

## **RETHINKING THE GLOBAL PROSPECTS AND FUTURE OF THE HISTORIC BENIN MOATS IN THE WAKE OF URBANIZATION**

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### **Executive Summary**

*The Benin moats have remained both a historical marvel and a mystery for centuries. They are indisputably among Africa's most renowned environmental heritages with the potential for global recognition and exploration. This study examines the potential global worth of the Benin moat and the impact of urbanization on the future of this historic environmental heritage. The work aims to uncover the general contemporary awareness about the Benin moats while also highlighting their aesthetic and economic significance. It shows the factors contributing to their decline, highlighting the implications for their global future. The paper uses historical methods to review the literature on Benin moats as both cultural and environmental heritage. It also adopts the survey method to gather empirical data on the decline and loss of moats in some parts of Benin City. The paper is largely descriptive and expository in orientation. The study finds that Edo residents are largely familiar with the moats. It also finds that there are noticeable anthropogenic-induced changes in the Benin moats caused by urbanization and its attendant consumerism. In view of reimagining the global future and potential of the Benin moats, the work argues for restorative and preservative care that could transform the moats into tourist attractions for economic advantage. The paper concludes that unwholesome consumerist tendencies associated with modern urbanization must be conscientiously mitigated for the preservation of the moats for future generations. The study recommends ecological, cultural, and conservative initiatives, as well as sustainable urban planning strategies as key essentials in safeguarding the environmental heritage of the Benin moats in the wake of rapid urbanization.*

**Keywords:** Benin Moats, Urbanization, Tourism, Environment, Heritage

### **Introduction**

Many studies have shown that there is a connection between urbanization and the loss and distortion of cultural and environmental heritage across the globe (Akil et al., 2022;

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Adie & Amore, 2020; Guzman, 2020). Therefore, people strive to preserve their inimitable cultural heritage for the future. Like other people and places where nature has favorably bestowed aesthetic environmental endowments, Edo people have continued to imagine how best the natural and cultural environmental heritage of their ancient past could be preserved. Particularly, the Benin moats are among the foremost cultural environmental heritage Edo people hope could get the attention they deserve and be harnessed for economic and aesthetic gains in contemporary times. A large number of Benin indigenes believe that the moats have great potential for drawing global attention in terms of tourism and even scientific engagements to Edo state. These lofty ideas have fertile grounds in today's flourishing ideas of globalization. As globalization forces nations and people to renegotiate and navigate their ways into global relevance in the future, Edo people could effectively rally their cultural and environmental heritage in the sustenance of their own unique identity in the global future. The historic Benin moats are among the most viable cultural, geographical, and environmental advantages the Benin people could explore in this regard.

However, there is a growing concern about the continuous loss and almost derelict state of the Benin moats among Edo indigenes. Rapid urbanization and unmitigated consumerism, manifesting heavily in land grabbing across Benin City and its environs, are leading to the encroachment of the natural geographic spaces of the moats (Tomiak et al., 2024). Projections from some recent independent observers indicate that the loss of Benin moats will continue as the city continues to expand and as more lands are used up for residential, commercial, and public utility constructions and infrastructure in the state (Tomiak et al., 2023; Curnow, 2024). It is globally acknowledged that urban development often leaves significant changes to natural ecological balance, resulting in increased threats of environmental degradation and even erosion of cultural heritages. In the case of the Benin moats, urbanization might eventually rob future generations of Benin indigenes and the world of this historic heritage.

While many articles, write-ups, and even studies have delved into the historical description of the nature and purpose of the Benin moats, especially within the context of their ancient significance (Tomiak et al., 2023; Curnow, 2024) not much study has been carried out on unravelling the global potentials of the Benin moats in rethinking the global future of the Benin people. This study is conducted to examine the general awareness and global potential of the Benin moats and the challenges posed to them by rapid urbanization and unmitigated environmental and economic consumerism. The study seeks to provide valuable insights into the current state of moats' environments in Benin City and offer strategies for better preservation for their future global relevance.

### **Study Area: Benin People and Their Land**

Benin is used interchangeably with Edo without confusion (Omoera, 2019). To put this differently, it is convenient to say that beyond being a geographical entity, Benin is also used to describe the people and the language spoken mostly by the dwellers of the southern region of the present Edo state of Nigeria. The principal town of the people is Benin City – the rallying point of the Edo people (Aisien, 1995).

Imoagene (1993) on the Edo people and their neighbors in the Mid-Western region of Nigeria gave an impressive description of the patrimonial territory of the Edo people. Edo state is presently in the south-south geopolitical zone in the present political configuration of Nigeria. Aisien (1995) notes that the Edo people of Nigeria are divided into several sub-units, each of which speaks a patois of the Edo stem- language. In Edo state are found such ethnic groups as the Benins who speak the Edo language or Benin. There are also Esan (Ishan), Etsako, Onwan, and Akoko who speak dialects of the Edo language which in some cases are not mutually intelligible. According to Egharevba (1968), the Benin people emigrated from Egypt and in the course of their journey southward, they settled at Ile-Ife before finally arriving at their present location. The magnificence of the Benin moats may have something to do with the craft wisdom of the inventors of the pyramids. Another origin myth claims that the foremost dweller of Benin was the youngest son of God who, together with his eldest brother (founder of Ile-Ife), had been ordered by their father (God) to take possession of the world (Egharevba, cited in Imoagene, 1993, p. 7). Based on the second version of the origin of the Benin people, it is held that the people may have been living in the area from the very beginning (Osagie, 2002).

