SPATIAL MAPPING OF SHELLFISH MARKETING IN KURE ULTRA MODERN MARKET, MINNA, NIGER STATE, NIGERIA.

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ABSTRACT

Geographic Information system and Remote Sensing in the field of marketing is used in this study to open up a wide range of its possible applications as the study assessed shellfish marketing in Kure Ultra Modern Market Minna Niger State. The aim was to develop a database of various shellfish product on sale at the market. The demographic profile, socio-economic characteristics of the marketers and problem associated with the marketing, 100 questionnaires were administered the analytical tool used were frequency distribution, tables, percentages and cost-benefit ratio. Returns from the interview and questionnaire were use to verify the result which depicts that both male and female were engage in the business with female forming the majority group (55%) and 45% men. Marketing of the shellfish was profitable which was attributed to realization of the significant of shellfish over meat. The high profit was recorded in raining seasoning (70%) while dry season sales were 30%. Species of shellfish marketed were crayfish, prawn, cockles, snail, shrimps and crabs. The study also shows that the shellfishes mostly sold are in fresh form (85%) while 15% are in dry form. Daily sales ranges from N1000-N5000, majority of the respondents (75%) patronize low-cost transportation means between N500-N1000. In every enterprise there must be a problem; most of the problem encountered by the respondents were lack of constant supply from the landing site which is mostly marine environment, inadequate storage facility, poor transportation, high tax charges and theft; all this attribute data and the co-ordinate of the selling point at the market were put into ArcGIS environment. Base on the findings, recommendations were profiled to the government and database kept for references.

Keyword: *Geographic Information System, Remote Sensing, Attribute Data, Co-Ordinate Point Database,* Marketing, Distributing Channels, Cost and returns *profit.*

INTRODUCTION

For most regions of the World, the geographical locations, population of the people and availability of products plays the most decisive role in marketing and consumption habits of the people. For example people living in the coastal areas (i.e. those in East and South) have access to and preference for marine shellfish than those living in North and West where there is large resources of fresh water fishes. Despite that people from the coastal areas who resident in Minna, Niger State quest for these marine shellfish, the only way to access these products is through marketing.

Hence, increase in the price of marine shellfish and it products prompted the researcher to indentified their selling point and to map them using Remote Sensing and Geographical Information System.

Material & Method

Minna is the headquarter of Niger State, it is located on the longitude 6° 30'E-6°40'E and latitude 9°30N-9°,35'N. the population of Minna is about 201,429 with 105m miles and 95,626 females (NRC 1991).
Kure Ultra modern market is located beside Oduoye quarters is the largest markets in Minna metropolis. Virtually it has different commodities, people came from different part of the country to market their product including fishes and other fishery products.

Fig 1satellite image of the study area

Table 3.1   Sources of Data Collection

Data	Type	Year	Source
Topographic map	Hand copy	1997	Ministry of Land Town Planning, Minna
Landsat	Quickbird	1998	Ministry of Town and Planning, Minna
G.P.S	Garmin	1972	Ministry of Town and Planning, Minna

RESULT

Integrating Remote Sensing and Geographical Information System in Marine Shellfish Marketing

The use of Remote Sensing and Geographical Information System in the field of marketing opens up wide range of possible application. Remote Sensing provides a valuable tool in the process of locating the selling point of marine shellfishes and its product in Kure Ultra Modern market(fig 2)
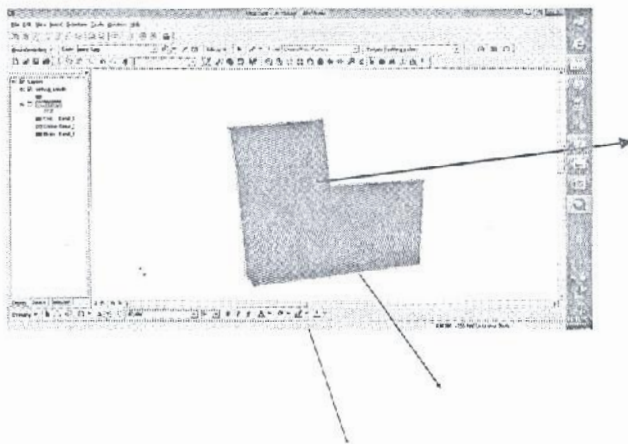

Plate 1: Picture showing snail sales point
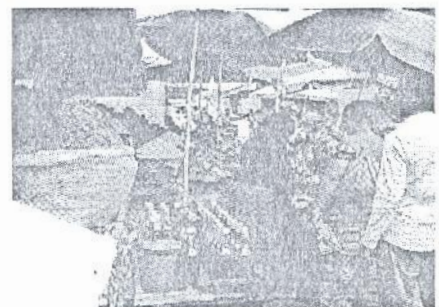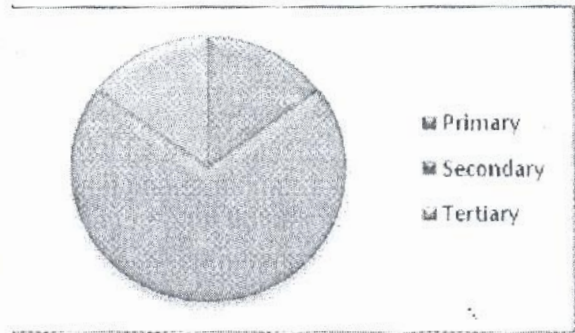
Plate 2: Picture showing crayfish sales point

Plate 3: Picture showing a section of the — arket.

