditional authorities in decision-making processes about the river. He proposed that the water policy framework should foster a continuous dialogue between the traditional authorities and the state institutions like VRA, Environmental Protection Agency and Water Resource Institute through regular consultations, community meetings and information sharing to maintain harmonious relationships in the management of the Volta River. The chief remarked:

In fact, we need to have a representation when management decisions about the Volta River are being taken to ensure that our voices are heard and our opinions are considered.⁴²²

⁴²² Nana Kwafu Akoto, interview, 8th January, 2022.

The chief made reference to the fact that the ecosystem of Volta River at Akwamu is under threat due to various human activities such as pollution, overfishing, tree cutting and unregulated sand mining. Therefore, conservation measures are needed to safeguard the ecosystem to ensure the continued survival of the various plant and animal species that depend on the river's ecosystem. According to the chief, addressing these concerns will involve implementation of strategies to manage and control the growth of the water weeds and regular monitoring of human activities that pose threat to the river. The chief therefore concluded that, it is important for traditional authorities, environmental agencies and stakeholders like Volta River Authority to collaborate and find sustainable solutions to mitigate the impact of human activities on the Volta River at Akwamu. By doing this, the chief noted that a legal framework is appropriate to recognise and integrate the authority of the traditional leaders into the state institutions to ensure a holistic approach in the management of the Volta River in the Akwamu traditional area.

On their perspectives regarding the use of a legal framework to facilitate the integration of traditional laws and state laws for the management of the Volta River in Akwamu traditional area, the VRA, Environmental Protection Agency and officers from Asuogyaman District Environmental Health responsible for environment- related issues about the Volta River mentioned that they acknowledge the importance of traditional laws in managing the Volta River within the Akwamu traditional Area, therefore developing a legal framework that respects the indigenous knowledge, practices and customary laws of the local communities for a sustainable management of the Volta River is a step in the right direction.

One of the environmental officers noted:

When we integrate the traditional laws with the state laws governing the river by developing a legal framework, it will help both institutions to work together in a complementary manner to achieve a balanced approach to the management of the Volta

River in the Akwamu traditional area, taking into account the interests and perspectives of both the local communities and the VRA as whole.⁴²³

5.4 Conclusion

Chapter five has discussed participants' perceptions on the integration of indigenous and modern conservation practices of the Volta River in the Akwamu traditional area. The rationale was to find out whether indigenous knowledge system should be maintained, abolished or integrated into the modern scientific methods in the management of the Volta River, and also to explore the nature of conservation strategies to be adopted to facilitate the integration of traditional laws and state' laws in the management of the Volta River in Akwamu Traditional Area.

With regard to whether indigenous knowledge system should be maintained, abolished or integrated into the modern approaches in the management of the Volta River, it was established that the indigenous knowledge system should not be abolished, rather, it should be maintained and incorporated into the modern approaches in the management of the Volta River, because incorporating indigenous knowledge systems with the modern method will foster a sense of shared responsibility between traditional authorities and the state institutions to work as a team to enhance the conservation efforts of the Volta River in the Akwamu traditional area.

Concerning the strategies to be adopted to facilitate the integration of indigenous knowledge systems and modern methods in the management of the Volta River, the discussions revealed that community engagement and decision-making, capacity building, public awareness and sensitisation, formation of Volta River management committee,

