GIS IN TOURISM - A ZIMBABWEAN PERSPECTIVE

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ABSTRACT:

The success of tourism in any country depends on the ability of that country to sufficiently develop, manage and market the tourism facilities and activities in that country. Most developing countries depend mainly on tourism for economic growth and diversity. Zimbabwe, a developing country in Southern Africa, is one such country. In Zimbabwe, agriculture and tourism are two of the largest foreign currency earners. Because of the uncertainties in agriculture resulting from the unpredictable climate conditions and fluctuations of prices of agricultural products on the international market, among other issues, tourism remains the only reliable source of investments and foreign currency. Therefore, there is the need to invest into the industry and develop it to meet international standards. This paper gives a background on tourism in Zimbabwe and how Zimbabwe Tourism Authority, the largest, government-owned tourism organisation in Zimbabwe, is managing it. An analysis of the shortfalls of the system in place is investigated and a discussion on an initiative for the development and the implementation of Geographic Information Systems in the organisation and the advantages it has to offer.

1. INTRODUCTION

Definition of Tourism

"Tourism is a composite of activities, facilities, services and industries that deliver a travel experience, that is, transportation, accommodation, eating and drinking establishments, entertainment, recreation, historical and cultural experiences, destination attractions, shopping and other services available to travelers away from home." (Tourism and Leisure Committee, 1997)

Worldwide, the significance of tourism, as defined by Ghosh (1998), is, among other, one of the major items of international trade. The industry helps in facilitating the flow of foreign currency amongst countries. In developing countries, according to Medlik et al. (1991), tourism is mainly seen as a growth industry as the flow of tourists in these countries distributes foreign currency. During the UNCTAD June 1998 summit, tourism was cited as the only major sector, internationally, in which developing countries have consistently had surpluses, the positive balance in their travel account having improved from six billion United States dollars in 1980 to sixty two billion United States dollars in 1996. Developing countries account for nearly 30 per cent of world tourism receipts.

In Zimbabwe, tourism is one of the industries with the strongest effect on the economy because it helps in developing other sectors. According to statistics supplied by SADC (1999), tourism in Zimbabwe contributes about five percent to the Gross Domestic Product (GDP). The sector employs approximately eighty thousand people directly and indirectly. The tourism sector is estimated to have generated two billion Zimbabwe dollars in 1996/1997 for the country. This makes

it the third highest earner of foreign currency, after agriculture and mining. Tourism has the potential of becoming the highest generator of foreign currency for Zimbabwe.

According to Fridgen's (1991) study of an American model, the success of any tourism business could be determined by:

- Tourism planning
- Tourism development and research
- Tourism marketing

According to Van Arragon and Wessels (1994), there has always been a direct relationship between tourism and cartography. From the definition of tourism above, tourism is concerned with travelling between close and distant places and maps are an important aid for location of these places. No other social activity involves the use of maps and thematic information for communication as much as does the tourism sector. Maps of travel routes and general information about the areas to visit are used in selecting the destination and in planning travel and stay.

On a continental scale, in June 1999, Noel de Villiers designed a concept called the African Dream in which GIS, satellite technology and the Internet would be integrated to form a continuous network of Afrika tourism routes from Cape to Cairo, with the Patron of the organisation being Mr Nelson Mandela. This approach to tourism is unique and is a way of conserving the environment, creating jobs and promoting tourism (Open Africa, 2002).

Locally, the Zimbabwe Council of Tourism carried out a study on the importance on tourism research in decision-making and tourism development. Zimbabwe Council of

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Tourism investigated the use of GIS in Tourism Research in storing, manipulating and analysing the voluminous tourism data and survey carried out. It also discussed the possibility of producing graphics on paper or on screen to broadcast the results.

2. THE SITUATION

Operators of tourist facilities in different towns and cities in Zimbabwe have been coming together and forming their own information centres or publicity associations, for example Kariba Publicity Association and the Masvingo Publicity Association. These associations come up with successful marketing strategies for their individual areas. Travel agencies are also private organisations that provide information on the country's tourist facilities and arrange personal holiday packages. These organisations successfully market themselves or hire other organisations to do so, mainly on the Internet, on local and international media and using colourful brochures and publications.

