Setting up an Information Resource Centre and the management of indigenous knowledge at the Harry Oppenheimer Okavango Research Centre[1]

Bright Nkhata

Harry Oppenheimer Okavango Research Centre (HOORC)
University of Botswana, Private Bag 285, Maun, Botswana
Nkhata@mopipi.ub.bw

This paper discusses the setting up of an Information Resource Centre at the Harry Oppenheimer Okavango Research Centre of the University of Botswana. It systematically outlines activities involved in the creation of an organised collection of information that has accumulated over the years in order to provide access for researchers. The paper further points out the significance of the inclusion of indigenous knowledge sources in such an Information Resource Centre in its future development plans. It also explains how such indigenous knowledge will be captured and in what form; how it will be organised; how the knowledge sources will be stored; how electronic bibliographic databases will be created and managed, and how worldwide access of such information will be facilitated. Finally, the paper also highlights challenges and limitations to this endeavour and emphasises that such a task would best be achieved by a multi-disciplinary approach that would involve not only information professionals but also other professionals.

1. Background

Botswana is a land-locked country situated in Southern Africa and measuring approximately 600, 370 sq km, only 15, 000 sq km of which is water surface. The climate is semi-arid with generally warm winters and hot summers. Its terrain is predominantly flat with the Kalahari Desert on most of the South Western part of the country. Overgrazing and desertification are significant features of the country and drought periods are regular, making fresh water a very scarce resource in the country. Due to such environmental challenges, Botswana is a party to a number of environmental international agreements, among which are Biodiversity, Climate Change, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Nuclear Test Ban, Ozone Layer Protection, and the Ramsar Convention on Wetlands. This scenario has caused Botswana to take issues in environment very seriously; this is partly shown in the research carried out in these areas, most of it in the Okavango Delta.

Okavango Delta is a large inland wetland system covering slightly over 20, 000 square kilometres in North-west Botswana. It is surrounded by the Kalahari Desert savannah and is recognized as one of the largest inland deltas in the world. It was designated a Ramsar site in 1997 and is the largest Ramsar site in the world. For hundreds of years the Delta has been a home for various types of flora, fauna, and human communities, all existing in a sustainable balance of the ecosystem. Five main ethnic groups, namely the Bungakwe, Dxeriku, Hambukushu, Wayeyi, and Xanekwe inhabit the Delta. These groups speak different languages, practice different customs and cultures, and engage in varying survival strategies that ensure minimum competition among them and with the other forms of life that live in the Delta. These survival strategies include: hunter-gathering in the desert savannah; foraging in swamps and rivers; collection of wild plant foods; farming; fishing and keeping goats and cattle.

Many factors must have contributed to the continued sustainability of the Okavango Delta environment. Among such factors is the existence of indigenous knowledge systems among the various communities in the Delta. Such knowledge systems include knowledge of weather and season changes in the Delta, animal behaviour and movements, medicinal properties of various plants, religious beliefs, customs and cultural practices, farming, and many other survival practices. In order to understand what is happening in the Delta, various research activities have been undertaken in the area over the years by environmental scientists, sociologists, linguists, historians, anthropologists, biological scientists, social scientists, geographical information systems (GIS) scientists and many other experts. These research activities have generated an enormous amount of documented information on the Okavango Delta, which provides considerable insight into life and experiences in the Delta. This kind of

---

1. Paper presented at the 15th Standing Conference for Eastern Central and Southern African Librarians (SCECSAL 2000), at Caesars Gauteng Conference Centre, Johannesburg, 15 to 19 April 2002.