The Benins boast of a traditional governing system that dates back to the early period of their history. The first recognized monarchical era among the Benin was that of the Ogisos (the King of the sky). The Ogiso phase of Benin's history would appear to have been a long one because as many as thirty-one of them are believed to have reigned before the last ruler of the dynasty was overthrown and expelled from the kingdom due to political upheaval. Thus, the Ogiso era ended with civil unrest, leading to the deportation of the last of them, called Owodo (Imoagene, 1993; Welton, 1969). Some writers trace the origin of the Benin moats to the Ogiso era in ancient Benin civilization (Curnow, 2024).

The historical narrative of the transition to the monarchical era of the Obas has various versions. In all, Oba Eweka is believed to be the first in this era (Osagie, 2002). Again, several online writers maintain that the Oba era witnessed the construction of the larger parts of the moats. It is also argued that many Edo communities may have joined in the construction of moats around their territories as the imperial power of the Oba's palace continued to spread (Curnow, 2024; Tomiak et al. 2024).

The ancient Benin kingdom was reputed for many things. For instance, the political and social developments in Benin kingdom so impressed the Europeans that one of them who visited the kingdom in 1604 compared it with a major European country of that time. In the words of one of the explorers, “The town seems to be very great. When you enter into it, you go into a great broad street, not paved, which seems to be seven to eight times broader than the Warmoes Street in Amsterdam” (Hodgkin 1975 in Osagie 2002, p. 13-14). Socioeconomically, the traditional Edo economy was focused on agriculture, commerce, and handicraft manufacturing. Agriculture was the foundation of the Edo economy, with yam, cassava, maize, and vegetables constituting the majority of their subsistence cultivation. The residents of Edo also engaged in trade, which included the trading of salt, kola nuts, and textiles. Their artisanal industry, which included bronze casting, weaving, and ceramics, was highly valued both in the local and international markets. The economy of Edo was structured on guilds and associations that regulated production and commerce.

According to the 2006 Census of the National Population Commission of Nigeria, the population of Edo State was 3,233,366 (NPC, 2006; Edo State Government, 2023). The most recent population figures for Edo state stand at an estimated 4,777,000 people (City Population, 2021). The sample size of this study is 1,859,185 people, comprising the Edo-speaking ethnic group of the state. That is 57.5% of the total population of 3,233,366.

### **The Historic Benin Moats**

Popularly called *Iya* among the Benin people of Nigeria, the moats are the most unique geographical and environmental heritage and identity of the Benin land. The renowned and historic Benin moats are massive ancient earthworks that date as far back as the 12<sup>th</sup> century CE (Curnow, 2024; Akujieze and Irabor, 2014). They are acclaimed as the largest man-made earthwork in the history of any known people. The earthwork formations usually appear in circular shapes encircling communities of Edo origins in the present Edo state of Nigeria. The Benin moats are not to be confused with the natural geological formations such as hills (*Oke*), mountains (*Utete*), and valleys (*Uye* or *Ugboghodo*). The Benin moats are distinctively human constructions, chiefly for defense fortification and boundary or border demarcations (*Iyan’uwu*) of Benin territories in ancient times (Akujieze and Irabor, 2014; Ebegbulem 2011).

The Benin moats have a long historical origin, probably reaching to the pre-Oba monarchical era (Curnow, 2024; The Nation, 2013). Some argue that the dates of some of the Benin moats may be longer in history than the popularly acclaimed Oba era. The moats encircling ancient Benin City span approximately 6500 square kilometers of land. In total, the Benin moats are believed to be more than 10000 kilometers long

(edoworld.net, 2023). Future archeological and geographic information research may shed more light on the dimensions, dates, and purpose of the Benin moats.

The Benin moats were typically dug ditches with sand heaps forming earthen banks on one side of the ditches to create a sort of outer wall beams. The ditches were structurally created to form a steep valley-like shape as an integral part of the defensive barrier. The ditches required anyone approaching the earth-heap beam to first coast through the precipitous valley before climbing the earthen wall. Traditional sources claim that the structural design of the moats was such that it prevented invaders from being able to hold on to their weapons as they struggled to climb the earthen walls. While invaders shielded their swords or dropped their arrows to ease their climbs, the waiting warriors of the moats' territories often capitalized on the vulnerability of the invaders by attacking from the top of the high earthen walls.

According to Akujieze and Irabor (2014), the ancient Benin moats could reach 5 meters in width and 30 meters in depth when the earthen wall is measured from the base of the ditch. This is almost consistent with another source's claim that the ramparts range in size from shallow traces to the immense 20-meter-high walls in some parts of the Benin moats (The Nation 2013; edoworld.net, 2023). This present researcher measured a moat at Aduwawa Benin City, with a width reaching about 7 meters and an estimated depth of about 13 meters. However, it should be noted that this particular moat is presently not in its original state, as many anthropogenic activities were observed on the moat in the course of the research.

Due to their perceived historical and environmental importance, the Benin moats were added to the World Heritage Sites of the Royal Palaces of Abomey in 1995. The Benin moats were also recognized by the Guinness Book of World Records in 1974 as one of the largest man-made structures by length. Despite the challenges posed by urbanization, many parts of the Benin moats have survived to date. While some of the moats are now parts of the city centers and have been defaced significantly by anthropogenic activities ranging from sand filling and refuse dumping, others, especially in the villages, still exist in their precinct states. Albeit, they no longer serve the defense fortification purposes for which they were originally constructed.

