CURTAILING DISASTERS IN HYDRO-TOURISM DESTINATIONS IN NIGERIA

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Abstract:*The importance of improving resiliency in tourism sector in Nigeria cannot be over emphasized. This is especially germane in hydro-tourism industry where tourist destinations are often located in areas of intrinsic scenery that are exposed to hazards which can transform into disasters. Among the hazards that can develop in hydro-tourism destinations include flooding, high winds, sea level rise, swell waves and electrical shocks which can occur through switches, cables and circuits, especially when such destination is an hydro-power project. Myriads of vulnerabilities in hydro tourism destinations which can transform into disasters when not properly managed in the country have been categorized into three groups in this paper following Lindell, et. al.(2006) while different techniques of preventing such vulnerabilities from transforming to disasters were discussed.*
Keywords*: Curtail, Disaster, Hazard, Hydro-Tourism, Vulnerability*

INTRODUCTION

Tourism according to United Nations World Tourism Organization UNWTO (2014) is a social, cultural and economic engagement which entails the movement of people to places outside their usual environment for personal or professional purposes. The act is a major source of income, investment and employment for people. World Tourism Organization (2005) observed that, tourism activities has the capacity to stimulate development, economic growth and create new opportunities for poverty alleviation and self-governance, especially in regions that are resource scarce or have limited livelihood options. World Travel and Tourism Council (2007) regards travel and tourism as an inseparable part of the world in which we live, making a vital contribution to the world's economy, as well as to the quality of life of its citizens. Tourism shares in realizing the universal aspirations of uniting friends and families, stimulating exchanges across frontiers, creating sustainable jobs and countering climate change.

Tourism counts among the main economic activities in many countries; it remains one of the fastest growing industries across the world. Tourism has an annual growth rate of 4 percent in countries such as USA, Italy, France, Spain, UK and Caribbean while African countries such as Kenya, South Africa, Morocco, Tunisia, Gambia, and Egypt are of recent, earning substantially from tourism activities (Mani, 2003). According to the UNWTO (2014) tourism remains a primary source of foreign exchange earnings in 46 out of 50 of the world's least developed countries (LDCs). The tourism sector, if properly managed has the potential to make a substantial contribution to the achievement of the United Nations Sustainable Development Goals.

It is the realization of the importance tourism in development activities of a nation that made the Nigerian government to transform the Nigeria Tourism Board (NTB) to Nigeria Tourist Development Corporation (NTDC) by the virtue of Decree 81 of 1992 with its supervision put under the Ministry of Cultural and Tourism. This action of government in transforming the tourism sector in Nigeria is highly commendable. The country with a vast and fascinating landscape has diverse and amiable climatic variables and is rich in biological diversity, cascading water systems rolling links and beautiful sceneries. Creating wealth from these favourable natural endowments through tourism activities will no doubt help in developmental efforts of the country.

Although tourism encourages economic development at tourist destinations, such activities however needs to be properly planned to avoid occurrence of hazard which can transform into disaster when not properly managed. This is because; the intrinsic aspects which tourism industry is built upon are often vulnerable to hazards. This assertion is especially true in hydro-tourism destinations where tourists are usually expose to both natural and man-made hazards. While the natural hazards may manifest inform of high winds, flooding, storm surges, tsunamis, swell waves, sea level rise etc, man-made hazards usually results from physical vulnerabilities of structures (i.e. collapse of buildings and dams) and infrastructure (i.e. boat accident and electrical shocks, in power generating dam).

Disaster in hydro-tourism destinations can also result from social vulnerability of tourist themselves. This relates to poor hazard knowledge of tourists, communication and language barriers between tourists and local residents. Byrd (2007) observed that communication and language barriers may induce hazard which can transform into disaster when tourist are not easy to reach with relevant information such as warning.Sonmez, et al (1999), considered tourism as a very risky industry.

In order to reduce the risks in tourism industry, disaster management planning should prioritize improving tourism destination's resiliency as currently being supported in this study. This is especially germane in hydro-tourism destinations which attract highest number of tourists yearly in most countries including Nigeria. According to European commission data, 63% of the European holiday makers prefer water destinations against 25% of those giving preference to mountain locations, 25% to cities and 23% to country side.

