
ENVIRONMENTAL IMPACT OF CHURCH LAND ACQUISITION AND USE ON WETLANDS ON FLOODING AND DEFORESTATION IN KUMASI: A RELIGIO-CHRISTIAN EXPLORATION

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ABSTRACT

Environmental safety is a global concern. The acquisition and destruction of wetlands or waterlogged areas for building projects is a rising concern for Kumasi residents due to its negative impact. Considering the Christian context of Kumasi in relation to the biblical mandate of environmental stewardship (Genesis 2:8-15), this paper explored the environmental impact of church land acquisition and use in water areas on flooding and deforestation through structured interviews and questionnaires from purposively and randomly sampled 2515 participants. Findings indicate that while some African Independent Churches (AICs) are to blame, traditional and State authorities, private owners and commercial agencies too are responsible. Also, the construction of church buildings on wetlands or waterlogged areas causes blockage of waterways, water/air pollution, vegetation loss and greenhouse effects, flooding and deforestation which are harmful to human lives and the ecosystem. Meanwhile, responses revealed that AICs acquire and use wetlands because of proximity to members, the fear of Pastors losing members, relative affordability and urbanization. The majority suggested that churches, chiefs, state agencies, community members and all other players should discontinue their involvement and rather prioritise human lives and environmental protection by sustaining wetlands. This study recommends a collectively harmonious public sensitization that fosters advocacy on the need to avoid or minimize the acquisition and use of water areas for building purposes. Potentially, this paper informs national policy and community interventions as it contributes to scholarships concerning Eco theology, religion and human development and Christianity and environmental stewardship.

Keywords: Environmental Protection; Religion; Christianity; Flooding; Deforestation

INTRODUCTION

Environmental protection is a worldwide call. Every institution including religion has a role towards it. Despite this global responsibility, our environment is fast deteriorating and failing to support life in this 21st century, hence, environmental crisis (Sev, 2009). Religion, from the philosophical thoughts of Durkheim, is explained by Cladis and Cosman (2001) as a unified system of beliefs and practices relative to sacred things. Kehinde (2020, 330) expands that, religion serves as the nexus between humanity and the external network of some phenomena from which life issues arise. One such issue is the environmental crisis. Religiously, the call to environmental stewardship is an evidential instruction for faith and practice enshrined in some religious traditions. This is because, “the attitudes and values that shape people’s concepts of nature come primarily from religious perspectives and ethical practices.” (Kehinde 2020, 330). Thus, these “ethical practices and values” that would produce loyalty on the part of humanity toward environmental stewardship and safety are “enshrined in sacred religious traditions, teachings and texts.” (Vuong *et al.*, 2020). From a Judeo-Christian perspective, the biblical cases of Genesis 2:8-15 and Luke 20:9-10 indicate that Christians have an ecological responsibility toward the garden, vineyard, earth-keeping, environmental safety and stewardship. The Judeo-Christian texts elaborate on the human relationship with the environment (Jackson, 1971: 19; Barr, 1972: 10; Passmore, 1980: 12; Dor, 2010). The relevance of “wetlands” in environmental serenity is key (Amo, 2015; Anku, 2006). Known as the “Garden City of West Africa” for her rich vegetation, forests and water resources (Owusu-Sekyere *et al.*, 2023) as well as being the second largest city in Ghana with a major Christian population (GSS, 2021), Kumasi is expected to improve environmentally. Mensah (2014) inquires, “Is

Kumasi still a Garden City?” This is because of the current unpleasant state of Ghana’s forestry, vegetation and water bodies, especially in the Ashanti Region. Kumasi is expected to improve environmentally. However, Kumasi’s situation is not reflective. Confronted with land acquisition challenges (Gyamera *et al.*, 2018; Ameyaw & de Vries, 2021) in the face of urbanization and human development, the acquisition and destruction of wetlands or waterlogged areas for building projects is challenging in Ghana (Amo, 2015) and a rising concern for Kumasi residents due to its negative impact including flooding and deforestation (Ijigah *et al.*, 2013, 100; Ameyaw & de Vries, 2021). Meanwhile, constituting a vital part of the ecosystem, wetlands filter and remove pollutants (Anku, 2006), and serve as storage for excess flooding rivers from uplands (Mitsch & Gosselink, 2000). Wetlands conserve and preserve aquatic species of plants and animals. They provide food, beauty, recreational opportunities, medicine and well-being to the environment and humanity (Amo, 2015). Encroaching such lands is hazardous. Against this background and considering the Christian religious context of Kumasi, this paper explored the environmental impact of church land acquisition and use in water areas on flooding and deforestation through structured interviews and questionnaires from purposively and randomly sampled 2,515 participants.

ROLE OF RELIGION IN INFLUENCING HUMAN BEHAVIOR

The relationship between religion and human behaviour is evident in scholarship. In the work of Cladis and Cosman (2001), the objective of religion is to ensure that sacred beliefs are reflected in practices, hence influencing behavioural response. To them,

beliefs should unite with practices. Kehinde (2020, 330) measures human behaviour in relation to one's attitudinal response towards phenomena in life. Simply, people's religiosity and belief patterns should influence their actions, reactions and inactions (Durkheim, 1965; Hart, 2019:3).

