WATER BODIES AND ECONOMIC DEVELOPMENT IN SOUTH EAST, NIGERIA

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Abstract
The paper discusses water bodies and economic development in south East, Nigeria. It explores the relationship between water bodies and economic development in Southeast Nigeria. It highlights the biodiversity potential of these water bodies and outline strategies to make them functional such as environmental restoration, infrastructure development, dredging, and regular pollution control. The study examines the potential economic benefits of functional water bodies in the region, including reliable clean water supply, improved transportation, consistent access to aquatic food, enhanced recreation and tourism, efficient irrigation, and ecosystem restoration. The paper also addresses the negative impacts of the current lack of functional water bodies, such as the widespread drilling of boreholes, economic losses due to travel to other regions for essential resources, migration out of the region, and the overall dependency of the local economy. The study employed a historical method of qualitative objective content analysis of both primary and secondary sources. The finding of the paper reveals that the absence of functional water bodies has significantly contributed to the region's economic stagnation which has in constant migration out of the region with attendance economic consequences. The study concludes that revitalizing the water bodies in Southeast Nigeria could transform the region into a thriving economic hub within the nation.
Keywords: Water Bodies, and Economic, Development, Economic Development

Introduction

Water bodies, also known as "blue spaces," encompass visible water sources such as streams, rivers, marinas, springs, canals, fountains, ponds, and lakes. In urban planning, "blue space" refers to outdoor environments, whether natural or man-made, that feature moving or still water accessible to the public. These water bodies, including oceans, rivers, lakes, and wetlands, are vital for numerous reasons. They provide essential habitats for a wide range of species, thereby supporting biodiversity and maintaining ecological balance. Water bodies also play a significant role in climate regulation by storing and distributing heat, influencing weather patterns, and acting as natural climate regulators.[1] Their importance extends to human life, contributing to hydration, sanitation, food production, and various agricultural, industrial, and daily activities. Economically, water bodies support activities like fishing, tourism, and transportation and are crucial for intra-and-inter-regional trade. Moreover, they offer recreational opportunities such as swimming, boating, and fishing and contain valuable natural resources, including minerals, oil, and natural gas, which are fundamental to various industries. Water bodies also help control floods and filter pollutants, earning them the description as the "kidneys of the landscape."[2] The effective management of water bodies directly impacts the well-being of all living organisms in their vicinity, including those in Southeast Nigeria.

The Southeast is one of Nigeria's six geopolitical zones and the ancestral homeland of the Igbo people, who speak the Igbo language. This region, with a population of approximately 36 million people around 18% of Nigeria's total population[3] comprises five states: Abia, Anambra, Ebonyi, Enugu, and Imo. Geographically, the Southeast is bordered by the River Niger to the west, the Niger Delta to the south, the North Central plains to the north, and Cross River State to the east. Contrary to the common misconception that the region is landlocked, Southeast Nigeria is home to several significant water bodies, including the Imo River, Azumini Blue River, Lower River Niger, Igwu River, and Cross River. Unfortunately, these water bodies have long been underdeveloped and underutilized, leading to substantial economic losses, a shortage of recreational spaces, and environmental challenges such as gully erosion and widespread borehole drilling across both rural and urban areas.

Functional water bodies in Southeast Nigeria could serve as catalysts for comprehensive economic development. While there is no universally accepted definition of economic development, for this discussion, in this context, economic development involves increases in income and wealth, improvements in the quality of life, and reductions in social vices, inequalities, and poverty. It also includes infrastructure development, environmental protection, economic diversification, human capital development, and the enhancement of intra- and inter-regional trade and investment. It is also defined by Karl Seidman as "a process of creating and utilizing physical, human, financial, and social assets to generate improved and broadly shared economic well-being and quality of life for a community or region."[4] These are the collective benefits that functional water bodies could bring to Southeast Nigeria. This study aims to identify the water bodies in Southeast Nigeria and assess their economic potential in the region.