Beyond its well-known industrial and energy uses, water offers a wide variety of opportunities for recreational and tourist activities (Franco-Solis and Zhu, 2015). Water is a precious resource that attracts. Different water bodies can sustain several diverse forms of tourism; such include beach tourism, river tourism, tourism of reservoirs, lakes and natural pools, and tourism of thermal water. The latter which can be regarded as oldest form of tourism (Folgado-Fernandez et al (2018) serves a dual purpose of recreation and health treatment through thermal bath (Molina-Villar 2004). When people decide to go on vacations and travel for recreation, instruction and pleasure, many have strong tendency to head to water locations.

It is the growing trend in water based tourism (Hilma and Mohammed, 2016) coupled with increasing prevalence of hydro tourism disasters, especially at tourist destinations that has spurred this particular research. UNEP (2008) observed that the varied impacts of climate change are also making tourism disasters to be more evident at destinations around the world.

The Concept of Hydro-Tourism

The prefix "hydro" means water. It is used in this paper with the word tourism to generate a compound word; hydro-tourism. Thus, hydro-tourism can be defined as recreational sport and free time activity whose target area is a natural or artificial water surface, riverside or lakeside and its environs. Hydro-tourism destinations thus includes hydropower plants, irrigation projects, springs, canals, beaches, rivers, waterfalls and water parks that contain swimming pool.

Banhidi (2013) observed that the emergence of hydro-tourism activities goes back to the development of vehicles suitable for water transport, as well as man's various leisure time activities done in the vicinity of a water surface. Different types of hydro-tourism may intertwine with each other or with other trends of tourism; for example ecotourism, rural tourism etc.

Hydro- tourism is especially embraced by water lovers, who are happy with what water and its natural environment can offer them. Today, basic touristic infrastructure and superstructure are being provided at hydro-tourism destinations in different parts of the world. Michalko (1999) define super-structure as those things tourism destinations can offer in the area of accommodation and catering, including the sum of all services tourist may use.

Hydro-Tourism Destinations in Nigeria

Nigeria is a potential tourist paradise. The country according to Abiodun (2002) is blessed with good tropical weather, variety of wildlife, awe-inspiring waterfalls, historical relics, captivating beaches and rolling hills, coupled with warmhearted and culturally active populace. Table 1 shows the list of hydro tourism destinations located in different parts of the country.

The capacity of the above listed tourism destinations to generate substantial revenue for the country cannot be over-estimated. This can only be achieved through government assistance in creating the enabling environment for tourism to thrive and attract both the domestic and foreign tourists.

Vulnerabilities in Hydro-Tourism Destinations

Water locations contribute to recreation and tourism industry worldwide. Those water points such as beaches, rivers, mountain lakes and springs, waterfalls and, coral reefs have powerful attraction for people; they are collectively referred to as hydro-tourism destination. Some of such locations, especially in economically endowed countries of Europe and America are not only developed for sightseen, but provide opportunities for water based activities like cruise ships, sport fishing, ecotourism, underwater diving, canoeing and Kayaking. According to Folgado-Fernandez, et al (2018), the relationship between water and tourism is characterized by a dual understanding of the element as a precious resource and as an attraction.

Hydro-tourism destinations are however characterized by a number of vulnerabilities. This is because, such destinations, because of their locations are usually predisposed to substantial damage from hazards caused by natural process or induced by man. Such hazards include high winds, rip currents, electrical shocks, boat accident, swell waves, storm surge and flooding due to low elevations amongst others.

Westgate and O'Keefe (1976) defined vulnerability as the degree to which a community is at risk from the occurrence of extreme physical or natural phenomena, where risk refers to the probability of occurrence and the degree to which socio-economic and socio-political factors affect the community's capacity to absorb and recover from extreme phenomena. Vulnerability can thus be viewed as the conditions determined by physical, social, economic and environmental factors or processes, which increase the susceptibility of a community to the impact of hazards.