2. Harry Oppenheimer Okavango Research Centre (HOORC)

The idea of establishing a research centre in Maun to carry out work in the Okavango Delta dates back to the 1980s, when a Maun Field Station of the University of Botswana was set up. However, the present structure of HOORC was established in 1991, when consultancy on the establishment of the Okavango Research Centre was carried out. By 1994 a physical structure had been created and a Director of the Centre appointed. At its inception, the HOORC was mandated to serve the Okavango region, including the Boteti, Linyanti, and Chobe regions, by initiating, co-ordinating and promoting research, environmental monitoring, teaching and outreach activities.
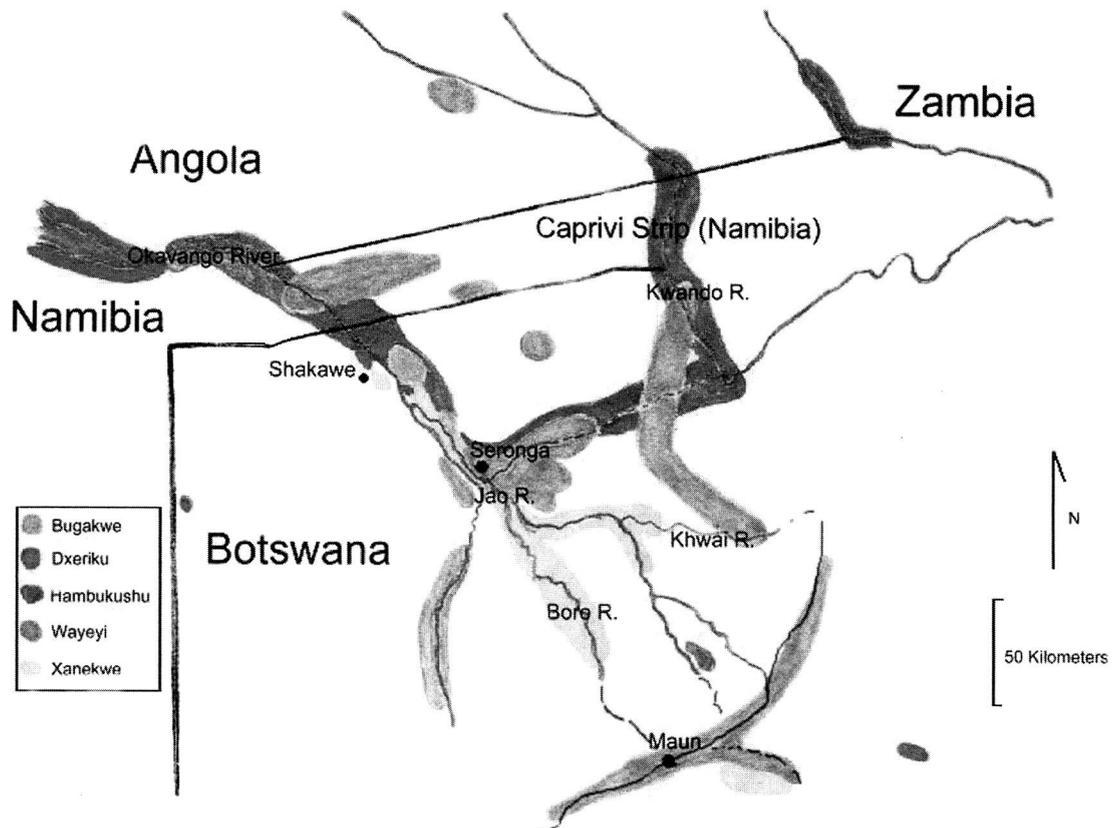

Figure 2 Okavango Delta

Recognising the importance of information in research, teaching and learning, the establishment of an Information Resource Centre was also highlighted in the 1991 consultancy. According to this consultancy, an Information Resource Centre in Maun would be very important, particularly since the only other relevant information resources can be found in Gaborone, hundreds of kilometres away from the Okavango Delta. It was envisaged then that the Information Resource Centre in Maun would be a major service by the University of Botswana to government departments and the community in Maun and that it would likely be one of the most effective links between HOORC and the broader community in northern Botswana.