⁴²³ Mr. Mualah, environmental officer, VRA, interview, 18th October, 2022

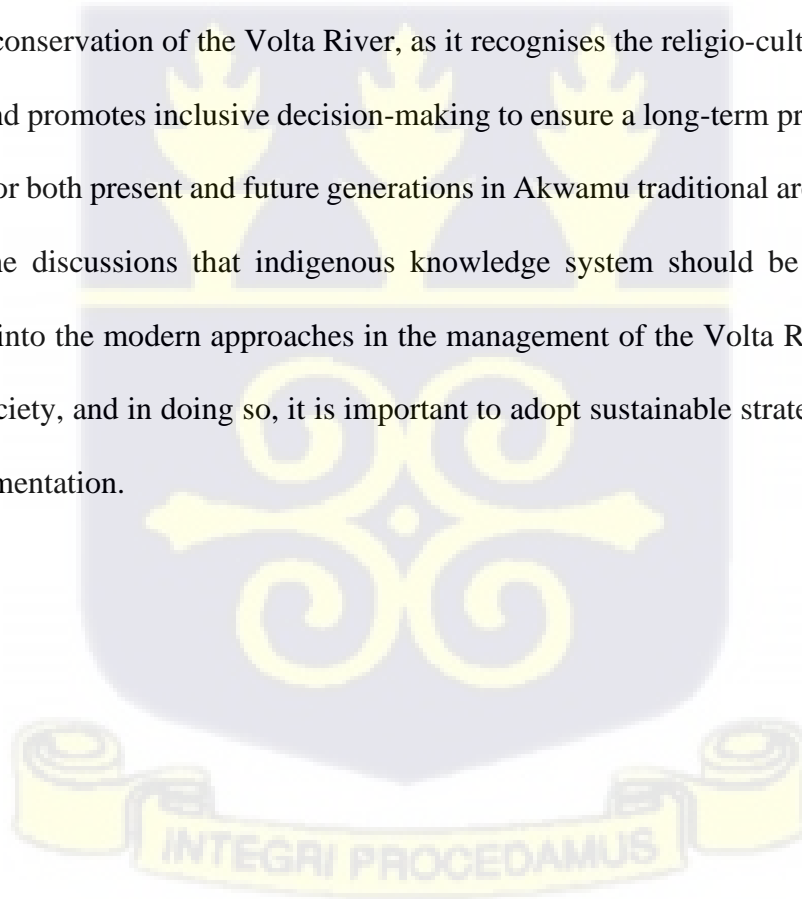
effective communication and network and water policy framework are the most conservation strategies that can be implemented to facilitate the integration of the indigenous knowledge and modern system in the management of the Volta River.

In connection with community engagement and decision-making, the discussions disclosed that, the indigenous people of Akwamu have developed a unique set of cultural values and beliefs associated with the Volta River. Therefore, community engagement and decision-making processes between the traditional authorities and the formal institutions can help to strengthen the relationship between indigenous knowledge and modern approaches in the management of the Volta River. Similarly, findings from the discussions revealed that through capacity building as an integrative strategy, a collaborative effort between formal and informal institutions can be established to promote a mutual understanding between modern and indigenous water resource management systems. Also, it emerged from the discussions that public awareness and sensitisation are essential elements for integrating indigenous knowledge into modern methods for the management of the Volta River. This is because if people are made aware of the role of indigenous water resource management practices as well as the role of modern method of managing the river through public education and sensitisation, it will promote a collaboration and dialogue between traditional authorities and the agents of modern institutions, leading to an effective management of the Volta River.

In the case of formation of Volta River management committee, the study revealed that through the committee system, traditional authorities can contribute their traditional knowledge and practices related to the river, while the state agencies also bring their technical expertise on board, and this teamwork will enable them to incorporate both scientific and cultural perspectives together for a sustainable management of the river. On the issue of

communication and network as a strategy for integrating indigenous knowledge and modern methods for the conservation of the Volta River, the study disclosed that, since communication network is a valuable tool for sharing ideas among stakeholders, it is important to develop an all-inclusive social media strategy which are accessible to all stakeholders in the Akwamu traditional area, to share relevant information about traditional laws and legal frameworks related to the Volta River, so that it will encourage the riparian communities to treat the Volta River with utmost decorum.

In the discussions, it also emerged that, instituting a water policy framework that integrates traditional laws and state laws will provide a robust legal and governance structure for effective conservation of the Volta River, as it recognises the religio-cultural significance of the river and promotes inclusive decision-making to ensure a long-term preservation of the Volta River for both present and future generations in Akwamu traditional area. It is therefore clear from the discussions that indigenous knowledge system should be maintained and incorporated into the modern approaches in the management of the Volta River in Akwamu traditional society, and in doing so, it is important to adopt sustainable strategies to facilitate its full implementation.



CHAPTER SIX

SUMMARY, RECOMMENDATIONS AND CONCLUSION

6.1 Introduction

This chapter, which concludes the research journey presents the summary of the major findings raised from the study in order to draw appropriate recommendations and conclusion. It first summarises the findings from chapter three which answers research question one, which seeks to examine and analyse the indigenous religio-cultural practices of the Volta River in Akwamu traditional area. Also, the findings in chapter four, which answers research question number two, and examines the factors militating against the indigenous conservation of the Volta River in Akwamu traditional Area are summarised in this chapter. Additionally, this chapter summarises the findings in chapter five, which answers research question number three, and explores stakeholders' perception on the integration of indigenous and modern conservation practices of the Volta River in the Akwamu traditional area. Based on the findings highlighted in the chapters, appropriate recommendations and conclusion are drawn.