Water Bodies in the South East States

It is essential to identify these water bodies geographically according to the states where they are located and to highlight their economic potential. Starting from Abia state, The Imo River flows for 240 kilometers before emptying into the Atlantic Ocean, serving as a natural boundary between Abia and Rivers States, as well as between Imo and Abia States. Its inland waterways make it a vital driver of economic development. The river's tributaries in Abia include the Owerrita and Onuimo/Umu Okpara Rivers. The Azumini Blue River, known for its naturally crystal-clear blue waters that turn green when it rains, connects to the Imo River and forms a natural boundary between Abia and Akwa Ibom States.[5] Its tributaries, the Aba and Okpuluobo Rivers, contribute to the economic significance of this waterway, especially given its location in a key commercial area.[5]

Another prominent river in Abia State is the Igwu River, located in the northern part of the state. This river serves as a natural boundary and connects Abia with Akwa Ibom State, as well as various communities such as Ohafia, Abam, and Bende. Historically, during the pre-colonial and colonial periods, the Igwu River was an important transportation route and a source of aquatic food for surrounding communities. Arochukwu, a region rich in water bodies, is home to several notable rivers. OgbanaNkuma, also known as "Running from the Stone," is a unique river in Arochukwu that originates from a stone formation and includes a waterfall. It is accessed by 79 steps and supplies water to nearby rivers. The Okpara River, a major tributary of the Cross River, flows through Arochukwu. The Arochukwu River, another significant water body, flows through the town and is a tributary of the Okpara River. The Utuma River, which flows through the Utuma community, and the Ihechiowa River both empty into the Okpara River. Additionally, the Okpu River flows through several communities before merging with the Arochukwu River. Other rivers in Abia State include the Uduma River in Ohafia, the Mmam River in Umuobasi Mbala, the Aku River in Lokpanta, the Awka River, and the Uzumani River in Abirba, among others. Each of these water bodies plays a critical role in the region’s ecosystem and holds untapped economic potential that could be harnessed for development.[6]

In Anambra state, there are many water bodies, and the major River in this state is River Niger. It serves as a natural boundary between Anambra State and Delta State before flowing into the Atlantic Ocean. The Anambra River runs from Uzo-Uwani to Aguleri, Anam, Nsu, Gbe, and Onitsha, connecting with the Nkisis and Mgbakiliki Rivers before emptying into the Niger River. Another significant river is the Omambala River, which flows through the state and also empties into the Niger River. The Umuleri River, originating from the Umuleri community, flows into the Anambra River. The Ezu River originates in the Ezu community and discharges into the Omambala River. Similarly, the Ogbaru River traverses the Ogbaru community before flowing into the Niger River. The Ufuma River also courses through the Ufuma community, ultimately emptying into the Omambala River. Furthermore, the Enugu-Ukwu River flows through the Enugu-Ukwu community and contributes its waters to the Omambala River. Collectively, these rivers are vital to agriculture, fishing, and various economic activities within Anambra State, while concurrently serving as crucial habitats for a wide array of aquatic speciesp.[7]

Several aquatic systems within Ebonyi State encompass the Ebonyi River, which traverses the region and acts as a feeder to the Cross River. Additionally, other notable rivers in the area include the Ivo, Okposi, Oshiri, Uburu, Ishielu, Ntezi, and Ezza Rivers. These waterways facilitate agricultural practices, fishing, and a range of economic pursuits, while also serving as vital ecosystems that sustain a variety of aquatic organisms.[8] Furthermore, if these rivers are effectively developed and sustained, they have the potential to substantially augment the state's water resources, promote transportation both within and between states, support the generation of hydroelectric power, and further improve agricultural output.

In Enugu State, various aquatic ecosystems exhibit considerable economic promise. The Ajalli River is instrumental in facilitating fishing and irrigation activities, in addition to possessing the potential for hydroelectric power generation. Similarly, the Ekulu River serves as a sanctuary for fishing, irrigation, and water supply, while also presenting opportunities for tourism development. The Oji River contributes to fishing, irrigation, and water provision, with the added prospect of hydroelectric power generation. The Inyi River is utilized for fishing, irrigation, and water supply, and it also offers potential for the growth of tourism. Akpugoeze Lake, a natural lake, is poised for enhancement in fishing, tourism, and recreational pursuits. Similarly, Ogelube Lake provides avenues for fishing, tourism, and recreational activities. Nike Lake, a man-made lake, is similarly positioned for fishing, tourism, and recreational engagement. Furthermore, the Enugu Dam, also a man-made structure, exhibits potential for hydroelectric power generation, water supply, and irrigation. The Oji River Dam, another constructed dam, shares similar prospects for hydroelectric power generation, water supply, and irrigation.[9]