Table 1: Hydro-Tourism Destinations in Nigeria

S/N	ATTRACTION	DESCRIPTION	LOCATION	STATE
1	Azumini Blue River	Natural	Azumini	Abia
2	Kiri Dam	Natural	Jada	Adamawa
3	UtaEwa Beach	Natural	IkotAbasi	AkwaIbom
4	Blue River	Natural	OhubuUkanafun	
5	Wikki Warm Spring	Natural	Yankari Leisure Spring Water	Bauchi
6	Enembia Warm Spring	Natural	Orokam	Benue
7	The Rare Monatee Katsina-ala River.	Wildlife/Ecotourism	Makurdi	
8	Beach Resort Project	Leisure Beach	Makurdi	
9	Jaffy Falls	Natural	KuyaUta	Borno
10	Lake Tilla Holiday Resort	Resort	Kwaya-Bura	
11	Kwa Falls	Natural	Anengege, Akamkpa	Cross River
12	Agbokim Falls	Natural	Ikom/Etung	
	Ebom Ox-bow Lake	Natural	Abi	
13	Koko Port	Natural	Koko	Delta
14	Escravos Beach	Natural	Escravos	
15	Bomadi Beach Party	Natural	Bomadi	
16	UmanaAfikpo Golden Sand Beach	Leisure River Beach	Afikpo	Ebonyi
17	Green Lake	Natural	Abakaliki	
18	DadinKowa Dam	Man Made	DadinKowa	Gombe
19	Oguta Lake Resort	Natural	Oguta	Imo
20	Wawan Rafi Lake	Scenic		Jigawa

21	Matsirga Water Falls	Natural	Kafancahn	Kaduna
22	Kangimi Dam	ManMade	Kangimi	
23	10th Century Kusugu Well	Monument/Cultural	Daura	Katsina
24	Argungu Int. Fishing Festival	Natural	Argungu	Kebbi
25	Rivers Niger and Benue Confluence	Natural	Lokoja	Kogi
26	Owu Water Falls	Natural	Kajola	Kwara
27	Oboaiyegunle Lakes	Natural	Obbo	
28	Owe Kajita Falls	Natural	Ilorin	
29	Bar Beach	Nigeria's Prime Beach	Victoria Island	Lagos
30	Badagry Beach	Beach Resort	Badagry	
31	KaiyetoroMaiyegun Beach	Beach Resort	Lekki	
32	Eleko Beach	Beach Resort	Lekki	
33	Lekki Peninsula	Beach Resort	Lekki	
34	Tarkwa Bay	Beach Resort	Tarkwa	
35	Water Parks	Recreational	Ikeja	
36	Akodo Village Resort and Beach	Beach Resort	AkodoEpe Road	
37	FarinRuwa Falls	Natural	Wamba	Nassaarawa
38	Hunki Ox-bow Lake	Natural	Awe	
39	Gurara Water Falls	Natural	Gurara	Niger
40	Kainji Lake National Park	Wildlife	Kainji	
41	Shiroro Dam Tourist Resort	Natural	Shiroro	
42	Mayanka Water Falls	Natural	Mayanka	
43	Ebute Oni Tourist Beach	Natural	Ebute Oni	Ogun
44	Yemoji Pool Resort Centre	Leisure	Yemoji	
45	Iwopin Boat Regatta	Cultural	Iwopin	
46	IpaleIloro Water Falls	Physical	IpaleIloro	

47	Ebomi Lake	Natural	Ipesi	Ondo
48	Aruta Water Falls	Natural	Ekiti West	
49	Erin Ijesha Water Falls	Natural Water Falls	Obokun	Osun
50	Ado-Awaye	Suspended Lake	Natural	Oyo
51	Bade Fishing Festival	Festival	Gashua	Yobe
52	Bula Tura Oases	Natural	Nguru	
53	Kalale Hippopotamus Pond	Ecotourism	Dan Guldi, Maru	Zamfara
54	Kwatakwashi Rock/Water Spring	Natural	Kwartakwashi	

Source: Author's Compilation (2020)

Different types of vulnerabilities have been recognized, some according to Aysan (1993) include lack of access to resources (economic vulnerability), disintegration of social pattern (social vulnerability), lack of strong institutional structure (organizational vulnerability) lack of access to information and knowledge (educational vulnerability) lack of public awareness (attitudinal vulnerability) limited access to political power (political vulnerability) certain belief and customs (cultural vulnerability) and weak buildings (physical vulnerability). There are indeed many other kinds of vulnerabilities.

However, vulnerability in hydro-tourism destinations has been classified in this paper into three following Lindell et al (2006); these are natural, physical and social vulnerabilitiesas can be seen on Table 2.