6.2. Summary of Major Findings of the Study

The main objective of this study was to investigate the indigenous religio-cultural practices and management of the Volta River in Akwamu traditional area. Specifically, the study sought to achieve the following specific objectives.

1. To examine and analyse the indigenous religio-cultural practices of the Volta River in Akwamu traditional area.
2. To identify and analyse the factors which undermine the effective implementation of indigenous conservation practices of the Volta River in Akwamu traditional area.

3. To explore stakeholders' perception on the possibility of integrating indigenous and modern conservation practices of the Volta River in the Akwamu traditional area.

6.2.1 Major Findings from Research Objective One: Indigenous Religio-Cultural Practices of the Volta River in Akwamu traditional Area

With respect to indigenous conservation practices of the Volta River in Akwamu traditional area, the study revealed that Akwamu people strongly believe in the sacred nature of the Volta River which is governed by deities, and as a source upon which their livelihood revolves. They also hold the view that the Volta River is seen as a fair and unbiased avenue through which human disputes are resolved, and for fear of spiritual offences, they revere the river with utmost dignity by adhering to the traditional values that protect it. These traditional values constitute the ecocentric ethics which are motivated by religio-cultural beliefs and practices in the management of the Volta River. These traditional values include taboos associated with sacred grove, totemic animal and *sasa* trees. Other forbidden acts related to the Volta River which the study revealed were taboos associated with menstruation, fishing on sacred days, building houses close to the river, cutting trees around the river, open defaecation along the river bank, farming at the upstream of the river, washing clothes near the river and washing cooking utensils in the river.

The study also revealed that, aside from the primary purpose of Akwamu people using *Akwasidea* festival to honour their ancestors and sustain their cultural heritage, it is an avenue that offers a unique opportunity to create awareness of the indigenous conservation practices related to the Volta River to members of Akwamu community. This is done through speeches by traditional leaders, community elders, environmental experts and knowledgeable

individuals who speak about the ecological importance of the river and the need for its protection.

6.2.2 Major Findings from Research Objective Two: Factors which undermine the Implementation of Indigenous Conservation Practices of the Volta River in Akwamu traditional Area

On the issue of factors which undermine the effective implementation of indigenous conservation practices of the Volta River in Akwamu traditional area, the study revealed that migration and resettlement of non-indigenes in Akwamu traditional area as a result of the construction of the Akosombo dam, non-collaboration between state institutions and traditional authorities, and the negative attitudes of traditional authorities were found among key factors militating against the smooth implementation of the traditional laws in the conservation of the Volta River. Other key factors revealed by the study which undermine the effective implementation of indigenous conservation practices of the Volta River in Akwamu traditional area were introduction of Christianity and over-population in Akwamu Traditional Area.

With regard to the migration and resettlement of non-indigenes in Akwamu traditional area as a result of the construction of the Akosombo dam, the study revealed that the Volta river has been a major source of livelihood for the Ghanaian economy in general and Akwamu community in particular for various socio-economic benefits. However, the presence of non-indigenous groups in the study area with diverse cultural differences as well as economic hardships leading them to prioritise their livelihoods over conforming to the traditional norms which are related to the Volta River has led to the erosion of the traditional laws that seek to protect the Volta River.

On the issue of non-collaboration between state institutions and traditional authorities, the study revealed that the state institutions do not collaborate with the traditional authorities to effectively enforce the traditional laws to protect the Volta River, and this has weakened the powers of the traditional authorities to enforce the traditional laws. This may be due to inadequate institutional and legal support that is supposed to recognise the traditional authorities who are responsible for enforcing the traditional laws related to the conservation of the Volta River.