In Imo State, numerous significant water bodies are integral to both the ecological and economic frameworks of the region. The Imo River is a major watercourse that traverses the state, acting as a tributary to the Niger River. Another important river is the Otamiri River, which flows through the state capital, Owerri, and subsequently converges with the Imo River. Additionally, the Nworie River runs through the Nworie community, eventually discharging into the Imo River. The Njaba River also passes through the Njaba community before joining the Imo River. The Uba River, which flows through the Uba community, similarly contributes to the Imo River's watershed. The Orashi River delineates part of the border between Imo and Rivers State and flows into the Niger River. Among other distinct aquatic features in the state is Oguta Lake, a large and picturesque lake

located in the Oguta community, esteemed for its fishing prospects. Another notable body of water is Nwaorie Lake, a smaller lake situated near the Otamiri River, recognized for both fishing and recreational opportunities. The Orashi and Njaba Rivers course northwest and then southward toward the Bight of Bonny, which is part of the Atlantic Ocean. Collectively, these water bodies facilitate agricultural activities, fishing, and other economic ventures in Imo State while providing essential habitats for a variety of aquatic species.[10] Furthermore, these water bodies play an indispensable role in the overall water supply system of the state, significantly contributing to the sustainable management and distribution of this vital resource. Their involvement extends beyond mere provision, as they are also integral to the generation of hydroelectric power, which serves as a renewable energy source crucial for meeting the state's growing energy demands. Moreover, they bolster the state's tourism sector by facilitating recreational activities and natural attractions that draw visitors, thus enhancing the local economy. The interplay of these functions underscores their multifaceted importance not only in ensuring resource availability and energy sustainability but also in fostering economic development through the promotion of tourism.

These water bodies hold immense potential to significantly contribute to the development of both the state and the region. To fully unlock this potential, it is crucial to put these resources to active use. In Enugu State, these water bodies can play a vital role in the economy through fishing and aquaculture, hydroelectric power generation, irrigation and agriculture, tourism and recreational activities, as well as domestic water provisions and, for industrial uses. By harnessing these resources, Enugu State can create jobs, stimulate economic growth, and enhance the standard of living for its residents.

Economic Potential of Water Bodies in South East

Functional water bodies hold significant economic potential in the development of the Southeast in various ways. Some of the economic values of water bodies in the region are discussed herein.

Water Economy: A properly operating water supply system guarantees consistent access to potable water for all households. This enhancement not only contributes to public health by decreasing the incidence of waterborne illnesses and promoting improved sanitation practices, but it also alleviates the strain on residents who presently invest significant time and resources in sourcing water from unreliable alternatives. Transitioning to a reliable water supply system will ultimately enhance economic productivity and overall well-being. Regrettably, this area, despite its abundant water bodies, is unable to adequately meet the water needs of its residents, who must rely on their own efforts for water acquisition.[11]

Hydropower Generation: Hydroelectric power is generated by harnessing the energy of falling water. This method of power generation is one of the oldest sources of electricity. It relies on the potential energy of water stored at a high elevation to produce electrical energy. Hydroelectric power is an attractive source of electricity because it is both renewable and cost-free. Additionally, it is one of the cleanest sources of power, producing no emissions or smoke. Unlike nuclear power plants, which generate hazardous waste materials such as alpha, beta, and gamma radiation, hydroelectric plants produce no such waste. This makes hydroelectric power a safe option, even for locations near residential areas. The advantages of using this form of power generation are numerous. If implemented in the South East region of Nigeria, it could significantly improve the long-standing issue of unreliable power supply in the area.[12]

The South East region is bedeviled with epileptic electric supply. The major sources energies required in the area comes from the inadequate national grid outside the region. Hence, the people and their economic activities rely to a large extent on generating their own expensive energies. It is against this background and the need to complement other sources of power for economic development of the area through hydropower generations which the region water bodies have shown encouraging prospects. A study on the prospects of power generation using water bodies in South East Nigeria revealed significant potential for small hydropower projects in locations such as Anambra East and West, Idemili South, and Ekwusigo Local Government Findings have also revealed that that other water falls in Arochukwuru and in some parts of Enugu have such power generation potential. These areas are well-suited for the development of small hydroelectric power projects.[13]