### **Urbanization and Cultural Environmental Heritage**

At the dawn of the 21<sup>st</sup> century, about half of the world's population resided in the cities. This figure is projected to continue to grow, reaching more than 60% by 2050, with Africa and Asia contributing significantly to the numbers (Zipperer, Northrop, and Andreu, 2020). Presently, across the globe, there are 31 mega cities with more than 10 million people and another 987 smaller cities with population figures between 500

thousand and 5 million people. A projected increase of megacities to 41 and smaller cities to 1290 is expected in about 2030 (Zipperer, Northrop, and Andreu, 2020). These figures undeniably speak to rapid urbanization. Conceptually, urbanization is a complex mix of several interrelated concepts, such as population migration, infrastructure development, environmental changes, economic transformation, and social changes, among others. In simple, unambiguous terms, it refers to the process by which an increasing proportion of a population moves from rural areas to urban centers, resulting in population growth and expansion of cities and towns (United Nations, 2022; Dawson et al., 2009, Regmi, 2017).

It is within the complex dynamics of urbanization that environmental changes occur, giving rise to the issue of the protection of cultural, environmental heritage and the question of sustainability. As expected, population growth places tremendous stress on natural systems. It leads to greater exploration and exploitation of natural resources (Zipperer, Northrop, and Andreu, 2020; Haggitt, 2004). It is this anthropogenic strain on natural balance that results in infringement on environmental heritage. Environmental heritage itself connotes the natural and even cultural endowments inherited from past generations and are preserved and protected for future generations. This could range from the ecosystem, geographical topography, biodiversity, and cultural landmarks, cultural heritage constructions, among others, that are of significant historical or cultural value to a place (Alnsour et al., 2023). As already shown in the paper, the Benin moats are environmental heritage of immense value to the Benin people, to which urbanization now poses a great threat.

Urbanization no doubt has several positive implications for society. These positives do not in any way nullify the negative consequences on its trail. Higgitt (2004) connected urbanization to environmental degradation using Jordan as a case. In this case, urbanization particularly resulted in strain on land and water resources as population growth continued to demand expansion of cities and even agriculturally cultivated land. Alnsour et al. (2023) focus on the impact of urbanization on cultural heritage with attention on some historical buildings in Jordan. Both studies are clear on the fact that unmitigated urban development significantly affects cultural and environmental heritage.

In the African continent, the World Bank, as of 2017, already projected that urbanization could lead to suboptimal land use and harmful environmental impact. According to the prediction, the major demographic and geographical shifts in the continent have the potential to propel unprecedented environmental challenges in the future (The World Bank, 2017). Similarly, National Geographic (2023) noted that rapid urbanization will, in the near future, exacerbate the twin problems of poverty and environmental degradation. In Nigeria, Aliyu and Amadu (2017) observe that

urbanization is demographically driven without commensurate socioeconomic development. The situation often results in negative consequences on the environment, including pollution and poor health conditions. While these are significant implications of rapid urbanization, the critical issue of the degradation of environmental heritage is another layer to the problem of unplanned urban development.

Unplanned urbanization alters natural habitat and environmental cultural heritage through housing, road, and pavement construction, among others. In all, humans remain the ultimate invasive species consuming environmentally sensitive areas, resulting not only in habitat loss but also in the loss of sensitive environmental and cultural heritage (Higgitt, 2004; Fu et al., 2023). Fu et al. (2023) particularly pointed out urbanization as the major factor causing the decline in the value and integrity of cultural heritage, especially in historical areas lacking proper documentation. This seems to reflect the case of the Benin moats which currently suffer loss and distortion of material properties due to unplanned urban expansion of Benin City. As Fu et al. (2023) suggest, this paper agrees that the protection of cultural heritage amidst rapid urbanization requires impact assessment and effort directed toward maintaining a healthy balance between cultural heritage preservation and urban growth.

## **Methodology**

To determine the level of awareness and general perception about the Benin moats, their decline and loss as a result of urbanization, and the global future potentials and existence of the Benin moats, the researcher carried out a survey and conducted some personal interviews to collect empirical data.

*Research Design:* The study employed a survey design to examine opinions on the awareness and perception of respondents on the historic Benin moats and the challenges posed by urbanization to their global future.

*Sampling:* Various sampling techniques are available (Levy & Lemeshow, 2009). To investigate the study context, a sample size of 100 respondents was used. This is justified within the recommended range of 30 to 500 for most studies (Sekaran & Bougie, 2016). The total of 100 respondents used for the study was the number of collected questionnaire responses in usable formats out of the original 120 received. That is an 84% response rate. The focus was on communities known to have long stretches of moats, such as Iyaro, Ekenwan Road, Third East Circular, Aduwawa, Ohovbe, Ahor, Isi communities, and Egba communities.

*Instrument:* This study used a questionnaire as its survey instrument. This method was chosen due to its suitability for directly obtaining knowledgeably informed data from participants on the variables under investigation. A structured questionnaire was

developed for the respondents' opinions on Benin moats and the issue of urbanization. The data from the questionnaire was supported by information gathered through personal interviews with some key stakeholders, such as community heads and government functionaries.