3. The Information Resource Centre

The Information Resource Centre (IRC), or Library and Documentation Centre (LDC), as it is sometimes referred to, is part of the Resource Centre, which will include the following units: the Natural Collections, containing plant and animal specimens; Outreach and Information, which will deal with teaching, workshops and seminars; Environmental Monitoring, Data Management and Storage, that will be responsible for GIS and remote sensing activities; the Water Science Museum which will deal with facts about water and drought; and the Amphitheatre which will be used for holding different functions on various water related issues. The idea behind the Resource Centre is to facilitate access to information in various forms within one physical structure. Although some of the

units of the Resource Centre have not started functioning as yet, activities in the Natural Collections, the GIS and remote sensing centre, and the Information Resource Centre have already started.

The focus of collection development activities in the IRC is on the fields of Natural Resources Management as this is the focus of research at HOORC. However, as already been pointed out, this facility is the only one of its kind in this part of the country; therefore it is also expected to meet the information needs of users from government departments, schools, and the public at large. This means that information will also be collected in various other fields, although not with the same depth as in the fields of natural resource management as mentioned earlier. In addition, being the only information facility of the University of Botswana in the north, IRC will also be expected to support information needs of distance learning programmes of the University for learners based in this part of the country. It is in this context, therefore, that the role of the IRC should be viewed as specifically serving research needs of the HOORC community, as well as serving other users, and its collection activities will also reflect this role.

Information resources in the IRC will include all forms that exist in the modern information environment. Currently, the IRC already has over 4 000 books, several hundreds of aerial photographs of the Okavango Delta, a number of maps of the Delta, field notes of various researchers, grey literature, interviews and professional correspondence, films, audio tapes, video tapes and slides. It has also recently received materials from IUCN and Bio-diversity Support Programme, ordered hundreds of books, and is in the process of subscribing to a number of journals and electronic information sources. The diverse forms of sources not only require various types of information storage facilities and expert professional care and handling of materials, but also highly skilled and knowledgeable human resources in the acquisition, processing, storage and dissemination of information to users.

4. Setting up the Information Resource Centre

Although the idea of establishing an Information Resource Centre at HOORC is as old as that for establishing HOORC itself, the work of starting an IRC was accelerated by the donation of a very valuable collection by one of the most prominent researchers in the Okavango Delta, Mr. Peter Alexander Smith. This donation comprised over 4 000 books, most of which are rare and out of print; aerial photographs of the Delta, maps of various parts of the Delta, professional correspondence and interviews, and grey literature on the Delta that is both unique and rare. As there was no physical structure for such materials to be kept in an organised manner and be accessed, these valuable information materials were all kept in metal trunks awaiting space and expertise to organise the materials. This situation made it imperative for the University of Botswana to consider providing human resources and space a matter of urgency.

In theory, setting up an Information Resource Centre would probably be regarded as a standard activity in that steps to be followed would be more or less similar from one situation to another. However, in practice this may not be the case. Many factors, both from within and outside the institution, play very important roles in the process of setting up an Information Resource Centre, and this makes each process unique. The situation at HOORC is no exception. The following are some of the issues that were involved in the process and steps taken to create an information system that would facilitate information access by the users.

4.1 Resources, facilities and equipment

The first issue that had to be addressed was the provision of resources, facilities and equipment. The recruitment of a senior librarian to guide the development of the Information Resource Centre and the assignment of two junior library positions was the real beginning in this respect. As soon as the Senior Librarian commenced duty in April 2001, work on setting up the required infrastructure intensified. Efforts were made to set up a Port Cabin from which the Information Resource Centre could start operating, since a permanent structure was still in the planning stage. This proved difficult, as the whole process was dragged into a chain of bureaucratic procedures, so that it took more than three months to move an already existing cabin from the old premises of HOORC in Maun to the new premises. Once the Cabin was moved to the new premises, one would have thought that things would be implemented faster. However, this expectation proved optimistic. Efforts to install telephones and computer networks, provide shelves and cabinets for document storage; and other basic equipment and facilities to start operations all proved futile 8 months after the arrival of the senior librarian at HOORC. Even the filling of the junior library positions was not effected due to problems that require university policy changes. These experiences make the processes of setting up an Information Resource Centre at HOORC a unique challenge.