Indicating literature on the broader relationship between religion and society

The nexus between religion and society is a historical one, with a beautiful tapestry woven through the ages. Scholars emphasise this relationship in several ways. According to Riviş-Tipei (2023: 113), religion's impact on human societies extends into the fabrics of politics, ethics and cultures which define individuals and communities. Thus, religion helps to shape the ethical, cultural and political conduct of persons and groups to promote safety and soundness in a society. In relation to community, the studies of Bommas *et al* (2012) and Versnel (1981) reveal that religion in a particular region or community shapes social norms and conduct of the inhabitants, thereby promoting communal safety and sound living for the people.

Christianity and environmental protection in Ghana

Asante (1995, p. 15) emphasises the managerial responsibility of human beings as stewards of God's creation and created order which includes the ecosystem – the beautiful bionetwork and interrelatedness within the environment. It is therefore imperative that, such stewardship should ensure the protection of the environment through sanitation, conservation, caring and preservation. From a Judeo-Christian perspective, Twumasi-Ankrah *et al* (2023, p. 889) observe that humanity has a conscious responsibility towards safeguarding the

earth and the environment through some caretaking activities that make both the earth and environment conducive for human life and existence. Similarly, Samkange and Samkange (1980, p. 7) advocate for one to choose human life over selfishness. Wiafe and Gariba (2023) concluded that Christianity has a huge influence towards the transformation of the Ghanaian society through the practice of Christian faith and virtuous character in everyday life, which includes environmental care. This is evidenced in the work of Conradie (2011: 5). The modern Christian is expected to imitate God's care over creation, and to be stewards of the environment (Baham, 2020, 2; Conradie, 2011).

Environmental impact of Christian activities in Ghana

The Christian teachings on "earth-keeping" in Genesis 2:8-15 and Genesis 1:26-28 emphasise how God, the Creator, after making a beautiful garden eastward with river flows and plants and animals carefully located within such ecosystem, put Adam to keep and care for it in such a way that humanity's dominion is reflected through good stewardship and environmental protection. Thus, the interconnectedness among the creatures (Snyder, 2010) reveals a communal aspect of creation (DeWitt, 2008), necessitating a collective effort that prioritises the integrity and value of the ecosystems (Moltmann, 1993; Bauckham, 2010) from an eco-centric perspective (Pope John Paul II, 1990). Previewed to this, some Christian activities in Ghana have positively contributed to environmental sustainability such as the planting of over 1.6 million seedlings with an 87% success rate by the Church of Pentecost, Ghana (The Vaultz News, 2024). Sadly, after exploring the environmental stewardship role of churches in Ghana, most churches are passive to environmental care (Gyimah & Owiredu, 2014). To boost the passion of

churches towards environmental care, A Rocha Ghana has instituted a reward scheme, namely: Eco Church, for churches who will actively contribute towards caring for the environment (Turkson, 2022).

Addition to existing knowledge

Several studies have explored land acquisition challenges and the use of wetlands and its environmental impacts from some socio-cultural, economic, technological and biological perspectives. Amo (2015) explored some strategies to minimize dangers caused by construction projects on wetlands. Gyamfi *et al.* (2018) then examined the effects of wet conditions on buildings in wetlands in Kumasi and explored some potential construction technologies for control. With a focus on the impact of near-river settlements, Takyi & Amponsah (2024) recently investigated the extent of encroachment and pollution of the Wiwi and Subin rivers in the Kumasi metropolis. However, this study explores the root cause leading to the acquisition and use of wetlands and their holistic environmental impact. Uniquely, the study takes a *religio-Christian* perspective to explore why churches acquire lands in waterways and waterlogged areas and the environmental impact of flooding and deforestation. This seems a new dimension towards filling the gap in scholarship especially about Christianity and environmental protection and human development, hence knowledge advancement.

METHODOLOGY

Research Design and Methods

The research employed a Case study design using a mixed methodology comprising qualitative and quantitative approaches (Johnson, 1994). Unlike approaches/designs that use either quantitative or qualitative research such as interpretivist, constructionist, action research and

positivist approaches which focus on the researcher's experience remotely or being involved, the case study approach combines both quantitative and qualitative research from contextual real-life experiences and responses of the location of the phenomena (Stake, 1995; Yin, 2018; Merriam, 1998). Therefore, the results do not depend on the researcher's knowledge but more importantly on the people's shared experiences. Moreover, while for instance action research mainly studies social phenomena, a case study is employable in social, cultural, economic, political, phenomenological and religious contexts (Lewin, 1946; Reason & Bradbury, 2008). Exploring the impact of church land use on environmental safety is a complex phenomenon due to its sensitive context. The rationale for the mixed methods approach was to ensure the collection of sufficient data from as many respondents as possible (Assibey *et al.*, 2024) as well as ensuring additional quality and reliability to the findings obtained from studying such a complex phenomenon (Sharma *et al.*, 2023, 3). The above explanations justify why this study employed a case study since the issue of environmental protection is not only social, but also economic, cultural, ecological, political, religious and eventually a national concern.