*Procedure:* The questionnaire was divided into two parts (Sections A and B). Section A collected demographic information such as gender, age, tribe, residence, and occupation, while section B, consisting of ten items, measured opinions on the Benin moats and the impact of urbanization on their potential for a global future. To ease data gathering, an online survey was launched, and links were distributed to some respondents in Benin City via individual WhatsApp platforms and community groups. To reach respondents without internet access, some printed questionnaires were distributed to respondents in various areas within Benin City and some fast-developing communities around Benin City.

*Analysis:* Some statistical tools such as frequency tables, simple percentages, and bar charts were utilized to quantitatively analyze empirical data collected. These were corroborated by opinions from personal communications with individuals with good knowledge of the Benin moats, including some Benin chieftains, opinion leaders, government functionaries, community leaders, and some museum curators.

### **Ethical Consideration**

Consent and authorization were formally requested from the participants to facilitate the completion of the questionnaire. Adequate information regarding the aims and objectives of the study was provided to ensure a thorough understanding and cooperation from the respondents. The participants were assured confidentiality of their responses, and that the data will be utilized exclusively for academic purposes.

## Results and Analysis

**Table 1:** Demographic Characteristics of Questionnaire Respondents

<b>Demographic Characteristics</b>	<b>Categories</b>	<b>Frequency</b>	<b>Percentages</b>
<b>Gender</b>	Male	56	56%
	Female	43	43%
	Not specified	1	1%
	Total	100	100%
<b>Age</b>	Under 20	18	18%
	21-40	37	37%
	41-60	35	35%
	60 and above	10	10%
	Total	100	100%
<b>Tribe</b>	Benin	87	87%
	Others	13	13%
	Total	100	100%
<b>Residence</b>	Benin City	63	63%
	Communities around Benin City	24	24%
	Villages of Edo origin	13	13%
	Total	100	100%
<b>Occupation</b>	Civil servant	36	36%
	Self-employed	39	39%
	Farmer	5	5%
	Student	20	20%
	Total	100	100%

Source: Self Compiled (2024)

Table 1 above shows four demographic characteristics, namely, gender, age, tribe, residence, and occupation. The table illustrates that both male and female respondents participated in the survey robustly, with 56 respondents that is, 56% identifying as Males, while 43 (43%) participants were females. Only 1 participant opted not to disclose their gender identity, categorized as not specified.

Most respondents ranged between 21-40 years of age, with a total of 37 participants comprising 37% of the total respondents. This was closely followed by the 41-60 age group, constituting 35%. The age categories of under 20 and above 60 years had 18 (18%) and 10 (10%) participants respectively. The age distribution of the respondents

shows that the general population seems to be interested in the issue of the Benin moats. As Table 1 also shows, the majority of the respondents, 87 (87%) in the survey, identified as Benin indigenes. Only 13 (13%) participants indicated other tribes. The demographic information of the participants in Table 1 also shows that 63, representing the majority of respondents (63%) live in Benin City; 24 of the participants (24%) reside in communities around the city center; while 13 of the participants (13%) dwell in various villages of Edo origin. 39; 39% of participants were self-employed, 36 (36%) were civil servants, 20 (20%) were students, and 5 (5%) identified as farmers in the occupation categories.

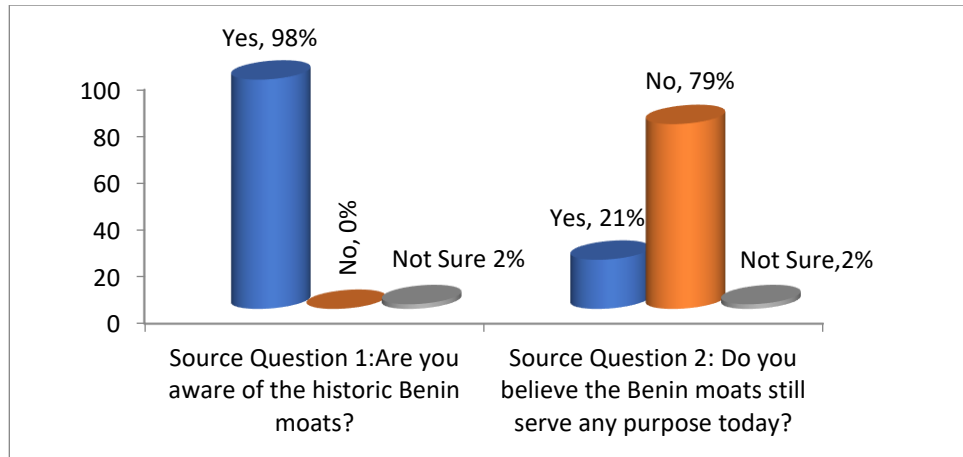
Section B of the questionnaire measured awareness and perception about the Benin moats, the impact of urbanization on the moats, and conservation issues. The table below shows the questions in these categories and participants' responses.

**Table 2:** Statements on awareness and perception of Benin moats

S/N	Source question	Response format	Frequency	Percentages (%)
1.	Are you aware of the historic Benin moats?	Yes	98	98%
		No	0	0%
		Not sure	2	2%
		Total	100	100%
2.	Do you believe the Benin moats still serve any purpose today?	Yes	21	21%
		No	79	79%
		Not sure	0	0%
		Total	100	100%

Source: Self Compiled (2024)

Table 2 above shows an overwhelming majority of respondents (98; 98%) are aware or know about the historic Benin moats. Only an infinitesimal number of participants, that is, 2%, were unsure about the Benin moats. We note here that these two respondents belonged to the age category of under 20. However, 79 respondents (79%) believe that the Benin moats have outlived their importance, leaving 21; 21% of participants who hold that the Benin moats still serve some purpose today. The figures in Table 2 summarily show that although the majority of Edo people and residents are familiar with the historic Benin moats, there is, however, a general perception that they do not serve any significant purpose in contemporary times. This finding is drawn from the (98; 98%) respondents who claimed to be aware of the Benin moats and 79 respondents (79%) who believe that the Benin moats have outlived their importance as represented in the chart below.