Figure 2: Digitized map of the study area showing various selling points.

Table and Figure 4.1: Educational Qualification of the Respondents

| Qualification	No. Of respondents	Percentage
Primary	3	15
Secondary	14	70
Tertiary	3	15
Total	20	100

Source: Researcher 2010

On the literacy level about 15% have primary school certificate, the same percentage said they have tertiary certificates (diploma, NCE&degree)and the majority of the respondents 70% said they only have secondary school certificates. This is an indication that education is important in marketing because it enhanced market performances in terms of record keeping,improved marked strategies and efficient allocation of resources. This agrees with Olayemi (2004) who states that education added advantage in the adoption of modern marketing techniques and in performing marketing functions, with majority of females overtopping as marketers.

Table and Figure 4.3: Duration in the shellfish business.

| Duration (year)	No. Of respondents	Percentage
1 – 10	12	60
10 – 20	8	40
30 – 40	–	–
Total	20	100
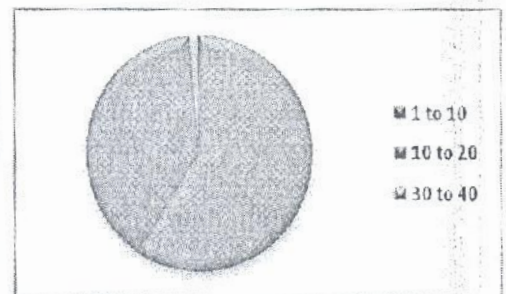
Source: Researcher 2010

Table and figure 4.3 shows that about 60% respondents have been in the business for the past ten years while 40% said that they were in it for almost twenty years though none of the respondents was involve in it for more than thirty years and above. This depicts that the business has been in existence for decades.

Table and Figure 4.4: Peak sales season of shell fish

| Period of profit	No. Of respondents	Percentage (%)
Raining season	14	70
Dry season	6	30
Total	20	100
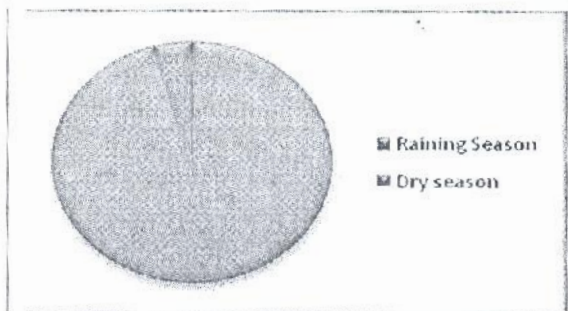
Source: Researcher 2010

Closely connected duration in marketing is season, table 4.4 shows that rainy season has the highest profit as reported by the respondents, which accounted for 70% while 30% of respondent reports that the dry season sales record the lowest profit earn (figure 4.4).This could be attributed to its availability in raining season

Table 4.5 and Figure 4.5: Types of Species Marketed by the Respondents

| Type of species	No. Of respondents	Percentage (%)
Snail and Shrimp	8	40
Periwinkle and Crayfish	6	30
Crabs	4	20
Cockles and Oyster	2	10
Total	20	100
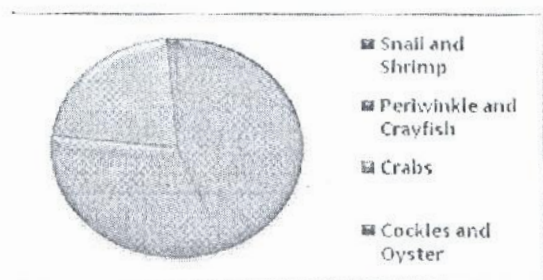
Source: Researcher 2010

Table and figures 4.5 portrays that snail and shrimp remain the preponderance species marketed which accounted for 40% compared to the cockles and Oyster which is the least species (10%).