Transportation: Rivers and waterways in this region were once essential for the transportation of goods and people, long before the advent of roads and automobiles. They served as cost-effective routes for moving wares and farm produce, reducing transportation costs and facilitating trade and commerce. These water bodies can once again fulfill this purpose, as they did in the past. For instance, the waterways that begin at Okpu-Umuobo in Osisioma Ngwa Local Government Area of Abia State, extend to Azumini in Ukwa East Local Government Area, ultimately terminating at Igwenga, Opobo in Rivers State. The river, a tributary of the Imo River, flows through the Ngwa heartland into Azumini, Opobo/Ikot-Abasi (Igwenga), and was historically used for transportation between the Ngwa people and their neighbors, including the Ibibios, Anangs, and Opobo, particularly during the palm oil boom. This waterway was once a major export route for the Ngwa people and the Igbos, even before the arrival of Europeans. The economic benefits were vast, as this river was the lifeblood of Aba's economy, giving birth to the city itself.[14]

Reopening this route would significantly improve connections between Aba and neighboring towns, fostering better communication and economic activity. In the past, it took only about 30 minutes to travel from Aba to Oron

in Akwa Ibom State or Opobo in Rivers State, and around 45 minutes to reach Calabar. Reopening these waterways would be one of the most beneficial developments in years, reestablishing vital links for businesses in the riverine communities from the Ngwa axis down to Azumini and other areas. Another example of the potential impact is the River Niger, which similarly supports economic activity in the region. Beside this one there are other water ways like the Imo River that run across Abia and Imo state, and the Anambra River Niger. The utilization of waterways has the potential to alleviate congestion on our road infrastructure. It may also diminish the economic strain experienced by individuals who currently travel to Lagos for the clearance of their goods; such operations could instead be conducted at proximal locations such as Port Harcourt or Onne Wharf. The economic benefits derived from this initiative would be substantial for the region. In the current context, fostering connectivity between communities and markets via waterways is crucial.[15] They provide effective transportation routes, particularly in areas with inadequate road infrastructure. This alternative transportation method not only alleviates traffic congestion and lowers transportation expenses but also links isolated regions to broader markets, thereby promoting trade and economic advancement.

Recreation and Tourism: Functional water bodies such as lakes, rivers, and coastal areas provide opportunities for recreational activities such as boating, fishing, swimming, and sightseeing. Tourism related to water-based activities contributes to local economies through spending on accommodations, dining, and other services. Water bodies in the east have several waterfalls with great economic potential. Notable among these waterfalls include:

A. Awhum Waterfalls, located at Amaugue village in Awhum, Udu LGA of Anambra state:
B. It flows from granite rock, and it is supposed to be a tourist haven if developed. This majestic natural splendor has enormous economic potential to unleash if made functional.
C. Ogbaukwu Waterfall is located in Anambra state. It is also known as Owerre Ezukala Waterfall or Ogba Ukwu Waterfall. It is one of the tallest waterfalls in South-Eastern Nigeria. The waterfall presents one of the greatest natural tourist attractions. However, its underdeveloped environment has relegated it to a mere local stream without much comeliness to be desired.
D. Ngwo Waterfall is located in Ngwo Enugu State. Its enchanting nature of cascading from small s of the peak of Ngwo cave, forming a shallow pool at the cave floor and flowing out as a small stream has, over the years, become a top tourist destination in Enugu. But its tourist attraction is limited to the local people and limited in fame because it is still underdeveloped.
E. Ezeagu Waterfall or Ogbagada Waterfall is located at ObinofiaNdiuno, Enugu state. This is one of the most popular waterfalls at the lower end of the Okpoku Spring, a cold and warm spot within the Ogbagada River.
F. Amanagwu Waterfall is located in Arochukwu Local Government Area of Abia state. This waterfall is supposed to be one of the most tourist attractions places in Abia state.
G. Iyi Nzu Waterfall is one of the most fascinating waterfalls to visit in southeast Nigeria, Located in Ezimo, Udenu Local Government Area of Enugu state. It is one of the tallest waterfalls in the state. The spectacular manner (like a wave) in which this waterfall makes it a sight to behold. However, its economic potential is yet to be tapped
H. Orsu waterfall is one of the most majestic waterfalls in Awgu, located in Awgunta, Awgu LGA of Enugu State. The waterfall is located in a valley and surrounded by tree providing a perfect shelter for visitors to the fall.
I. Iyi Uba Waterfall is one of the many waterfalls in Enugu State. The Iyi Uba Waterfalls which is situated in Obinagu town within a deep valley is surrounded by mini caves while the water source is inside one of the caves.
J. Obialuohuu waterfall is one of the highest waterfalls in Mmaku, located in Afam. The waterfall is surrounded by beautiful rock formations and beautiful trees providing perfect shades for visitors to the area. The Obialuohuu waterfall is a place worthy of a visit. whenever you explore Mmaku, make sure to visit the waterfall.
K. Opi Waterfall is located in the town of Opi in Nsukka, Enugu State, the Opi waterfall, also referred to as Uhere Waterfalls, is located within the Opi cave. The Opi waterfall is a perfect destination for nature lovers and adventure seekers.[16]