**Fig. 1:** Bar chart on awareness and perception of respondents on Benin moats

**Table 3:** Statements on urbanization and its impact on the Benin Moats

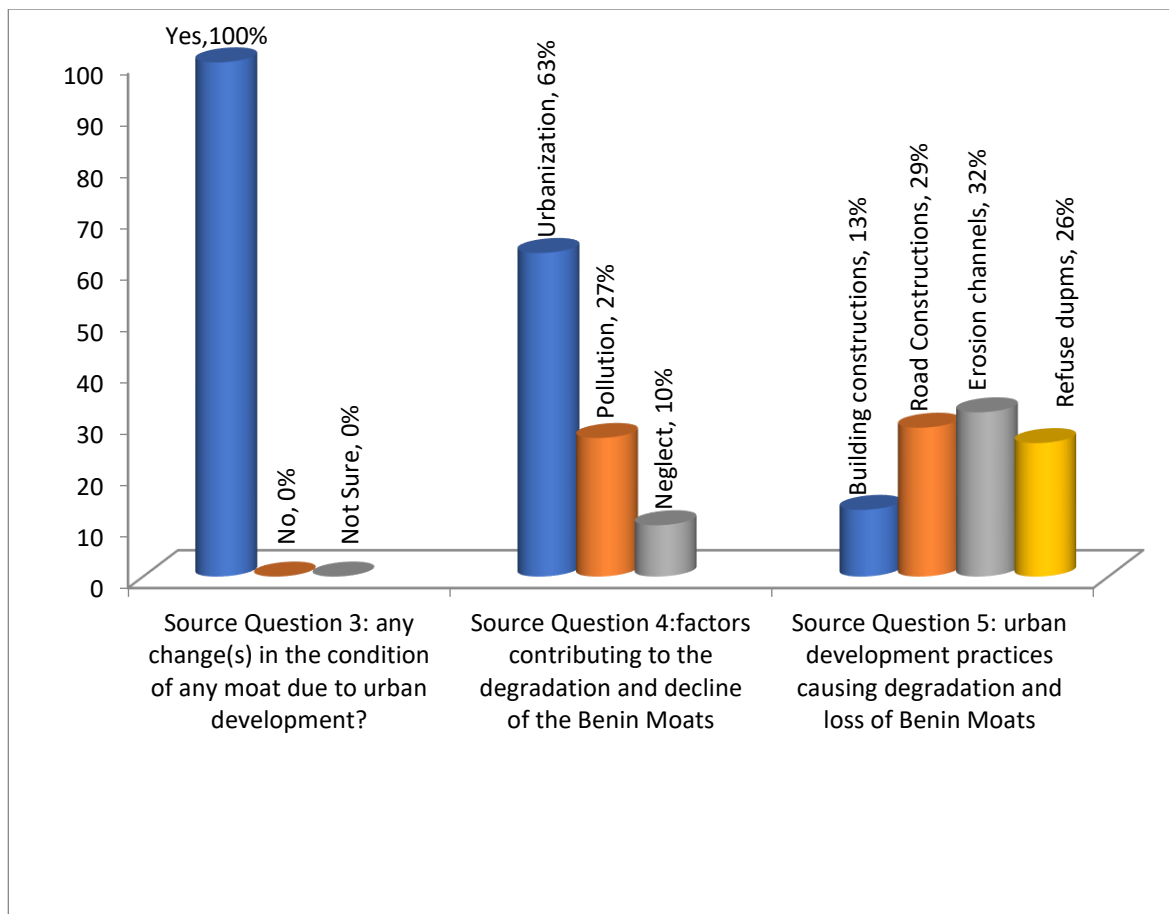
S/N	Source question	Response format	Frequency	Percentages (%)
3.	Have you observed any change(s) in the condition of any moat due to urban development?	Yes	100	100%
		No	0	0%
		Not sure	0	0%
		Total	100	100%
4.	What do you consider the main factors contributing to the degradation and decline of the Benin moats?	Urbanization	63	63%
		Pollution	27	27%
		Neglect	10	10%
		Total	100	100%
5.	Which of these urban development practices in your opinion leads more to the degradation and loss of Benin moats	Building constructions	13	13%
		Roads constructions	29	29%
		Erosion channels	32	32%
		Refuse dumps	26	26%
		Total	100	100%

Source: Self Compiled (2024)

The result from Table 3 above reveals glaringly that all respondents agree to have observed changes to the historic Benin moats. This is evident in the 100; 100% “Yes”

response to the question “Have you observed any change(s) in the condition of any moat due to urban development?” According to the data presented in Table 3, a total of 63 respondents (63%) identified urbanization and its attendant developmental activities as the main culprit among factors contributing to the degradation and decline of the Benin moats. Similarly, 27 participants, constituting 27% of the total sampled group, ticked pollution as the main factor contributing to the degradation and decline of the Benin Moats. Notably, all 27 respondents in this category live in the city center as seen in their demographic information. In contrast, however, 10 respondents noted “Neglect” as the main factor contributing to the degradation and decline of the Benin moats.