In the case of Christianity and its contribution to the erosion of the traditional laws that protect the Volta River, the study revealed three groups of Christians in Akwamu Traditional society. These include the indigenous Christians of Akwamu society who are receptive to the traditional laws that govern the Volta River, because they have a deep-rooted understanding of the significance of the river and the traditional laws that govern it. Therefore growing up within this traditional environment fosters a sense of responsibility and compliance with the traditional laws that govern the river. The second group of Christians are indigenous Akwamu individuals who have converted to Christianity and are seen as being respectful of the traditional laws that protect the Volta River, because they have the notion that the traditional laws are in variance with their personal values or religious beliefs, therefore they prioritise their Christian principles and teachings over the traditional laws related to the Volta River. The third group of Christians in Akwamu Traditional Area are non-indigenous Christians who have migrated to Akwamu Traditional Area with their primary focus on economic activities, and as a result, their economic pursuits take precedence over traditional practices related to the Volta River. This indicates that Christians within Akwamu Traditional Area hold diverse viewpoints with regard to religious beliefs and practices associated with the Volta River, and

these diverse viewpoints are influenced by cultural background, religious influence and economic opportunities.

The study also revealed that over-population has led to water quality deterioration of the Volta River because of the intensification of economic activities along the river by immigrants who have different levels of awareness and understanding of the traditional laws governing the river, therefore they end up discharging liquid and solid waste into the river, contributing to the pollution of the river. Similarly, the study discovered that over-population in Akwamu traditional area has led to an increased demand for land for agricultural activities and settlements along the river which has resulted in soil erosion, sedimentation and siltation, and in the end affecting the water quality of the river, and also leading to practices such as deforestation, improper agricultural methods, where the top layer of soil is washed away and transported into the river during rainfall events.

6.2.2 Major Findings from Research Objective Three: Stakeholders' Perception on the Integration of Indigenous and Modern Conservation Practices of the Volta River in the Akwamu Traditional Area

With regard to stakeholders' perception to ascertain whether indigenous knowledge system should be maintained, abolished or integrated into the modern methods in the management of the Volta River, the study established among officials from both formal and informal institutions that the indigenous knowledge system should not be abolished. However, it makes the case that it should be maintained and incorporated into the modern approaches in the management of the Volta River, because incorporating indigenous knowledge systems with the modern method will foster a sense of shared responsibility between traditional

authorities and the state's institutions to work as a team to enhance the conservation efforts of the Volta River in the Akwamu Traditional Area.

Also, incorporating indigenous knowledge systems alongside the modern method will recognise the importance of indigenous knowledge, which has been accumulated over generations through the deep connection between indigenous communities and the Volta River. The study also showed that, neither indigenous knowledge nor modern method alone is enough to address the current challenges of the Volta River, but blending the two systems is a step in the right direction to deal with the situation. This finding dispels the views of some researchers who claim that indigenous knowledge in biodiversity conservation strategies has outlived its usefulness in the contemporary society due to the introduction of scientific methods.

Touching on strategies to be adopted to facilitate the integration of indigenous knowledge systems and modern methods in the management of the Volta River, the study revealed that community engagement and decision-making, capacity building, public awareness and sensitisation, formation of Volta River management committee, effective communication and network and water policy framework are the most conservation strategies that can be implemented to facilitate the integration of the indigenous knowledge and modern system in the management of the Volta River.

In connection with community engagement and decision-making, it was revealed that, the indigenous people of Akwamu have developed a unique set of cultural values and beliefs associated with the Volta River, therefore community engagement and decision-making processes between the traditional authorities and formal institutions can help to strengthen the relationship between indigenous knowledge and modern approaches in the management of

the Volta River. Similarly, the study revealed that through capacity building as an integrative strategy, a collaborative effort between formal and informal institutions can be established to promote a mutual understanding between modern and indigenous water resource management systems. Also, it emerged from the study that public awareness and sensitisation is an essential element for integrating indigenous knowledge into modern methods for the management of the Volta River. This is in the sense that if people are made aware of the role of indigenous water resource management practices as well as the role of scientific method of managing the river through public education and sensitisation, it will promote a collaboration and dialogue between traditional authorities and the agents of modern institutions, leading to an effective management of the Volta River.

With regard to formation of Volta River management committee, the study revealed that through the committee, traditional authorities can contribute their traditional knowledge and practices related to the river, while the state agencies also bring their technical expertise on board, and this teamwork will enable them to incorporate both scientific and cultural perspectives together for a sustainable management of the river. On the issue of communication and network as a strategy for integrating indigenous knowledge and modern methods for the conservation of the Volta River, the study disclosed that, since communication network is a valuable tool for sharing ideas among stakeholders. It is therefore important to develop an all-inclusive social media strategy which are accessible to all stakeholders in the Akwamu traditional area, to share relevant information about traditional laws and legal frameworks related to the Volta River, so that it will encourage the riparian communities to treat the Volta River with utmost decorum.