Population and Target

Considering a religious approach, Christianity in Ghana was the general context. However, it was zeroed to Kumasi metropolis. Being the primary home of Ghana's Asante-Twi-speaking people of the Akan ethnic group and one of Ghana's cosmopolitan zones, Kumasi has six municipal assemblies, namely: *Asokore Mampong* municipal, *Oforikrom* municipal, *Asokwa* municipal, *Suame* municipal, *Abuakwa* municipal and Tafo municipal (Cobbinah *et al.*, 2020). It is the seat of the Asante Kingdom established in the late 17th century (Cobbinah *et al.*, 2020).

Sampling, Validation and Reliability

This study sampled three municipal assemblies, namely: *Oforikrom* municipal, *Asokwa* municipal and *Asokore-Mampong* municipal. The selection rationale was based on empirical evidence from the pilot test conducted that, though arguable, these areas had the most wetlands on which some projects including church buildings were raised. Purposive and simple random sampling techniques were used. Purposive sampling was used because it aided the selection of only participants with particular knowledge or experience about the phenomenon of church land acquisition (Patton, 2023: 243). Therefore, the study specifically engaged the direct agents or stakeholders such as land authorities, owners, buyers and those who received as gifts/donations and Christians. Meanwhile, in order to satisfy the ethics of data collection by ensuring voluntary participation without any form or expression of coercion, random sampling procedures were used to choose people who were willing, ready, accessible and available to participate (Creswell & Clark, 2011).

A total of 2650 questionnaires were distributed and 20 interview arrangements were solicited. However, a sample of 2500 answered questionnaires representing 94.3% were retrieved and 15 interviews representing 75% were successfully done. These percentages of data collected affirm the reliability and validity of the survey since according to Sember *et al.* (2020), retrieved responses are more than 50% respectively. Also, considering the average percentage of 84.65% for the responses obtained from questionnaires and interviews, it validates the reliability of these instruments (Ravinder & Saraswathi, 2020) since a coefficient of 0.82 (82%) reveals data validity, according to Cronbach's alpha analysis (Bujang *et al.*, 2018). Additionally, a pre-test (pilot survey) was conducted to verify respondents'

availability and readiness to be engaged. Out of 75 persons in *Susuanso* and *Anloga* that were approached by the researchers, a size of 55 participants constituting 73.3% willingly participated, hence data validation and reliability.

The total sample size was 2515 participants. Purposively, 115 participants were selected, comprising pastors, church members, church workers, community members, land owners and opinion leaders, and 2400 community members were randomly sampled for participation. The sample size comprised a total of 1550 members from Oforikrom Municipal – 945 students from KNUST, 605 participants from Oforikrom, *Susuanso*, *Anloga*, *Tech-Ayigya*, *Ayeduase*, *Boadi*, *Oduom* and *Aprade* communities. Also, 405 members from Asokwa Municipal were randomly selected from *Gyenyasi*, *Atonsu*, *Agogo* and *Bomso* communities, and 445 members were from Asokore-Mampong Municipal – 150 from *Asokore Mampong*, 110 from *Sepe-Tempom* and 174 from *Adukrom* and *Akurem* communities.

Questions and Ethical Consideration

Surveys and interviews were structured and included open-ended and closed-ended questions. However, prior to participation, respondents' consent was sought. They were assured of the confidentiality of their identities and responses from third-party engagement, and that they could choose to ignore a question if they are not willing to indicate their position or view. Thus, no one was coerced to disclose information against their comfort. Finally, participants were assured that their responses were solely for academic purposes (Cresswell & Clark, 2011).

Collection of 2515 Data

The authors engaged some fifty (50) well-trained, research-inclined students to assist

RESULTS

Quantitative findings are presented in tables to highlight important trends while interpreting data descriptively and indicating significance. Qualitative findings on the other hand are thematically integrated by weaving interview excerpts throughout the discussion to illustrate or elaborate on quantitative results. The discussion includes the implications of the findings with scholarly support for understanding the relationship between Christian activities and environmental protection in Kumasi.

Christian awareness and involvement in the environment

To categorise the respondents to align with the study's purposive target, participants were asked to indicate their titles/labels as either being: church leader, church member

(duty-free), church worker, or community member. The rationale for separating "community members" was the possibility that one may be a member of the community but not a member or leader of a Christian church. Despite not being a Christian, such a member needed inclusion in this study as a resident and an immediate witness to the activities that may threaten the environmental safety of the community since such an unsafe impact affects all. Table 4.1 gives the distribution. The findings show that only 101 respondents were probably non-church members but concerned residents or indigenes of the communities. Therefore, 2414 respondents were Christians, belonging to one church or the other, and that, these possibly were either active or passive residents of their church communities. It is obvious that some church members were non-residents.

