THE MANAGEMENT OF AUDIOVISUAL MATERIALS IN THE MEMBER STATES
OF THE EAST AND SOUTHERN AFRICA REGIONAL BRANCH OF THE
INTERNATIONAL COUNCIL ON ARCHIVES (ESARBICA)

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DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and has not previously, in its entirety, nor in part, been submitted at any other university for a degree.

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June 2007

ABSTRACT

This research investigated the management of audiovisual materials (AV) in the East and Southern Africa Regional Branch of the International Council on Archives (ESARBICA). The study employed questionnaires, interviews and observation to gather data from a population of fourteen national archives. The response rate from the questionnaires was 64.28%. The observations and interviews were carried out from a sample of three national archives and four national media organisations, as explained in Chapter Three. The study confirmed previous studies that attributed continued dissipation of AV materials to various factors such as climatic and environmental conditions, shortage or lack of skilled AV archivists and lack of a standard legal framework in the ESARBICA region. Most national archives did not cover audiovisual archives in their legislation.

The study discovered that most of the national archives did not apply the following policies to AV materials: appraisal, acquisition, access, preservation, retention, digitisation and disposal. The study revealed that most of the national archives had a collaborative relationship with national media organisations, where the latter were required to deposit copies of AV materials in the national archives. However, some national archives relegated the responsibility of managing AV materials to media organisations.

Poor infrastructure hindered effective management of AV materials. Most of the national archives did not have equipment to monitor environmental conditions. This could have contributed to the vinegar syndrome in some of the national archives. Poor structural placement of some of the national archives resulted in inadequate allocation of funds to the national archives. This invariably impacted on the way national archives preserved AV materials. The researcher discovered that there were very few training opportunities in AV archiving in the region. The few trained staff had intermediate skills obtained from conferences, seminars and workshops.

Most importantly, the study revealed that most of the national archival institutions in the region were not applying the records life-cycle model (or any other model) to the management of AV materials. The major recommendations were a change in the structural placement of the national archives, where the directors of the archives would report to an influential ministry in the government service. Such a position would accord the national archives more recognition and thus more financial resources may be availed to the national archives to enable them manage the nation's heritage more effectively. An

Integrated Records Management (IRM) model was recommended. The application of the IRM model requires a paradigm shift from the traditional image of archivists as mere custodians of archives to active participants in the decisions that affect the management of all formats of records, from the creators' organisations or departments before such records (including AV materials) are transferred to the national archives for long-term preservation.

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DEDICATION

For my loving husband Charles and children Christine, Diana and Maria Abankwah.

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LIST OF ABBREVIATIONS AND ACRONYMS

AACR2 - Anglo American Cataloguing Rules 2

AES - Audio Engineering Society

AIFF - Audio Interchange File Format

ALB - National Archive of Recorded Sound and Moving Images (Sweden)

ANSI - American National Standard Institute

ARSC - Association of Recorded Sound Collections

APA - American Psychological Association

AMIA - Association of Moving Image Archives

ASCII - American Standard Code for Information Interchange

AV - Audiovisual

AVAPIN - Audiovisual Archiving Philosophy Interest Network

AVMs - Audiovisual materials

AVU - Audiovisual unit

BBC - British Broadcasting Corporation

BNARS - Botswana National Archives and Record Services

BWA - Broadband Wireless Access

CALM - Computerisation for Archives, Libraries and Museums

CAQDAS - Computer-Aided Qualitative Data Analysis Software

CBS - US Television Channel

CCTV - Closed-Curcuit Television Camera

CDSISIS/WINISIS - UNESCO Windows database software

CDs - Compact Discs

CD-Rs - Erasable Optical Disks

CD-ROM - Compact Disc Write Only Memory

DAT - Digital Audio Tapes

DMSS – Digital Mass Storage Systems

DVDs - Digital Versatile Discs

E-mail - Electronic mail

E-records - Electronic records

ESARBICA - East and Southern Africa Regional Branch of the International Council on Archives

HVAC - Heating, ventilation and air-conditioning

FIAF - International Federation of Film Archives

FIAT - International Federation of Films and Archives

IASA - International Association of Sound and Audio Visual Archives

ICA - International Council on Archives

ICBS - International Committee of the Blue Shield

ICOM - International Council of Museums

ICRC - International Committee of the Red Cross

ICCROM - International Center for the study of the Preservation and Restoration of Cultural Property

IFLA - International Federation of Library Associations and Institutions

IFTA - International Federation of Television Archives

IRM - Integrated Records Management

ISAD (G) - General International Archival Description

ISBD - International Standard Bibliographic Description

JICPA - Joint IFLA/ICA Committee on Preservation in Africa

JPEG - Joint Photographic Experts Group

JTC - Joint Technical Commission

LC - Library of Congress

LISA - Library and Information Science Abstracts

LP – Long-Playing (gramophone record)

MAD - Manual Archival Description

MARC - Machine Readable Cataloguing

MDL - Minimum Data List

MPEG - Motion Picture Expert Group

NARSA - National Archives and Records Service of South Africa

NAZ - National Archives of Zimbabwe

NBC - National Broadcasting Corporation

NFVSA - National Film, Video and Sound Archives

NGOs - Non-governmental organizations

OCR - Optical Character Recognition

OCLC - Online Computer Library Center

PVA - Polyvinyl acetate

PVC - Polyvinyl chloride

PET - Polyethylene-terephthalate

RAMP - Records and Archives Management Programme

RLG - Libraries Research Group

ROMs - Read Only Memory

RH - Relative Humidity

SEAPAVAA - South East Asian and Pacific Audio Visual Archives Association

SGML - Standard Generalised Markup Language

SSA – Sub-Saharan Africa

SAPSS - Statistical Package for Social Scientists for Windows

TBC - Time Base Corrector

TCC - Technical Coordinating Committee

TDM -Total Design Method

TVT - Tanzania Television

UCLA -University of California (Film and Television Archive)

U.S.A. - United States of America

U.K.- United Kingdom

UNESCO - United Nations Educational, Scientific and Cultural Organization

VTR - Video Tape Recording

WAV - Waveform (audio format)

WORM - Read Once Write Many

ZNBC - Zambia National Broadcasting

ZIS - Zambia Information Service

CHAPTER ONE: INTRODUCING THE STUDY

1.0 Introduction

An introduction to a study is viewed as:

> an overview of the research report highlighting the background, statement of the problem, purpose or aim, objectives, significance or justification, scope, brief methodology, major findings and recommendations (Makerere University Graduate School 2004).

In line with the above statement, Creswell (1994:42) earlier observed that an introduction usually focuses on the problem that led to the study. The present study was a response to growing concern about the deteriorating state of archival materials, in general, and audiovisual (AV) materials, in particular. This concern is directed at the African continent and, in particular, the East and Southern Africa Regional Branch of International Council on Archives (ESARBICA) (Boston 2003; Chida 1994:24; Hamoya 2003; Lekaukau 1989:34; Matangira 2003a:32; Matangira 2003b:43; Mazikana 1994:4; Mazikana 1997/1998:154; Musembi 1986:115-125; Mwangwera 2003; Ngulube 2003a:352; Njovana 1989:24; Olivier 1999:10). Mazikana (1997/1998:154) deplored the overall archival situation in Africa as a crisis that required urgent remedial measures. This situation seems to have remained the same, if not worse, if one were to go by studies such as Matangira (2003:35); Matangira (2003b:43) and Ngulube (2003a:331). Harsh environmental conditions in tropical countries contribute to the prevailing situation (Chida 1994:24; Schuller 2004a). The study was therefore an attempt to suggest common practical solutions to the problems encountered in managing AV materials in the region.

The need to keep proper records has been stressed by various authors, including Carlin (2003), Mthethwa (1989:38), Musembi (2003:440), Penn, Pennix and Coulson (1994:7), Ricks, Swafford and Gow (1992:8), Sejane (2004:5), Tafor (2001:4) and Wiggins (2000:6). Information as a resource has surpassed other resources in today's information society (Harrison 1997/98:182; Penn, Pennix and Coulson 1994:3). Carlin (2003), Mthethwa (1989:38), and Sebina (2004) asserted that records are vital ingredients to the administrative machinery of any government. Records protect the rights of citizens and, hence, government officials are held accountable for failure to keep proper records (Sebina 2004; Sejane 2004:5). Carlin (2003) observed that the absence of records threatens a nation's sense of identity and continuity. Records are regarded as an asset and

hence a national heritage (Musembi 2003:440; Sejane 2004:4). Records in all formats should be managed throughout their life-cycle if they are to realize their value (Mullon 2004). In this regard, Njovana (1989:24) emphasized the need for archivists to preserve non-textual and non-paper records, as they hold a wealth of information.

Harrison (1997:1), McKemmish (1993:8) and Musembi (2003:440) conceded that archival records are a primary source of historical and research information and they facilitate legal and administrative functions. The value attached to archival materials is captured in the assertion that, " a country without a history is not a country" (About the National Archives and Records Services of South Africa 2004). Archival materials may be in paper, micrographic or electronic format. That means that they can be in textual or nontextual format. Archival materials include newspapers, letters, diaries, personal and general files, maps and plans. They include audiovisual (AV) and machine-readable materials such as aperture cards, slides, films (cinematographic films and micro-films), audio cassette tapes, video tapes, gramophone records, phonographic recordings, compact disks (CDs), Compact Disk Write Only Memory (CD-ROMs), Read Once Write Many (WORM), reel to-reel-tapes, traditional music and speeches, maps, drawings, photographs, scripts, posters, manuscripts, slides, art works photographic recordings in various formats, including optical digital videos, kinescopes, optically readable laser discs and the latest DVD image technology (Koch 1997:33; McKemmish 1993:6; Mullon 2004a; Ricks, Swafford and Gow 1992:202; Roberts 1993:401).

AV materials are an indispensable part of cultural and intellectual heritage (Harrison 1997/98:182; Schuller 2004a). Harrison (1997/98:182) stated that "audiovisual carriers are not new but have become of increasing importance as art, entertainment and information carriers." The spread of modern communication technologies has enabled AV materials to play a vital role as data carriers for communication, information, teaching, learning and culture (Casciero and Roney 1988:2; Harrison 1997/98:182). However, in order for them to be usable, they need to be managed properly, otherwise they deteriorate and disappear. This does not seem to be the case in some countries in the ESARBICA region, due to lack of guidelines, shortage of expertise, harsh climatic conditions and poor infrastructure to preserve records (Chida 1994:27; Matangira 2003b:47; Mazikana 1997/98:147; Moyo 2002:110; Ngulube 2003a:134).

Despite their versatility, AV materials are prone to decay and distortion (Harrison 1997/98:185). These materials are greatly affected by environmental conditions such as heat, cold, dust and humidity. It is for the above reasons that Harrison (1997/98:185) pointed out that AV materials are most vulnerable to destruction as they "...are made of polymers, and all polymers decay". Bereijo (2004a:324), Modin (1986:101) and St-Laurent (2004) supported these views.

According to the UNESCO's (2007) Memory of the World Programme, AV materials continue to deteriorate. "Everyday, irreplaceable parts of this memory disappear for ever." For instance, it was observed that the cellulose nitrate base used to make films in the early 1950s is unstable, extremely flammable and hazardous to health (Bereijo 2004b:325; Schuller 2004a). Even though cellulose nitrate was replaced with cellulose acetate and later cellulose triacetate, the latter is said to be unstable (Bereijo 2004b:324). The author observed that polyethylene terephthalate which is a more durable version, has not been widely implemented worldwide "... due to the wide expansion in the market of triacetates" (Bereijo 2004b:325). The situation is exacerbated by technological obsolescence, which renders older versions of hardware and software obsolete. "Consequently, information which relies on obsolete technologies becomes inaccessible" (Mullon 2004a). It is against this backdrop that Harrison (1997:93) argued that AV archival materials pose technical difficulties of appraisal and preservation.

The problems of managing AV materials differ and are more complex than conventional records (Harrison 1997:2; Roper 1982:106). Although UNESCO has taken steps to digitise AV records (Boston 2003; ICA-news 2004; Schuller 2004a), they have not yet been accepted as 'archival', despite their versatility (Schuller 2004a). Schuller (2004a) observed that AV materials require different policies and practices from conventional documentary materials. This study addressed problems specific to tropical environments especially in the ESARBICA region. It calls for a critical examination of records management models that prevail elsewhere in the world, with a view to adopting the most suitable model(s) to the ESARBICA states. This is because tropical environmental conditions differ from other parts of the world.

1.1 Background to the study
This section gives an explanation of the records concepts, with emphasis on the records cycle. It highlights efforts taken by international organizations to address the problem

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under study. It gives a brief historical overview of the development of archival services in ESARBICA member states, as well as the current state of AV materials in the region.

1.1.1 Terms and concepts

DiRenzo (1966:6) stressed that concepts are indispensable and irreducible elements of theory. (Precise and refined concepts lead to precise and refined theory.) The author perceived a communication problem emanating from conceptual definitions. This leads to misunderstandings between professionals within the same discipline. It is therefore common to find similar terms having different meanings "each allegedly referring to the same phenomena" (DiRenzo 1966:7). Edmondson (2004a) supported DiRenzo's views when he observed that AV archiving has unique concepts and terminology that are often misused, lack precision and clarity. He therefore supports a definition of concepts in any discipline to clear confusion. DiRenzo (1966:7) concluded that the validity of theory is contingent on the truth of the concepts applied, hence the need to define concepts in any scientific inquiry.

Leedy and Ormrod (2001:61) stated that terms should be defined operationally, to enable others to evaluate the research in order to "…determine whether the researcher has carried out what was proposed in the problem statement". Glatthorn (1998:135) concurred with the arguments in favour of a definition of terms. He emphasised that researchers and writers should spell out key terms and concepts when:

- The term is relatively new and has not gained popularity in the profession;
- The term is generally used ambiguously and needs to be given a precise meaning; and
- The term is general and the researcher needs to attach a special meaning to it.

The definition of the terms and concepts given below fit into this framework.

Archive - may refer to the physical structure or building where records of continuing value are kept. That means it is an institution or agency (private or public) that has a statutory mandate (or other mandate) to manage records or materials that have been preserved for their continuing value (Bellardo and Bellardo 1992:3; Edmondson 2004b; McKemmish 1993:8; Walne 1988:22). The term can also be used to refer to non-current valuable material in any format that may be preserved permanently in their original form because of their continuing evidential value (Harrison 1997:1; McKemmish 1993:5).

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According to Edmondson (2004b), the word archive is derived from the Latin word 'archivum', which means public building and record. The author pointed out that the Greek word for archive is 'archeion', which literary means a superior or magistrate's place. It can therefore be seen that the word archive has multiple meanings, which include origin, power and building (Edmondson 2004b). Bellardo and Bellardo (1992:3) and Edmondson (2004b) concluded that, in modern times, the following meanings are applied to the term archive:

i) A building or part of a building where public records are kept (repository);
A container where physical documents are kept;
ii) A digital location such as a computer, or directory where computer documents are kept;
iii) The non-current documents created or received and accumulated by a person or an organization. Such documents could relate to activities, rights or claims of a person, family, corporation, community, nation or any other entity; and
iv) The agency or organization that collects, stores and preserves AV materials. It is also referred to as an archival agency, archival institution or archival programme (Bellardo and Bellardo 1992:3).

Schwirtlich (1993:45) perceived an archive to be either a purpose-built building, which is specifically planned to fit a particular collection or general or converted building for archival purposes. Ward (1990:1) noted that the term 'archives' conjures up a double meaning in Europe and North America, where it is used formally and informally. To a layman, archives are old documents usually kept in dusty basements, with occasional research value. Ward (1990:2) portrayed the functional value of archives above their physical age and form. This view promotes the preservation of archival materials for their value. McKemmish (1993:8) felt that archives could be accumulated or received by a person or an organization and preserved because of their continuing value. McKemmish (2005:17) concluded that archives and archive "always result from deliberate and partial acts of selection, accumulation, classification and description". In this study, the term 'archive' will be used to refer to non-current AV materials preserved by an archival institution in any format. It will also be used to refer to the repository which stores AV materials.

