

## Riverfront Utilization in Makurdi, Benue State

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**ABSTRACT:** Makurdi river front in Benue State is characterized with a lot of uncoordinated uses; these includes activities like farming, sand and gravel mining, fishing activities and also block industries. A sample of 498 respondents in Makurdi town; comprising of 333 residents along the river front, and 165 respondents in other parts of the town were randomly selected. Using field observation, questionnaires and secondary data, the study has determined the use of Makurdi river front, the attitude of the people to the river front, the alternative uses for Makurdi river front and the existing policy on river front development. The hampered the use of the river front as part of liveable urban environments. The near absence of government policy or continuity of a policy agenda is also a contributory factor. The study concludes that the riverfront is contributing to personal incomes but not to the economic development of Makurdi town and the state at large. The study recommends that some existing activities (farming and fishing) should be incorporated with alternatives uses result reveals that alternative uses could be incorporated into the Makurdi riverfront. But the perception of the people which has affected their attitude to the river front has such as open parklands, resorts, hotels, leisure attraction and sporting activity. There should also be a policy on the development of the riverfront which should be based on a bottom – up approach for sustainability, as riverfront development is a long-term project/process.

**Keywords:** Makurdi town, Public perception, Riverfront, Waterfront, Waterfront development

### I. INTRODUCTION

Rivers have long been recognized as one of humanity's most important natural resources. They make huge contribution to human welfare and appear to be limitless sources of food, transportation, recreation, social, and economic benefit. Many coastal and riverine settlements owe their origin and prosperity to water transport and trade.

Public perception of river front development has led to the attitude/ utilization patterns, and subsequently redevelopment of the riverfronts as observed in cities worldwide. Countries like Malaysia, Singapore, South Africa and Mozambique have taken advantage of their water fronts and changed them from industrial ports to urban liveable environments. Nigeria has many cities that lie along Rivers and coastal areas. Notable among them is Makurdi located along River Benue. This port area also grew and witnessed the blight, as a result of better road and railway transport from 1900, containerization shipping, and the effect of crude oil production coupled with industrial and technological advancement.

Instead of physical developments expected, the role of the riverfront in Makurdi seems to have been limited to activities such as fishing, farming, irrigation, as a source of water supply, sand and gravel harvesting, canoe transportation, and a place to dump refuse.

How the river front is utilized is a function of how it is perceived. The amount of knowledge or foresight of the potential of the riverfront as an important resource and means to physical and socio-economic growth may also be a determinant of the extent of utilization of the river front. In this regard, questions to answer are thus; How do people perceive the riverfront; and are these the best possible ways to use the Makurdi river front? If not what other possible activities can be reintroduced into the area to make it a more desirable and economically viable riverfront. This research therefore sets out to investigate how people view the Makurdi river front.

#### 1.1 Study Area

Makurdi, the state capital of Benue State is located at the intersection of latitude 7<sup>o</sup>43'N and longitude 8<sup>o</sup>32'E, east-central Nigeria, started on the south bank of the Benue River (Fig 1). Founded about 1927 when the railroad from Port Harcourt (279 miles [449 km] south-southwest) was extended to Jos and Kaduna, Makurdi rapidly developed into a transportation and market centre.

Administrative and planning purposes have delineated the boundary of greater Makurdi at 16 km radius (Figure

2) with the centre at the general post office along the Beach Road. Makurdi was founded in the late 1920s, and it was not until 1932 that the bridge across the River Benue (known as Benue Narrows) was completed [1]. All these have led to significant changes experienced by the town since its inception. It was a crossing point between the Northern and Eastern parts of Nigeria, an Inland water port town, a provincial headquarter and now a state capital. As a result of these changes, Makurdi witnessed a rapid increase in socio-economic and physical development within these periods.