Table 4.1: Distribution of Titles of Respondents

Title	Frequency	Percent (%)
Church Leader	335	13.3
Church Member (Ordinary)	972	38.7
Church Worker	369	14.7
Community Member	101	4.0
Pastor/Reverend	704	28.0
Youth secretary	34	1.3
Total	2515	100.0

Source: Researchers' construction, 2023

The results in Table 4.2 below show that the majority of Christians – pastors, church leaders and workers, members and community members who may belong to one church or another, are aware of the presence of buildings on wetlands – in waterways and waterlogged forests. In that, only 369 participants representing 14.67%, less than one-third, indicated their ignorance about

the problem. Thus, altogether, both members of churches and community residents are aware of such an environmentally unfriendly practice. However, being aware of such unfriendly practices and yet indulging could mean that acquisition of such lands obtained through the authorisation, leasing or agreement with other agencies, and not merely on the churches' right to ownership.

Table 4.2: Awareness of Buildings in waterways and waterlogged areas

Membership Status	Aware of Buildings in Waterways & Waterlogged Areas		
	Yes	No	Total
Church Leader	268	67	335
Church member	771	201	972
Church worker	302	67	369
Community member	67	34	101
Pastor/Reverend	704	0	704
Youth secretary	34	0	34
Total	2146 (85.33%)	369 (14.67%)	2515 (100%)

Source: Researchers’ construction, 2023

Inferring from Tables 4.1 and 4.2 above, the findings show the significance of Christian involvement in this study and how the results affect them as well. Finally, the two distributions significantly relate Christian awareness, involvement and activities about issues concerning the environment.

Common Types of Buildings in Waterlogged Areas

In 2021, a news report by Graphic Online revealed that the then Minister of Works and Housing in Ghana, Mr. Asenso-Boakye, placed an order on Kumasi City authorities to demolish over 300 structures identified as impeding watercourses – found in waterways

(Baah, 2021). Respondents were asked to identify some of the buildings they have seen in waterways or waterlogged areas. Table 4.3 shows that out of 2146 witnesses who were aware of such buildings, in as much as urban industrialization may occupy the majority of wetlands followed by residential buildings, a significant percentage of buildings in waterlogged areas are church structures, representing 19.6%. This implies that in every 100 occupied wetlands in Kumasi, about one-fifth are for churches. In relation to the findings, Takyi & Amponsa (2024) discovered that many of the lands along riversides are for industrial, residential and commercial purposes.

Table 4.3: Types of Buildings in Waterlogged Areas in Kumasi

Types of buildings in waterlogged areas in Kumasi	Frequency	Percentage (%)
Residential	718	33.45
Commercial	250	11.65
Church	421	19.6
Industrial	757	35.3
Total	2146	100.00

Source: Researchers’ construction, 2023

Field Pictographs of Churches in waterlogged areas and their impact



Figure 1: A picture of an African Independent church building causing sheet erosion

Source: Researchers' investigation, 2023



Figure 2: A picture of a church building causing water pollution and an unhealthy environment

Source: Researchers' investigation, 2023



Figure3: A picture of a storey church building with a weak foundation blocking a waterway with a wall

Source: Researchers' investigation, 2023

Unsafe Environmental Activities

In a close-ended question, respondents were asked: "What are some of the activities you think Ghanaians do which make the environment unsafe?" Table 4.3 below shows that inasmuch as some 168 respondents might have had no idea about factors that make the environment unsafe, a majority of 2145 out of 2515 respondents, representing 85.3% indicated building in waterways and waterlogged areas, deforestation (felling of trees) and destroying of vegetation as the first three harmful activities against the environment. By implication, even though Ghanaians are religious and may acknowledge some positive contributions from religion, the issue of environmental safety is regarded as a social and an all-inclusive concern. Therefore, activities such as building in waterways or waterlogged areas, destroying vegetation and deforestation by individuals, corporate bodies and/or religious groups are threats that could render the environment unsafe.

Table 4.3: Unsafe Environmental Activities

Activities	Frequency	Percent (%)
Buildings in waterways/waterlogged areas	134	5.3
Deforestation (felling down of trees)	34	1.3
Destroying of vegetation	34	1.3
All of the above	2515	85.3
None of the above	168	6.7
Total	2515	100.0

Source: Researchers’ construction, 2023

Table 4.4: Environmental Effects

Effects of Deforestation & Vegetation clearing	Frequency	Percent (%)	Effects of Building in waterways, waterlogged areas	Frequency	Percent (%)
Climate change	134	5.3	Flooding	268	10.7
Greenhouse effect	335	13.3	Water pollution	201	8.0
Loss of human lives	134	5.3	All of the above	2046	81.3
Wildlife extinction & Destroying of aquatic and forest habitats	572	22.7			
All of the above	1339	53.2			
Total	2515	100.0	Total	2515	100.0