Audiovisual archive – Edmondson (2004b) conceded to the lack of a clear standard definition of an AV archive in current use. The author cited the South East Asian and Pacific Audio Visual Archives Association's (SEAPAVAA) constitution of 1996, which pertains to the body's membership. The above body refers to AV archives as:

> organizations or units responsible for collecting, managing, preserving and providing access to and making use of AV materials. In this regard, the term includes government and non-government organizations, commercial as well as cultural organizations, which carry out similar functions. Moving images and/recorded sounds, films, magnetic tapes, discs or any other known and unknown medium.

Edmondson (2004b) settled on a professional definition, which views an audiovisual archive as an organisation or department of an organisation which is statutorily mandated to provide access to the audiovisual heritage through collection, provision and promotion of access to the AV collections. In the context of the present study, Edmondson's (2004b) definition of an audiovisual archive is adopted.

Audiovisual materials - is a generic term used synonymously with audiovisual heritage. It refers to records or archives in pictorial and aural, form regardless of their physical make-up or recording process used (Bellardo and Bellardo 1992:4; Edmondson 2004b; Hedstrom and Montgomery 1998; Walne 1988:24). The term is used to describe "information content held in storage and transmission media, and formats that use images and sound rather than, or sometimes in addition to, textual matter" (Hedstrom and Montgomery 1998). It encompasses motion pictures with sound, such as video cassettes, cinematographic films; sound recordings such as gramophone/phonographs record disks, CDs, reel-to-reel tapes, magnetic audio tapes, tape-slide displays, traditional music and speeches; maps, drawings, photographs, scripts, posters, manuscripts, slides, art works and the latest digital AV tapes such as DVDs (Edmondson 2004b, Hedstrom and Montgomery 1998; Lindner 2004).

Edmondson (2004b) was of the opinion that the definition of AV materials covers "anything with images and/or sounds, on the one hand, to the moving image with sound or the audio-slide show, on the other". Similarly, the Copyright and Neighbouring Rights Act (Botswana Government Gazette 2000) defined audiovisual work as "a work that consists of a series of related images, which impact the impression of motion, with or without

accompanying sounds, susceptible to being made audible". Given the range of definitions covering audiovisual media, Edmondson (2004b) suggested that the term audiovisual should comprise reproducible images and/or sounds embodied in a carrier:

> where recordings, transmission, perception and comprehension normally requires a technological devise, whose visual and/or sonic content has linear duration, whose purpose is to communicate the content, other than using the technology for other purposes.

Edmondson (2004b) emphasized that AV materials are cultural materials created for public use. Hedstrom and Montgomery (1998) felt that the term AV has not been replaced by multimedia, which is often wrongly used synonymously. This study adopted the Hedstrom and Montgomery (1998) definition. The term audiovisual archives, in this study, refers to information content in sound and visual formats, i.e. formats of motion and sound, as well as images with or without sound.

Preservation - Forde (2002:167) argued that archivists and librarians use this term broadly. Different meaning are attached to 'preservation', leading to misunderstandings in meaning. Earlier, Forde (1990:118) observed that preservation means different things to different people. While it may mean making pickles to a chef, to an archivist, it means "preventing the deterioration of archival material" (Forde 1990:118). Nevertheless, the term acquires different meanings, depending on the format of documentation. While preserving traditional records means storing physical papers under the best conditions to avoid damage and/or repair damage, preserving electronic records is different (International Council on Archives Committee on Electronic Records 1996). Preserving electronic records entails migrating them to new technological devices from time to time to avoid obsolescence of software and hardware.

Harvey (1993:75) argued that contemporary usage of the term preservation refers to activities that put emphasis on accessibility to archival material and to the value attached to the information content. Harvey (1993:75) perceived preservation as a broad term that encompasses physical storage facilities, managerial and administrative strategies, to determine how records are stored, how they are used, how often they are used, physical processes to repair records, reformatting methods and policies that ensure their long-term usage. Harvey (1993:74) cited Sir Hilary Jenkinson (1937), who stated that the materials

in the custody of archivists require physical keeping. This means that archives should be accorded physical care and security.

In this study, the term applies to the processes and activities that prolong the usable life of archival records. This includes textual and non-textual materials (Bellardo and Bellardo 1992:26; Forde 2002:167; Walne 1988: 22).

Record - McKemmish (2005:9) defined records as:

> archival traces of an act or event...stored by recordkeeping and archival processes in ways which preserve their content and structure, link them to related documents, and record information about related social and organizational activities.

In this context, therefore, archival records or traces are a reflection of documentary and contextual links of related social and organizational activities. They include journals, newspapers, magazines, monographs, artefacts, compact disks, videotapes and sound recordings.

Records management - The preceding concepts can be operationalised through a records management programme. Records management is defined as that area of administrative management which is responsible for the "efficient and systematic control of the creation, receipt, maintenance, use and disposition of records" (Shepherd and Yeo 2003:6). According to Penn, Pennix and Coulson (1994:7), a comprehensive records management programme backs up the records management process. The programme makes it possible for an organization to control the quality and quantity of the information that it creates.

The definition and concept of records management by Penn, Pennix and Coulson (1994:7) and Shepherd and Yeo (2003:6) rests on the premise that records pass through phases during their life.

Controlling records throughout the life-cycle is the basis for records management. Bantin (2002:68) described the records cycle as "the prominent model for North American archivists and records managers since at least the 1960s." The records cycle theory equates records to a biological organism. It is believed that records are born at creation stage and they are later used and maintained. During their old state (disposition stage), they are either transferred to the archives or destroyed (Parker 1999:12; Penn, Pennix and Coulson

1994:12; Shepherd and Yeo 2003:9). Shepherd and Yeo (2003:9) likened the records cycle to the information life-cycle model used in information management technology. In that regard, various authors, including Jones and Beagrie (2003:130), Mnjama (1996a:25), Mullon (2005), Parker (1999:12), Penn, Pennix and Coulson (1994:12), Sejane (2004:22), Shepherd and Yeo (2003:10) and Tafor (2001:22) stated that records should be managed through a life-cycle. Shepherd and Yeo (2003:5) likened the records cycle to the information life-cycle models used in information management and technology.

The records cycle has been highly criticized by various information professionals such as Flynn (2001:80), McKemmish (2003) and Shepherd and Yeo (2003:11). For instance, McKemmish (2003) criticized the life-cycle model for separating traditional records management processes from archives administration. This presupposes an artificial distinction between business records and records kept for cultural reasons. It actuates the professional perspectives of archivists and records managers (McKemmish 2003; Shepherd and Yeo 2003:9). The authors opined that the life-cycle model does not cater for electronic records as it views records as physical entities. McKemmish (2003) and Upward (2000:119) advocated an integration of records processes with no strict barriers, the records continuum model. The records cycle and other models are discussed in detail in Chapter Two. In this study, the term covers conventional and non-conventional records or materials.

Records - In the present study, the term applies to documented information created in the conduct of business regardless of medium or format.

1.1.2 Background to the problem

Regional and international attempts have been made to address the deterioration of AV materials worldwide (National Library of Australia 2000; ICA-news 2004; General Conference 33 rd Session 2005; Kula 2004a, b; Pickett and Lemcoe 1991; Schuller 2004a). The International Federation of Film Archives (FIAT), the International Association of Sound and Audiovisual Archives (IASA), the International Council of Archivists (ICA), the International Federation of Television Archives (IFTA) and the International Federation of Library Associations and Institutions (IFLA) have "...collaborated since 1979 in a Round Table of Audiovisual Records under the auspices of UNESCO" (Harrison 1997/98: 188). Other non-government organizations (NGOs) that are concerned about AV materials include the American-based Association of Recorded

Sound Collections (ARSC), the Association of Moving Image Archives (AMIA) and the South-East Asia-Pacific Audio Visual Archives Association (SEAPAVA) (Harrison 1997/98). The United Nations Educational, Scientific and Cultural Organization (UNESCO) Memory of the World Programme and the American National Standards Institute (ANSI) have been jointly involved in various activities to prolong the life expectancy of AV materials (Boston 2004; UNESCO 2006; Schuller 2004b). A Joint Technical Commission (JTC), which is a joint effort between the Audio Engineering Society (AES) and AINSI, is currently devising standards and practices for preserving and maintaining AV materials (Schuller 2004a).

It appears that most national archival institutions in ESARBICA still fail to match the international parameters and standards of managing AV materials. The poor state of AV materials in Zimbabwe, Zambia, Malawi, Zanzibar and Tanzania is a testimony to the above (Matangira 2003b:48; Moyo 2002:110; Mazikana 1997/98:153; Ramokate 2005:2). Matangira (2003a:32), Mwangwera (2003) and Olivier (1999:12) observed that most archival institutions in ESARBICA were still having problems with their AV collections. Matangira (2003a:33; 2003b:45) observed that Zimbabwe only made provision for an AV unit (within the National Archives) fifty-three years after opening the National Archives. Malawi, which had a large collection of AV materials lacked technical skills and adequate facilities to handle them. This resulted in the dispersal of archival collections across various collections, leading to a deterioration of AV materials (Mwangwera 2003).

Ngulube (2003a:18) alluded to the lack of a clear framework to implement new regulations that protect all types of archival records from heavy use, loss and deterioration. The author observed an absence of national standards for the preservation of records and archives in South Africa (Ngulube 2003a:18). From the foregoing discussion, it is evident that the preservation landscape in the ESARBICA region has been unsatisfactory. It is no wonder that, in 1989, ESARBICA "devoted its ninth biennial conference to a critical analysis of the history and development of archival services in the region" (Lekaukau 1989:32).

Formed in 1969 to promote an exchange of ideas through regular professional meetings, seminars, workshops and conferences regionally and internationally, ESARBICA's membership stands at 14 member states that include Angola, Botswana, Kenya, Lesotho, Namibia, Malawi, Mozambique, South Africa, Swaziland, Tanzania, Zanzibar, Zambia,

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Seychelles[1] and Zimbabwe (ESARBICA 2004). The organization is concerned with the management and preservation of records in all formats. The preservation of AV materials was deemed to be so important that the theme of ESARBICA's Eleventh General Conference was devoted to 'New Archival Materials' (Lekaukau 1989:34).

Out of three ESARBICA countries included in UNESCO's survey of endangered AV carriers (Boston 2003), responses were received from the National Archives of Zimbabwe. Studies by Matangira (2003a:34), Moyo (2002) and Mazikana (1997/98) reported that out of the fourteen member states of ESARBICA, only two countries, namely Zimbabwe and South Africa had devised preservation strategies for managing AV and magnetic media. A few other countries, including Zambia, Kenya and Botswana, have made some attempt, while other countries in the ESARBICA region have barely started.

1.2 Research problem

The following section below defines the problem under study. It depicts a picture of the magnitude of the problem and its consequences to the region and the need for the study.

1.2.1 Statement of the problem

Creswell (1994:56) stipulated that a purpose or statement of the problem gives direction for the research. The author observed that a statement of the problem provides a clear and accurate summary of the overall purpose of the study. It clearly depicts the central concept that the study is exploring, the units of analysis and the methodology employed (Creswell 1994:56).

The management and preservation of AV materials have been identified as the greatest challenge to the archival profession in the twenty-first century (Schuller 2004a; Matangira's (2003b:47; Yahaya 2001:66) survey revealed that this problem is prominent in the ESARBICA region. Her views were echoed by Mwangwera (2003), Ngulube (2002a:127), Ngulube (2003a), Yahaya (2001:65) and Olivier (1999:12). The magnitude of the problem was succinctly captured by Mwangwera (2003), who lamented that the quality of sound and picture archives in the Malawi National Archives was "...wearing out at a very fast rate because the materials are very old and at the same time they are exposed to poor environmental conditions due to lack of appropriate infrastructure for their storage".

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[1]Seychelles has not been an active member of ESARBICA since 1999.

Chida (1994:24) and Ngulube (2003a:86) concurred in the case of Zimbabwe and South Africa, respectively. Mnjama (1996a:28) and Tafor (2001:26) attributed this problem to lack of co-ordination between the various processes of the records cycle.

The problem is that AV materials are not effectively managed in the ESARBICA region, due to the failure of archivists to manage them throughout their life-cycle, and a general lack of strategies and policies to manage AV objects. Despite all the efforts to address the problem, it appears that no study has adequately focused on the application of the records cycle to the management of AV materials in the region. This seems to imply that there is no model that adequately documents the best practices for the management of AV materials in tropical environments such as those of ESARBICA. It is against this backdrop that the present study uses a survey method to determine the current state of AV materials in the region.

1.2.2 Research purpose

The study aimed at identifying strategies for managing AV materials and suggesting ways of preserving contemporary AV materials in the archival institutions of ESARBICA.

1.2.3 Research questions

Saunders, Lewis and Thornhill (2003:23) stressed the importance of defining clear research questions at the beginning of the research process. These authors argued that research questions determine the conclusions from which data is gathered at the end of the research process (Saunders, Lewis and Thornhill 2003:23). They suggested that research questions should be in line with relevant literature on the area under study and they should generate new ideas. In an attempt to address these aims, the researcher asked the questions below:

i. To what extent is life-cyle model applied to the management of AV materials?
ii. What policies do archival institutions in the ESARBICA region apply to the management of AV materials?
iii. What strategies do archival institutions in the ESARBICA region apply to the management of AV materials?
iv. What are the current levels of AV management knowledge and skills of archivists in ESARBICA?

v.   What are the available local or regional training opportunities for staff that manage AV materials in ESARBICA?

vi.   What are the environmental conditions under which AV materials are stored in archival institutions in ESARBICA?

vii.   What steps have been taken by national archives in ESARBICA to deal with AV materials in electronic format?

viii.   What are the most efficient methods, procedures and policies for acquiring, selecting, appraising, arranging, storing, accessing and preserving AV materials in archival institutions of ESARBICA?

1.2.4 Research objectives

Research questions form the basis for research objectives. Hence, objectives can be phrased in the form of research questions. Objectives are more acceptable to the research community as proof of a researcher's sense of direction and purpose (Saunders, Lewis and Thornhill 2003:25). They assist the researcher to identify the outcome of a study.

The objectives of the study were to:

i.   Identify policies which archival institutions in ESARBICA used to manage AV materials;

ii.   Investigate the extent to which the life-cycle model was applied to the management of AV materials in ESARBICA;

iii.   Identify strategies which archival institutions in ESARBICA apply to the management of AV materials;

iv.   Ascertain the current levels of AV management knowledge and skills of archivists in ESARBICA, in relation to managing AV materials; and

v.   Establish locally or regionally available training opportunities for staff that manage AV materials in ESARBICA.

The objectives, questions and possible sources of data are presented in Table 1.