On the question of which urban development practices and associated phenomena lead more to the degradation and loss of Benin moats, responses varied between building constructions, road constructions, erosion control channels, and refuse dumps. Figures from Table 3 reveal that a fair majority of respondents (32; 32%) believe that channeling erosion to moats causes significant degradation and loss of the Benin moats. Another 29 respondents (29%) went for road construction as the leading cause of degradation and loss of Benin moats. 26 participants (26%) and 13 participants (13%), respectively, opted for refuse dumps and building construction activities as the main urban phenomena causing degradation and loss of Benin moats. The overarching finding, as revealed from the data in Table 3, is that there are significant changes in the environmental and cultural heritage of the Benin moats due mainly to urbanization and its associated activities. These include poor erosion control mechanisms; poor waste management systems resulting in refuse dumps and pollution, and poorly planned buildings and road constructions. Below is a chart showing the responses to the inquiries in Table 3.



**Fig 2:** Bar chart on urbanization and its impact on the Benin Moats

**Table 4:** Statements on conservation and direction for the global future of historic Benin moats

S/N	Source question	Response format	Frequency	Percentages (%)
6.	Would you agree that the Benin moats are well preserved for the future?	Yes	7	7%
		No	75	75%
		Not sure	18	18%
		Total	100	100%
7.	Are you familiar with any law or conservation initiative aimed at	Yes	16	15%
		No	64	64%
		Not sure	20	20%

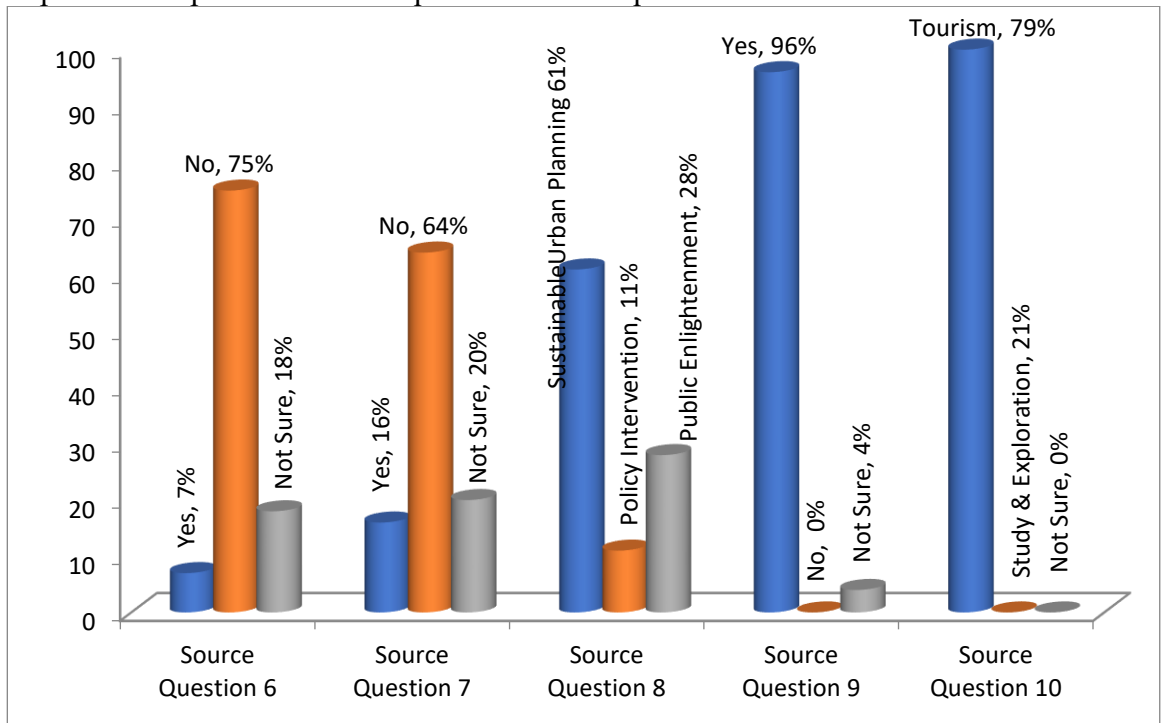
	protecting the Benin moats for future generations?	Total	100	100%
8.	What strategies do you believe could best help in preserving the Benin moats as environmental and cultural heritage	Sustainable urban planning	61	61%
		Policy interventions	11	11%
		Public enlightenment	28	28%
		Total	100	100%
9.	Do you believe the Benin moats have global potential and should be recognized by UNESCO as a World Heritage Site?	Yes	96	96%
		No	0	0%
		Not sure	4	4%
		Total	100	100%
10	Which area do you think the Benin moats could be more viable and contribute to the socio-cultural and economic development of Edo state in the future?	Tourism	79	79%
		Study and exploration	21	21%
		Not sure	0	0%
		Total	100	100%

Source: self-compiled (2024)

The findings presented in Table 4 indicate that 75 respondents, constituting 75%, do not agree that the Benin moats are well-preserved for the global future, while an additional 18 respondents, or 18%, are uncertain about whether they are well-preserved or not. On the other hand, 7 participants, equivalent to 7%, agreed that the Benin moats were well preserved. Table 4 also shows that only 16, 16% of respondents claim to be familiar with some regulation or conservation initiative aimed at preserving the Benin moats. In contrast, 64 respondents, a far majority accounting for 64% of participants are not familiar with any law or conservation effort aimed at preserving the Benin moats. Closely following are an additional 20 respondents, constituting 20%, who are not sure about any preservation effort.

