APPLICATION OF GEOGRAPHIC INFORMATION SYSTEM (GIS) IN TENEMENT RATES COLLECTION

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INTRODUCTION

Revenue generation by local govt. in Nigeria comes from:
• Tax and statutory allocation from Federal and State Govt.
• Local rates on markets and shops
• Permits and fines charged by local courts
• Tenement rates and naming of streets
• Signboard and advertisement permit fees
• Birth and death registration fees
• Wrong parking fees and motor park fees
• Marriage registration fees and road closure levies
INTRODUCTION

• Local Government Area councils have many departments which perform these functions.
• GIS allows users to view, understand, interpret and visualize data in many ways to reveal relationship, patterns and trends in the forms of maps, reports and charts. GIS is very useful and applicable in Local Government administration, most especially in tenement rate collection.

STATEMENT OF PROBLEM

• The present system of tenement rate administration in the country is based on manual method which is inefficient, time-consuming and prone to error and abuse.
• The manual method adopted by our administrators is due to lack of awareness of benefits offered by GIS in tenement rate administration and their refusal to apply GIS for various reasons.
• **AIM**: To apply GIS for the effective collection of tenement rates at Local Government level.

**OBJECTIVES**

• Database design
• Geometric and attribute data acquisition
• Database creation
• Spatial analyses
• Analysis of Results

**STUDY AREA**

A part of Busari Olarinre Scheme in Atiba Local Government Area, Oyo State, Nigeria. The site is along Oyo – Ogbomoso road in Oyo town
METHODOLOGY

• DATABASE DESIGN
  i. Conceptual Design: Vector Data Model was adopted
  ii. Logical Design: Relational data model adopted
Parcel Table (P_ID, O_Name, P_Use, P_Status, P_Per, P_Area, P_Value, T_Rate)

• DATA ACQUISITION
• Dataset Used: Layout Plan collected in softcopy from the Local Govt. Survey Unit

HARDWARE AND SOFTWARE USED

• HP Laptop
• A3 printer
• Autodesk Map 3D 2009
• ArcGIS 9.3

• Physical Design
• Database Creation
Database Creation: Using ArcGIS 9.3

SPATIAL ANALYSES/INFORMATION PRESENTATION
LANDUSE CHART

<table>
<thead>
<tr>
<th>S/NO</th>
<th>LAND USE TYPE</th>
<th>NO OF PLOTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>COMMERCIAL</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>RESIDENTIAL</td>
<td>189</td>
</tr>
<tr>
<td>3</td>
<td>RECREATIONAL</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>MATERNITY</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>RELIGIOUS</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>220</td>
</tr>
</tbody>
</table>

ANALYSIS OF RESULT

- Tables 4 shows land values, ownership and tenement rate the local government could generate per annum. The local government would be able to generate tenement rate of nine hundred and fifty one thousand three hundred and twenty eight Naira eighty seven Kobo (₦ 951,328.87 K) per annum in the study area.
WAYS OF IMPROVING REVENUE GENERATION

• Use of Geographic Information System
• Provision of good infrastructure: The LG should use the generated revenue for the provision of social amenities like good roads, potable water, well-equipped health centers, etc. to encourage people to pay tax faithfully and change their attitude of tax evasion.
• Staff motivation: LG staff should be encouraged through appropriate training and good welfare package to enhance effective revenue management and to discourage embezzlement and revenue mis-management.

CONCLUSION

• Internally generated revenue in local governments has enabled people to enjoy a lot of benefits such as well-equipped health centers, potable water, good roads, quality education, etc. The capabilities of analytical tools in Geographic Information System (GIS) have been demonstrated to enhance effective revenue collection and administration at local government level.
• THANKS FOR LISTENING