Table 1: Research objectives, research questions and possible sources of data

Research objective	Research question	Possible sources of data
Identify policies which archival institutions in the ESARBICA region apply to the management of AV materials.	What policies do archival institutions in ESARBICA region apply to the management of AV materials	**Questionnaires**: E1, E2, F1, F2, H1, K6 **Interviews**: D1, D4, F1, G2, H1, H2
Investigate the extent to which the life-cycle model was applied to the management of AV materials in the archival institutions of ESARBICA.	To what extent is the life-cycle model applied to the management of AV materials in the archival institutions of ESARBICA?	**Questionnaires**: D1, D2, D3, D4, F6, F8 Interviews: E1, E2, E3, E4, E5, E7, J3, J4
Identify strategies which archival institutions in ESARBICA apply to the management of AV materials.	What strategies do archival institutions in ESARBICA region apply to the management of AV materials?	**Questionnaires**: B1, A1, B2, B3, B4, B5, C1, C2, C4, C5, C6, C7, C8, I6, F1, F2, F3, F4, F5, G1, G2, G3, G6, G7, G8, G9, G10, G11, G12, G13, G14, G15, H2, H3, H4, H5, H6, H7, H8, H9, H10, H11, H13, H14, H15, H17, H18, H19, H20, I1, I2, I3, I4, I5, I6, J1, J2, J4, K1, K2, K3, K4, K5, K6, L9, M1, M2, M3 **Interviews**: B1, B2, B3, A1, A2, C1, I3, I4, I5, C2, C3, G1, G3, G4, J1, J2, J4, J5, J6, J8, J9, J10, J11, J12, J13, J14, J15, J16, J17, J18, J19, J20, J21, J22, J23, J24, J25, K1, K2, K3, K4, K5, K6, K7, K8, K9, K10, K11, K12, K13, K14, K15, K17, K18, K19, L1, L2, L3 **Observations**: A2, A3, A4, A5, B1, B2, C, E1, E2, D, I10, I11, I12,
Ascertain the current levels of knowledge and skills of archivists in ESARBICA, in relation to managing AV materials.	What levels of knowledge and skills do archivists in ESARBICA have in relation to managing AV materials?	**Questionnaires**: L1, L2, L3 **Interviews**. L1, L2, L3
Establish locally and/or regionally available training opportunities for staff who manage AV materials in ESARBICA.	What are the available local and/or regional training opportunities for staff who manage AV materials in ESARBICA?	**Questionnaires**: L4, L5, L6, L7, L8

1.3 Justification for the research

Justification of a study is a statement that explains importance of the study for specific audiences (Creswell 1994:111). Creswell (1994:111) asserted that the justification of a study should address three major questions: How does the study add to the scholarly research and literature in the field? How does the study help to improve practice? Why does the study improve policy? The present study enriches the existing theoretical literature, and offers practical solutions to practitioners in the field of AV materials in the ESARBICA region, to researchers and other stakeholders. This was done by adapting an Integrated Records Management (IRM) model which integates the responsibilities of records managers with those of archivists. The study suggests changes in policies, which

bring about new strategies of managing AV materials. Such strategies include equipping AV archivists with knowledge and skills of managing AV materials, more appropriate ways of storing AV materials, a legislative framework to protect AV materials and overall security of the materials and the environment, in which the AV materials are stored.

An Internet search of the Library and Information Science Abstracts (LISA), NEXUS and EBSCOhost databases, as well as grey literature, revealed scanty information on studies about AV materials in Africa and ESARBICA. Studies on Africa that were identified were Abbott (1999) in South Africa, Chebani (2003) in Botswana, Derges (1992) in ESARBICA, Kwame (2004) in Ghana, Matangira (2003a; 2003b) and Mutiti (2001) in the ESARBICA region, Mwangwera (2003) in Malawi, Ngulube (2003a) in South Africa, Ngulube (2003b; 2002; 2001) in Sub-Saharan Africa (SSA), Peters (1998) in South Africa and Sejane (2004) in Lesotho.

Abbott (1999:15) revealed that the National Archives of South Africa was in full control of the creation and management of electronic records. However, Ngulube (2003a:160) observed that, despite the fact that management of electronic records was reflected in the National Archives of South Africa Act No. 43 of 1996, electronic records management did not feature prominently in the annual reports of the Directorate of the National Archives until the 1990s and guidelines for managing electronic records were inadequate. Worse still, lack of training in preservation of electronic records in South Africa was a set-back in the management of the national heritage. Ngulube (2003a:334) also reported that only one archival institution in South Africa had a written disaster preparedness plan. He concluded that disaster preparedness and security of records were not accorded priority in archival institutions in South Africa and the rest of the ESARBICA region. The present study sought to discover whether or not the situation has changed. The studies of Abbott (1999) and Ngulube (2003a) are very important to the current study, as they raise problems that other ESARBICA countries may be experiencing. This study is therefore comprehensive, in-as-far as it covers the entire region.

Although studies such as those of Derges (1992) and Matangira (2003a, b) have been conducted on AV materials in the region, no study has evaluated the application of the records cycle model to the management of AV materials. Chebani (2003:6) recommended that archival institutions in ESARBICA should apply an integrated records management model (IRM) to the management of archival records. Derges (1992), Matangira (2003a, b) and other studies revealed the status of AV materials in the region but the present study

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took a different perspective to the problems of managing AV materials. This was accomplished by examining the application of the records cycle model (and related models, such as the records continuum and the IRM model) to the processes of managing AV materials in the region. It was an attempt to identify possible causes to the problems that archival institutions in the region are currently grappling with.

UNESCO's commemoration of 27 October at the 'World Day for Audiovisual Heritage' is a testimony to the extent to which the preservation of AV materials has become an international concern (UNESCO 2006). UNESCO's promotion of AV materials underlines the value attached to the safeguarding and preservation of AV heritage. The present study therefore came at a time when AV professionals, worldwide were joining hands to curtail the deterioration of AV materials.

The present study used new data to refine and critique established models in an attempt to recommend the most appropriate model for managing AV materials in the region. Denscombe (2002:84) regarded such an approach as a contribution to original analysis. The present study provided new information in the area of managing AV materials, in general, and in ESARBICA, in particular. The research objectives, research questions and assumptions were designed to assess the application of the existing records and archival theories, as well as establishing whether or not archival institutions in the region were managed in accordance with established procedures.

Blaxter, Hughes and Tight (1998:13), Cryer (2000:191) and Denscombe (2002:84) stressed a need for originality in research. Cryer (2000:191) urged researchers to use standard procedures, tools and techniques to develop an appropriate research methodology. While studies such as those of Mwangwera (2003), Ngulube (2003a, 2001), Matangira (2003a, b) and Sejane (2004) mainly used questionnaires, the present study triangulated questionnaires, interviews and observations. The research instrument was pre-tested on experts who attended the XV111 Biennial ESARBICA Conference, which was held in Gaborone, Botswana, from 27 – 29 July 2005. The professionals included directors of archival institutions in the region, AV archivists, researchers and trainers. Their contributions helped the researcher to fine-tune the research instrument and greatly improve the validity of the research findings. The methodology employed by this study therefore enabled the researcher to compare findings with previous studies, to determine the extent to which the results were similar or different. The researcher was able to ascertain whether or not failure to apply the records cycle model to the management of

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AV materials was a contributory factor to the problems that archival institutions in the region were faced with. This was, to some extent, an original contribution to the knowledge in the field of information studies.

Since this study covered the whole region, as opposed to others such as Chebani (2003), Matangira (2003a; 2003b) and Sejane (2004). The results of the study are more representative of the current state of AV materials in ESARBICA. Moreover, the study was conducted at a time when archivists internationally and regionally were wary of the deteriorating state of archival holdings, particularly in Africa. It is hoped that the findings of the study will urge the Directors of National Archival institutions in the region to develop AV archiving programmes, which are currently lacking (Matangira 2003b:46; Ngulube 2003a:342).

This study particularly contributes to policy-making in the area of AV management and preservation, by updating the international community with pertinent issues or problems that archival institutions in the region are facing. Through international publications of the results, donor agencies such as UNESCO, IASA, FIAF and FIAT might be able to understand and address some of the problems that the region is currently experiencing. The data gathered from this study will enable ESARBICA countries to allocate scarce resources more effectively and ultimately formulate better plans and policies. As Creswell (1994: 111) pointed out, this study is significant because it adds to scholarly literature in the field and improves practice and policy-making.

1.4 Overview of literature review

Saunders, Lewis and Thornhill (2003:75) believed that a thorough review of literature assists the researcher to "develop a thorough understanding of and insight into the previous research that relates to...research question (s) and objectives". The review puts the research in context by taking a critical view of previous work, identifying key points, presenting them logically and highlighting gaps which require a fresh insight (Saunders, Lewis and Thornhill 2003:75). Creswell (1994:20) pointed out the following purposes of the literature in a research study:

- It reveals results of previous studies that are closely related to the area of the study;
- It puts the study in context with on-going studies, thereby filling gaps; and
- It acts as framework on which the study is established and it acts as a benchmark to compare the results of the study with other studies.

In order to realise these purposes, Shipman (1988:107) stated that the literature review should address the following questions.

- How information is extracted and used;
- The validity and representativeness of the source of information; and
- Whether or not there is enough information/evidence to justify reliability and validity.

The present researcher conducted a search from abstracts, indexes and reputable journals in the area of study, books, electronic databases and other general references. Equipped with the relevant information, the researcher was able to refine the research topic and carry out a critical review of the literature, as suggested by Saunders, Lewis and Thornhill (2003:75). The present researcher achieved the following advantages from the review.

- A replication of previous research was avoided;
- Important variables from previous studies were identified;
- Theories in the area of records and archives were identified;
- Strengths and gaps in previous studies were identified;
- Formulation of the research problem based on previous research, making the study relevant and significant to the professional community (Saunders, Lewis and Thornhill 2003: 47).

This section analyses existing literature on the subject in an attempt to reveal contributions, weaknesses and gaps (Blaxter, Hughes and Tight 1998:109; Makerere University, Graduate School 2004). The literature review covers a theoretical framework, which includes models used to manage records throughout their life-cycle, the need to manage and preserve AV materials, types and characteristics of AV materials, AV equipment (storage and maintenance), historical background to the preservation of AV materials (including an overview to the development of AV materials world-wide, in Africa and in ESARBICA), legislation that applies to the management of AV materials, archival functions, risk reduction, disaster preparedness, environmental control, abuse and mishandling, general security and staff training, as well as previous studies in the area of AV materials (world-wide, in Africa and in ESARBICA).

The major contributors to the area of AV materials in the region include Abbot (1999), Chida (1994), Derges (1992), Hamoya (2003), Matangira (2003a, b), Mnjama (1996b; 2005), Mwangwera (2003), Ngulube (1999; 2003a, 2003b), Sejane (2004) and Tafor

(2001). The views of these authors generally point to common problems that archival institutions in the region are faced with. These include lack of funds, which, in turn, leads to failure to meet recommended climatic conditions to preserve AV materials, inadequate or lack of required equipment, shortage of, or lack of, trained AV archivists, absence or outdated policies and lack of a legal framework to control the use and preservation of AV materials in the region. A synopsis of the above studies is detailed in section 2.17 of Chapter Two.

Judging from the previous studies, the major gap in the previous studies is that they did not apply the records cycle or any other model to the management of AV materials. Furthermore, the methodology employed by previous studies focused on questionnaires and interviews, with little application of observation techniques. Previous studies concentrated more on national archival institutions, with the assumption that AV units in various archives manage all AV materials. This study brings in a new dimension to research in AV materials by including media archives (such as national television and radio organisations, where large volumes of AV materials are kept).

1.5 Overview of methodology

The present researcher attended a FIAT/IASA Southern African Workshop on Film, Video and Sound Archives in October 2005, in South Africa, and the ESARBICA Conference in July 2005, in Botswana. The Workshop and Conference enabled her to become acquainted with the participants in the research. The audience comprised AV archivists from the ESARBICA national archives, AV archivists from television and radio archives in the region, researchers and professionals and international organizations (FIAT and IASA). FIAT and IASA are the largest supporters of the preservation of AV materials worldwide. Coupled with the workshop exposure, the researcher decided to use the triangulation method, which included observation of AV materials and the storage facilities. This was done to minimize the limitations in questionnaires and interviews, thereby increasing the reliability and validity of the results.

This study used a qualitative and quantitative approach. The researcher used information form the literature to formulate questions. The questions were answered through self-administered questionnaires, interviews and observations. The questionnaires were mailed to Directors of National Archives in the ESARBICA region. In-depth interviews and observations were conducted to clarify issues with the Directors of National Archives and

personnel who deal with AV materials in selected archival institutions as reflected in Chapter Three. Questionnaires were sent to selected national television or broadcasting organizations, film archives and video archives in the region.

1.6 Delimitations of scope, limitations and key assumptions

Delimitations are boundaries or parameters around the study. They denote how the study will be narrowed in scope. The scope spells out what is not going to be investigated or covered by the study. Mauch and Birch (1998:105) concurred when they stated that "delimitations are integral parts of the design because they set parameters, tell the reader what will be included, what will be left out, and why". Put simply, the researcher precisely states what (s)he intends to do and does not intend to do (Leedy and Ormrod 2001:61). Unfortunately, limitations are potential weakness of the study (Creswell 1994:110). The next section will cover the scope of the study, its limitations and assumptions.

1.6.1 Scope of the study

This study was centred on fourteen national public archival institutions in ESARBICA, which have been listed in previous sections. According to Matangira (2003a:32), " they are all national collecting institutions with the mandate to preserve archival documentation regardless of format or media...". These include Angola, Botswana, Kenya, Lesotho, Malawi, Mozambique, Namibia, Swaziland, Tanzania, Zambia, Seychelles, Zimbabwe, South Africa and Zanzibar. Selected specialised media (Television and Broadcasting, Video and Film Archives) organisations responsible for managing AV materials in the various ESARBICA states were included. These were Botswana Television, the South African Broadcasting Organisation (SABC), the Namibia Broadcasting Corporation, Zimbabwe Broadcasting Corporation, Swaziland Television Authority and Zanzibar Broadcasting Corporation. Justification for including media archives is documented in section 2.5.3. Audiovisual archives of private organisations, national libraries, academic archives, local archives, production archives, museums, department archives, university archives, banks and history archives were beyond the scope of this study. These archives were excluded from the study because they do not have a mandate to provide archival services at a national level.

The national archival institutions are likely to provide the appropriate information for this study because they all have the mandate to preserve archival documentation in any format or media (Matangira 2003a:32).

1.6.2 Limitations

It has been suggested that no research method is free from error (Melville and Goddard 1996:47; Moore 2000:12). Melville and Goddard (1996:47) observed that "the data is imperfect because of experimental, recording and other errors". The present researcher could not control some flaws inherent in questionnaires, interviews and observation techniques. The researcher had no way of ascertaining whether the intended respondents completed the questionnaires. Melville and Goddard (1996:44) pointed out that researchers "have no right to expect total honesty. Some participants will not care that much about the answer or will try to give the 'socially correct' answer".

This is why the authors concluded that, with questionnaires, a researcher is dealing with a problem of 'human volunteers'. Others flaws in questionnaires, interviews and observations have been detailed in sections 3.5.1.5, 3.6.2, 3.6.4, and 3.7.2 of this thesis. Indeed, the present researcher could not completely rule out all problems involved in dealing with human beings.

Limitations are potential weaknesses of the study (Creswell 1994:110). According to Shipman (1988:161), "the limitations of social research are usually attributed to technical weaknesses in design, data collection and analysis". The present author argued that limitations could be conceptual (a variety of models with conflicting recommendations), technical (data collecting methods devoid of reality), organizational (personal, professional or political hopes could influence a research topic, the way an investigation is conducted and the interpretation of results) as well as policy (decisions based on insufficient research data). Mauch and Birch (1998:105) identified three factors that affect the outcome of which were beyond the researcher's control. These are "the respondents' willingness to respond at all, to respond in a timely fashion, and to respond accurately". By distributing the questionnaires at an early stage of the survey, the researcher was able to follow-up on the questionnaires.

The researcher is cognizant of the limitations of this study. There were problems of accessing documents and literature written in Portuguese, since she is not proficient in the language. Furthermore, the fact that the study was conducted on fourteen geographical locations posed logistical problems. Thus the researcher was unable to conduct interviews and observations in all the fourteen countries due to limited finances and time. The researcher only visited four countries, which is 28.5 % of the population. However, the

researcher believes the results from the observations could be generalised to the region since it represented all categories of the archival institutions in the region, as countries such as Botswana, Namibia, South Africa and Swaziland were visited for observations.

It was not possible for the researcher to visit all national archives and media organizations in all the ESARBICA countries. The researcher visited selected media organizations given in Appendix II.

Getting clearance from all relevant authorities, particularly in Botswana, caused delays. The researcher reviewed various models for managing records, without attempting to prescribe an ideal standard model for managing AV materials in ESARBICA. Bearing in mind the fact that models are mere representations of reality, the researcher prescribed a model to be used as a guideline by different ESARBICA archival institutions.

1.6.3 Assumptions

Leedy and Ormrod (2001:62) stressed that assumptions are core to any research. "…without them, the research problem itself could not exist". The authors stipulated that researchers should spell out what they take for granted to prevent misunderstanding. Hence, "all assumptions that have a material bearing on the problem should be openly and unreservedly set forth" (Leedy and Ormrod 2001:62). In so doing, assumptions enable others to make a critical evaluation of the conclusions that result from the research. The researcher made three assumptions:

i) National archival repositories in ESARBICA have a mandate to manage AV materials in all formats or media. The researcher felt that for national archival institutions to fulfil their mandate, all formats of archival materials should be managed in an integrated manner;

ii) A total archives approach, where all forms of archival media are integrated, is better than a media separation approach, where specialists or media archival institutions manage AV materials; and

iii) National archival institutions manage all their records, so that they are accessible in the long run.