Table 2: Vulnerabilities in Hydro-Tourism Destinations

S/N	Categories	Vulnerabilities
1	Natural	Low Elevation Area Swell Waves Sea Level Rise
2	Physical	Structures (Houses, Buildings, Complex) Infrastructure (Transportation, Electricity etc)
3	Social	Language Barrier Knowledge of Low Hazards Risks and Evacuation

Source: Adapted from Lindel et al., (2006)

Natural vulnerabilities refers to the risks of natural conditions, tourists are exposed to at hydro-tourism destinations. Such hazards vary from one geographical location to another. They include Tsunami, flooding, swell-waves, rip waves, high wind etc. Physical vulnerabilities basically relates to structure and infrastructure. While structure include houses, building and complex such as dam which can collapse due to a number of reasons at tourist destination thus resulting into disaster, infrastructure relates to things like electricity which can shock especially at hydropower destinations and boat or ship which can capsize thus generating disaster. Social vulnerabilities relates to tourists themselves. Such people may possess communication and language barriers which thus make them difficult to reach with relevant information such as warning to avoid disasters (Byrd, 2007).

Approaches to Disaster Management

Disaster is a serious disruption of the functioning of a community or a society, causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. It results from the combination of hazards, conditions of vulnerability and insufficient capacity

During the 21st century, the losses from disasters have expanded dramatically in many developed and developing countries. Within this period, more than one million people have been killed and more than 2 billion others have been directly affected by disasters. The trend in the rate of disaster according to Banks (2005) is towards increasing losses thus, making active risk management more essential than ever.

The task of disaster management is systematic in approach; and it requires the collaborations of the public, private and stakeholders in developing proactive responses to perceived threats. UNEP (2007) consider disaster management techniques as consisting of five step process of:

i. identifying hazards and risks,
ii. assessing community vulnerability to risk,
iii. developing a preparedness and mitigation plan,
iv. implementing the plan, and;
v. evaluating and revisiting the plan, as condition changes.

David et al., (2015) summarized the above five processes into four phases of mitigation, preparedness, response and recovery as seen in Figure 1

Fig. 1: Disaster Management Techniques
Source: David, et. al. (2015)

While the upper half segment of the circle represent the pre-disaster actions to be taken i.e. mitigation and preparedness, the lower half segment of the cycle represents the post-disaster actions that can be taken. Mitigation in the diagram involves risk reduction efforts especially during construction, planning, and design of infrastructure; this is in order to increase resilience against disaster. The preparedness phase is made up of all actions and activities that are responsible for building the capacity of a community for effective and organized response to disaster. The focus in the study is the upper two segments in the circle. The response phase is made up of all actions geared towards stabilizing, containing and control of disaster conditions, while the recovery phase involves the reinstatement of previous normal condition before the disaster event. Efforts here are basically towards repair and restoration of damaged infrastructure.

In relating the four phases of disaster management identified by David et al (2015) to hydro-tourism activities; mitigation strategies will include accessibility to life jackets in boats and ships to prevent drowning, construction of sea walls to prevent flooding, erection of signboards at beaches to warn tourists about strong currents, construction of strict barriers around dam and reservoir to restrict unauthorized entry. Preparedness strategies will include emergency planning and training. The response phase comes after a disaster event. At this phase, actions will be directed towards limiting both the initial and subsequent impacts from the disaster.

The ability to prepare and respond to any given disaster is a function of the lead time of hazard causing the disaster. While hazard of tropical storms will offer tourist a lot of time to prepare, hazard of boat capsizes will not offer such opportunity. Recovery phase aims at reconstruction of physical properties and restoration of social and economic activities that were affected by hazard. Such in hydro-tourism destinations may be inform of pulling out of water, a sunken ship or boat and restoring it back on water for transport service.

Precautions and Safety Measures in Hydro-Tourism Destinations

Hydro-tourism destinations are often located in areas of intrinsic scenery that are exposed to both natural and man-made hazards that can transform into disaster when not properly managed. Such hazards usually emanate from natural, physical or social vulnerabilities at tourist destinations. While natural vulnerability may be presented inform of risk of rip current; physical vulnerability may be presented inform of risk of rip current or swell waves; physical vulnerability may be to language barrier and knowledge of local hazard risk and evacuation.