Source: Researchers’ construction, 2023

Obviously, in Table 4.3 above, the respondents indicated a higher proportion of awareness about the adverse effects of both deforestation and building in waterways and waterlogged areas. About 1911 respondents representing 53.2% out of 2515 responses are of the view that the greenhouse effect, climate change, loss of lives and extinction of animal species and wild forests are immediate adverse effects of deforestation. Meanwhile, in terms of individual effects, a relative majority of 572 respondents would discourage the activities of deforestation and vegetation clearing due to their severe havoc resulting in wildlife/species extinction and

destruction of aquatic and forest habitats. Some studies indicate that, land clearing follows acquisition before usage. It may include removal of vegetation and cutting down of trees which may pollute both water and air around or on the land (NEPAD, *Land preparation*, p. 3). Meanwhile, this pollution could occur during the construction project after land clearing. Moreover, a majority of 2046 respondents representing about 81.3% agree that flooding and water pollution are immediate adverse effects of buildings in waterways and waterlogged areas. These higher percentages imply that the majority of Kumasi residents and Christians in Kumasi

know how dangerous these effects are and thus might oppose any environmentally hazardous activity such as acquiring and using wetlands for building purposes.

Table 4.5 below shows the distribution of three denominational categories and two church membership groups. The findings reveal that about 60% of churches that are aware of buildings in water areas belong to the Pentecostal/Charismatic denomination who are in the African Independent Churches

popularly known in Ghana as “One-man churches” and/or Pentecostal/Charismatic churches. This descriptively implies that one could infer that it is more likely for AICs to acquire and use water lands for church buildings than Orthodox/Protestant churches might do. Nonetheless, this is a collective blame for the entire Church in Kumasi in her socio-religious duty towards environmental protection.

Table 4.5: Denominations and churches represented

Members’ Denominational proportion		Members of Churches represented	
	N (%)		N (%)
Pentecostal/Charismatic	1509 (60%)	African Independent Churches & Pentecostal/Charismatic churches	1544 (61.4%)
Protestant	604 (24%)		
Orthodox	402 (15.98%)	Orthodox & protestant churches	971 (36.6%)
Total	2515 (100%)		2515 (100%)

Source: Researchers’ construction, 2023

Represented in Table 4.6 below are the 2146 respondents in Table 4.4 who are aware that some churches acquire and build in waterways and waterlogged areas. The majority of the respondents from the survey think that “cheap acquisition” is the first reason some churches acquire and build in waterways. According to them, some churches especially the AICs face financial challenges in their early years, leaving founders with no better option than to go for such lands in the meantime. The second reason is the fact that churches are influenced by location, visibility and proximity to members. Next, while there may be other reasons such as exposure to urban areas and

wetlands received as gifts, 469 respondents constituting 21% indicated that pressure mounts on pastors and leaders who may have the fear of losing members if a place is not secured immediately. Coupled with some financial limitations, some pastors may seek or rent any space available, including water area(s). Meanwhile, in terms of getting a place very close to members and which people can easily identify, church members and workers pose a relatively higher influence on pastors and church leaders. Table 4.6 below supports the findings described above.

Table 4.6: Membership Status and Reasons Churches Acquire water lands

No.	Reason	Membership Status			Frequency	Percent
		Pastor & Leaders	Members & Workers	Others		
A	Cheap land/ area	435	368	34	837	
B	Proximity to members and Easy visibility/ identification	335	268	1	604	
C	Desperation, Fear of losing members and Progressive development of area	134	268	67	469	21.86%
D	Others	137	89	9	235	10.95%
	Total				2145	100%

Source: Researchers’ construction, 2023

DISCUSSION

Reasons for Acquisition of water/wet lands

Theme of affordability, urbanization and economic ease for members

In relation to “Why churches acquire and use wetlands for church buildings” and the fact that church buildings are part of the common types of structures identified on wetlands (Table 4.3), it is implicative that such choices are fueled by affordability, urbanization and economic ease on members. A pastor gave this interview response: “I admit that some of us feel bad sometimes about having our church buildings on and around wetlands. Indeed, land is scarce and very expensive in Kumasi, a city where the religiosity of most Ghanaians is increasingly advancing. We sometimes have no better option.” (A Pastor, 38 years, Susuanso, Kumasi). Regarding

the cost of acquisition, findings of Takyi & Amponsah (2024) revealed that urbanization in the Kumasi metropolis has led to a gradual increase in land price but wetlands are relatively cheaper. This, according to them, has attracted most city residents to acquire and build on wetlands. Among these residencies are church structures.

Another respondent added: “In Ghana here, there is pressure on natural resources such as water and lands, especially in the urban areas where the population is high and modern Christians do not find school buildings attractive for church meetings, new churches and fellowships such as ‘One-man churches’ suffer to secure a place of worship. To not lose their foundation members, sometimes our pastors are forced to fall on wetlands to put up some temporary structures. This is the reality.” (A Church Deacon and Carpenter of an AIC, 35 years, Oforikrom, Kumasi).