1.7 Ethical considerations

According to Makerere University Graduate School (2004), ethical considerations involve "getting clearance from the ethical body and consent of respondents to the moral

justification of the investigation". Blaxter, Hughes and Tight (1998:146) stated that ethical research "… involves reaching agreements about uses of this data, and how its analysis will be reported and disseminated". The present researcher sought permission to conduct research at the Botswana National Archives and Records Services (See appendix X11). The project supervisor who is the current editor of ESARBICA journal made contacts with the directors of the national archives of ESARBICA, on behalf of the present researcher. Apart from agreements with users and seeking clearance with ethical bodies to consent the study, the present researcher was required to submit a research proposal to the Research Ethics Committee of the University of KwaZulu-Natal. Saunders, Lewis and Thornhill (2003:129) recommended this procedure. This is in line with the rules and procedures of scholarly writing.

Various authors advise researchers to adhere to professional ethics (Bickman and Rog 1998:499; Blaxter, Hughes and Tight 1998:146; Creswell 1994:148; De Vaus 2002:58; Leedy and Ormrod 2005:102). Leedy and Ormrod (2005:102) stated that a code of ethics ensures that researchers uphold explicit standards. The ethics cover variables such as; respect for participants' right to privacy, voluntary participation, informed consent, protection from physical or psychological harm, confidentiality, anonymity, privacy and honesty with professional colleagues (guarding against plagiarism). The above principles translate in validity and reliability of the research product.

Adams and Schvaneveldt (1985:79) maintained that these are key elements to good research. Blaxter, Hughes and Tight (1998:146) concluded "the pursuit of truth and the right to know are not held as absolute values by everyone". Since the present study upheld the above ethics, the dependent and independent variables used to extrapolate data met the required level of validity. The dependent and independent variables, as well as instruments used are discussed in Chapter Three.

1.8 Outline of the thesis

Mouton (2001) opined that an outline enhances the organisation and coherence of a thesis. It provides a researcher with direction and perspective as it discusses what the thesis will cover. The main topics that are covered in each chapter, are discussed. The organisation of this thesis is a result of rigorous training and application of guidelines stipulated by the Information Studies Programme, University of KwaZulu-Natal. These guidelines were augmented with literature review from books and Internet sources. They included, the

American Psychological Association (1994), Glatthorn (1998), Makerere University Graduate School (2004), Mauch and Birch (1998), Mouton (2001), *Writing a thesis in the Social Sciences: a guide to good practice for students and staff* (2004), and Watson (1987). The thesis is divided into six chapters.

Chapter One - gives an introduction to the study. A background to the problem is narrated and punctuated by a definition of key terms. It systematically gives the statement of the problem, objectives of the study and research questions. These are followed by the justification for the study, theoretical framework, delimitations and assumptions, literature review and an overview of the methodology. The chapter gives an overview of citation styles, with emphasis on the Harvard citation system. It ends with a summary.

Chapter Two - gives a theoretical background to previous research findings related to the study (Leedy and Ormrod 2001:84). By so doing, it serves the following purposes:
i) It puts the reader in touch with the results of related studies;
ii) It links the study to the current dialogue in the literature about a topic, fills in gaps and extends prior studies;
iii) It sets a framework and a benchmark, against which the results can be compared with other studies. The chapter ends with a summary of what is known about the topic and the contribution this study will make to the existing body of literature.

Chapter Three - gives a detailed description of the design and various methodological processes or tools used to gather the empirical data used in this study (Mouton 2001: 123).

Chapter Four - summarises the findings from the data collected and their statistical treatment and gives any supporting evidence of the research questions or lack of it (American Psychological Association 1994:15).

Chapter Five - evaluates and interprets the implications of the results with particular emphasis on theoretical consequences of the results and the validity of conclusions (American Psychological Association 1994:18). The original assumptions are either qualified or negated.

Chapter Six - summarizes the outcome of the study. It draws on similarities or differences between the current study and other studies, in an attempt to confirm or negate the

conclusions drawn from the study. In so doing, the researcher was guided by the following questions:

i) What have I contributed here?

ii) How has my study helped to solve the original problem?

iii) What conclusions and theoretical implications can I draw from my study?

(American Psychological Association 1994:19)

The responses to the above questions formed a basis for the conclusions and recommendations which arose from the study.

1.9 Citation style

Writers and researchers are required to cite or acknowledge other people's ideas in their writing. This is done to enable readers to identify the sources and to provide evidence of scholarly research (The University of Western Australia 2004). Every scholarly discipline has a preferred citation style. The styles in use include: Harvard style, APA style, Chicago style, CBE style and other sources (MLA 2005; *Research writing and style guides* 2005). Most of these styles are adaptations of the Harvard style, e.g. the MLA style is widely used by many writers in literature, language studies and other fields in the humanities. Writers in natural sciences use the CBE style, while the APA style provides documentation advice for writers in the social sciences (American Psychological Association 1994).

Metzger (2005) observed that the Harvard method (popularly known as the author/date method) is the most common method used in the social science and physical sciences and at universities. This method requires that information sources, including quotations, be acknowledged throughout the study. It also requires a slight change in the bibliographic form, whereby the date of publication immediately follows the author's last name. This enables the readers to quickly find the appropriate entry in the alphabetical list of references at the end of the research paper or thesis (Metzger 2005; Shajahan 2004:341). It is a popular system among academic journals, the social, physical and natural sciences, as well as universities internationally (The University of Western Australia 2004; Gilbaldi and Achert 1988:179). It offers advantages of flexibility, simplicity, clarity and ease of use both for author and reader (The University of Western Australia 2004). Unlike other citation styles, the Harvard referencing system does not require the use of footnotes within the article (Gibaldi and Achert 1988: 179). It does not refer readers to other places such as

footnotes and chapter references "which are features of other systems" (The University of Western Australia 2004). Instead, a complete alphabetical listing of references is given at the end of the thesis to enable readers to find the appropriate entry.

There are variations of the Harvard referencing system. The APA format uses the author-date method of citation (Mouton 2001:229). That means, "the surname of the author and the date of publication are inserted at the appropriate point in the text." (Mouton 2001:229). Italics are used instead of underlining certain elements (such as book titles, and journal titles) (*Research writing and style guides* 2005). This is the style the present study applied. Although the APA, 4th edition, prefers a bibliography, the Information Studies Programme at the University of KwaZulu-Natal uses a reference list. The writer thus reflects only cited sources in the list of references. This study adopted the shorter Harvard method (Mouton 2001:232), which replaces the brackets around the dates in the reference list with a period and it drops commas after the date in the text. This is the style used by the Information Studies Programme at the University of KwaZulu-Natal.

1.10 Summary
This chapter stated the research problem, stipulated the research objectives and research questions and gave an overall background to the problem under investigation. It provided a clear perspective to the context of the ESARBICA archival landscape vis-à-vis the international archival landscape. The significance of the study is based on relevant empirical, studies as well on current trends in the field. An overview of the methodology used was given, as well as ethical issues that governed the research. The citation style used was explained and reasons why that particular style was chosen were given.

CHAPTER TWO: LITERATURE REVIEW

"Knowledge does not exist in a vacuum, and your work only has value in relation to other people's" (Saunders, Lewis and Thornhill 2003:43).

2.0 Introduction

The literature review is always the first step in conducting research. The literature review was conducted to reveal previous work done in the area of investigation, in an attempt to reveal all variables "...that may be the cause of the problem under investigation" (Saunders, Lewis and Thornhill 2003:63). Jankowicz (2000:159) and Saunders, Lewis and Thornhill (2003:63) argued that a literature survey is a prerequisite, to research since knowledge does not exist in a vacuum. Blaxter, Hughes and Tight (1998:109) stated that the literature review allows the researcher to compare what has been done, by giving an insight into those aspects of the study that may require a detailed exploration. Sekaran (2003:63) explained that:

> the purpose of the literature review is to ensure that no important variable
> that has in the past been found repeatedly to have an impact on the problem
> is ignored.

This means that a researcher's findings are valued in relation to previous research. The comparison of studies provides a foundation for a theoretical framework, which leads to a problem statement (Blaxter, Hughes and Tight 1998:112; Sekaran 2003:64). Sekaran (2003:64) stressed that research that ignores the variables that critically influence the problem is futile. Blaxter, Hughes and Tight (1998:109) opined that the literature review serves as a framework for developing research questions and testable hypotheses that would support or negate the theory. By so doing, the literature review serves as a basis for further research (Blaxter, Hughes and Tight 1998:109; Sekaran 2003:64).

Chapter Two reviews the literature on the subject of records and archives management, with emphasis on AV materials. Several theoretical frameworks have been used to explain the processes involved in managing archival materials from the creating agencies or organisations to archival institutions, where records are kept for safe custody. The studies that have been identified cover the key processes that govern archival and AV materials. These include studies based on the records life-cycle model, the reference model of the record-keeping system, the records and archives management as parallel systems, the records continuum and the integrated records management (IRM) model (Cox 1992:51;

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Cook 1990:37; Flynn 2001:80; Horsman 2003,;McKemmish, and Guercio 2001:254; and Roper 1999a:23).

The literature review culminated in a theoretical framework on which research questions and objectives were based. The theoretical framework provided the basis for the recommended model. This underscores Saunders, Lewis and Thornhill's (2003:44) suggestion that a literature survey should enable a researcher to look at the problem more objectively. The sections that follow will cover the theoretical framework, the need to manage and preserve AV materials, types and characteristics of AV materials, the historical background to the preservation of AV heritage, administration of AV archives, archival functions, bibliographic control of AV materials, preservation of AV materials, physical control, staff training and studies done in ESARBICA. The chapter ends with a summary.

2.1 Theoretical framework

The theoretical framework is guided by the record life-cycle. Records must be managed from creation to disposal, irrespective of format. There are a number of models that may be used to manage records throughout their life-cycle, irrespective of format. The next section discusses the various models and gives a justification of the records life-cycle model.

2.1.1 Models

Forcese (1973:38) perceived a model as "an imitation or abstract from reality that is intended to order and to simplify our view of that reality, while still capturing its essential characteristics". Models are graphic presentations of concepts or variables researchers use to depict a problem. They are also used to illustrate the processes that govern the principles in a given discipline (Boman *et al.*, 1997:48; Miller and Salkind 2002:46; Wilson 1997:250). Wilson (1997:250) described a model as "a framework for thinking about a problem and may evolve into a statement of relationships among theoretical propositions". Models conceptualise complex phenomena through a mechanism such as a diagram, to interpret reality (Boman *et al.* 1997:48). Models depict characteristics and variables of a phenomenon through words or concepts of a given discipline (Forcese 1973: 38).

One can analyse the model by focusing on certain aspects of reality. Rice and Bishoprick (1971:3) argued that since it is impossible for human minds to understand all the variables that affect any observable phenomenon, conceptual models are used to depict those variables that have the greatest influence on the phenomenon.

There are various types of conceptual models. They can be social, philosophical, or mathematical (Miller and Salkind 2002:46; Rice and Bishoprick 1971:3). "They can involve physical phenomena, emotional phenomena, or anything capable of theoretical analysis" (Rice and Bishoprick 1971:3). In the social sciences, models are used to develop theory and research design (Miller and Salkind 2002:46). The authors urged researchers to use models in cases where "...they can assist in identifying significant variables in such a way that tests of hypotheses can be defined more sharply" (Miller and Salkind 2002:46).

Wilson (1997:250) observed that most models in information behaviour research merely describe an information-seeking activity, including causes and consequences of the activity or the relationships among the information-seeking behaviour. Wilson (1997:250) said that while such models rarely "advance to the stage of specifying relationships among theoretical propositions, they ...may suggest relationships that may be fruitful to explore or test". Forcese (1973:43) felt that models are incomplete representatives of reality, hence merely serve as guides and lenses to scientific research. Forcese (1973:43) pointed out that models erroneously lead researchers "to expect certain outcomes, to perceive certain things, and to fail to perceive other things". Although Forcese (1973:43) observed that there is a general tendency for some models to dominate scientific literature for as long as they are not disputed, he conceded that a model shapes scientific research. It should thus be viewed as a perceptual filter which is inevitable.

The literature is replete with theories on models that are said to be the basis for effective management of information in any media (An 2001; Flynn 2001:80; McKemmish 2003; Mnjama 1996a:2; Parker 1999:12; Peace 1984:23; Penn, Pennix and Coulson 1994:16; Shepherd and Yeo 2003:11). While the theories of managing information differ in some ways, the major concepts underlying this study were based on the processes of managing information, from its creation to its disposition. These processes include creation, acquisition or selection, appraisal, accessioning, arrangement, description, storage and disposal. In exploring the various models in the records and archives discipline, the present researcher took a cue from Wilson (1997:267), by asking the following questions.

- To what extent are different models complete, or reasonably complete, representations of the reality they seek to model?
- In what ways is the model complementary; that is, how does knowledge on one level of analysis aid another?
- How does knowledge of records management models aid understanding of the processes of managing audiovisual materials?

A thorough examination of these questions led to the model proposed in Chapter Six.

The major models related to the outlined processes that have been identified in the literature include records life-cycle concept, archivist's perspective of the records life-cycle, reference model of the record-keeping system, records and archives management as parallel systems and the records continuum model and the integrated records management (IRM) model. The following sections deal with these models in greater detail.

2.1.2 Records life-cycle concept

Abbott (1999:6) pointed that the records management function facilitates the management of records as they progress through the stages of the records cycle. That ensures accurate, complete, accessible and usable records. Roper and Millar (1999a:11) stated that the records life cycle concept "is an essential principle to records and archives management". It was developed in North America by Schellenberg to control the creation of public records (Shepherd and Yeo 2003:9). It is based on the belief that managing records from the creation stage leads to efficient use, maintenance and disposition of recorded information (Mnjama 1996a:2; Parker 1999:12; Penn, Pennix and Coulson 1994:12). This theory indicates that the life of recorded information is similar to that of a biological organism. It goes through transitional phases. As will be demonstrated later, contemporary non-textual and electronic records tend to negate this model as was demonstrated by various authors such as McKemmish (2003) and Upward (2000:123). The pattern of specified stages of the records cycle is repeated over generations (Mnjama 1994:2; 1996a:30; Mullon 2005; Parker 1999:12; Shepherd and Yeo 2003:10). Parker (1999:12) and Shepherd and Yeo (2003:9) compressed the records cycle into three phases, namely current records, semi-current records and non-current records.

Mutiti (1999:15) observed that while some institutions in ESARBICA were in control of the full life-cycle of records, others were not in control. Mnjama (1994:2) concluded that

the aspect of maintenance and use was common, since records are used and maintained in all phases of the cycle. Mullon (2005), who viewed the records life-cycle from a business perspective, realised the need to design correct processes to control records throughout their life-cycle and hence reduce operational costs. Parker (1999:12) stressed that the life-cycle was based not on time, but on use. This is because the records cycle is a linear progression of activities from the current stage to disposition. Koch (1997:33) likened the records cycle phases to the functions of AV records. According to Koch (1997:33), the functions include collection, creation, classification, dissemination, preservation and conservation. Koch (1997:33) pointed out that other archival functions which apply to AV records such as acquisition, selection, accessioning and storage are added at a later stage. Kula (2004a) supported Mullon (2005), Mutiti (1999:15), and Parker (1999:12) when he advised records creators to adhere to the records functions in order to achieve an orderly transfer of moving images to archives. He stipulated that:

> all production elements (negatives, prints, videotapes, etc.), and related documentation, should be identified, designated, and scheduled so that the disposition of the elements can be controlled at every stage of the production/diffusion process (Kula 2004a).

The above observation fulfils a major records management requirement. There is therefore a need to introduce modern records management techniques in the early stages of the records life-cycle, as pointed out by Kula (2004a). Mnjama (1996a:26) pointed out that African national archives concentrated on managing the last phase of the cycle, to the detriment of the other phases. This is contrary to Abbott's (1999:6) suggestion that "it is the record management function to manage the records as they progress through various stages of the cycle, to ensure that the records are accurate, complete, accessible and usable." Mnjama (1996a:27) urged African national archives to play a more active role in managing all phases of the life-cycle. This would require, among other things, devising procedures for handling records in other media including "…films, photographs, slides, magnetic tapes and computer-generated records" (Mnjama 1996a:27). This therefore extends the responsibility of managing AV materials through the records cycle to media organizations that keep AV materials.