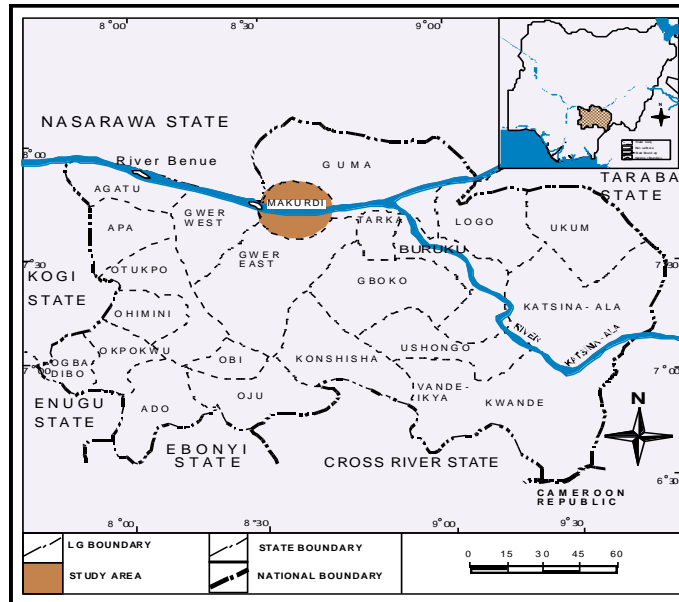


Fig 1: Map of Benue State showing Makurdi and River Benue

Source: Ministry of Lands and Survey, Makurdi (2013)

The river front which is between the 16 km radius of Makurdi town is bounded by ten (10) neighbourhoods namely; North Bank Market, Hudco Quarters, Wadata, Modern Market, Lobi, Wurukum, Benue State University, Gyado Villa, Gaadi and Fiidi. Thus, the study area spans between the Air Force Base to Wadata neighbourhood (Figure 2). This area is within the relief zone of Benue Valley and has a flood plain elevation of about 90 – 100 meters above sea level [2]

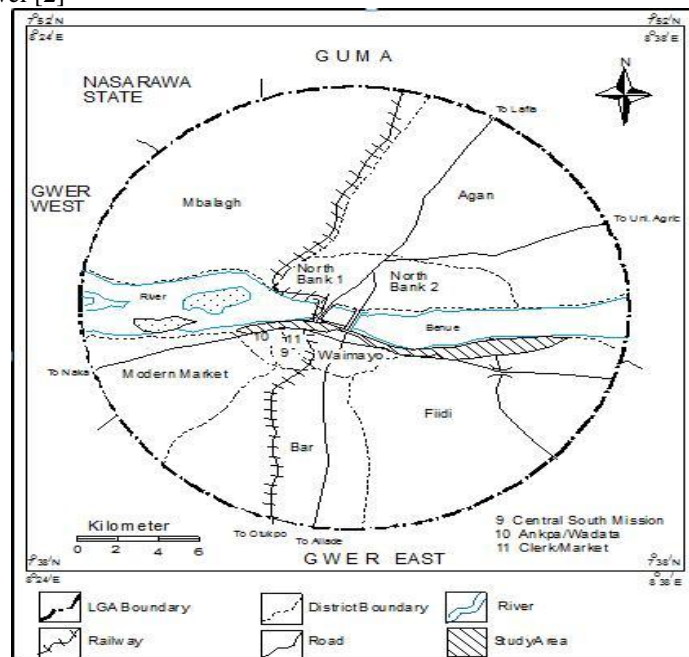


Figure 2: Map of Makurdi showing River Benue

Source: Ministry of Lands and Survey, Makurdi (2013)

## II. LITERATURE REVIEW

### 2.1 *The Concept of Waterfront and Waterfront Development*

Waterfronts have been perceived as land fronting onto water [3]. Further variations of the definition have been explored and widely used by many researches to include city port, harbour front, riverside and river edge [4]. A waterfront has been characterized as a place integrating land with water and having a natural attraction to people [5]. This study adopts the definition of a waterfront as “any property that has a strong visual or physical connection to water”[6].

Waterfront developments have several expressive and varying interpretations due to characteristics of sites and cities as the perception of urban waterfront development as any development in towns and cities of all sizes, and the water bodies may be a river, lake, ocean, bay, creek, or canal [4]. Waterfront projects are further described as maybe including buildings that are not directly on the water but are tied to it visually or historically, or are linked to it as part of a larger scheme. Waterfront boundaries are difficult to determine because they contained mixed use development, which is relatively homogeneous [7].

Initially, waterfront developments were solely on commercial basis and urban waterfronts began as commercial centres and survived on trade. But the expansion of city size, coupled with economic growth, industrial revolution (from 18<sup>th</sup> to 20<sup>th</sup> centuries) and reformation of transportation technology resulted in a decline of waterfronts [4]. Besides that, people started to move to live in more peaceful areas due to the pollution of waterfronts owing to manufacturing and industrial uses. Consequently, warehouse and manufacturing facilities along the waterfront were left unused and had become the eyesores of these communities.