Table 4 further reveals that while 61 respondents (61%) and another 28 participants (28%) respectively favor sustainable urban planning and policy intervention, 11 respondents (11%) prefer public enlightenment as strategies that could help in

preserving the Benin moats as the cultural and environmental heritage of Edo people. From Table 4, a clear majority of respondents, that is 96 representing 96% of the sampled population, believe the Benin moats have global potential and should be made UNESCO World Heritage Sites. Only an infinitesimal number of 4 respondents (4%) are unsure about the Benin moats becoming UNESCO World Heritage Sites. The majority of the study’s participants (79; 79%) submitted that the Benin moats are a viable environmental heritage that could contribute to socio-cultural and economic development when harnessed through tourism. Another 21 respondents (21%) saw potential in the study and exploration of the moats as the channel through which they can contribute to the development of the state. This is the summed response to the question, “Which area do you think the Benin moats could be more viable and contribute to the socio-cultural and economic development of Edo state in the future?” Consequently, the overarching finding on conservation and direction for the global future of the historic Benin Moats suggests that most of the respondents acknowledged that the Benin Moats are presently not well preserved, but that their recognition by UNESCO as World Heritage Sites coupled with some strategic measures like sustainable urban planning, and public enlightenment campaigns could change the tide, exposing the Benin moats as potential tourism attraction. The chart below shows respondents’ opinions on the inquiries in source questions 6-10 in Table 4 above.



**Fig. 3:** Bar Chart on conservation and direction for the global future of historic Benin moats

## **Discussion of Findings**

### ***Awareness and Perception of Benin Moats***

The first finding of the study showed that although the majority of Edo people and residents are familiar with the historic Benin moats, there is, however, a general perception that they do not serve any significant purpose in contemporary times. The general awareness level about the Benin moats, which cuts across the whole population of Edo state, as shown in the demographic information of the study, could be anchored on the preponderance of the moats. These respondents (whether indigenes or not) may have seen a physical moat in Benin City or other Edo communities. However, the awareness about the Benin moats seems to be localized among the residents of Edo state. A personal vox pop that sampled opinions of 20 students on awareness about the Benin moats conducted by the researcher at the University of Port Harcourt, Rivers state, on April 19<sup>th</sup>, 2024, revealed that none of the students interviewed had prior knowledge about the historic Benin moats. Another follow-up personal interview (April 23, 2024) with Osayi Igbinosa, one of the respondents in the category of those who shared the view that the Benin moats still serve some purposes, further clarified that although the moats are no longer serving the defensive fortification purpose for which they may have been originally created, they remain an enchanting aesthetic and defining feature of Edo landscape in modern times.

### ***Urbanization and its Impact on the Benin Moats***

The second overarching finding of the study revealed that there are significant changes in the environmental and cultural heritage of the Benin moats due mainly to urbanization and its associated activities. The researcher's direct observation of some moats at Aduwawa, Ohovbe, Evboumodu, and Egba communities in Benin City shows, with pictorial evidence, that urban activities such as building, roads, refuse dumping, and erosion channeling, among others, are fast defacing the symmetrical structures of the moats. To further buttress some respondents' claim that the moats suffer neglect, the terrible states of some moats were noted with pictorial evidence. The presence of grasses, refuse, and vegetation give a general sense of abandonment. Some of the pictures below show poor erosion control mechanisms; poor waste management systems resulting in refuse dumps and pollution, and poorly planned buildings and road constructions as urban activities currently degrading the Benin moats.



**Fig 4:** A picture showing a building fence on the high beam of a moat at Aduwawa Benin City



**Fig 5:** A picture showing a refuse dump in a moat in Benin City



**Fig 6:** A picture showing an unplanned road/path across a moat in Benin City



**Fig 7:** A picture showing digging on a moat in Benin City



**Fig 8:** A picture showing an erosion channel and a fence on moats in Benin City

### **Conservation and Direction for the Global Future of Historic Benin Moats**

Another central finding of this study on the issue of conservation and direction for the global future of the historic Benin moats revealed that the Benin moats are presently not well preserved and there is little or no conservation initiatives or policy framework aimed at protecting the moats. Furthermore, the study also showed that UNESCO's recognition of the Benin moats as World Heritage Sites, coupled with some strategic measures like sustainable urban planning and public enlightenment campaigns could change the tide, exposing the Benin moats as a potential tourism attraction. It is overwhelmingly revealed that not so much is currently being done to preserve this cultural and environmental heritage. As could be deduced, the poor preservation of the moats may have informed the opinion of the majority of respondents who believed the Benin moats had outlived their usefulness.