With reference to water policy framework, it was disclosed that, instituting a water policy framework that integrates traditional laws and state laws will provide a robust legal and governance structure for effective conservation of the Volta River, as it recognises the religio-cultural significance of the river and promotes inclusive decision-making to ensure a long-term preservation of the Volta River for both present and future generations in Akwamu traditional area.

6.3 Recommendations

The study disclosed that Akwamu people strongly believe in the sacred nature of the Volta River which is governed by deities and as a source upon which their livelihoods revolve. They also maintain that the Volta River is a fair and unbiased avenue through which human disputes are resolved, and for fear of committing spiritual offences, they revere the river with utmost dignity by adhering to the traditional values that protect it. It is therefore recommended that traditional authorities in Akwamu traditional area will continue to conduct traditional rituals and ceremonies that are specific to the Volta River and its deities. These practices will help to maintain the spiritual bond between the people in the community and the river. Also, the traditional authorities should promote a sense of environmental stewardship and responsibility towards the Volta River among community members and to make them aware that caring for the river and its surrounding ecosystem is an expression of reverence and respect for the deities. This can be done by inspiring and educating community members and members of the riparian communities on the significance of preserving the river and its surroundings, and committing them to embark on regular clean-up initiatives along the riverbanks to reduce pollution and maintain the cleanliness of the Volta River. This collective

effort will contribute to the long-term sustainability and well-being of both the communities and the river ecosystem.

The study also divulged that Akwamu people have a set of traditional values that constitute the ecocentric ethics in the management of the Volta River. These include ecological taboos, festivals and other forbidden acts related to menstruation, fishing on sacred days, building houses close to the river, felling trees around the river, open defaecation along the river bank, farming at the upstream of the river, washing clothes near the river and washing cooking utensils in the river. To ensure that both indigenous and non-indigenous people appreciate, respect and observe the traditional values mentioned above, it is recommended that the traditional authorities will educate the indigenous and non-indigenous people about the significance of these traditional values through community meetings and cultural events where the history, customs and traditions surrounding these traditional values are explained. Also, traditional authorities should ensure that the rules and restrictions associated with the Volta River are enforced consistently and fairly. This requires the support of community leaders and influential individuals who can act as role models and promote adherence to these traditional laws. Moreover, policy makers should incorporate the cultural importance of the Volta River into school curriculum so that students can learn about the traditions, rituals and stories associated with the river, to ensure that the younger generations will understand and appreciate the value of the Volta River. This can be done by integrating the river's cultural importance into various subjects like history, geography, social studies, and environmental science for students to gain an understanding of the river's role in society and the environment.

The study furthermore discovered that migration and resettlement of non-ethnic groups in Akwamu traditional area as a result of the construction of the Akosombo Dam, non-

collaboration between state institutions and traditional authorities, negative attitudes of traditional authorities, introduction of Christianity as well as over-population in Akwamu Traditional Area are factors contributing to the erosion of the traditional laws responsible for the conservation of the Volta River in Akwamu Traditional Area. In order to address these challenges, it is recommended that collaborative measures such as regular meetings, joint planning and shared decision-making are initiated by traditional leaders and state institutions to ensure that traditional laws and modern conservation efforts complement each other. In addition, there should be a dialogue between traditional authorities and Christian leaders to understand and appreciate each other about the need to recognise traditional laws alongside Christian teachings on the importance of environmental stewardship. With this, Christians can incorporate traditional laws related to the Volta River into their teachings and sermons. Also, legislation and policies that give a full legal protection to traditional authorities should be initiated by policy makers to recognise and support the smooth implementation of traditional laws in the conservation of the Volta River in Akwamu traditional area. Finally, incentives and recognition for individuals, communities and organisations that actively contribute to the conservation of the Volta River through traditional laws should be provided by the district assembly. This can be in the form of remuneration, incentives, certifications and public acknowledgment of their efforts.