2.1.3 The archivist's perspective of the records life-cycle

Cox (1992:51) and Guercio (2001:254) viewed the phases of records from an archivist's perspective. Guercio (2001:254) felt that the active stage of the records life cycle should comprise the activities of production or acquisition, organisation, maintenance, use and

selection. Semi-active records should include "...the activities of transfer, identification and organisation for the materials deposited, consultation and selection" (Guercio 2001:254). Guercio (2001:254) reckoned that the semi-active stage is managed at records centres. He concluded that the final stage of redundancy deals with selection, arrangement, description and permanent preservation of archival historical documents. The present researcher believes that these requirements should also apply to AV materials.

Harvey (1993:84) saw the need for archivists to play a proactive role from the creation stage. Harvey (1993) suggested that archivists should be knowledgeable about the production of the different kinds of media. This helps them to determine which medium is appropriate, the life expectancy of each medium and "the implications of each media for managing the archives" (Harvey 1993:84). The author opined that attention to the above matters at the record creation stage is rewarding, especially when records are left in the archivist's custody for long-term preservation. This is a challenge to archivists who, in most cases, merely receive AV materials from creating organisations or individuals.

2.1.4 Critics of the records life-cycle

The records cycle was highly disputed by various professionals, including An (2001), Horsman (2003), McKemmish (2003) and Upward (2000:119). This is because the records cycle theory was based on the assumption that all records are paper-based (Peace 1984:23). This means that not all formats of records can fit into the life cycle model. An (2001) cited Marshall (2000), who noted that the life-cycle concept narrowly segregates records activities and archival activities. By so doing, the life-cycle puts an artificial barrier between records managers and archivists. It views records as tangible physical entities in a static environment. It therefore fails to cater for electronic records. It views electronic records as new media, which equally require special handling. This explains why Flynn (2001:80) and An (2001) perceived the records life-cycle as a concept that perpetuates an artificial distinction between records managers and archivists. They argued that the life-cycle demarcated the work of records managers and archivists. Cook (1990:37) concluded that records and archives management are parallel systems. Various theories and models were advanced in an attempt to counteract the shortcomings of the records life-cycle model. These included reference models of the record-keeping system, records management as parallel systems, records continuum and continuum matrix representation of the life-cycle (Horsman 2003).

2.1.4.1 Reference model of the record-keeping system

Horsman (2003) advocated a reference model of the record keeping system. This model is based on the view that 'records management' is a narrow concept, which should be replaced with 'record-keeping' and hence a records management system should be replaced with a 'record-keeping system.' He emphasised that records managers manage records, while record-keeping is holistic, comprising the whole of society. Records management is thus restrictive. This is why Buckland (2003) argued that the records management theory should be part of a broad functional theoretical context embracing roles, activities and needs of employees in other parts of the organization that need access to records. Buckland (2003) felt that "…records management theory is likely to be sterile or incomplete unless it is related to a view of the organization as a whole".

Horsman (2003) stated that a record-keeping system is a regime comprising eight processes, which may or may not be in a simultaneous order. These processes are capturing, filing, description, storing, appraisal, preservation, disposal and providing access. Horsman (2003) felt that while description covers capturing, filing and storage, the process of appraisal "…starts at capture, by immediately deciding what documents to take in or to leave out, and it ends with disposal, or never, in case of continuing preservation" (Horsman 2003). This means that the process of appraisal is continuous, as opposed to a specific static activity, as portrayed by the life-cycle model.

2.1.4.2 Records and archives management as parallel systems

Cook (1990:37) proposed a strategic information management systems model where records and archives are managed as parallel systems. Cook (1990:37) pointed out that at the input stage, records surveys are conducted. Information contained in the records undergoes a control process, consisting of analysis and appraisal. At the conservation stage, records are transferred to records centres, or disposed of. At the output stage, records of continuing value are kept for further use (Cook 1990:37). Figure 1 shows this relationship.

Forde (1990:36) believed that records management is a branch of information management. Ford's (1990:36) argument was that the main criterion for a records management programme is the quality of information supplied, which, in turn, is affected by its relationship with an archives service. All these constitute the discipline of records management. Cook (1990:37) strengthened the above sentiments, as illustrated in

Figure 1. Peace (1984:22) felt that archivists should be concerned with the fundamental functions of records managers, as the latter's maintenance practices "…directly determine the quality of institution's archives in terms of completeness, integrity, and accessibility of the historical record" (Cook 1990:37). This model does not adequately cater for AV materials, particularly those in electronic format. The model emphasises conservation, which is more appropriate to textual than non-textual records. The criticisms of the records management theory and, in particular, the records cycle eventually gave rise to the records continuum model.

Figure 1: Records management as parallel systems
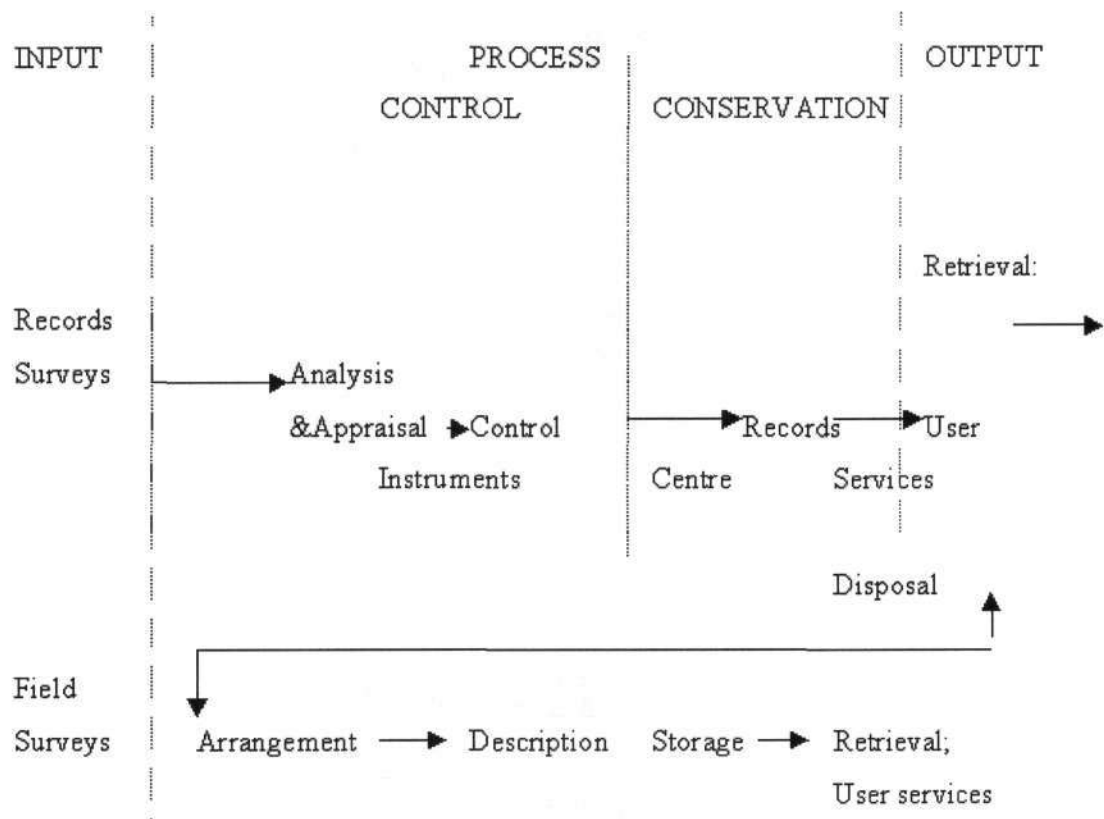
Source: Cook M (1990:37)

2.1.4.3 The records continuum model

An (2001), Flynn (2001:80) and McKemmish (2003) stated that the records continuum model is a theoretical basis for the management of records in their electronic and non-electronic format. Flynn (2001:80) gave the Australians' view of the continuum for records management as "…a consistent and coherent regime of management processes from the time of the creation of records (and, before creation, in the design of record-

keeping systems), through to the preservation and use of records as archives" (Flynn 2001:80).

Ian McLean was said to have first mooted the idea of a records continuum in 1995 (An 2001). An (2001) cited Ian Maclean who, in the 1950s, postulated that records managers were the true archivists. He declared that archival science should focus on the characteristics of classification systems, record-keeping systems and recorded information. Ian McLean's views forged a way for continuity between records management and archives (An 2001). Later, at an annual conference of the Association of Canadian Archivists in 1985, Jay Atherton (1985) grappled with a major weakness in the life-cycle concept (Flynn 2001:80). He asked if the management of current records was the first step in the administration of records or the continuing preservation of valuable records, the last step. Flynn (2001:80) cited Jay Atherton (1985), who cautioned that separation of records management and archives administration under the life-cycle concept was an anomaly. If taken to the extreme, it would be counterproductive (Flynn 2001:80). It would be tantamount to breaking up the records management process at the archival stage (Flynn 2001).

Tafor (2001:23) viewed the continuum as an integration of the activities of records managers and archivists. He observed that archivists are involved in the earlier stages of the continuum by designing record-keeping systems, appraising records before or on creation, storing records in conditions that ensure their long-term preservation and using appropriate formats for the creation of records. Tafor (2001) stated that the integration of records managers and archivists' activities ensures the effective management of records throughout their existence. Tafor (2001) therefore supported the continuum, since it integrates records managers and archivists' activities and enables them "to operate appropriate stages anywhere on the records continuum" (Tafor 2001:23).

Upward (2005:202) argued that the records continuum model "was designed to help build a form of activity theory for archivists out of concern with the relationship between recordkeeping and accountability". Upward (2005:202) focused on four elements, which play a central role in the management of information. The elements constitute transanctionality, identity, evidentiality and record-keeping containers. These elements or categories are discussed below.

    i.   Transactionality, which relates to records as products of activities;

ii. Identity, refers to who, or authorities by which, records are created and kept;

iii. Evidentiality, that is evidence of the records in relation to integrity and continuity; and

iv. Record-keeping containers, refer to the objects or documents that are created to store records.

Roper and Millar (1999b:13) simplified the stages of the continuum as: identification of records, intellectual control of records, provision of access to the records and physical control of the records. Although the continuum model recognizes the interrelationship between 'traditional' records management processes and 'traditional' archival functions, it dismantles the strict boundaries between records managers and archivists (An 2001; Australian ideas and management models: the records continuum; Flynn (2001:80) and McKemmish (2003).

Based on the above notion, Jay Atherton (1985) recommended a replacement of the life cycle with a records continuum model comprising four stages: creation or receipt, classification, establishment of retention or disposal schedules and their subsequent implementation, maintenance and use (in the creating office, inactive storage or archives) (Flynn 2001:80). Flynn (2001:80) pointed out that despite the fact that the first three stages of Atherton's continuum were similar to the life cycle, the fourth stage (maintenance and use) occurs at any time in the life of a record. Hence his conclusion that records are always at more than one stage since it is possible for the fourth stage to be simultaneously at all four stages. This is clearly evidenced in an electronic environment where the records processes do not have restrictive barriers. Upward's (2000) continuum model was discussed by various authors such as An (2001) and McKemmish (2005).

2.1.4.5 The integrated records management model

Closely related to the continuum is a model that portrays a matrix relationship between the records life-cycle and the continuum model. Roper and Millar (1999a:23) depicted the life-cycle and the continuum as an integrated records and archives management system (see Table 2). The IRM model was recommended to public archival institutions in an attempt to improve the management of records and archives (Roper and Millar 1999a:22). This concept portrays a continuum of care, where records follow a life-cycle and their care follows a continuum. Roper and Millar (1999a:13) stressed that records management and archives administration constitute good records and archives management, which are

prerequisites to a good public service system. It was therefore argued that "since paper-based records systems will continue for many years to be an inescapable feature of public sector administration…, there is a continuing need to apply established records and archives management principles and techniques …to records" (Roper and Millar 1999a:13). However, there is a need to adapt records ad archives management principles to the management of electronic records, to avoid information overload (Roper and Millar 1999a:13).

The Botswana National Archives and Records Services was reported to have implemented the IRM model (Chebani 2003:28; Mnjama 2005:461). Similarly, Mnjama (2005:460) cited Mlyiyansi (2002), who observed that the Tanzania National Archives was empowered "to oversee records management activities throughout the civil service. This effectively brought the management of all registries under the umbrella of the national archives" (Mnjama 2005:460). Chebani (2003:28) opined that the objectives of the IRM model are as follows.

i. To establish records and archives management systems that offer a continuum of care through the records' cycle;

ii. To facilitate the automation of records and archives management systems;

iii. To decentralise integrated records and archives management systems to regional and local administrations;

iv. To introduce effective systems for the life-cycle management of electronic records and archives; and

v. To safeguard and provide access to the archival heritage of a nation and the world at large.

Roper and Millar (1999b:18) suggested that the establishment of an Integrated Records and Archives System requires the following:

i. Enactment and implementation of comprehensive legislation to regulate the life-cycle management of records and archives, irrespective of medium or format;

ii. Designation of a single authority to oversee the process, whereby clear responsibility and authority is assigned to all people involved for their respective actions at each stage;

iii. Development of policies, procedures, systems and structures to ensure the maintenance of an integrated records and archives management programme;

iv.   Preparation of long-term strategic plans within the context of the wider strategic planning process of the government and key agencies to determine priorities within the programme;

v.   Provision and management of adequate resources, which include staff, buildings, equipment and funding, to ensure the implementation of the strategic plans and the sustainability of the programme; and

vi.   Monitoring and evaluating the programme to assess its efficiency and effectiveness and to make necessary structural readjustments.

Chebani (2003:55) acknowledged the fact that the IRM model was based on the record life-cycle concept, where records are managed from their current stage to the non-current, stage albeit with the following limitations:

- The life-cycle approach is mostly concerned with the management of paper records (this rules out some AV materials and electronic records);

- The life-cycle model portrays the stages of records in a linear order (this rules out electronic records as portrayed by the continuum model (see Figure 4); and

- The life-cycle concept focuses on custody, despite the fact that some records, such as electronic records, do not pass through a chain of custody.

Roper and Millar (1999b:15) stated that the IRM ensures that records are managed "from their creation to their ultimate disposal by destruction or by preservation as archives". This arrangement is said to end the traditional demarcation between the records manager's functions and the archivist (Roper and Millar 1999a:23). It requires the establishment of linkages between creators of records and archival institutions (Roper and Millar 1999b:15), an idea that was later supported by Harrison (2004a). Roper and Millar (1999a:23) stated that:

collaboration between records and archives managers is most successful if

the archival institution can be restructured to serve as a records and

archives institution, responsible for all aspects of records care throughout

the life cycle (Roper and Millar 1999a:23). Table 2 is an illustration of such

an arrangement.

Table 2: The integrated records management model

Phase	Current	Semi-current	Archives
Operations			
Analysis	Business process analysis		
		Receipt into records centre	Accession to Archival Repository
Creation	Creation or receipt		
		Maintain Arrangements and Documentation	Arrangement and Description
Control	Classification Filing Documentation		
		Review {Secondary value}	
Appraisal	Schedule {Primary and Secondary Values}		
		Safekeeping in Records Centre	Preservation and Conservation
Maintenance and Use	Office/File Store		
	Official access	Official Access	Public Access/outreach
Disposal	Transfer to Records Centre or Destroy	Transfer to Archival Repository or Destroy	
Responsibility	Desk Officer Records Manager Archivist	Records Manager Archivist	Archivist

Source: Roper and Millar (1999a:22)

Roper and Millar (1999b:17) depicted the IRM model as a 'continuum matrix representation of the life-cycle of a record'. The IRM model in Table 2 is condensed into four actions:

i. The creation or acquisition of the record;

ii. The placement of the record within a documented system that governs its arrangement and its retrieval throughout its life-span;

iii. Appraisal of the record for continuing value, as well as recording it in a disposal schedule in order to apply appropriate disposal action; and

iv. Maintenance and use, regardless of storage place (that is, records office, records center or archival repository), or user (who may be the creator of the record a successor or a third party) (Roper and Millar 1999a:20).