The main shortfalls of these Publicity Associations and travel agencies are that they only market tourism facilities and activities in their specific areas and not the whole country. They also only concentrate on tourism marketing and hence there is no planning, development and research in the area to further improve the tourism sector.

The Government of Zimbabwe set up the Zimbabwe Tourism Authority to successfully market tourism in Zimbabwe and to further develop the industry. The organisation is divided into the following four divisions:

- Human Resources and Standards
- Marketing and Communications
- Finance and Administration
- Research and Development

The Marketing and Communications division is the backbone of the whole organisation. This division disseminates information on tourist facilities and activities to international and local people, as a way of advertising. Without advertising, there would be no thriving tourism industry. Clients usually request for the information via the phone, e-mail or personal visits to this division. According to an interview by personnel at ZTA, the following is a list of typical queries:

- Travel arrangements in the country, whether you need visas and so on
- Information on the tourist facilities in the country, regarding location and facilities on offer.
- Advice on the best possible holiday option
- Restrictions on travelling, the best transport mode to use, timetable of flights
- Students and persons working in education looking for statistics and other general information

To respond to the queries, personnel refer to either some information in Microsoft Excel, Microsoft Word, Smartsuite databases or brochures and paper files.

3. PROBLEMS BEING FACED

One of the problems encountered in the tourism industry is the need for quick update and maintenance of the voluminous tourism data. In Zimbabwe, tourism authorities are continuously collecting data on tourist facilities. At the Zimbabwe Tourism Authority, most of this information is stored in hardcopy format. Some of the information gets lost after some time.

The current procedures for publishing the data are made available through traditional channels like booklets, brochures and journals. Tourist facilities operators produce most of these brochures but since production is very expensive, they make them available to ZTA at their own discretion and in small quantities. The Marketing Division has to rely on these brochures for visual representations of the facility and the rates but these usually run out fast as a copy is handed out to a visiting client who requires it and also the information is not very detailed. There is also lack of information on other tourist facilities.

With the information in different places, some in paper files, some on the computer, it usually takes a long time to respond to a client's query, especially if they are phoning for the information. This gives pressure on the employee and can lead to dissemination of poor quality information.

When the company underwent computerisation a few years ago, their computers where not put on a network. The unavailability of a network leads to each division storing its information on their own computers. Anybody from one division and requiring information from another division has to physical go to that department to get it. There is also redundancy as each division keeps a copy of the same tourist information.

4. DEVELOPMENT OF THE GIS

According to the New York State Archives GIS Development Guide, database planning is the single most important activity in GIS development. For designing this database, relational database modelling was used in Microsoft Access. Figure 1 below is a diagram indicating the flow of information into and out of the GIS and some of the information, which was involved in the data capturing stage.
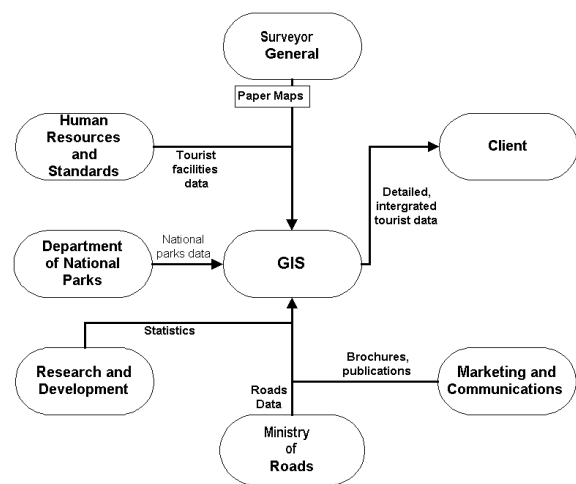