Besides, it was discovered that indigenous knowledge system should be maintained and incorporated into the modern approaches in the management of the Volta River, because neither one alone is enough to address the current challenges of the Volta River. However, blending the two systems is a step in the right direction to deal with the contemporary challenges facing the river. It is therefore recommended that traditional authorities,

policymakers, state institutions and community representatives should foster partnership to engage a participatory decision-making processes that involve indigenous knowledge and modern approaches for a sustainable management of the Volta River. The study also disclosed that community engagement and decision-making, capacity building, public awareness and sensitisation, formation of Volta River management committee, effective communication and network and water policy framework are the most conservation strategies that can be implemented to facilitate the integration of the indigenous knowledge and modern system in the management of the Volta River. It is therefore recommended that policy-makers should encourage state institutions, traditional authorities, environmental experts, community members and riparian communities along the Volta River to engage in a robust communication network platforms to integrate diverse knowledge sharing from all facets about the ecological significance of the Volta River and the need for integrating indigenous knowledge with modern systems for an effective governance of the river.

6.3 Conclusion

The research examined the indigenous conservation practices of the Volta River in Akwamu Traditional Area. It also examined the factors which have undermined the effective implementation of indigenous conservation practices of the Volta River in Akwamu traditional area. Finally, the study explored stakeholders' perception of the integration of indigenous and modern conservation practices of the Volta River in the Akwamu Traditional Area. Among other things, the findings related to the indigenous conservation practices of the Volta River in Akwamu Traditional Area indicated that Akwamu people have a set of traditional values that constitutes the ecocentric ethics in the management of the Volta River. In view of that they revere the river with utmost dignity.

In relation to the factors which undermine the effective implementation of indigenous conservation practices of the Volta River in Akwamu Traditional Area, it was discovered among other things that non-collaboration between state institutions and traditional authorities as well as the negative attitudes of traditional authorities were key factors militating against the smooth implementation of the traditional laws in the conservation of the Volta River. On the issue of seeking stakeholders' perception on the integration of indigenous and modern conservation practices of the Volta River in the Akwamu traditional area, it was revealed that indigenous knowledge system should be maintained and incorporated into the modern approaches in the management of the Volta River.

Based on the findings and recommendations of the study, the research study concludes that Akwamu traditional area has indigenous conservation practices that are closely tied to religious beliefs and practices associated with the Volta River. However, the effective implementation of these practices is hindered by various factors. Stakeholders recognise the need for integrating indigenous and modern conservation practices to address the contemporary challenges faced by the river. It is against this background that government agencies, traditional authorities, Christian leaders, indigenous and non-indigenous members of Akwamu emphasise the importance of preserving and integrating indigenous knowledge system, while embracing modern approaches to ensure a long-term sustainability of the Volta River in the Akwamu Traditional Area.

6.4 Areas for Future Research

1. Investigation into challenges of integrating indigenous knowledge into modern conservation practices of the Volta River Akwamu Traditional area.

2. Indigenous religio-cultural practices and biodiversity conservation of sacred groves in Akwamu Traditional Area.
3. Christians' perceptions of indigenous religio-cultural practices of biodiversity conservation Akwamu traditional area.
4. Incorporating indigenous knowledge into modern conservation practices of natural resources in Ghana: The role of the state.



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APPENDICES

APPENDIX A

Interview Guide for Traditional Leaders

Request for Interview

I am a PhD student of the Department for the Study of Religions at University of Ghana, Legon. I am conducting a research on the topic, 'Indigenous Religio-Cultural Practices and the Management of the Volta River in Akwamu Traditional Area'. You have been identified as one of my participants to share your views on how indigenous management practices can be enforced to improve the quality of the Volta River which is one of the main sources of livelihood Akwamu people. The information you will provide is purely for academic purpose, and it will be confidentially and anonymously treated for the purpose of the study.

Thank you.

Bismark Kwasi Osei

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1. What is your worldview about the Volta River in Akwamu traditional area?
2. How does your worldview about the Volta River influence your attitude towards its conservation?
3. Do you agree that the Volta River is endangered with deplorable condition?
4. If yes, can you please share with me the deplorable condition of the river?
5. What do you think are the causes of the deplorable condition of the river?