4.2 Sorting of information materials

Once the required resources and infrastructure have been put in place, processing the materials that are already available would be the next step. This would start by sorting the materials in various categories to determine what type of preservation treatment materials in poor condition would need, the type of metadata to be created for materials that are in good condition, and the appropriate storage facilities to be used for various types of materials. Sorting would categorise materials in groups such as maps, aerial photographs, and various others. Due to the poor condition of some of these materials, crumbling and breaking of rare and valuable information resources is very likely and the services of archive skills would be essential. Such skills are available in the University of Botswana Library and Information Services.

4.3 Compiling an inventory of what is available

This process would involve listing some of the information materials that are available in the Information Resource Centre. It would be particularly useful to keep a record of sources such as aerial maps and photographs, as they can easily go missing even before metadata can be created for them. In the case of book material, the usual procedure is to create an accessions register to record whatever has been received and added to the collection of the Information Resource Centre.

4.4 Creation of metadata and bibliographic records

Metadata and bibliographic records creation is a standard procedure that is meant to provide an access system or "finding tool". It involves the creation of records describing various information resources available in the Information Resource Centre according to specific internationally accepted standards, such as the International Standard Bibliographic Description (ISBD), Anglo-American Cataloguing Rules (AACR) and Dublin Core. The process also includes the activity of assigning classification numbers to locate materials in their respective storage areas.

Normally, knowledge skills in cataloguing and classification are adequate to such an activity. However, due to the complex variety of the information sources available in the Information Resource Centre, expert advice from professionals in other disciplines is also needed. This has become apparent with the classification scheme assigned to the aerial photographs by the originator, for example. When trying to serve a land use planner, it was clear that the researcher understood the system better than the information professional who was trying to help, as the method in which such photographs are classified is part of the map creation processes that land use planners are familiar with.

4.5 Labelling of storage facilities

Though a manual activity and supposedly needing unsophisticated skills, clear labelling of all storage facilities and general directions in an Information Resource Centre is as important as the other, more complicated activities already described above. A poorly labelled Information Resource Centre is as bad a "finding tool" as a badly catalogued and classified material, in that it may not be easy for materials to be located. In the modern information technology era, a good knowledge of graphic and desktop publishing skills would be an added bonus, since it would then be possible to make informative, attractive labels. This activity, therefore, should be given as much attention in the setting up of an information resource centre as any other activity.

5. Indigenous Knowledge and the IRC at HOORC

According to Warren (1991: 43):

> indigenous knowledge (IK) is the local knowledge – knowledge that is unique to a given culture or society. IK contrasts with the international knowledge system generated by universities, research institutions and private firms. It is the basis for local-level decision making in agriculture, health care, food preparation, education, natural-resource management, and a host of other activities in rural communities.

Flavier *et al.* (1995: 479) define IK as

> the information base for a society, which facilitates communication and decision-making. Indigenous information systems are dynamic and are continually influenced by internal creativity and experimentation as well as by contact with external systems.

The above definitions of indigenous knowledge highlight a number of important characteristics that are inherent in the knowledge that exists among the societies of Okavango Delta, which have been mentioned in Section 1 in this paper. Warren also points out that indigenous knowledge contrasts with international knowledge systems, which according to him are generated by conventional means of teaching, learning and research according to the Western norm. This assertion seems to suggest that in most of these processes of information generation and transfer, little attention is paid to indigenous knowledge; and the Okavango Delta situation is no exception. The writer of this paper entirely agrees with Warren's observation in this regard and this is why indigenous information should occupy a significant place in the future developments of the IRC at HOORC, and a more active approach must be adopted in order to acquire and manage indigenous knowledge of the Okavango Delta. It should also be pointed out that the IRC at HOORC should be in the forefront of such activities, as it is its business to acquire and manage information.