These stages are similar to what Upward (2005:202) referred to as transactionality, identity, evidentiality and recordkeeping containers. Roper and Millar (1999a:23) stated that the management of records through a continuum approach is based on parallel tasks below:

- Acquisition in the archives mirrors disposal in the records management phase;

- Reference and use in the archives phase are likened to maintenance and use in the records management phase; and

- Arrangement and description in the archives phase depends on classification in the records management phase (fulfilling the archival principle of original order).

This underscores the observation that the continuum and the records cycle is one and the same thing (Roper and Millar 1999a:23). The current researcher would argue that the records cycle and the continuum could only be one and the same thing if the two models accommodate electronic records and AV materials. The requirements of the IRM system clearly cover all records and archives "irrespective of medium or format" (Roper and Millar 1999a:18). That is, the above model accommodates a combination of text and non-textual materials. Chebani (2003:58) observed that the Botswana National Archives and Records Services "plays no role in the management of electronic records and yet the public service has appropriate infrastructure in place to enable it to do so".

Mnjama (2005:460) and Chebani (2003:28) focused on one aspect of the IRM model, i.e. decentralization of records and archives management systems throughout the public service. It can be seen from the IRM model's requirements (Roper and Millar 1999b:18) and the limitations noted by Chebani (2003:55), that the Botswana National Archives and Records Services and the Tanzania National Archives fall short of fully embracing the IRM model. The present researcher carefully examined the IRM model and compared it

with other models, before recommending an appropriate model for managing AV materials in the region.

2.1.5 Contrasting the records continuum with the records life-cycle

Roper and Millar (1999a:20) saw no need to make a distinction between records management and archives management. They felt that the records continuum links the agencies that create records with archival institutions through "systems that manage records ...from their creation to their ultimate destruction or by preservation as archives" (Roper and Millar 1999a:15). McKemmish (2003) stated that the continuum model portrays "... the relationship between records managers and archivists, past, present and future, and for thinking strategically about working collaboratively and building partnership with stakeholders".

An (2001) and Tough (2004:19) pointed out that the continuum model is internationally renowned for managing electronic records and archival materials. It is an integration of documents, records and archival science. Tough (2004:19) maintained that "the transfer of records from their creators into the custody of archival institutions is no longer necessary, nor even desirable, in the context of electronic record-keeping". Tough (2004:19) cited Greg O' Shea (n.d.) who opined that archivists should facilitate the management of records, regardless of their location. Harrison (2004a) stressed that archivists ought to take part in the decisions that affect the storage of records before they are sent to the archives. This necessitates archivists' influence on file organization, access systems and storage media. Nonetheless, if the management of records through the continuum implies doing away with traditional physical archives, one wonders whether the various creating organisations would have the appropriate infrastructure to preserve documents of archival value. A corollary to that would be the failure of other organisations to meet the recommended storage and climatic conditions for keeping archival materials.

In view of the above challenges, one would tend to agree with Harrison (2004a)'s opinion that archivists ought to play a proactive role in the management of all formats of records. Some of the advocates of the continuum model, such as An (2001), McKemmish (2003) and Upward (2000), seem to peg it to an electronic environment (Barata 2004:64; McKemmish 2003; The International Council on Archives Committee on Electronic

Records 1996; Tough 2004:17; Upward 2000:115). The current researcher believes that the continuum model is applicable to other formats, including AV materials.

Harrison (2004a) stressed the need to manage records, including AV materials, from the time of creation, before they come to the archives. Harrison (2004a) explained that such an approach enables archivists "to identify material which has archival value and to ensure that this material is identified, documented and preserved against the day when it is finally offered to the archive" (Harrison 2004a). Barata (2004:63) urged archivists to be involved early in the life cycle of electronic records in order to have an impact on their preservation. Barata (2004:63) reported that, in the U.K, the National Archives had realised a need to devise a strategy to implement electronic records management as part of a records management programme. The continuum concept therefore attempts to dismantle the strict boundaries between records managers and archivists.

Roper and Millar (1999a:35) recommended that the records cycle be incorporated into the continuum, to form an automated records management system (ARMS). The authors stated that "although a distinction is often made between records management and archives administration, the two are…aspects of the same process" (Roper and Millar 1999b:15). Roper and Millar (1999a:34) saw a need for organisations to build functional requirements into computers. Such a system would incorporate records management systems such as maintenance of registries, records classification systems, indexing, retrieval of records, control of the movement of boxes and files, generating administrative reports and managing the entire life-cycle of records. The present researcher adds that functional requirements would incorporate AV materials as well.

Although the focus of this study was not electronic records, some AV materials are in electronic format. There is thus a need to incorporate electronic records in the discussion of records' models. The ICA (1993) concluded that the records life-cycle for electronic records comprises three stages, that is conception, creation and maintenance (including preservation and use). In order for the records life-cycle stages to be carried out effectively, all archives should institute the following strategies:

i.   Active involvement in the entire life-cycle of electronic systems that create and retain archival records to ensure the creation and retention of authentic, reliable and preservable electronic records;

ii.   Ensure that records creators create and retain authentic, reliable records;

iii.   Manage the appraisal process and exercise intellectual control over electronic records; and

iv.   Articulate preservation and access requirements to ensure that archival records remain available, accessible and understandable (ICA 1993).

The following section gives a historic background to the preservation of AV materials

2.2 Historical background to preservation of AV heritage

According to Bubenik (2005), "the good technologies do not die, but rather adapted, modernised and integrated". Bubenik (2005) traced the development of AV documentation to old Sumerians and Egyptians, 5000 years ago. The Sumerians and Egyptians constructed special vaults to preserve important information. Bubenik (2005) reported that the AV revolution evolved from the discovery of photography, which gradually led to multi-media technology. Bubenik (2005) recorded four basic technological processes in the evolution of AV materials. These included photochemical registration (photography and film), mechanical registration (sound, cylinder, gram and plate), electromagnetic registration (sound, including sound film and television) and optical and magnetic registration (multimedia).

Despite the fact that progress in the development of audiovisual materials was not practically detectable for many years, Saintville (1986:3) and Vlcek and Wiman (1989:6) stated that the concept of preservation of AV archives arose from the need to re-use audiovisual documents for educational, commercial and historical purposes. This seems to have been the trend in developed and developing countries, as evidenced by various authors (Connors 2000:153; Edmondson 2004b; Forgas 1997:43; Matangira 2003b:45; Mwangwera 2003; Ombiti 1990:37; Poncin 1986:95; Saintville 1986:3). Thus, "…traces of visual records have been discovered in Europe, Africa, Australia, and the Western Hemisphere" (Vlcek and Wiman 1989:4). Edmondson (2004b) acknowledged that the history of AV archiving is diverse and that research on the topic is incomplete. Edmondson (2004b) pointed out that some countries such as Austria, United Kingdom, China, India, USA and Vietnam, had long-established institutions and programmes. Kula (2003:9) traced the history and organisation of moving image archives back to 1898, after the first public exhibitions of cinematography in Paris, London and New York.

Boleslav Matuszewski (n.d.) (a polish cinematographer) spearheaded the drive for the recognition of cinematography as objects of historical heritage (Kula 2003:9). Kula (2003:9) noted that Matuszewski (n.d.) recommended "the establishment of a worldwide network of archives to acquire and conserve the product of this new marvel of technology…" (Kula 2003:9). The sections that follow give a historical overview of the development of AV archival services world-wide and in the ESARBICA region.

2.2.1 Overview of the development of audiovisual archives in the Western world

Edmondson (2004b) concluded that the AV heritage in North America and Europe was better than that in the rest of the world, in terms of preservation and access. He attributed the disparity in growth to political, historical and economic circumstances of media industries in certain countries. For instance, AV materials decay fastest in tropical zones. Political will, coupled with recognition of the value of cultural preservation, is an impetus to the growth of AV archiving (Edmondson 2004b).

Edmondson (2004b) observed that the management of audiovisual archives "…began as a culturally-motivated movement, preserving material because of its intrinsic worth, regardless of commercial potential". This fundamental principle prevailed in the Western world, as well as in the developing world. Edmondson (2004b) wrote that AV archives were predominantly European-American oriented, giving little attention to the realities of developing countries. Klaue (2004) noticed that the development of audiovisual archives in Asia, Africa and Latin America was rudimentary, as AV materials were deposited on a sporadic and fragmentary basis.

Audiovisual archives were not recognised at the same time as textual archives. Posner (1984:5) reported that the French revolution ushered in a new era of archives administration in Europe. For the first time in the history of Europe, the general public had access to archives. Article 37 of the Messidor Decree permitted every citizen a right "to ask in every depository…for the production of the documents it contains" (Posner 1984:5). Saintville (1986:3) highlighted the significance of voluntary archives on everyday life throughout the world. He said that this was evidenced by the recognition given to film documents. Saintville (1986:3) stated that it was after such efforts that government authorities in France began to take an interest in and responsibility for, preserving AV materials.

Edmondson (2004b) opined that AV archives had no formal beginning. He observed that, at the beginning of the 20th Century, it was not "self evident that sound recordings and motion pictures had any enduring value". Edmondson (2004b) noted that the rapid growth of AV materials resulted from "their exploitation as a medium of popular entertainment". Similarly, Klaue (2004) observed that AV archives were relatively new, since the first sound archives were established in the 1920s, with most of them being established after 1945. Edmondson (2004b) noted diverse differences in the history of AV archives. He attributed the differences to geographical locations, cultural, political, economical and climatic factors. He concluded that the AV heritage of North America and Europe were relatively better than that in the rest of the world, in-as-far as preservation and access were concerned.

Kula (2003:13) recorded that individuals such as Henry Langlois, Ernest Lindgren and Iris Barry "secured public recognition of the need for moving image archives, and established the legitimacy of their calling". This led to the development of four pioneer organizations in 1935, namely the Cinematographique des Armees (in France), built from the newsreels filmed by cameramen during the Second World War (Saintville 1986:3). Saintville (1986:3) commended Albert Kahn, who took the original initiative to compile the Archives de la Planete (also in France). Other archives included the Museum of Modern Art Film Library, the National Film Archive, and the Reichsfilmarchiv in Berlin, Germany (Kula 2003:13).

Vlcek and Wiman (1989:6) documented the development of AV departments in the USA during the period of 1918-1924. Connors (2000:153) noted that the Public Television Broadcasting was accorded a special status by archivists in the USA in the 1950s. The author reported that "… many hours of public television archives were recorded on kinescope film and videotape-media with relatively short life-spans" (Connors 2000:153). According to Klaue (2004) and Vlcek and Wiman (1989:6), there was a boost in the AV archives development that was attributed to scientific and technologic progress, which led to the mass-production of film, radio and television. From 1950, the National Film Archive (in U.K) acquired AV materials from the British Broadcasting Corporation (BBC) (Hanford 1986:9). In 1950, the association of public service broadcasting organizations in the Federal Republic of Germany was founded (Heckmann 1986:17). In 1953, this association jointly created a joint television channel with other regional broadcasting organisations (Heckmann 1986:17). Labrada (1986:13) reported that the Spanish Film

Archives, or National Film Archives, were founded in 1953. The Archives, commonly known as Filmoteca, is an autonomous corporation (Labrada 1986:13), under the auspices of the Film Department of the Ministry of Culture. In Germany, public organisations run television broadcasting.

Poncin (1986:95) stated that broadcasters and archive officials were concerned about ways of preserving AV materials. This is because, since 1975, AV recordings had been changing fast, partly due to the use of videocassettes of different formats and standards (Poncin 1986:95). Edmondson (2004b) realized a disregard for AV materials in Australia. The author cited Rod Wallace (1978) (a pioneering archivist of the Library of Australia), who made the following observation:

> Public attitudes to historical material were very different then, particularly in the film world. We met with a lot of apathy at first. we were regarded as nuts, and were told so on many occasions. I will never forget the time a theatre full of film industry people watched a programme of old films recovered by the library and then one man told me we should have thrown the lot on the tip and others agreed with him too!(Edmondson 2004b).

With such gross negligence of the AV heritage, demonstrated above, some steps were taken to impress the value of the AV materials on the collecting institutions (Edmondson 2004b). The first sound archive in Vienna was established in 1899 (Edmondson 2004b). During the same period, the British Museum in London started collecting moving images. In Japan, Forgas (1997:54) recorded various pictorial cultural centres, as well as a plan to establish a national centre for preserving television broadcasts. In Fiji, Forgas (1997:54) observed a National Video Center in which videos were well housed, under controlled environmental conditions. Forgas (1997:54) examined various initiatives in Australia. These included commercial television stations and the National Library. The latter is said to have provided advisory service on preservation matters, including video preservation, to the whole country. Forgas (1997:54) reported that the National Film and Sound Archives of Australia housed a large collection of holdings "in an environmentally-sound film vault at 18 degrees Celsius and 37% RH, with good videos in good quality Ampex transit cases". The holdings included many commercial productions.

The period after 1935 led to the formation of the International Federation of Film Archives (FIAF) (Kula 1983:9; Forgas 1997:53). In 1978, the International Federation of Television

Archives (FIAT) was established through a collaborative effort of Instut National de L'Audiovisuel (Paris), the British Broadcasting Corporation (London), Radiotelevisione Italiana (Rome, and Norddeutshr Rundfunk-Fernsenhen (Hamburg). These were by then the major television networks worldwide (Kula 1983:11). Saintville (1986:4) observed that it was after such efforts that government authorities in France began to take an interest in, and responsibility for, preserving AV materials.

In the USA, organizations included the National Center for Film and Video Preservation, the Association of Moving Image Archivists (AMIA), the Museum of Modern Art in New Yolk (which aimed at preserving video art), the National Archive and Records Administration, the Library of Congress and the UCLA Film and Television Archives (Edmondson 2004b; Kula 1983:11).

The historical development of AV archives in ESARBICA differed from that of the developed world (Klaue 2004).

2.2.2 Development of audiovisual archives in the ESARBICA region

AV archival services developed at a slow pace in the ESARBICA region. Mazikana (1997/98:144) pointed out that a large part of the continent could not afford to operate an AV unit. Matangira (2003b:44) stated that most of the archival institutions in the region were "still struggling to develop their audiovisual collections". Matangira (2003b:45) further stated that although the National Archives of Zimbabwe (NAZ) were established in 1935, the audiovisual unit (AVU) was only established in 1988. Prior to that, "materials were dumped in a room with no temperature and humidity control required of films and other audiovisuals objects, and were catalogued second class to traditional library material" (Matangira 2003b:45). The situation improved with the establishment of an AV unit. The AV collections accumulated to about 2 500 films, 10 200 gramophone records, 250 (or more) VHS and Umatic videos, 1 045 slides, 600 (or more) audiocassette tapes, 386 reel-to-reel tapes and seven CD-ROMs (Matangira 2003b:45).

Matangira (2003b:46) and Mwangwera (2003) revealed that the National Archives of Malawi had a large collection of AV materials. These included about 4 000 films, 1 000 videos, 7 000 audiotape cassettes, 120 vinyl, 20 CDs and about 5 000 reel-to-reel tapes (Matangira 2003b:46). However, due to storage problems and lack of expertise, AV materials were deteriorating (Mwangwera 2003; Matangira 2003b:46). Matangira

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(2003b:46) wrote that the Zanzibar National Archives had a small collection of videos and audiocassettes. The Zanzibar National Archives collaborated with the Department of Broadcasting and Television to open a Sound Archives unit in the Main Library of Radio Zanzibar in 1989 (Matangira 2003b:46). The project covered all institutions that produce audiovisual materials in the country. It was later given a legal mandate for caring and preserving all Zanzibar records in 1988 (The United Republic of Tanzania 2007).

According to Mutiti (1999:13), the National Archives of Zambia were founded in 1947 as a depot of the National Archives of Zimbabwe (then Southern Rhodesia). In 1950, all the records were transferred to Zimbabwe. This led to the opening of a new national archive in Lusaka in 1950. Zambia's National Archives were said to have about 200 films, 2 500 microfilms, 200 microfiche, 25 videos and 200 audiotapes (Matangira 2003b:46).