The third respondent emphasised: “In Kumasi, where urbanization is at a higher percentage and people seem to have ‘no extra hours to waste,’ most church members end up prioritising ‘their time’ over ‘denominational affiliation’ or ‘their love for a particular church or pastor.’ Also, some church members would rather visit or attend a nearby church instead of paying huge unbearable transport fares to attend their original churches. In recent times, we have been faced with higher transport fares coupled with the sudden trend in the transport business where drivers and their conductors popularly known in Ghana as ‘mates’ would go short journeys to accumulate more money from passengers instead of going the same location in a single journey. Not only does this waste people’s time before they arrive at their usual churches, but their monies are affected so much that it becomes as if ‘church is rather expensive.’ This discourages many Church members from compromise sometimes to either miss church or schedule their attendance in a shift twice monthly, once monthly, including those who are even religious devotees. To manage this, leaders of churches or new movements would prioritise proximity and timeliness to get a closer land for a church building regardless of being wetland.” (A Church member and trader, 45 years, Ayeduase, Kumasi).

Interestingly, the fourth respondent, dissatisfied about the infidelity on the parts of some chiefs and private owners of some lands, especially in Kumasi, made this revelation: “As a young pastor, a chief delayed our church from having our church building on a good dry land two years ago. He sold the land he transferred to me to multiple persons with different allocation permits. Ashamed of his infidelity, he gave me a wetland plus a compensation worth one-third of the price. With much respect for him, I compromised, cleared and refilled the land on which our church is built now. Is it my fault, Sir?” (A

young Pastor, 29 years, newly married, Boadi, Kumasi). In affirming the Pastor’s grievance, Ameyaw & de Vries (2021) indicated that land acquisition in Ghana is faced with several challenges – unofficial charges, multiple sales and lack of transparency, among others. Gyamera *et al* (2018) revealed that frustrations, anxiety and fraud are some additional challenges. In relation to the issue with chiefs, the findings of Kuusaana & Eledi (2015), Abubakari, Ritcher & Zevenbergen (2018) and Mabe, Nashiru, Mummuni & Boateng (2019) reveal that the acquisition of land in Ghana can be done through customary transfer or statutory transfer. That means, customary authorities such as chiefs have primary ownership and transfer rights to lands, especially in the communities. Also, the State through its authorized agencies has the same rights (Ameyaw & de Vries, 2021).

Theme of Proximity

The third theme for discussion is “nearness of land and proximity of church premises to members.” Regarding the necessity of “proximity of church premises to members,” a community member in *Ayeduase* expressed her dissatisfaction towards the longer distance she had to cover with commercial buses before she reached her church premises every Sunday and sometimes for evening services on Wednesdays and Fridays. She was asked: “Does it matter to have church closer to members? Would you be faithful to always attend church despite its location and the longer distance it takes you to get there?” She lamented: “Mr. Researcher, I am a mother of three boys – nine, seven and four years old respectively. I am a wife and worker too. Commercial buses nowadays do not want to take one journey to long destinations anymore. Most of them prefer to take short distances to amass income. And since you find yourself mostly behind time, you painfully agree to board the buses and pay for the fares for the

number of short distances that will get you to your church location. The painful aspect is when you even happen to sit in the same bus for all those short distances and still pay full fares instead of the one-time fare or a reduced rate for being a sit-in passenger on the bus. Sometimes, because of these costs and the long distance, I do not go to church at all. Nowadays, because of my children and my family's security, I attend a nearby church which is just a walking distance. I only attend my original church sometimes once a month, mostly first Sundays. As for evening services, I have stopped. The distance is long and the church is far from home. Security issues during the night and issues with not getting a car back home make it challenging. I think our churches should be closer to us. But I also know that getting land is sometimes difficult. We hope things change. But I iterate that proximity is key if any church wants full membership or quantitative growth."

From the findings above, it can be implicated that waste of time due to long distance, economic and financial burdens such as transportation on the part of members are possible factors that affect church attendance to decline. In his *Factors leading to Decline in Church attendance in the present age*, Mehrjardi (2022, 229) recommends that growth in attendance through 'visitors' could be enhanced if these challenges among other external threats are considered and handled immediately. In their quest to explore whether or not the proximity of a person's place of worship impacts religious participation and neighbourhood commitment among Americans, the findings of Dougherty & Mulder (2019) revealed that the majority of Americans lived further from their place of worship in 2017, and therefore more people frequently attended a congregation in their neighbourhood. In relation to how some church members for want of proximity may swap attendance and allegiance to a particular community of

believers for another group while still loving God, some studies give responses. From his findings, Dandridge (2020, iii) concluded that "people are inconsistent in their church attendance yet have a love for and faith in God without longing for a commitment to community fellowship." That is, some people would feel the need to attend and be committed to a different church due to distance and yet they are faithful to God. For these individuals, God is the most priority of worship, but not one's special allegiance to a particular church. So, if distance and financial difficulties may pose challenges, attending the nearby church would not affect their faith in and love for God.