5.1 Acquisition of indigenous knowledge in the Okavango Delta

In order for indigenous knowledge to be acquired in its natural setting, and exhaustively, in the Okavango Delta, all possible media will need to be used. This would include photographic pictures, digital images, video recordings, audio recordings, and any other media that would capture events as they unfold on a daily basis. Such an approach will not only provide a source of indigenous knowledge in its most original form, but also in forms that can easily be manipulated and disseminated in the modern electronic environment. Acquisition of indigenous knowledge will prove the most daunting task for information professionals, as they are not normally exposed to recording information in society. Those that are involved in recording oral traditions usually belong to the divisions of the information profession concerned with archives, museums and history, and tend to regard themselves as not centrally information professionals at all.

5.2 Organisation and storage of indigenous knowledge sources

As indigenous information will be captured in media that are already being used for the other types of information, its organisation will follow the practices that are used internationally. Printed and audiovisual sources will be organised in appropriate storage facilities that are suitable for such materials; and electronic sources such as digital images will also be stored in appropriate electronic facilities such as Servers. Emphasis will be on organisation that facilitates quick retrieval of information. The storage environment would also have to be well regulated so that pests, temperature, humidity, and acidic conditions are all kept under control. Such factors will have to be taken care of at the planning and design stage of the physical structure that will be used to store such valuable knowledge and will need the full participation of information professionals, and not be left to architects and directors of institutions alone.

5.3 Retrieval systems and worldwide dissemination of information

To facilitate retrieval and worldwide dissemination, the indigenous information of the Okavango Delta will have to be processed as described in Subsection 4.4 above. Metadata and Bibliographic information will be created and made available on the University of Botswana Library and Information Services database. Such records will provide information on the sources available at IRC. However, as the ultimate aim is to disseminate full information worldwide, the feasibility of the use of technologies that support full text and various other image files is also being considered.

One such technology is digitisation. It is a technology that will enable the University of Botswana Library and Information Services to store and access text and images electronically and in a more integrated manner. It has been widely adopted by institutions in Europe and America, and one finds many accounts of digitisation projects on the Internet. As has been the case with the adoption of other information technologies in Africa, digitisation of valuable information has also been rather slow.

University of Botswana Library and Information Services feel that valuable collections such as the Peter Smith Collection and Herbarium, described earlier, ought to be preserved properly and disseminated worldwide. It is in connection with collections such as these that digitisation is being considered to start with. Websites of other institutions with digitised collections look quite impressive and attractive. Discussion groups on the Internet also provide much insight into what is required in a digitisation project. However, more detailed technical understanding, equipment and financial requirements prove elusive from sources such as the Internet, journal articles and textbooks. This experience has led to the decision that a tour of some of the American university libraries that have digitisation projects running would be essential.