Agriculture and Irrigation: Water bodies support agricultural production through irrigation systems, enabling farmers to cultivate crops in arid or semi-arid regions. Reliable water sources enhance crop yields and agricultural productivity, contributing to food security and economic development. It also supports mariculture which is a subset of aquaculture that involves the cultivation of marine organisms in their natural habitats or controlled marine environments. These will also promote food security and economic opportunities. Functional water bodies create a thriving ecosystem for the cultivation and harvesting of fish, crustaceans, and aquatic plants. This not only enhances local food security by providing a sustainable source of nutrition but also generates economic opportunities in the fishing and aquaculture industries, fostering local livelihoods and strengthening the

regional economy.[17] These water bodies if put in use in these directions can move the region from food dependency to sufficiency.

Aesthetic and philosophical: Water bodies such as rivers, lakes, oceans, and waterfalls have long been sources of inspiration for artists, poets, and nature lovers. Their aesthetic appeal lies in their ability to evoke a wide range of emotions and sensory experiences. The serene reflection of a still lake, the rhythmic ebb and flow of ocean waves, or the dramatic cascade of a waterfall can captivate the senses and stir feelings of peace, awe, and wonder. The visual beauty of water bodies is enhanced by their dynamic nature; they change with the time of day, weather, and seasons, offering a continuous, evolving canvas of colors, textures, and sounds. Philosophically, water bodies are imbued with symbolic meaning and metaphorical significance. In numerous cultures, water symbolizes life, purity, renewal, and the passage of time. Water bodies are not only visually stunning but also rich in symbolic and philosophical depth. Their ability to inspire both aesthetic enjoyment and philosophical reflection renders them powerful and enduring elements in art, literature, and human thought. For Instance, the Azumiri Blue river stunned ones imagination and naturally lead the beholder to think deep. The same feeling is present in all the water falls that we visited in the course of the field trips.[19] Figure I: shows potential of water bodies.

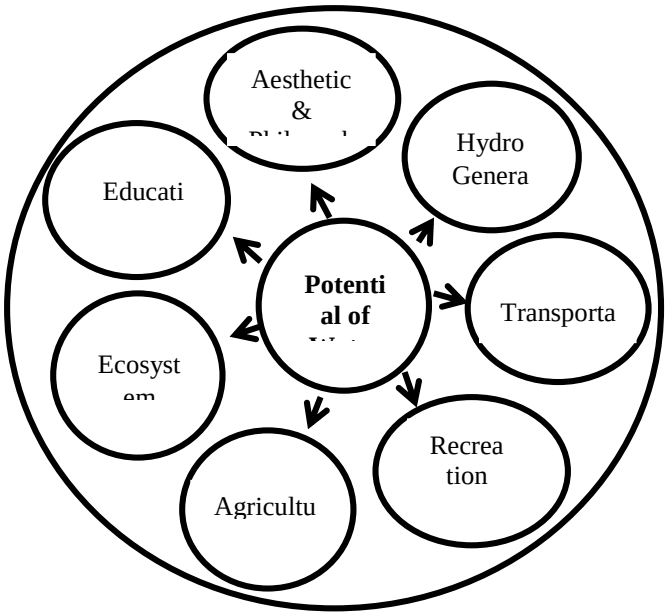

Figure I: Potentials of Water Bodies

Unused Water Bodies in the South East: A Multifaceted Crisis

The South East region faces a critical challenge due to the neglect of its water bodies. These unused resources have precipitated a cascade of economic, environmental, and social problems, significantly impacting the wellbeing of both human and aquatic life. Stagnant water bodies become over-nourished, leading to excessive algal growth, oxygen depletion, and harmful algal blooms. The Imo River, for example, demonstrates this issue with visible green plant growth, impacting aquatic life and habitat loss. The decline of native marine species creates an environment for invasive species to thrive, further disrupting the delicate ecosystem balance and reducing biodiversity.[20]