Theme of Environmental Impact

When asked about some potential negative effects if Ghanaians continue to acquire waterlogged lands and build in waterways, the majority of the respondents representing 81.3% indicated flooding, water pollution and loss of vegetation. Interested in the fact that owning waterlogged areas and forests for church buildings might lead to falling of trees which could distort the aeration in the environment, about 77.1% of the respondents expressed their dissatisfaction. They revealed that such deforestation as a result of clearing waterlogged forests for church buildings could result in unfavourable greenhouse effects, adverse climate change and loss of lives as exposure to the sun's heat would drastically increase. This empirical result is supported by some studies. In their quest to assess the environmental impact of building construction projects, the findings of Ijigah *et al* (2013, p.99) in their Table 7 revealed that the respondents ranked: pollution – 1st, habitat destruction – 3rd, loss of arable land and erosion – 4th, and increase in environmental temperature – 6th, according to the degree of immediate occurrence. Further, their findings emphasised the causal effects of global warming, flooding, air and

water pollution, destruction of vegetation and greenhouse effect (Ijjah *et al* 2013, p. 100). Also, a respondent revealed: “Wild animals like snakes and frogs which were in such forests and waterlogged areas will now move into houses and peoples’ homes. This is because the habitats of such wildlife animals have been destroyed and they are left with no options than to join domestic habitation. Meanwhile, this is unsafe for residents.” Studies give support to these responses. Ijjah *et al* (2013, p. 94) agree with earlier findings of UN-Habitat (2006) and Sev (2009) that, our environment is fast deteriorating and failing to support life since our desire for development is taking a negative stride on our livelihood, and even causing the extinction of some important species – such as plants and animals.

Theme of Reinforcement and sanctioning both acquisition and use of wetlands for buildings

The findings above seem to provide ideal and pertinent precursors to why some churches in their quest to maintain membership loyalty in the face of limited or unavailable lands would have no option but to acquire, accept, use and develop wetlands for church meeting places. Nonetheless, one may not endorse the activity of building on wetlands or in waterlogged areas just because church pastors or leaders lack financial support to acquire dry lands or are confronted with the urgency for proximity. This is because, some Ayeduse community members who advocate for the preservation of waters and clean air condemned such activity as they posit that “humanity needs the environment for survival and therefore activities that destroyed our vegetation, waters and air, should be prohibited with immediate effect. Eventually, our health will be affected since we depend on this environment.” In a recent issue on *Benefits from the environment*, Scotland’s

Environment (2014) iterates: “To support life, our environment depends on clean air, land, soil and water. We need to manage our influences over these resources and protect them so the environment can continue to provide the benefits we rely on, now and in the future.” (p. 2). In highlighting the findings of UNEP (2009a) and OECD (2006, 7), Bizikova (2011, 2) concludes that “Human well-being is vitally dependent upon improving the management of Earth’s ecosystems to ensure their conservation and sustainable use.” The findings of UNEP (2009a), OECD (2006, 7) and Bizikova (2011, 2) affirm that the survival of humanity depends heavily on the safety and improvement of the environment and the management of its Earth’s ecosystems which includes water resources, lands, air and the animals whose habitats are in the waters and vegetation. Crucial to this survival, Bizikova (2011, 2) reveals that the lives and well-being of vulnerable communities are tied to the safety of the ecosystems and proper management of the entire environment. This means that endangering the environment by destroying its resources and ecosystems is a misery to good and healthy living, especially among the immediate people. Therefore, these innocent individuals are the most affected victims of flooding, water and air pollution and greenhouse effects due to unsafe activities of building in waterways, clearing of vegetation and/or deforestation. This calls for legal reinforcement through traditional and state agencies.

Theme of Blame and Responsibility

The findings reveal that several players are to blame, namely: chiefs and traditional authorities, state agencies, private owners, estate developers, and religious organizations such as churches. However, the majority of the respondents record the highest blame on the chiefs and traditional authorities who are the primary custodians of all community lands, waters and all environmental resources

Kuusaana & Eledi (2015). Also, respondents blame State Agencies who fail to uphold integrity in their jobs by not prohibiting such acquisition and use of wetlands but rather taking some financial penalties to allow such projects to continue (Ameyaw & de Vries, 2021). However, about 45% of the respondents blame churches for even going for such lands, knowing very well the two-face effects on the lives of members should flooding or quake from underground lead to the collapse of the building, and the pollution and other environmental havoc such may cause (Bizikova, 2011).

ALTERNATIVES

Despite the urgency for proximity and immediate place for worship through the fear of losing members, about half of the respondents suggested there could be other alternatives even though the majority could not indicate any of such options. This might be investigated in the future regarding other appropriate options for churches.

Towards Improvement of Environmental Protection: The Way Forward

Ijigah *et al* (2013) concluded that environmental protection should not be an individual's responsibility but rather an all-inclusive one that involves all stakeholders. In view of such dissatisfaction, majority of the displeased respondents suggested some immediate solutions.

Church and Christians

Since the study remarks that the church in Africa could be an important agent for the safety of the environment if she does not indulge herself in any activities that become hazardous to the environment, respondents pleaded that churches should withdraw and discontinue from such activities. Taking

reflections from the situation in Kumasi, it is thus evident that inasmuch as other cultural and social players are responsible, the church in Ghana and Africa at large should know better. This is because Christianity through the Judeo-Christian scriptures upholds the moral and ethical responsibility of environmental stewardship or earth-keeping as humanity's essential responsibility for the survival of all creation as God intended (Genesis 2:16-18; 1:28). To this effect, a concerned church member and worker, a Pentecostal, advises, "The church in Kumasi and Ghana at large should set a good example by completely withdrawing from such activities. It should be the beacon of advocacy so far as nation building is concerned. Wetlands and waterlogged areas are essential for human life and peaceful coordination in Ghana's ecosystem. Christians should champion the stewardship of these resources."