After decades of depression, a massive redevelopment initiative began within the abandoned property class, and consequently initiated the world-wide era of waterfront revitalization [8]. In addition, it has been stressed that most of the waterfront redevelopments occurred in a larger context of urban renewal [9]. Thus, urban waterfront redevelopment phenomenon of our time began earlier in the 1960's, bloomed in the 1970s, accelerated in the 1980s [4] and will be continued. It was noted that, waterfronts developments has undergone cycles of transition from water dependent industry (industrial, shipping, and transportation uses) to more public endeavours. It was noted that urban waterfront redevelopment, is mainly but not exclusively associated with port cities. Many cities have successfully made this transition [10]. The three cities recognized by the media and academics as the leaders of the waterfront redevelopment in North America are Baltimore, Boston, and Toronto. The well-publicized success and increasing number of waterfront redevelopment projects taking place in other countries have contributed to a rapid spread of interest in this concept of development [4]. Although the scale and type of redevelopment of the waterfront varies from city to city, due to the patterns of original development, the basic concept of development is similar. To date, the new era of waterfront developments should continue to respond to new and changing demands, while attempting to maintain its heritage and preserve its natural features [5]. As such, riverfront development could be any use such as residential, commercial, industrial, manufacturing, recreational or otherwise.

### 2.2 *Attitude of People towards Riverfront Development*

Attitude itself is difficult to measure, but the perception of the people tends to affect our attitude towards a particular development. Perception can generally be defined as the ability to see, hear, or become aware of something through the senses. As such, the attitude of a person differs from one individual to another and from country to country.

In the developed world, what used to be industrial areas is now becoming a refuge for residents and visitors to enjoy on daily basis. It is a place where you can go to enjoy nature, get some exercise, have a picnic, or gather with friends and neighbours. Whereas in the underdeveloped world particularly in Asia and Africa, riverfront redevelopment is on the cradle stage; Countries like Malaysia, Singapore, South Africa and Mozambique have taken advantage of their water front and changed it from an industrial port to urban liveable environment.

### 2.3 *The Impact of Riverfront Development*

Water plays numerous roles in the world and the value of water has different meaning ranging from the context of wildlife habitat, angling opportunities to the scenic view [11]. In other words waterfront development has economic, socio-cultural and political impact on nations and cities. The rivers in Nigeria are seen as valuable national assets and serve important roles for communities around it for many years of their existence. The global and national economic value of water has a major impact on agriculture, transportation, biodiversity, industry, recreation, religion, domestic use etc. In spite of the importance and functions of rivers to livelihood mentioned, it has not been adequately harnessed for other purposes.

#### 2.4 Riverfront Development Policies in Nigeria

The National Inland Waterways Authority (NIWA), which is one of the authorities concerned with the development of the rivers and river front is vested with a lot of functions such as to improve and develop inland water ways for navigation; provide an alternative mode of transportation for the evacuation of economic goods and persons; and execute the objectives of the National Transport policy as they concern inland water waterways among others. But there is no improvement or development of the inland water for navigation, no dredging activity has been carried out on the river, uncoordinated uses are seen along the river corridors. As such, the authority's powers have not been seen on River Benue or its front. The major focus of the four National Development plans was on the development of rivers for water supply schemes with little or no provision on the development of the rivers for other development purposes (tourism and recreation). This means that right from the colonial era till date, national policy has not addressed development activity along the riverfront. Also, the Benue State Urban Development Board (BSUDB) and the Ministry of Lands and Survey which are primarily concerned with the physical development of the 16km radius of Makurdi town, and the Ministry of Culture and Tourism which is responsible for promoting tourism in Benue State; all lack policies or edicts on the development of Makurdi riverfront for alternative uses.

### III. RESEARCH METHOD

Data required for this study include existing uses of the waterfront, demographic characteristic of users, public perception of the waterfront, its use and the willingness of the respondents to pay for alternative uses. The challenges faced by respondents along the waterfront and existing policies on waterfront development were also required. Sources of data required to meet these needs included field observation and questionnaire administered to residents along the waterfront and residents in other parts of the town, and existing policy on riverfront development from the National Inland Waterways Authority (NIWA), Benue State Urban Development Board (BSUDB), Ministry of Lands and Survey and Ministry of Culture and Tourism.