Unused water bodies provide ideal breeding grounds for mosquitos, escalating the risk of mosquito-borne diseases like malaria. Stagnant water becomes a breeding ground for harmful bacteria and pathogens, increasing the risk of waterborne diseases for nearby communities. Unused water bodies represent untapped potential for tourism, fishing, aquaculture, and recreation. This leads to residents spending money outside the region, hindering local economic growth. Negligent water bodies negatively impact property values in surrounding areas, as attractive waterfront properties become unattractive. The absence of functional water bodies deprives the region of potential jobs that would be created in related industries, such as fishing, tourism, and transportation. The Imo River once facilitated efficient transport, but its neglect has hindered transportation routes, impacting the region's economic activity. Unused water bodies contribute to increased flooding risks as rainwater runoff is not effectively channeled. The region's susceptibility to gully erosion is exacerbated by this lack of proper management.[21] These water bodies have become dumping grounds for domestic and industrial waste, leading to pollution and contamination. A 2017 World Health Organization report identified the Imo River as one of the most polluted rivers in Nigeria.[22]

Indiscriminate Borehole Drilling, the region witnesses a rapid increase in borehole drilling, driven by a perception of economic development, but lacking proper planning and regulation. In urban centers, the density of boreholes is alarmingly high, with instances of 5 boreholes within 50 buildings. Excessive drilling depletes groundwater resources, lowering the water table and reducing future water availability. Groundwater extraction can cause land subsidence, leading to structural damage to buildings, roads, and infrastructure.[23]

The South East region is facing a multifaceted crisis due to the neglect of its water bodies. Addressing this issue requires a comprehensive approach, focusing on environmental restoration, public health initiatives, and economic development strategies. Reversing this decline will require a collective effort, involving government agencies, local communities, and stakeholders, to unlock the full potential of these valuable water sources

Strategies to make these Water Bodies Economic Viable

The effective management of water bodies necessitates the implementation of diverse strategies aimed at improving their ecological integrity, usability, and sustainability. It is essential to manage these aquatic environments effectively to promote environmental conservation. Ensuring the vitality of aquatic ecosystems safeguards biodiversity, facilitates sustainable hydrological cycles, and alleviates the impacts of climate change, thereby contributing to the overall health of the environment and the communities reliant on these resources. Achieving such outcomes requires significant time and financial investment from all levels of government, including both regional and federal authorities in Nigeria. To restore the functionality of these aquatic systems, a series of critical actions must be undertaken.

One effective strategy is Pollution Reduction. It is imperative to enforce rigorous measures aimed at curbing pollution originating from industrial, agricultural, and residential activities. This objective can be attained by upholding existing regulations and advocating for best practices, such as the utilization of environmentally friendly products and the implementation of sustainable agricultural methods. Additionally, the establishment of regular water quality monitoring programs is essential for the timely identification and resolution of potential issues. Such monitoring ensures that emerging challenges are addressed before they escalate, thereby safeguarding the overall health of aquatic ecosystems. Another vital intervention is Oxygenation and Pollution Control; the installation of aerators can significantly enhance oxygen levels in water, which is crucial for the biodegradation of pollutants and the sustainability of aquatic organisms. This approach facilitates the natural processes that maintain the vitality of water bodies. Furthermore, Habitat Restoration should be prioritized; the planting of native species around aquatic environments provides essential habitats for wildlife while also stabilizing banks, thereby mitigating erosion and enhancing ecological equilibrium. The introduction of suitable fish species can contribute to the preservation of ecological balance and facilitate recreational fishing condition.[24]