To avoid the ugly incidents of hydro-tourism hazards, tourisms industry should always prepare detailed plan of programme and employ the experienced and knowledgeable hands or agencies that are well versed with the local conditions of places of visit and are adequately informed about the technical aspects of the exercise. The authority organizing the tourism experience should;

i. clearly state the purpose of the tourism,
ii. design the tour programme and route map. Such should include places to visit, date and time duration for each visit
iii. obtain the necessary permissions from the authorities managing such tourist destinations,
iv. share the contact numbers of local administrators of the destination including those of the emergency mitigation units,
v. list out the clothing needs for the tourists and provide the essential protection materials,
vi. divide the tourists into manageable groups to be headed by experienced and authorized guide,
vii. confirm the weather condition of the destination before taking off,
viii. demonstrate the emergency preparedness plan to the tourists before taking off; and
ix. carry along first aid kits.

While the aforementioned points serve as guidelines for the organizers of the tourism activity, the following subsections contains some of the guidelines to be followed by tourists themselves, specifically at rivers, beaches, and dams to avoid mishap that may turn to disaster.

Avoiding Disaster at Hydropower and Irrigation Projects

Dams are usually constructed to pond water for the purpose of hydro-power and large scale irrigation activities. Water in such reservoirs are usually regulated to minimum design level to store as much energy as possible for daily hydro power generation as well as to prevent any spillage or dam collapse. While the frequent and rapid changes in reservoir water level and flows downstream of the generating station may affect the safety of tourists; the high voltage electricity being generated from such dams may also put tourist at risk of electrocution. Thus tourists should ensure that:

i. experienced project engineer accompany the team tourists,
ii. all safety measures are taken,
iii. only necessary belongings are carried along,
iv. they do not touch any electrical switches cables or circuits,
v. they do not lean on safety hand railings,
vi. they do not enter into the water, especially at the upstream, segment as the surface is usually slushy and slippery,
vii. they remain alert for siren sound, warning light and changes in water level,
viii. they avoid the banks of water flow as mud and slush which are usually slippery accumulates there; and
ix. they stay away from rocks and boulders as they may have in them, dangerous animals which may create panicky behaviour

Avoiding Disaster at Rivers and Beaches

During leisure time and festive periods many tourist usually head to rivers, sandy beaches and turquoise water to relax. Among the common beaches highly patronized in Nigeria include Bar beach, Badagry beach, Kayetoro, Mayegun beach, Eleko beach, Elegushi beach, Lekki Peninsula beach and Tarkwa bay, all located in Lagos State, while the major rivers include Niger, Benue, Ogun, Kaduna and Yola rivers. Attempt to unwind and warm up at river banks and beaches however often put most tourists at risk of drowning. According to Houser (2019) an average of twenty tourists drown each year in Costa Rica beaches while 1.2 million people

around the world die by drowning every year (International Life Saving Federation, 2019).

Tourists are usually at high risk of drowning at rivers beaches because they:

i. they are generally unfamiliar with beach and river conditions and safety measures,
ii. have poor knowledge of beach and river hazards such as rip currents and breaking waves,
iii. most times, have language barriers,
iv. are usually over confidence in their swimming ability; and,
v. most times, make unwise swimming decisions after consuming intoxicating drinks.

Apart from the above, many beaches and rivers neither have life guards nor have system in place that can warn tourists about dangerous waves, fast changing tidal conditions rapids and waterfalls, rip currents and presence of dangerous marine animals such as snakes, crocodile and sharks. To avoid disasters at rivers and in beaches, tourists should:

i. avoid swimming without lifeguards,
ii. avoid restricted areas for any reason,
iii. obey warning signs showing denial, caution and indicated precautionary measures,
iv. avoid boating or other recreational activities organized by unauthorized and unlicensed agencies,
v. ensure the license and availability of required safety gear where boat riding is permitted,
vi. avoid putting hands or legs in water to avoid disaster that can be induced by dangerous aquatic animals such as crocodiles and snakes; and,
vii. avoid hasty movements in boat as it may cause imbalance which can lead to disaster.

The above enumerated guidelines for rivers and beaches also apply for swimming pools in hotels and sport centres.

CONCLUSION

Disaster risk reduction is one way to achieve sustainable tourism. Through this effort, the revenue base of Nigerian government can be broadened and goals of economic development will be achieved. This task

however calls for political will both from the government agencies responsible for moderating the activities and tourism agencies. This can be through the provision of resources towards strengthening disaster management infrastructure and operations.Effort along this direction will aid in achieving resiliency at various hydro-tourism destinations in the country. With this effort, disaster management goals and objectives can be achieved even in the face of disaster event.

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