Urban development perception study design was used to assess the level of perception of waterfront activities by urban residents. The questionnaires were administered in 13 neighbourhoods within the Makurdi metropolis. These include 10 neighbourhoods bordering the River Benue namely: North Bank Market, Hudco Quarters, Wadata, Modern Market, Lobi, Wurukum, Benue State University, Gyado Villa, Gaadi, and Fiidi; while three (3) other neighbourhoods not bordering the river were selected. These are: High level, Federal low cost, and Kanshio. Residents within these neighbourhoods in Makurdi were interviewed using structured questionnaire.

The 2011 population figures as projected from 2006 population census figures of Makurdi Local Government Area is 307,586.

In determining the sample size for total population of Makurdi Local Government Area, the Taro Yamane formula for sample size was used:  $n = N/1+N(e)$  Where:

- n = sample size
- N = the population
- e = the exponential rate
- 1 = constant

A total of 498 respondents were randomly sampled comprising of 333 respondents from neighbourhoods bordering the riverfront and 165 from other parts of the town.

### IV. FINDINGS AND DISCUSSION

#### 4.1 Activities along the Makurdi Riverfront

Makurdi riverfront has been observed to incorporate uses such as farming activities, block industry, sand and gravel mining, fishing activities, and transportation (figure 3). From the survey conducted, farming had the highest percentage (31.4%) as the predominant activity even though this was on a subsistence level since the land is not large enough for extensive irrigation. This unfortunately makes the area prone to severe erosion. 10.4% of the respondents are involved in block industry. The block moulding activities reduces the aesthetic value of the riverfront. 9.1% of the respondents are involved in sand mining activities. The advantage is that it makes sand readily available to builders at a cheaper rate and also a raw material for block production; as such these industries are located close to the river bank. It also aids navigation as sand is removed from the river beds. The disadvantage is that it makes the area further prone to erosion in the wet season. Its economic advantage is seasonal. Sandy beaches that are supposed to be used for recreational purposes are mined, human activities add to the litter, thereby decreasing the aesthetic value of the riverfront. Only 6.9% of the respondents are involved in water transportation. This shows that there is a reduced water transport activity on the River Benue front, despite the fact that water is present all year round. 4.8% of the respondents along the riverfront are involved in fishing activities. This is usually one of the major activities for riverside communities, but the level of participation in Makurdi riverfront is low.

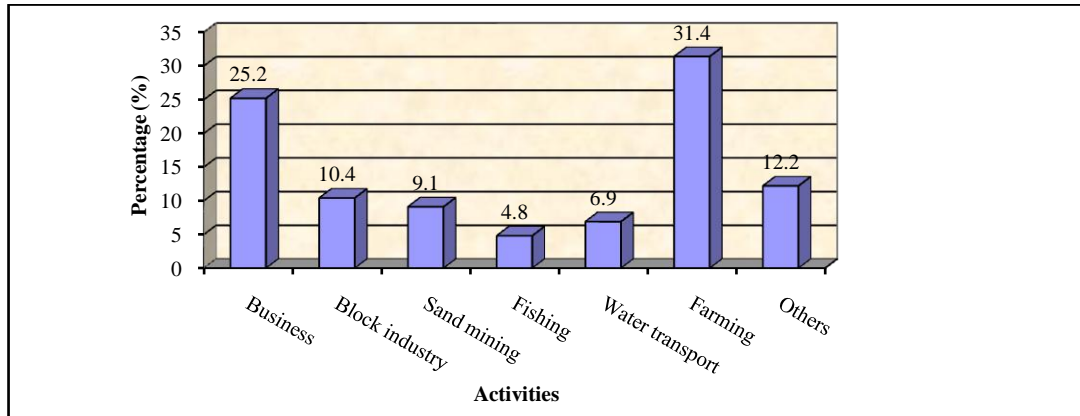


Figure 3: Activities along the Benue Riverfront

Source: field work, 2013

4.2 Use of the Riverfront

Different people use the riverfront for different activities/ aspect. From figure 4, it can be seen that 38.4% of the respondents use the riverfront as source of water either for domestic or irrigation purposes, while 12.1% of the respondents in other parts of the town use it as source of water via Makurdi Greater Water Works and Water vendors. However, 33.6% of respondents along the riverfront and 32.1% of respondents in other parts of the town use it as sources of food while as low as 0.9% of the respondents living along the riverfront, use it for recreational purposes. On the other hand, the use of the riverfront also differs with other people living in the other parts of the town as 53.9% of the respondents do not use the river or its front for any of the aforementioned purposes this may be the reason why they do not visit it. The result further stresses the fact that the use of the riverfront by the respondents is primarily based on what the river can offer at a particular time.