The tour undertaken by the Director of the University of Botswana Library and Information Services and the Senior Librarian of the IRC at HOORC took them to the universities of Georgia, Virginia, Florida, Oregon State, Washington State and the University of Washington. The tour provided a clearer insight into what is involved in electronic learning and digitisation of various types of information collections. It was quite fascinating to note the range of equipment that is required to digitise maps, plant specimens, and aerial photographs for example. Of particular interest also was the knowledge gained in determining the steps to be taken in a digitisation project, what equipment and infrastructure are required, what expertise, and how and where such expertise would be acquired. In addition to knowledge gained on the tour, agreements on corroborative work and sharing of expertise and experiences were also made, and this makes it more possible for University of Botswana Library Services to digitise some of their valuable collections like the Peter Smith Collection at HOORC.
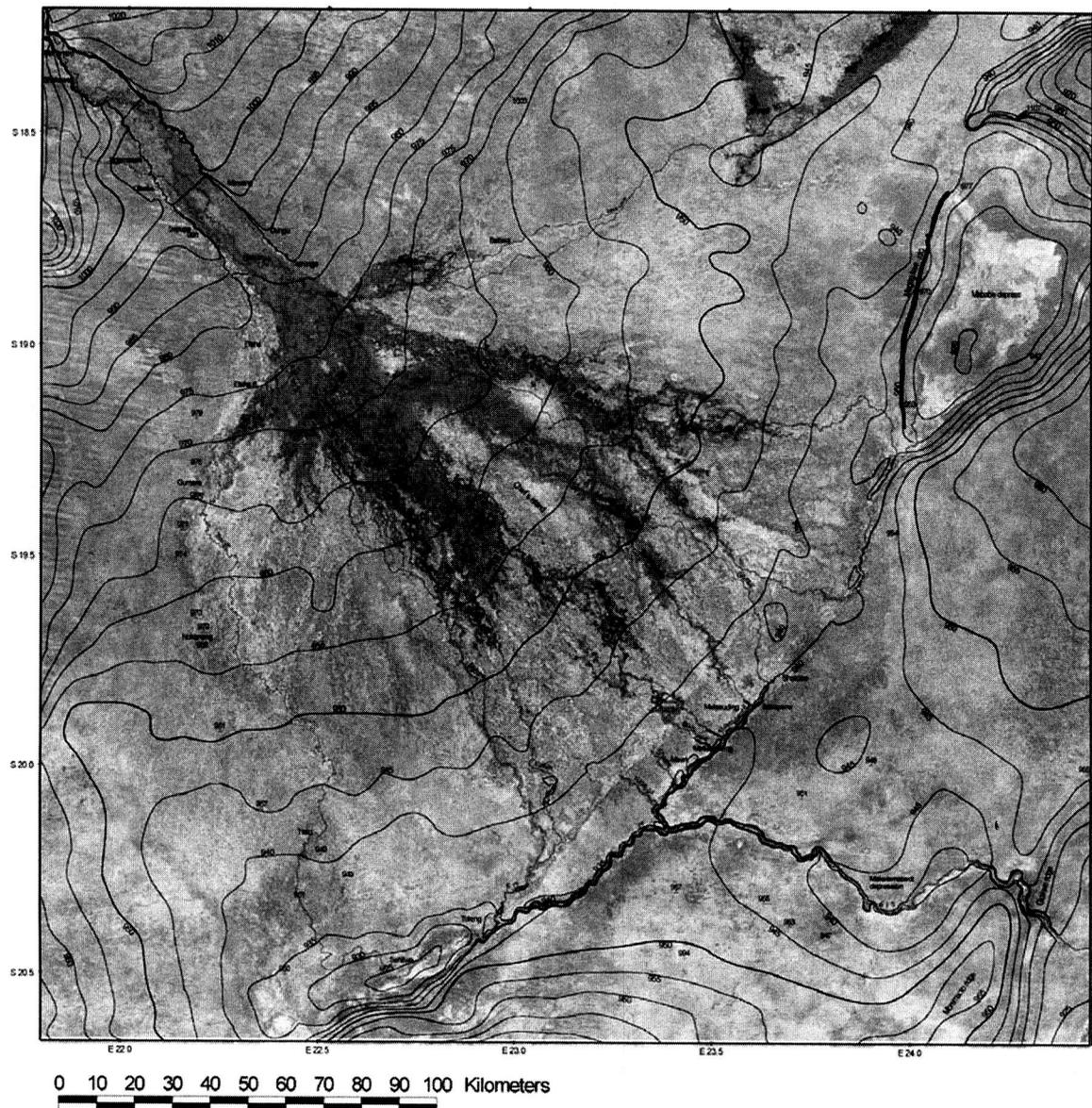

Figure 3 A detailed map of the Okavango Delta

6. Challenges and limitations

Establishing an Information Resource Centre is a challenging task. It requires not only knowledge from literature as to how such a task can be accomplished, but also the creativity of translating literature knowledge into physical and visible structures. The task is further complicated by the fact that such a centre is developed within the framework of the mother institution, which may have its own constraints in its operations.