In line with rethinking the potential and global future of the Benin moats, it is important to note that Edo residents are currently yearning for various intervention efforts to preserve the moats for the future. Strategies such as sustainable urban planning, policy intervention and public enlightenment are believed to be in the right direction in preserving the Benin moats as the cultural and environmental heritage of the Edo people. Significantly, one finding that speaks to the potential future of the Benin moats is that many Edo residents believed that the Benin moats should be recognized as UNESCO's World Heritage Sites. This is the opinion of 96 respondents, representing 96% of the sampled population of the study. A personal communication with Williams Ijesurobo in Benin City on 15<sup>th</sup> April 2024 strengthened the case for a potential global

future of the Benin moats. According to him, a final word has not been heard yet on the origin and purpose of the Benin moats. He added, for instance, that the historical origin of the Benin moats could be farther than is currently believed. For him, the same could be said about the purpose for which they were constructed. Williams Ijesurobo (Personal communication on 15<sup>th</sup> April 2024) saw a potential global future in further study and exploration of the moats. The interviewee further noted that not so much is known about the moats beyond what had been passed down from ancient times as tales among locales. This accordingly opens up the opportunities for archeological and other geoscientific investigation and engagement. In somewhat an agenda for future investigation, Williams Ijesurobo (Personal communication on 15<sup>th</sup> April 2024), continued by mentioning: the number of the moats, sizes in scale and dimension, possible earthmoving instruments available, and labor force, among others, as potential areas of study of the moats that could help in better appreciation of the ancient Benin civilization that birthed the moats and Benin people in general.

In the same vein, Augustine Imade (Personal communication on 15<sup>th</sup> April 2024), having opined that the Benin moats are civil engineering masterpieces and marvels, noted that the nature and magnitude of the moats are such that they should capture global academic and scientific investigations. For him, some of the moats present some forms of architectural formations and consistencies that should excite modern construction engineers. They hint at a sophisticated and even mystical civilization only a probe with global interest can unravel. To further buttress the potential of a global future for the Benin moats, Charles Osawemwengie (Personal communication on 16<sup>th</sup> April 2024) stated that the Benin moats have great potential to benefit from global advancement in technology. According to him, advances in the Global Positioning System (GPS) have the technological capability of remapping the moats for proper documentation and preservation for the future. He added similarly that other scientific technologies, especially in Laser Scanning (LS) and Ground Penetration Radar (GPR), could provide crucial and compelling details about the moats that could benefit the global community in the future. The positions of these interviewees serve to emphasize the opinions of the 21 respondents (21%) who saw potential in the study and exploration of the moats as the channel through which they can contribute to the development of Edo state in contemporary times.

Another area of potential global future revealed in the findings of this work is that the Benin moats are a viable environmental heritage that could contribute to socio-cultural and economic development when harnessed through tourism. As the study showed, the majority of participants (79; 79%) hold the view that the greatest significance of the historic Benin moats lies in their potential for global tourism. The tourism industry is acknowledged worldwide as a stimulant for economic growth. Coupled with the rich cultural heritage of the Benins, the moats could significantly boost the tourism industry

of the state with a ripple effect on other sectors of the economy through strategic investment.

## **Conclusion**

The Benin moats have not garnered the significant attention needed to secure their relevance in the global future. They are, at best, in their precinct states (especially those in the villages) and, at worst, in degraded states due to urbanization and its associated activities (in the city centers). The ongoing actions of converting moats to erosion channels, indiscriminate dumping of refuse, and sand filling of moats for building and road constructions are a few of the culpable urban activities leading to the degradation, decline, and loss of the historic Benin moats today. In all circumstances, these unhealthy activities challenge the global future of the moats. As already pointed out in this study, there is a need for sustainable urban planning that pays attention to mitigating urban-economic consumerism. In rethinking the global future of the Benin moats, there is a need not only for conservation initiatives aimed at protecting the moats as cultural and environmental heritage but also for economic-oriented initiatives in line with emerging norms of globalization. Tourism particularly stands out in navigating the future of these environmental heritages. The Benin moats could be utilized for economic advantage while being maintained for future generations.

## **Recommendations**

Based on the findings of the study, the following are suggested recommendations for a way forward in safeguarding the environmental heritage of the moats in the wake of rapid urbanization. Firstly, there should be a public-driven awareness campaign to draw the attention of the whole nation to the Benin moats as a national treasure. Currently, as the study found, the awareness about the Benin moats is localized, especially among Edo state residents. Some ecological strategies could help not only in the protection of the Benin moats areas for the future but also for more widespread awareness about them. For instance, there should be clear government policies declaring these areas as national ecological and environmental heritage reserves. This could help mitigate human impact and preserve the moats' ecosystem. Secondly, there is a need for Edo culture to evolve beyond the prevalent orientation that the moats were protective fortifications and boundary landmarks in ancient Benin civilization. A sustainable cultural strategy for safeguarding environmental heritage like the Benin moats should involve promoting awareness through cultural events such as eco-themed cultural exhibitions, storytelling focused on the ancient creation of the moats and volunteering for cultural conservative initiatives, among others. These could cultivate a deeper connection of the people to their environmental heritage and natural surroundings as a whole.

Thirdly, there is an urgent need for sustainable urban planning in Edo state to curb the encroachment into the natural spaces of the moats. The moat areas should come under the protective designation as heritage sites and be protected by law. Building and road constructions should strictly adhere to the state's master plan. For instance, convents and bridges are perfect and sustainable alternatives to sand filling of the moats during construction. Also, the government must implement erosion and waste management strategies to stop the degradation and pollution of the moats due to the channelling of rainwater and indiscriminate dumping of refuse in parts of the moats. Finally, there is a need to strategically rethink the global future and value of the Benin moats in contemporary times. The study particularly pointed out that a huge economic advantage could be derived from the recognition of the Benin Moats as one of UNESCO's World Heritage Sites due to the potential it holds for global tourism. While this is being awaited, the state government should lead in investing in the development of some parts of the moats for tourism attraction. For instance, cable vehicle facilities (these are small vehicles for sightseeing that move on cables in the air) could be developed in some good scenic stretches of the Benin moats to provide visitors and tourists a unique aerial view.

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