Customary/Traditional Authorities

Since the findings and other literature indicate that chiefs, the state, private and religious organizations are part of the reasons for the environmental problems in Africa today, respondents require that traditional leaders play very responsible roles of fidelity and credibility toward land transfer and leasing while withdrawing and prohibiting acquisition and use of wetlands for building projects.

State Authorities

Respondents gave cautions, emphasising the need for the respective State Agencies to prevent these practices. These agencies include: Local Unit Committee Members such as Assemblymen and Assemblywomen for communities, Lands Commission (Constitution 1992, Article 258; Lands Commission Act, 2008, Act 767), Water Resource Commission (WRC Act 522; Constitution 1992, Article 269; Adjei, 2022), and Ministry of Lands and Natural

Resources (MLNRs) which is mandated and responsible for the sustainable management and utilization of Ghana's natural resources, namely: forests, land and wildlife reserves (PNDCL 327, Section 11 of the Civil Service Law, 1993). Also, the National Commission for Civic Education (NCCE) in collaboration with the above-identified agencies should prioritise intensive public sensitization to improve communal, regional and national awareness on the need to sustain natural resources such as wetlands and waterlogged forests for environmental safety. Ijigah *et al* (2013) revealed that in seeking measures towards environmental protection, serious attention should be paid to pollution control and ecology conservation (p. 101). They remark that this should be a collective responsibility as involving every individual in both the control and conservation of our ecosystem by reinforcing all ecology conservation laws and statutory Acts (Ijigah *et al* 2013, 101).

Private Land Owners and Estate Developers

Due to their business-mindedness at the expense of ecological safety, the rights of private landowners should be checked. Also, the encroachment of waterlogged areas for industrial, residential and commercial purposes should be discouraged and sanctioned. This way, the environmental impact of flooding and deforestation could be minimised or zeroed.

Community Members

Some respondents indicated that community members should be good citizens and keepers of the environment on which their survival depends. Therefore, they should resist any trespassers.

CONCLUSION

The biblical responsibility in Genesis 2:8-15 and Genesis 1:26-28 reveals and instructs Christians worldwide to "care and protect and be responsible for all of creation, including the lands, the waters and the entire environment." Ghanaian Christians have this charge to keep, especially in the Kumasi metropolis where urbanisation and development are putting pressure on natural resources including wetlands that are to be conserved for environmental safety. Although literatures such as Ameyaw & de Vries (2021) and Gyamera *et al* (2015) indicate some challenges with land acquisition, no Ghanaian has the right to acquire and use waterlogged areas for building projects. Despite the economic pressures and proximity concerns that may influence churches or individuals to resort to wetlands, lands identified as 'waterways, waterlogged forests or wetlands' cannot be occupied unless such occupancy is towards the conservation, protection and improvement of the ecosystem. Findings from 2515 interviews and questionnaires revealed that a majority of 1,509 respondents suggested that the church should prioritise its socio-religious allegiance to environmental protection through individual and collective responsibilities toward national development. Also, the churches in Kumasi should prioritise the welfare of members and ensure withdrawal, discontinuation and noninvolvement in such environmentally unfriendly practices. Meanwhile, the reality is that churches are not the primary defaulters, other players such as chiefs, other traditional leaders, state land authorities, private owners and community members should equally prioritise human life and environmental safety over their selfish gains, and they should discontinue such involvement. Indeed, the relevance of wetlands is key for environmental serenity and human survival. Environmental impact on flooding and deforestation through acquisition and use

of wetlands for building projects may lead to adverse effects such as climate change, greenhouse effects, water and air pollution, loss of lives, extinction of some species and destruction of wildlife forests and aquatic habitats. This study recommends a collectively harmonious public sensitisation that fosters advocacy on the need to avoid or minimise the acquisition and use of water areas for building purposes. Potentially, this paper informs national policy and community interventions as it contributes to scholarships in relation to Eco theology, religion and human development and Christianity and environmental stewardship in the field of humanities and social sciences.

Limitations of the Study

Despite the way forward, the issue of religious freedom and the right to own property pose huge limitations. Also, one may suggest a relatively larger sample size in future explorations. Despite their dissatisfaction, respondents were unable to make recommendations regarding alternative solutions for churches that readily face the pressure to acquire and use wetlands at the detriment of the environment in that regard. To that extent, the study is limited. Thus, future research could explore alternative solutions for churches.

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Abbreviations

AUDA – African Union Development Agency

GSS – Ghana Statistical Service

KNUST – Kwame Nkrumah University of Science and Technology

NEPAD – The New Partnership for Africa's Development

SPSS – Statistical Package for the Social Sciences

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