Additional measures comprise Sediment Management, where regular dredging or removal of sediment is essential for sustaining water depth, preventing flooding, and ensuring navigability of water bodies. This practice aids in regulating the natural sediment deposition process, which, if unmanaged, could result in ecological disruptions. Erosion control is crucial; implementing strategies such as vegetation planting and constructing protective barriers is important to mitigate soil erosion, as this can negatively impact water quality and disrupt the natural environment. Effective water flow management is likewise critical, necessitating that sufficient water flow is maintained to preserve ecological equilibrium. This may require controlled releases from dams or weirs to replicate natural flow patterns and support aquatic ecosystems. Creating safe access points for activities such as fishing, boating, and swimming can promote public engagement while maintaining environmental integrity. Furthermore, the provision of amenities, including picnic areas, trails, restrooms, and seating, enhances the visitor experience and encourages responsible utilization of natural resources. Additionally, the establishment of efficient waste management systems is imperative; the implementation of appropriate waste disposal and recycling facilities is vital to deter littering and pollution, alongside fostering public awareness regarding the significance of maintaining the cleanliness of water bodies.[25]

Moreover, embracing environmentally sustainable landscaping techniques, including the use of indigenous flora and the reduction of chemical applications, contributes to lessening the effects on aquatic environments. This strategy fosters a sustainable relationship between human endeavors and natural ecosystems. The cultivation of eco-conscious tourism and recreational pursuits has the potential to generate economic revenue while simultaneously fostering conservation efforts. Furthermore, advocating for sustainable aquaculture and fishing methodologies guarantees economic advantages while safeguarding ecological integrity.[26]

Through the integration of these proactive measures, aquatic ecosystems in the South East Region of Nigeria can be revitalized into dynamic, operational, and sustainable resources that yield considerable ecological, social, and economic advantages for the local populace. A steadfast commitment to these initiatives will guarantee that these water bodies endure as invaluable assets for both present and future generations. The focus on the restoration and management of these aquatic environments transcends mere remediation; it encompasses the realization of substantial potential. Such operational water bodies can function as engines of economic advancement, promote environmental sustainability, and facilitate social development, thereby laying the groundwork for a more promising future for the region.

Conclusion

The paper discussed the relationship between water bodies and economic development in Southeast Nigeria. It showed the presence of numerous water bodies in the region, including streams, lakes, waterfalls, and rivers, with waterways that could support agriculture and water transportation. It also highlighted the significant economic potential of these water bodies, such as the development of a water-based economy, hydropower generation, recreational opportunities, and tourism. Examined the consequences of neglecting these water bodies, which include health hazards, economic challenges, environmental degradation, and limited transportation options. It further explored strategies for making these water bodies economically viable, emphasizing proper water body and ecological management, dredging, regular water quality monitoring, habitat restoration, waste management, and infrastructure development to ensure the sustainability of these aquatic resources in the region. The findings showed that water bodies played a crucial role in the region's economic development, particularly in transportation, during the pre-colonial and colonial periods. However, it also revealed that these water bodies have been largely neglected by both regional and federal governments, hence the attendant economic woes such as migrations out of the region, unemployment and poverty. The paper stressed that revitalizing and utilizing these water bodies resources would significantly benefit the economy of the region in particular and Nigeria as a whole.

Endnotes

[1]Denisa Ogoyi, "Importance of Bodies of Water and Blue Spaces Within Growing Urbanised Areas," accessed 10 May, 2024, *https://earth.org/importance-of-bodies-of-water-and-blue-spaces/*

[2]Denis Ogoyi, Importance of Bodies of Water and Blue Spaces Within Growing Urbanised Areas,". See also *https://www.lawinsider.com/dictionary/water-bodies.*

[3]"Population of Cities in Nigeria," World Population Review 2022," accessed 12 June, 2024, https://worldpopulationreview.com/

[4]Karl F. Seildman, *Economic Development Finance* (Thousand Oaks:Sage Publication, 2005), 5

[5]The authors did and extensive field study in the five states within the region to have a firsthand information and see the cited in other to be able to compare and contrast information from oral interviews and written works. The field work lasted for a period of 6 months.

[6]The researchers as indigenes of Abia and Imo states carefully documented the water bodies that they have visited time and again.