In the case of Botswana, Kukubo (1986b:163) cited Thompson (n.d.), who stated that audiovisual materials were kept under the same environmental conditions as traditional archives. Plans were underway to preserve AV materials in a cold room and to appoint an officer to specifically look after AV materials. However, at the time of the present study, AV materials were still being kept under the same environmental conditions as text records. Matangira (2003b:46) reported that 400 film titles were stored in the Botswana National Archives and Records Services (BNARS). The AV materials were stored under the Archives Administration division. Some of the materials were obtained from Radio Botswana (Matangira 2003b:46). Piet (2004) later reported that the BNARS had an arrangement with the Ministry of Information and Broadcasting, where Radio Botswana and Botswana Television Services ensured that programme producers deposited copies in the BNARS (Piet 2004). This situation prevailed at the time of the present study.

Matangira (2003b:46) pointed out that, in Tanzania, the responsibility of preserving AV materials was relegated to the Audiovisual Institute of Tanzania, known as Tanzania Television (TVT). A different scenario was depicted in Swaziland, where the national archives had a photography section with a collection of photographs of national events dating from the pre-independence era (Swaziland Government, Ministry of Tourism 2005). Mamba (1986:251) earlier revealed that the National Archives of Swaziland had instituted an oral history project, which preserved oral testimonies of Swaziland history (including pre-colonial history). Mamba (1986:251) stated that "earlier surveys of Swazi traditions indicate that they probably contain the richest data on the pre-colonial past yet

extant in Southern Africa". Matangira (2003b:46) reported a very small collection of AV materials in Swaziland. The same situation prevailed in Seychelles National Archives (Matangira 2003b:46). In the case of Kenya National Documentation Services, Matangira (2003b:46) reported a separate AV unit, which mainly housed AV materials from government institutions.

It appears that South Africa was ahead of the other ESARBICA member states in terms of audiovisual preservation. In 1964, the National Film, Video and Sound Archives (NFVSA) of South Africa was formed (About the National Archives and Resource Service of South Africa 2004; Matangira 2003b:45; Ngulube 2003a:173:). NFVSA is a specialized repository for audiovisual materials, with a mandate to collect and preserve AV materials that are produced in South Africa (About the National Archives and Resource Services of South Africa 2004). It preserves different formats of AV records and related materials such as films, videos, CDs, DVDs, scripts, posters, slides, music, sculpture, paintings and other artefacts. The NFVSA's oral section promotes indigenous music, art and South African history (About the National Archives and Resource Services of South Africa 2004) as revealed by participants at the first FIAT/IASA Southern African Workshop of Film, Video and Sound Archives, held in South Africa. NFVSA is a model to other ESARBICA countries. The section that follows examines the administration of AV archives worldwide and in ESARBICA.

2.3 Administration of AV archives

Schwirtlich (1993:45) stated that archival buildings are either purpose-built to meet specific needs or they are multi-purpose buildings converted for archival use. Roberts (1993:387) suggested two ways of managing AV materials: a media separation approach, where materials are managed by specialists or media archival institutions and a total archives approach, which calls for the integration of "…management of all forms of archival media, using common techniques and systems as far as possible, while recognizing the specific needs of special format records" (Roberts 1993: 387). Roberts (1993:386) presented alternatives to managing special format archival materials. These are:

- The transfer of the management of special format materials to alternative locations such as libraries and museums;

- An institution that is better equipped to manage special format materials; copies of special format materials are kept at the archive while the originals are stored in either of the above locations.

While Edmondson (2004b) saw the need for officially designated and recognised national audiovisual archival institutions, he noted that the physical location of the AV archives varied from country to country and institution to institution. Edmondson (2004b) felt that the administration of audiovisual archives depended on whether or not the service was offered by government, semi-private or private firms. Chavula (1988:28) and Kofler (1997:44) supported these views. Chavula (1988:28) made similar observations when he surveyed the National Archives Act of East Africa. Chavula's study revealed that only the Lesotho and Sudan national archival Acts indicated the ministries to which the archival services belonged. "...this means that they can be moved to any ministry at any time" (Chavula 1988:27). Chavula (1988:27) concluded that the administrative structure of a national archive depends on the emphasis that the government placed on the national archives.

2.3.1 Administration of AV archives, worldwide

Edmondson (2004b) revealed that in the 19th Century there were attempts to impress the importance of AV materials on collecting institutions in Europe. Harrison (1997:3) stated that a combination of AV materials in one setting was a common practice in Australia. The practice was different in the United Kingdom (UK). Harrison (1997:3) wrote that "...the BBC has archives of separate materials under different heads of department and scattered all over London and beyond....". Cook (1986:24) maintained that the BBC was responsible for providing technical services for written archives, sound recordings and visual recordings in the U.K. Harrison (1997:3) observed that, unlike Germany, where Sound Archives were under one administration, Canada's AV materials were decentralised to heads of departments managing specialised AV materials. The author revealed similar cases in the Library of Congress and the National Archives in Washington DC. He reported that most of the cited archives were "... developing into function-based archives rather than material or media-based archives" (Harrison 1997:4). Saintville (1986:3) said there was a similar approach in the case of France. Labrada (1986:13) pointed out that Spain followed the media separation approach where AV archives were managed under two types of institutions: film archives responsible for radio and television programmes, funded by the state and private organisations responsible for

producing radio and television programmes. The section that follows discusses the administration of AV archives in the ESARBICA region.

2.3.2 Administration of AV archives in the ESARBICA

Eurocentric influences were manifested in the way AV materials were administered in ESARBICA. The administration of AV archives in ESARBICA did not differ much from the developed world, albeit with resource constraints. A few cases of separate media archives are reported in ESARBICA. These include Malawi, Zanzibar, Zimbabwe and South Africa (National Archives and Records Service of South Africa Act No. 43 of 1996; Matangira 2003b:46; Mwangwera 2003).

Njovana (1989:25) described an organised AV service in Zimbabwe in which AV materials were stored in a Records Centre, which was meant to be an AV unit. The unit had cold room facilities to store films, photographic negatives and microfilms. The unit was reported to have made efforts to acquire AV materials throughout the country. Efforts were made "to acquire equipment for the utilisation and maintenance of the materials" (Njovana 1989:25). Matangira (2003b:45), however, observed that AV materials were stored in the library section of the National Archives of Zimbabwe. They were "dumped in a room with no temperature and humidity control and they were catalogued second class to traditional library material." (Matangira 2003b:45). This shows that the administration of AV materials at the National Archives of Zimbabwe has changed over the years.

Edmondson and members of AVAPIN (1997:44) reported that there was a lack of an internationally approved model for a standard structure of audiovisual archives. The authors stressed a need for uniform principles of preservation, restoration, cataloguing and documentation. They concluded that the above principles should apply to the management of AV recordings regardless of the administrative structure of AV materials in an organisation. However, a structure alone does not lead to organised AV collections. The collections should be organised in order for them to be accessible to users. An AV Archive may be a unit of a centralised national archive, a subject-centred national archive, or a private, specialised media archive (Schuursma 1997:81). Schuursma (1997:81) suggested three approaches to managing AV materials:

- A medium-centered approach which gives priority to the preservation of specialised sound recordings;

- A content-centered approach which focuses on the content of the recordings for research and educational purposes; and

- A multi-media approach that is a combination of all media. It aims at giving maximum service to the user.

While Schuursma (1997:82) insisted that there was a need to make a distinction between the two approaches, he acknowledged that, in some instances, a multi-media approach was common. Such an approach aimed at giving maximum service to the user. The multimedia approach requires "a larger part of the budget to be directed towards the acquisition and preservation of audiovisual media" (Schuursma 1997:82). The author had reservations about the multimedia approach, since such financial discrimination in favour of audiovisual materials could not easily be achieved (Schuursma 1997:82). Schuursma (1997:82) explained that, in reality, most archives were medium-centred, content-centred, or a combination of both. The present researcher believes that most national archives in the region attempt to follow the multimedia approach, but are unsuccessful.

Kofler (1997:45) suggested that AV archives should be legally designated, mandated and appropriately equipped to "…collect, restore and preserve audiovisual materials of national or international importance…" The author saw a need for countries to formulate a legal framework, in order to make a clear distinction between AV archival institutions, which are officially appointed and are recognised, and other types of AV organisations. He emphasised that a statement of the purposes, objectives and responsibilities of all archival institutions in the country should back up such a framework. The sections that follow will examine organising AV materials, bibliographic formats, cataloguing rules and problems of cataloguing, finding aids and archival functions.

According to the National Archives and Records Service of South Africa, Act No. 43 of 1996, the mandate of the NFVSA of South Africa is "to collect audiovisual and related material which was made in or about South Africa" (National Archives and Records Service of South Africa, Act No. 43 of 1996). The archival Acts for the Tanzania and Zanzibar National Archives (The United Republic of Tanzania, No.6 of 1979), National Archives of Zimbabwe (Department of National Archives 2006), Swaziland National Archives (Swaziland Government, Ministry of Tourism 2006) and National Archives of Namibia (Government Gazette of the Republic of Namibia 1992) are all silent on the preservation of audiovisual materials. This shows a weakness in some of the archival Acts,

which may have a negative impact on the administration of AV archives in the region. The next section examines the placement of national archives in the administrative hierarchy in the region.

2.3.3. Placement of AV units or national archives in the ESARBICA

Mazikana (1997/98:145) and Mnjama (2005:459) reported that the placement of national archives was varied, but the majority of the national archives fell under the Ministries of Education, Sports, Art and Culture, as well as the Civil Service Department. However, there were extreme cases, such as the National Archives of Swaziland, which fell under the Ministry of Tourism, Communication and Environment, while in Lesotho "the national archives are a small component of the Department of Culture, which fall under the Ministry of Tourism, Sports and Culture" (Mnjama 2005:459).

Mazikana (1997/98:145) pointed out that a few countries had appointed boards/committees to assist the national archives. "In South Africa, the management of audiovisual collections is directly under the national archives..." (Mnjama 2005:466). It appears that different member states have different ways of administering AV materials. For instance, in Botswana, all public records are the responsibility of the BNARS, which aims at providing efficient and effective economic management of all public records throughout their life-cycle, as well as their preservation (Ministry of Labour and Home Affairs, Government of Botswana 2005). The latter was recently placed under the Ministry of Youth, Sport and Culture (2007).

Dlamini (1999:27) reported that the National Archives of Swaziland was placed under the Ministry of Natural Resources and Energy and later under the Ministry of Tourism, Communication and Environment. Dlamini (1999:27) explained that the aims of the above ministries differed from those of the national archives. Such a structural arrangement posed problems for the National Archives of Swaziland. These included shortage of funds, shortage of personnel and lack of machinery and equipment. These shortcomings were attributed to the fact that the aims and objectives of the ministries differed from those of the national archives (Dlamini 1999:27). Dlamini (1999) observed that it was difficult to convince administrators to release funds because they "lacked knowledge, understanding and importance of the information kept in archives" (Dlamini 1999:27). A discussion of the need to manage AV materials effectively follows in the next section.

2.4 The need to manage and preserve AV materials

Audiovisual materials need to be managed throughout their life-cycle. The pressing need to manage and preserve AV materials stems from their fragile and fugitive nature (Library and Archives Canada 2005; Bereijo 2004a:324; Edmondson and Members of the Audiovisual Archiving Philosophy Interest Network (AVAPIN) (1997:20). The Library and Archives Canada (2005) believed that "the first step towards managing the audio-visual records in any government institution is a good understanding of these records". There is a need to understand that AV materials differ from traditional textual records in format, nature and use. AV materials render an invaluable service to government, private institutions and the general public. This explains why the Library and Archives Canada (2005) opined:

> ...although the printed page can preserve the words of a minister's speech, videotape will reveal what was actually said, including the speaker's intonation, appearance, facial expressions and gestures. Audio-visual records are particularly suited to recreating events; they can show us people, places and things we could not experience firsthand. Motion picture films, magnetic tapes and discs are also designed to reach a mass audience and can be powerful communication tools.

Not only do AV materials differ from textual records in usage, they differ in format. Various authors, including Bereijo (2004b:373), Forgas (1997:44) and Paton (1999:189), noted their vulnerability to loss and destruction due to their fragile nature. Paton (1998:189) cited Bogart (n.d.) who stated "...although magnetic tape has historically been considered fairly sturdy, it does deteriorate over time, sometimes catastrophically". In an attempt to protect AV materials from wanton destruction, UNESCO passed a decree in 1980 that mandated national archival institutions to set legislative measures to guard against destruction. Klaue (1997:24) lamented that there was no dramatic break-through in the way most countries conserved AV materials. He advised that the first step towards the protection of AV materials "...is to establish everywhere the recognition that photographs, films, video and sound recordings represent archival material worthy of preservation" (Klaue 1997:24). He saw a need for proper legislation for AV archives. This therefore requires an understanding of the different types and different characteristics of AV materials.

2.5 Types and characteristics of AV materials

AV materials differ from textual records in format and characteristics. Koch (1997:25) and Matangira (2003b:44) pointed out that AV media have unique features and need to be handled differently. Paton (1998:189) underscored Koch's (1997:25) views, when he described the exceptionally thin and narrow material that magnetic tapes are made out of. The author noted that magnetic tapes are prone to damage during play-back. Paton (1998:196) advised archivists to familiarize themselves with various sizes and speeds of each type of recording, as "the format of each recording can be an additional factor in determining playing time and will determine the types of equipment needed to play the recording."

Other authors raised issues pertaining to the nature and types of AV materials (Bereijo 2004a:325; Bereijo 2004b:373; De Pew 1991:195; Harrison 1997:3; Klaue 1997:25; National Film and Sound Archive 2005; Modin 1986:101; Norrlander 1986:99; Poncin 1986:95; Spirt 1987:73; Wiener 1987:36). The Library and Archives Canada (2005) and Roberts (1993:392) grouped sound recordings and moving images into three categories namely mechanical carriers, magnetic tapes and optical carriers. Given the diversity and unique nature of AV materials, there is a need to explore the different formats in order to determine ways of handling and maintaining them

2.5.1 Mechanical carriers

Schuller (2004b:114) categorized mechanical carriers into cylinders, coarse groove discs or shellacs, instantaneous discs and microgroove discs or vinyl. These media have different characteristics and therefore require different maintenance. For instance, there are two types of cylinders, which are either coated with wax or cellulose nitrate. Schuller (2004b:114) pointed out that cylinders are vulnerable to embrittlement. He cited Gibson (1988), who observed that wax cylinders are susceptible to mould, if stored under humid conditions. Shellac discs are a replicated format, mainly in 25cm or 30 cm, and they are played at a speed of 78rpm. Organic binders hold these formats (Schuller 2004b:114). Schuller and Haefner (2005) recommended that replaying these formats requires specialised equipment and experience.

Schuller (2004b:114) explained that instantaneous discs preceded magnetic tape. These media were used to make sound recordings and could be replayed immediately after recording. The most popular ones were acetates, which were also known as lacquer discs.

These were later produced in microgroove format. They were mainly produced in three formats; 17 cm, 25 cm and 30cm (long-play LPs), consisting of polyvinyl chloride (PVC), polyvinyl acetate PVA), vinyls and singles. They are aluminium, glass and steel plates coated with cellulose nitrate. Radio stations used them during shifts between a recording and its transmission (Schuller 2004b:114). Schuller (2004b) noted that most of the information on this media has dissipated world-wide, because the lacquer coating becomes brittle and shrinks with time. There is therefore an urgent need to transfer all instantaneous discs, as their future cannot be predictable (Schuller 2004b:115). Schuller (2004b) warned that improper handling and poor-quality replay equipment could easily damage microgroove discs. He suggested that reproduction of conventional mechanical carriers should be kept to a minimum, as the latter were susceptible to destruction.

Phonograph records contain historical recordings for posterity (Jaffe 1987). This medium derives its uniqueness from the fact that "it is the only medium that uses mechanical vibration to record and reproduce sound, and it is the only sound recording medium whose equipment is not portable" (Jaffe 1987:240). Jaffe (1987) stated that the biggest advantage of the above medium is its permanence. Nevertheless, Jaffe (1987:240) observed that the medium is very fragile and therefore sensitive to poor handling.