6. As a traditional leader, do you have any indigenous practices of managing the River?
7. If yes, could you tell me what they are?
8. Could you please explain how these indigenous practices work to conserve the river?
9. Do you have sanctions in place against those who violate the traditional rules that govern the Volta River?
10. If yes, what kind of sanctions do you enforce against those who violate the traditional rules that govern the river?
11. As a traditional leader, do you encounter any challenges in your efforts in enforcing the indigenous knowledge system in managing the Volta River?
12. If yes, what factors account for the challenges in your efforts in enforcing the indigenous knowledge system in managing the Volta River?
13. What is your personal opinion about integrating indigenous religio-cultural practices with the modern statutory laws for a sustainable management of the Volta River?
14. What strategies should be put in place to facilitate the integration of the indigenous practices and modern methods in the management of the Volta River?
15. What prospects do you envisage when the indigenous practices and the modern methods are integrated for the management of the Volta River?

APPENDIX B

Interview Guide from State's Institutions (VRA, EPA, NADMO, District Assembly)

Request for Interview

I am a PhD student from the Department for the Study of Religions at University of Ghana, Legon. I am conducting a research on the topic, 'Indigenous Religio-Cultural Practices and Management of the Volta River in Akwamu Traditional Area'. You have been identified as one of my participants to share your views on integrating indigenous and modern conservation practices for the sustainable management of the Volta River. The information you will provide is purely for academic purpose, and it will be confidentially and anonymously treated for the purpose of the study.

Thank you.

Bismark Kwasi Osei

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1. What is your perception about the challenges facing the Volta River in recent times?
2. What do you think may be the cause(s) of the deplorable condition of the river?
3. As a state institution, how do you protect or manage the Volta River?
4. In protecting the river, do you collaborate with the traditional authorities in Akwamu traditional area?
5. If yes, how do you collaborate with traditional authorities in Akwamu traditional area in managing the river?
6. What is your perception about the indigenous methods used by the traditional authorities in protecting the river?
7. Should the traditional rules used in protecting the river be maintained or abolished?

8. If yes/no, give your reason(s).
9. What is your personal opinion about integrating indigenous religio-cultural practices with the modern statutory laws for a sustainable management of the Volta River?
10. What strategies do you think when put in place will help to facilitate the integration of the indigenous practices and modern methods in the management of the Volta River?
11. What potential benefits do you foresee by integrating the traditional laws and the modern methods in the management of the Volta River?



APPENDIX C

Interview Guide for Riparian Communities

Request for Interview

I am a PhD student of the Department for the Study of Religions at University of Ghana, Legon. I am conducting a research on the topic, 'Indigenous Religio-Cultural Practices and the Management of the Volta River in Akwamu Traditional Area'. You have been identified as one of my participants to share your views about your awareness and compliance of the traditional laws governing the use of the Volta River in Akwamu traditional area. The information you will provide is purely for academic purpose, and it will be confidentially and anonymously treated for the purpose of the study. Thank you.

Bismark Kwasi Osei

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1. How long have you lived in this community?
2. What motivated you to live close to the Volta River?
3. Are you aware that there are traditional laws governing the use of the river?
4. If yes, share with me some of these traditional laws.
5. Do you comply with the traditional laws governing the use of the Volta River?
6. If yes/no give reason(s) for your answer.

APPENDIX D
PICTURES



Fig 2: Interview with Nana Kwafo Akoto III, Paramount Chief of Akwamu Traditional Area Palace



Fig 3: Interview with Nana Tete Amoh, the priest of the Volta River (Left) and Abusuapanyin Kwabena Awuah (Right)