[7]"List of Water Areas in Anambra State," accessed 17 June, 2024,https://awkarealestate.ng/list-of-water-areas-in-anambra-state/#google_vignette

[8]J. I. Awu, O. A. Ogunjirin, F. A. Willoughby, A. A. Adewum, "Potability Evaluation of Selected River Waters in Ebonyi State, Nigeria," *Nigerian Journal of Technological Development*, Vol. 12, No. 1, J 2015. See also M.O. Nwabunike, Godwin V.C. Igwe, Godwin VC Igwe, & Ijeoma Jane Ochokwu, "Comparative analysis of physico-chemical parameters of some river systems of Ebonyi State, Nigeria," *Journal of Aquatic Sciences* 34(1)2020 :33-41 DOI: 10.4314/jas.v34i1.5

[9]The authors visited all the Rivers discussed.

[10]Gordon Amangabara, "Drainage Morphology of Imo Basin in the Anambra – Imo River Basin Area, of Imo State, Southern Nigeria," accessed 10 August, 2015, *DOI: 10.9734/JGEESI/2015/17114*

[11]C. Uzoigwe "Sustainable Groundwater Management in the South East Region of Nigeria," *Journal of Environmental Science and Technology*14(2), 2021:127-141.

[12]Kay Den "Hydraulic Energy of Waterfalls and its Application in Electric Power Generation,"accessed 7 August, 2023, *https://www.google.com/search?-poial*

[13]Benneth Oyinna, Kenneth E. Okedu , Ogheneruona E. Diemuodeke , Lois E. David , Isaac O. Negedu , Elijah A. Osemudiamen , Ilhami Colak , & Akhtar Kalam, "Assessing small hydropower sites in Nigeria for sustainable development using ArcGIS," accessed 10 May, 2024https://doi.org/10.1016/j.egyr.2023.09.102

[14]The local people interviewed echoed that this water ways played vital roles in their economic survival during the colonial and Precolonial period. See all Rodrigue, J. P., Comtois, C., & Slack, B. The Geography of Transport Systems (2016).; United Nations Conference on Trade and Development (UNCTAD) "*Review of Maritime Transport*," (2017).

[15]interview respondents especially the people that these rivers cut across their communities sees functional water bodies as a catalyst for their development.

[16]These waterfalls explain here does not show all the waterfalls in the region but was only used as examples. There are so many waterfalls seen all over the region during the field trip. See also Oyibo Ugbo, "Waterfalls in South East Nigeria," accessed 10 July, 2024, *https://outravelandtour.com/top-ten-most-popular-waterfalls-in-south-easta*.

[17]Nyaudoh Ukpabio Ndaeyo, Gabriel S. Umoh, & Enefiok O. Ekpe, "Farming Systems in Southeastern Nigeria: Implications for Sustainable Agricultural Production," *Journal of Sustainable Agriculture* 17(4) 2001:75-89, DOI: 10.1300/J064v17n04_07

[18]Jay R Corrigan, Kevin Egan, & John Downing, "Aesthetic Values of Lakes and Rivers,"2006, *DOI: 10.1016/B978-012370626-3.00003-X*

[19]Robbre George, "The Deeper Philosophical and Spiritual Implications of Water as a Photo Graphic Book of Mirrors, "accessed 10 August, 2024, *https://www.robbiegeorgephotography.com/blog/blog_posts/the-deeper-philosophical-and-spiritual-implications-of-water-as-a-photographic-book-of-mirrors*. The enchantment and the awe that confronts any one that stares at these water bodies is much. It forces one to naturally enjoy the beauty and philosophically meditate about nature and what lies within these water bodies.

[20]A sight at the Imo River and other rivers in the region welcomes you with firsthand information of how these Rivers have degraded.

[21]Uzoigwe "Sustainable Groundwater Management in the South East Region of Nigeria."

[22]Sesan (2017-12-16). "Nigeria's perilous pollution indices," *Punch Newspapers*, 2023-09-13. See also World Health Organization, "Imo River most polluted water in 2017.

[23]Uzoigwe.

[24]World Bank, *Fish to 2030: Prospects for Fisheries and Aquaculture*, (Washington, DC: World Bank.2012).

[25]Y. N. Lohdip & J. J. Gongden, "Nigerian Water Bodies in Jeopardy: The need for Sustainable Management and Security," Transactions on Ecology and The Environment, Vol 171, 2013. Doi:10.2495/WRM13002.

[26] E. G. McPherson, "Green Infrastructure and Climate Change: Integrating Water, Building, and Land Management Practices," Landscape Journal, 35(2), (2016): 281-296.