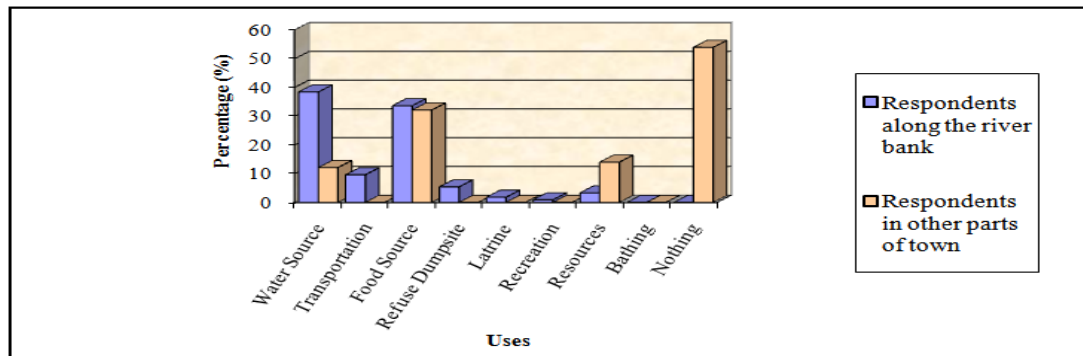


Fig 4: Uses of the Benue Riverfront

Source: field work, 2013

4.3 Public Perception of the Riverfront

It is a fact that perception influences the attitude of the people. Perception describes the way people accord importance to a particular development, site, or area in any locality. This also affects the attitude of the people to a particular development or facility in an area. Table 1 illustrates the perception of Makurdi people to the riverfront.

Table 1: Public Perception of the Riverfront

Perception of the riverfront	Respondents along the river bank		Respondents in other parts of the town	
	Frequency	Percentage	Frequency	Percentage
Hideout	25	7.5	18	10.9
Transportation	63	18.9	28	17.0
A resource	58	17.4	48	29.1
Refuse dumpsite	59	17.7	17	10.3
Defecating	20	6.0	10	6.1
Farming activities	108	32.4	44	26.7
<b>Total</b>	333	100.0	165	100.0

Source: Field work, 2013

Table 1 shows that both respondents residing at the river bank and other parts of the town perceived the riverfront in different ways. While 32.4% of the respondents at the river bank see it as farmlands 29.1% of the respondents in other parts of the town perceive it as a resource that can be developed either as part of urban aesthetic or for other economic activity As such this has affected the attitude of the people to the riverfront with 17.7% of the respondent along the riverfront, and 10.3% of the respondent in other parts of the town perceiving it as a refuse dumpsite.

**4.4 Alternative Uses at the Riverfront**

Table 2 illustrates alternative uses that would attract the patronage of respondents to the riverfront if introduced.

**Table 2:Alternative Uses**

Uses	Respondents along the river bank		Respondents in other parts of the town	
	Frequency	Percentage	Frequency	percentage
Football pitches	17	5.1	8	4.8
Gardens	23	6.9	18	10.9
A resort	16	4.8	14	8.5
Shops	9	2.7	9	5.5
Fishing zones /Festivals	178	53.5	53	32.1
Boat cruise	24	7.2	12	7.3
Swimming pool	12	3.6	9	5.5
Recreational activities	16	4.8	15	9.1
Transportation	27	8.1	17	10.3
Others	11	0.3	4	6.0
Total	333	100	165	100