Setting up an IRC at HOORC has had to face these constraints and challenges, as the paper has highlighted in Section 4. It is a challenge, for example, to be able to deal with institutional constraints that would make it difficult for a Port Cabin to be moved within weeks from the time a decision is made. One has to find ways of keeping the morale up and have enough patience as the system drags for months to carry out a straightforward task such as this. In addition, organising thousands of materials, some requiring specialised treatment and expertise with limited resources is yet another challenge. One needs to work extremely hard to achieve anything tangible in such a situation.

Management of indigenous information as part of the IRC's responsibility also presents another challenge. It is obvious, for example, that the acquisition of indigenous information may not be within the understanding of the institution, particularly regarding the responsibilities of an information professional. This misunderstanding may generate resistance when it comes to making resources available to enable the work to be done. The need for input by other professionals into the management of indigenous information may also put pressure on scientists who already have much to do in their own fields. Such challenges may not just need people to be available to contribute towards the management of this type of resource, but also a total change of mindset as to what would be expected in the ambit of such a task.

7. Conclusion

Setting up an Information Resource Centre cannot merely follow already prescribed steps and pre-existing experiences. It is a task that has challenges that may vary from one situation to another. At HOORC, setting up an Information Resource Centre has had its own challenges that are unique and hence required specific solutions. The issue of indigenous knowledge also makes the role of IRC at HOORC challenging, and requires the participation of other professionals in the processes of acquisition and management of such resources. Although there are challenges and limitations in the whole process, the experience of setting up an IRC at HOORC and the inclusion of indigenous information in the management of information is nevertheless a worthwhile experience.

References

Bock, John and Johnson, Sara E. 2001. *The Okavango Delta Peoples of Botswana.* [Online]. Available: http:// kalaharipeoples.org/documents/Okavango.htm

Dei, George J. Sefa. 1996. African development: the relevance and implications of indigenousness. [Online]. Available: http:// www.brocku.ca/epi/casid/dei.htm [cited 15 November 2001]

Flavier, J. M. *et al.* 1995. The regional program for the promotion of indigenous knowledge in Asia, In: Warren, D. M. *et al.* (Ed.) *The cultural dimension of development: Indigenous knowledge systems.* London: Intermediate Technology Publications.

Kreizeman, Karen. 1999. *Establishing an Information Resource Centre: a practical guide.* London: Bowker Saur.

Langridge, D. W. 1992. *Classification: its kinds, elements, systems, and applications.* London: Bowker Saur.

Mathias, Evelyn. 2001. *Introducing ethnoveterinary medicine.* [Online]. Available: http://www.ethnovetweb.com [cited 15 November 2001]

Nkhata, Bright and Ngidi, Tiro. August 2000 (unpublished). *Setting up an Information Resource Centre: a consultancy report.* Gaborone: Water Utilities Corporation.

University of Botswana. 1995. *Development of the Okavango Research Centre: project memorandum.* [unpublished report]. Gaborone: University of Botswana.

Warren, D. M. 1991. *Using Indigenous Knowledge in Agricultural Development; World Bank Discussion Paper No. 127.* Washington, D.C. The World Bank

Wells, Marianna S. and Young, Rosemary. 1997. *Moving and reorganising a library.* Aldershot: Gower.

World Bank Factbook 2001. *CIA - the World Bank Factbook: Botswana.* [Online]. Available: http://www.odci.gov/cia/ publications/factbook/geos/bc.html

World Bank Group. 2001. *What is indigenous knowledge - definitions.* [Online]. Available http://www.world bank.org/afr/ik/ basic.htm [cited 15 November 2001].