Fig 4: Interview with nana Otuaben of Akwamu-Gyakiti



Fig 5: Sasa Tree Leaves being shown by Nana Kwaku Budu Akomea V of Atimpoku



Fig 5: Interview with Nana Okrukata of New Akrade



Fig 6: Interview with Nana Otuaben and Nana Afum Aboagye of Akwamu



Fig 7: Interview with Nana Kwafo Akoto III and Nana Samanhyia in Akwamu Palace

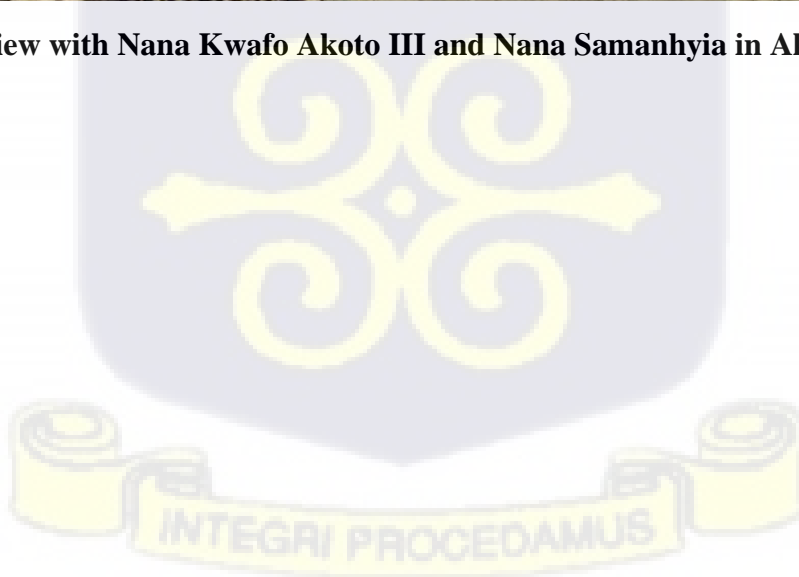




Fig 8: Interview with officers from Environmental and Sustainable Development, Volta River Authority, Akosombo

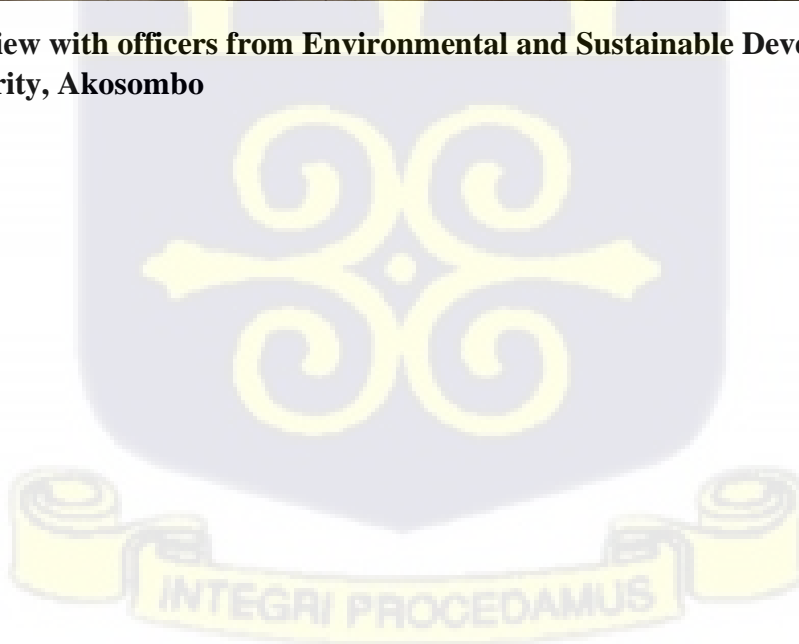




Fig 9: Focus Group Discussion with Fisher folds at Abume on Akwasidae



Fig.10: Solid waste being channeled into the Volta River at Atimpoku



Fig 11: Liquid waste being flown into the Volta River at Dzidzokope



Fig 12: Slaughter house close to the Volta River at Atimpoku



Fig 13: Washing liquid flowing into the Volta River at New Senchi



Fig 14: Soil Erosion being carried into the Volta River, causing sedimentation at Akwamufie

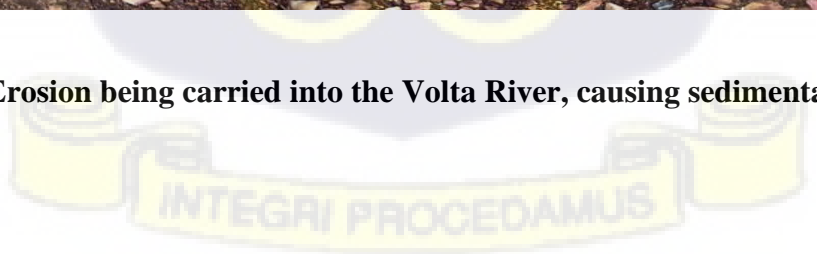




Fig 14: A traditional leader at Akwamu-Gyakiti showing the researcher pieces of red clothes tied to mango trees as a symbolic gesture to protect the Volta River



Fig 15: 'Atigya': A fishing method where fishermen cut trees along the Volta River and dump them into the River to provide shade and conducive place to attract more fish