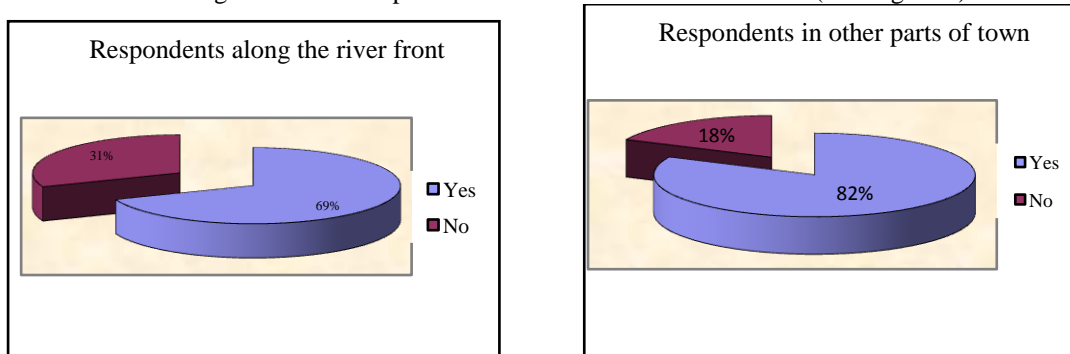
Source: Researcher’s field work, 2013

Table 2 reveals that 53.5% of the respondent along the river bank and 32.1% of the respondent in other parts of the town suggested fishing zone/ festival to be introduced along the riverfront while 8.1% and 10.3% of the respondents along the river bank and other parts of the town respectively suggested the utilization of the river for transportation purposes in order to develop jetties and a dockyard on the riverfront.

The 2006 population census puts the population of Benue State at 5.2 million, making it the 7th most populous state in the country. The population of Makurdi stands at about 300,377 (NPC 2006). Furthermore, the river is flanked by two prominent universities in the state; the Benue State University (BSU) and the University of Agriculture Makurdi located on opposite sides of the river with a combined population of over 30,000 staff and students. Makurdi also has a number of military outfits in the town; the Nigerian Air force Base, and the Army Barracks, coupled with the establishment of many new banks in the town. This gives the town a cosmopolitan nature with a critical mass of people who will be drawn to the river front resorts and activities if fully developed to desired functional standards. Given its strategic location, the town is also an important gateway between the north and the southern part of the county, with a good linkage by rail, road and an airbus and so could become an important tourist destination if its potentials are developed and well marketed.

**4.5 Willingness to accept Alternative Use**

31% of respondents along the river front were unwilling to accept alternative uses due to the apprehension that they would lose their means of livelihood and were not convinced that they would be considered in the incorporation of alternative uses. However 69% accepted alternative use. In other parts of town, 82% welcomed the idea of alternative uses against 18% who preferred the riverfront to be left as it is(See Figure 5).



**Figure 5: Willingness to accept alternative use**

Source: field survey, 2013

## V. CONCLUSION AND FURTHER RESEARCH

Based on the findings of the research, suggestions which can enhance the utilization of the riverfront as part of an urban liveable environment would include policies to address the development of the riverfront; this will in turn reduce the uncoordinated activities along it. These should however reflect a bottom-up approach to incorporate the needs and aspirations of the people of Makurdi town.

### 5.1 Recommendations/ Policies

In order to enhance the utilization of the riverfront as part of an urban liveable environment;

Farming activity which is the most dominant activity along the river front could be moderated within the 16km radius of Makurdi town, and other potential uses introduced within Makurdi metropolis to make the area economically viable thereby creating mixed land uses along the riverfront while erosion mitigation practices should be encouraged to conserve the vast natural resource for recreational purposes.

Based on the peoples' opinion, the best alternative use to be introduced is the fishing zone/ festival, if introduced should be monitored greatly for threat of biodiversity, as local fishing already exists.

The Zoological garden should also be revitalized and well managed as this will boost tourism and recreation along the river front and the Labour market located close to the riverfront in Benue State University could be reorganised into Riverfront Park as observed at the "University of Lagos water front" which could be an ideal site for students' relaxation.

The Wadata market and the AngwanJukun area also situated along the riverfront of Makurdi town play a very important role in the economic development of Makurdi town. If these areas are upgraded and reorganized to accommodate a dockyard, they will boost economic growth.

Private investments and public- private partnerships geared towards improving the aesthetic quality, security and accessibility to all users should be encouraged while also maintaining sustainable economic viability. This is only made functional with the total involvement of all stakeholders involved.

### 5.2 Conclusion

Though the Makurdi riverfront has great potential for development, it is presently being under-utilized. The attitude of the people of Makurdi has hampered its development because of individual benefits derived on daily basis. Little or no attention has been given in terms of the provision and maintenance of this abundant resource. The planning and development of the Makurdi riverfront is becoming important, considering the fact that it is a pull factor for tourism and recreation especially during special festivals, holidays or weekends. It is in this regard that the study suggests that alternative uses could be introduced and sustained; but increased awareness and needed infrastructures by the Government (State and Federal) will encourage public-private partnership or private investors to invest in development projects on the riverfront.

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