Table and Figure 4.6: Forms in which Shellfish are sold.

| Forms of marketing shellfish	No. Of respondents	Percentage (%)
Fresh	17	85
Dried	3	15
Total	20	100
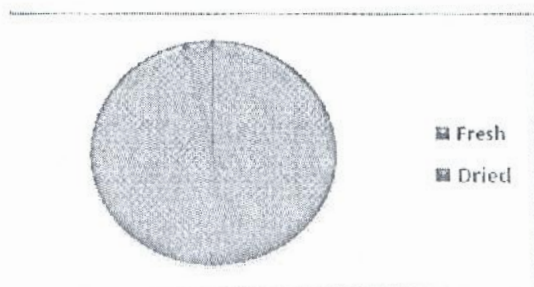
Source: researcher

The data in table & fig 4.6 reflects the sales of shellfish in various form, 85% of the total respondents sells fresh shellfish while 15% sells in dried form.
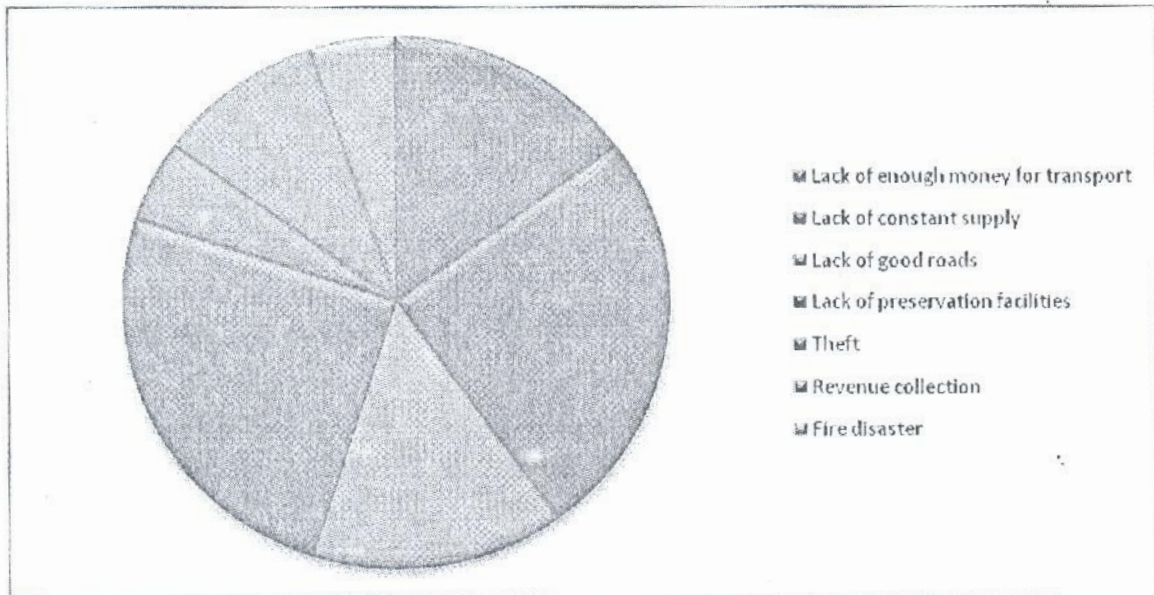
Table 4.7 and Figure 4.7: Total sells per day by the respondents

Sales per day	Frequency	Percentage (%)
1000 - 2000	12	60
3000 - 4000	2	10
5000 and above	6	30
Total	20	100
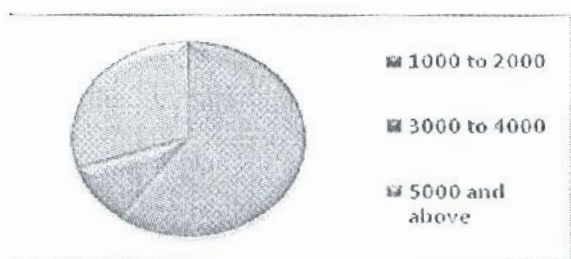
Source: researcher

The daily sales varies as shown in table& fig 4.7 above, majority sales between #1000 – 2000(60%) the least sales being within #3000 – 4000 (10%), and 30% of the respondents said #5000 and above. This has indicated there is no day shellfish no marketed at the market,

Legend:
- Lack of enough money for transport
- Lack of constant supply
- Lack of good roads
- Lack of preservation facilities
- Theft
- Revenue collection
- Fire disaster

Source: Researcher

The Fig. above unveiled that most of the problems encountered by the respondent is lack of constant supply of goods and preservative facilities which accounted for 25% respectively this dominates other problems such as theft and fire disaster (5%), While 15% depicts that transportation was another problem faced due to perishable nature of shellfish, then followed by revenue collection 10%.

CONCLUSION

This study focused on the assessment of shellfish marketing with aid of remote sensing in there Ultra Modern Market Minna, Niger State. Therefore, the study pointed out the preferable period of marketing was rainy season, with much consumption of snail and shrimp.mostly require in fresh form.Constraints that mediate against the abundant of the shellfish species in the markets is poor storage and transportation affects the availability of the product and the cost.

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