Figure 1. Flow of information in the GIS

For the spatial component, the 1: 1 000 000 scale map of Zimbabwe (see Figure 2) and the maps of Kariba and Matusadonha National Park, illustrated in Figure 3, were digitised using ArcView Version 3.2 and errors edited in PC ArcEdit (ArcInfo). Avenue and Visual Basic were used for customisation.
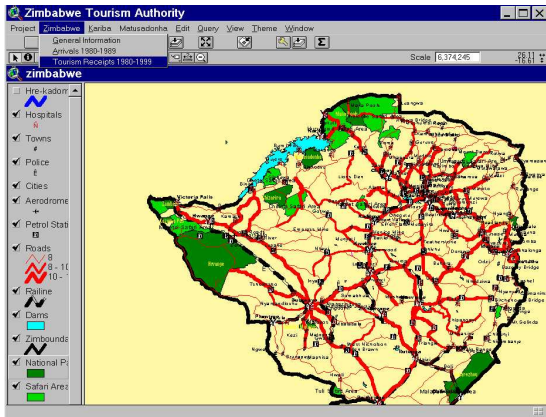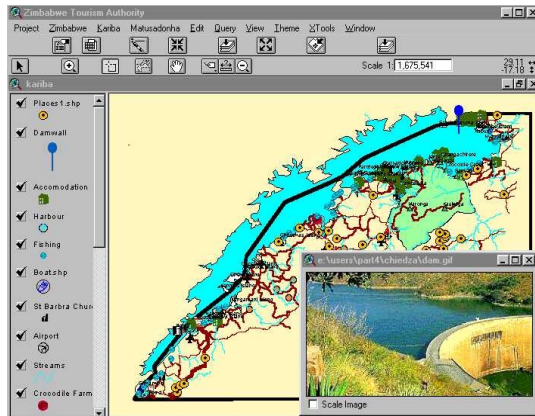

Figure 2. 1: 1 000 000 scale map of Zimbabwe

Figure 3. Maps of Kariba and Matusadonha National Park

4.1 Advantages of GIS to the Organisation

Toppen et al. (1994) described various kinds of applications of GIS in market research. Some of the marketing questions answered by a GIS include:

- Where customers are located
- The potential turnover of the business
- Where can I further develop and how
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Since tourism contributes a lot to the economy of a country, it can be looked at as some form of business, hence this application is also relevant to it. With a GIS, instead of doing market research using statistical software on thematic data only, the Research and Development Division can do it effectively by adding the spatial component to it. The market research can help identify popular areas and underutilized potential areas and from these, the industry is expanded and services improved

Zimbabwe Tourism Authority employees will be able to show a large amount of tourist information in an easy to read key map and the tourism information can be easily updated. There is general information on the entry requirements to the country, the climate, rules of the road and disease prevention.

For every town, in this case Kariba, information on the tourist facilities on offer, the rates at each facility, types of rooms, services on offer, the nearest police station, petrol station and hospital can be obtained. On clicking on a tourist facility, and sample pictures of how the facility looks like can be obtained, viewed and printed for a client on request.

With ArcView Network Analyst, there is the ability to calculate the shortest route between places and also to generate directions. These can be printed out for a client and would make it easier for him/her to get to the required destination by following the mapped out directions. Information on the type of road, the width and whether it is tarred or not can be obtained from the attribute tables. This is also required and enables those visitors who will be driving to choose the best mode of transport to use.

Statistics on the number of tourist arrivals and tourism receipts to Zimbabwe from 1980 to 2000 can be accessed from the menu and the chart printed for an interested client.

Queries can be made on the National Parks and Safari Areas concerning their accessibility from the nearest town in terms of distance and mode of transport. Services provided at each National Park can be obtained from the tables. By clicking on several points in each park, information on the animals, birds or vegetation in that section can be obtained. Information on the camps in the National Parks is also available.

This list of queries is endless, and unique to every potential tourist. For the system to be more effective, it can also be made available on the Internet for access by lots of potential visitors from the country and other parts of the world.

5. CONCLUSION

From the situational analysis, I gathered that all the employees are computer literate and have been working with Microsoft Excel or Access for some time. This poses an advantage for implementation of the system because the starting point can be Microsoft Access, which they are already familiar with and then the gradual shift to ArcView for spatial information. A lot of institutional issues need to be addressed like:

- Which information should be shared and by whom?
- Which division should pay for the system?
- What other information should be included?
- The issue of security regarding credibility of the information
- Employees of Zimbabwe Tourism Authority can only use the system developed so far.

Tourism generally receives some recognition from the government as one of the foreign currency earners hence any moves that would improve on it would get attention. It is from this important point that should the executives in the tourism industry of Zimbabwe become well appraised of the importance of GIS in their day to day operations, then the use of the technology will be effected.

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