2.5.2 Magnetic tape media

Magnetic tape media include video and audiotapes. Video media is normally on open-reel videotapes in VHS, Umatic, Betamax and other configurations (Klaue 1997:25). Video media includehalf-inch video cassettes in (VHS), three-quarter inch Umatic cassettes, one-inch C-format videotape, two-inch videotape, video 8 High 8 and half-inch Beta cassettes in both analogue and digital formats (Klaue 1997; National Film and Sound Archive 2005; Leary 1988; Roberts 1993). Roberts (1993: 393) noted "a variety of miniature cassette formats for portable cameras and several obsolete cartridge formats". Audio media are recorded on quarter-inch open reel audiotapes, quarter- inch audiocassettes, 1/8 mini cassettes and digital audiotapes (DAT) (Barkholz 1987:21; National Film and Sound Archive 2005).

Forgas (1997:44) characterized magnetic tape media as impermanent and therefore an unsuitable archival medium (Forgas 1997:44). Forgas (1997:46) stated that most of the problems associated with the preservation of videotapes resulted from the number of formats that videos went through in a short span of time. Forgas (1997) noted that

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videotapes are composed of four thin layers which comprise polyester, binder and magnetic. He was quick to point out that older magnetic media are beset with preservation problems caused by cellulose triacetate and PVC materials. Forgas (1997:45) observed that videotapes were not affected by the above problem.

Paton (1999:196) categorized magnetic recordings into monaural formats and stereo formats. Archival monaural formats include full-track, half-track, two-lane highway and four-track, while stereo formats include two-track, half-track and four-track (Paton 1999:199). Paton (1999) conceded that other formats existed, but different terminology was used by different audio technicians and hence the lack of standardization. For instance, Schuller (2004b:115) categorized magnetic materials into two parts: the support or base film and the magnetic layer. Schuller (2004b) said that the support material is historically cellulose acetate, which can easily become brittle and deteriorate. PVC, which succeeded cellulose acetate, has proved to be more durable (Schuller 2004b:115). Schuller (2004b) noted that more recent polyethylene-terephthalate (PET), which is commonly known as polyester, is more chemically stable. De Pew (1991:218) pointed out that iron oxide and PET were very unstable. "The polyurethane binder is hygroscopic and will deteriorate if stored at high temperature…or high humidity (above 20°C and 40 percent RH)" (De Pew 1991:218). De Pew (1991) recorded that polymers that form the polyethylene terephthalate are used as a film base. This is because the materials are strong, flexible, transparent and resistant to tearing and burning (De Pew 1991:213).

All reel-reel to reel audio and analogue audiocassettes have iron oxide, which does not seem to exhibit stability problems. Chromium dioxide and its substitute (cobalt doped iron oxide) are also used for basing analogue audiocassettes and most video formats (De Pew 1991:220; Schuller 2004b:115). These the authors warned that metal chemical particles used for analogue and digital video formats are not stable, as they corrode and thus lose recorded information. Schuller (2004b:116) emphasised that "apart from the chemical concern expressed for metal particle tape, the magnetic stability of oxide pigments is not a major concern of audio preservation". He maintained that the greatest problem that affects magnetic stability is modern pigment binding materials. These swiftly clog the replay heads and affect the quality of the replay signal.

Barkholz (1987:21) pointed out that some audiotapes are made of acetate/polyester material, which is coated with iron oxide, while some audiotapes are made out of ferric

oxide that is coated with chromium dioxide. Paton (1999:196) cautioned that audiocassettes are more prone to damage and failure than reel tapes, particularly during playback

Ward (1990:108) observed that all magnetic recordings are easily obliterated when exposed to strong magnetic fields. Ward (1990) noted that sound recordings are susceptible to internal and external damage. For instance, tapes can easily get entangled in machines, needles or styluses easily scratch discs and cylinders. Edmondson (2004b) warned that artefacts are susceptible to scratches, dust and surface noise. Ward (1990:109) further pointed out that sound recordings are dependent on complex technology, which deteriorates at a rapid rate. Since archivists have no influence on the technical developments of sound recordings, "recordings may be received by an archivist for whom playback equipment is no longer available and cannot be reconstructed..." (Ward 1990:109). IASA (2004:4) pointed out that reproduction technology is "a potential source of damage for many audio carriers...". Migration was found to prolong the life-span of sound recordings. However, before any recording is migrated, it is important to have a thorough knowledge of its characteristics. The numerous problems associated with magnetic tape media call for an examination of optical discs, which are more versatile.

2.5.3 Optical media

De Pew (1991:190); Library and Archives Canada (2005); Ricks, Swafford and Gow (1992:201), Schuller (2004b:116) and Weir (1988:139) recorded that technological developments have led to the development of optical disks/laser disks. These include videodiscs used to record moving images, Read Only Memory (CD-ROMs, Write Once/Read Many times (WORM) digital optical disks and Erasable optical disks (CD-Rs). The latter contain digital information embedded in an organic dye that is highly susceptible to light, and thus unstable (Saffady 1998:44; Schuller 2004b:116). These authors noted that compact discs are susceptible to mechanical damage through scratches, which obstruct the laser beam from reading the recorded information.

The Library and Archives Canada (2005) and Schuller (2004b:117) reported that the latest optical discs are recorded on digital versatile discs (DVDs). According to Schuller (2004b:117), "DVDS function in the same way as CDs, and are prone to the same stability problems." However, because of their high density, DVDs are more vulnerable to deterioration (Schuller 2004b:117). This author lamented that CD-Rs are widely used to

preserve "endangered analogue carriers of various kinds" such as image and sound, which are very fragile. Weir (1988:140) pointed out that WORM (write once read many) system had limitations. For instance, WORM disks are expensive, they cannot be exchanged between systems and they are not transportable. This necessitates conversion of data from optical discs to another storage system. Other formats include photographs and films. These are discussed in the section that follows.

2.5.4 Photographic materials

Defelice (1987:262) and Roberts (1993:387) named three types of photographs likely to be found in archives. These include prints which are mounted, unmounted, framed and encased; negatives which include glass plates, unjacketed or jacketed, flexible negatives and transparencies which include lantern slides, 35mm projection slides and large 4x5" or 8x10". Roberts (1993:387) stated that, unlike conventional textual records, photographs do not normally contain evidential value. Nevertheless, pointed out that photographs "commonly contain a wealth and variety of information that goes beyond the purposes for which they were originally taken" (Roberts 1993: 387).

De Pew (1991:195) realised the vulnerability of photographs when he stressed that each layer of a photograph "may react in a different way to the immediate environment and in some cases to each other...". For instance, organic dyes vary in sensitivity and are unstable, while silver is vulnerable to chemical degradation and therefore, relatively unstable (De Pew 1991:195). This author stated that, modern photographs are coated with a baryta layer, which protects the fibre base which reduces textual interference of the paper fibre. Since photographs that were produced before the 1880s do not have the baryta layers, they are more susceptible to damage (De Pew 1991:195). This explains why Swartzburg (1995:187) concluded that the physical composition of photographs is more complex than paper text. Defelice (1987:268) advised that glass plate negatives can be restored to enable "copy prints of photos which may otherwise vanish from existence". Defelice (1987:268) concluded that, the fact that it is possible to find photographs dating from the turn of the century accentuates the need to preserve them as a national heritage.

2.5.5 Motion picture cinematographic film

Film may appear in 8mm, 16mm, 35mm and 70mm form. They may be in colour, in black and white, with acetate or nitrocellulose bases (Klaue 1997:25). Wiener (1987:35) warned

that, despite the popularity of videos, "the preservation of motion pictures recorded on their original film medium, especially older and rare films, is increasingly becoming urgent and problematic". De Pew (1991:207) and Roberts (1993:393) made similar observations when they noted that the physical composition of films is complex, hence more attention should be given to their preservation. De Pew (1991:207) further observed that motion pictures are made of a complicated product that has layers of different chemical and physical characteristics. For instance, "black and white film has at least four and sometimes five layers" (De Pew 1991:207) while colour has nine layers.

De Pew (1991:208) observed that, in the early 1950s, films were produced from nitrate and polyester materials. Various authors, including Bereijo (2004a:325) and De Pew (1991:208), pointed to the dangers of nitrate. De Pew (1991) warned that "nitrate film decomposes even under favourable storage conditions and thus poses the most serious preservation problem for libraries and archives" (De Pew 1991:208). The product, which is highly flammable, can ignite spontaneously at a low temperature of 106 $^{\circ}$ F (De Pew 1991:208). The author reported that cellulose acetate films were later produced to combat the dangers of nitrate films. The former are more stable, although the first acetate films (cellulose diacetate) were less satisfactory (De Pew 1991:208). These were later replaced by cellulose triacetate, a tougher and more moisture-resistant material (Bereijo 2004a:324; De Pew 1991:212). De Pew (1991) reported that cellulose triacetate was widely used after the 2nd World War. De Pew (1991:212) further noted that, from 1951, nitrate films ceased to be reproduced in the United States of America (USA).

Acetate films have superseded nitrate films since the 1950s. "Most professional motion picture film is made from this material" (De Pew 1991:212). De Pew (1991) cautioned that acetate films were not a panacea to the problem of preserving motion pictures. This is because acetate negatives deteriorate rapidly under high humidity and any fluctuations in humidity affect them. De Pew (1991:212) warned that although cellulose diacetate does not shrink, it warps. The degradation of cellulose diacetate films was seen to produce a vinegar syndrome (Bereijo 2004a:326; De Pew 1991:212). The degradation that is caused by high temperatures and humidity results in a production of acetic acid that can damage other films (Bereijo 2004a:326). Given the above limitations, there is a need to examine the composition of AV carriers.

2.6 Composition of AV carriers

According to Schuller (2004b:113), the chemical nature of audiovisual carriers makes them susceptible to damage, destruction and loss. Haefner (2005) reported that magnetic tapes are made up of three layers. The first layer is comprises cellulose acetate (for tapes made in the mid-1930s) and polyvinyl chloride (PVC), for tapes manufactured between 1944 and1972, polyester (PE) for tapes manufactured in the 1950s. The second layer is a binder with magnetic pigments, which is contained in PVC tapes and polyester urethanes (PEU), which have been in production since the 1970s. The third layer is made up of antistatic back coating. Haefner (2005) and Edmondson (2004b) cautioned that the replay of AV carriers might affect their integrity. For instance, the PEU binder is prone to hydrolysis, which is caused by humidity, air pollution and other environmental hazards. This results in a deposit of oxide, which clogs the tape heads, resulting in a breakdown of the playback equipment (Haefner 2005).

Wheeler (2005) stated that "the magnetic coating of magnetic tape is a complex mix of magnetic particles, binder, lubricant, head cleaning agent and other lubricants". Barkholz (1987:21) recorded that some audiotapes are made out of acetate/polyester material coated with iron oxide, while some are made out of ferric oxide, coated with chromium dioxide. Paton (1999:196) warned that "audio cassettes contain exceptionally thin and narrow tape which makes them more susceptible to damage and failure than reel to reel tape. They are particularly prone to damage during playback". The author concluded that audiotapes are short-lived and unsuitable for long-term storage of historical information. This explains Wheeler's (2005) observation that tape manufacturers use special magnetic particles, which are not publicized to customers. Wheeler (2005) conceded that, although some of the formulas remain constant over a long period in the product's lifespan, the multitude of variables (in the manufacture of tapes) "…makes it impossible to accurately predict the life of video tape".

This reinforces the need to transfer information contained on such fragile media to more durable media. This would require appropriate equipment to facilitate access to the migrated media. A discussion of equipment for accessing the various AV formats follows.

2.7 Audiovisual equipment

According to Higginbotham (1995:29), "without the equipment to access the medium, the information on the tape or the disk might as well not exist". Swartzburg, Bussey and

Garretson (1991:109) recorded that "…archives that house non-traditional media are faced with new storage challenges". This is partly due to the fact that they require additional space and specially designed equipment. Leary (1988:119) pointed out that specialised professional playback equipment was required for films and sound recordings. Older equipment is rendered obsolete by changes in technology. This makes it difficult to access older materials (Feather and Eden 1997:22), which is why Bubenik (2005) stressed that human beings can only make use or re-use of AV materials with the help of sophisticated technologies. Bubenik (2005) pointed out that all AV materials are sensitive and thus susceptible to degradation and destruction with, time.

Harvey (1993:83) advised that care should be taken to protect the fragile materials from being damaged by the equipment which is used to provide access to the materials. Harvey (1993:83) suggested that archival equipment should be of the highest standard and it should be of professional, rather than domestic, quality. He recommended that the equipment should be regularly maintained. Bubenik (2005) supported Higginbotham (1995:29) when he presented a paper at the FIAT/FIAT Southern Africa Workshop on Film, Video and Sound Archives, held in South Africa. Bubenik (2005) taught delegates about different types of AV equipment, which included the latest digital mass storages systems (DMSS). Using his archives in Croatia as a model, Bubenik (2005) stressed that the online archive system was radically changing the old archival world. He used graphic illustrations to portray different types of sophisticated AV equipment.

Bubenik (2005) depicted a hybrid archival vault, with analogue and digital documents. The hybrid archival vault is said to have influenced television archives (Bubenik 2005) in Croatia and other parts of the world. Bubenik (2005) pointed out that the choice of technical equipment should be based on various factors, which include size and format of media, weight of media, access time and the way the media is packaged. Vlcek and Wiman (1989:117) supported these views when they stated that AV equipment "must relate to the collection requirements". That is, the equipment should be compatible with the materials in the collection.

According to Bubenik (2005), Jenkinson (2004), Wheeler (2005) and Vlcek and Wiman (1989:117), AV technical equipment materials include VHS analogue format for recording videotape (which include standard conversion equipment, VHS consumer models, industrial VHS, VCRs, S-VHS and Betacam-SP, which is a popular archival format),

video processors, high-quality professional tape recorders, digital tape recorders, (including replay VTRs) record VTRs, Time Base Correction (TBCs), audio monitoring, video monitoring, standard video cameras, computer terminals, television monitors/receivers, film strip projectors, sound slide projectors, slide projectors, 16mm projectors, record players, moving shelves, wooden shelves, closets, electrical engine moving shelves, vertical moving archival silos and automatic (robotic) archive systems. Section 6.1 of the IASA: guidelines on the production and preservation of digital audio objects (2004:48), placed emphasis on data formats, as opposed to audio specific carriers. This is because data formats (such as WAV, BWF or AIFF) are easily recognised by computer systems and encoded to prevent loss of data IASA (2004:48). This explains why IASA (2004) recommended that audio specific carriers such as Digital Audio Tape (DAT) should be transferred to a more reliable data storage format for preservation purposes.

Jenkinson (2004) felt that "television videotape recording (VTR) equipment is complex. Each machine is made to record and replay tapes to a specific television standard and recording format". This author observed that television pulse generators are required for each standard of television equipment. These include built-time base correctors (TBCs), which "provide accurate time correction of the replayed signal so that it precisely matches the television standard". However, Jenkinson (2004) conceded that domestic and industrial VTRs include television standards converters, which require encoders and decoders. Wheeler (2005) advised archives to buy high-quality equipment "with a large installed base so that equipment and parts will be available years after the format is no longer being produced." IASA (2004:49) recommended a DMSS system that can store, manage, maintain, distribute and preserve various complex digital objects with related metadata. Feather and Eden (1997:22) were sceptical that archivists would cope with technological innovation as they could not afford to upgrade or change to new formats. Wheeler (2005) advised archivists to modify tape recorders by disabling the record function to prevent accidental erasure of tapes. Vlcek and Wiman (1989:119) recommended the following criteria for selecting AV equipment:

Usefulness – ascertain if there is a real need for the equipment, bearing in mind the possibility of obsolescence,
Performance – ascertain if the equipment meets performance standards, such as size of amplifier, light levels, sharpness of images, frequency response, signal to noise ratio and dual purpose,

Compatibility – ascertain how well the equipment works with existing equipment, whether it requires special servicing and whether frequently replaced parts are interchangeable with stocks within the institution,

Portability – ascertain if the equipment is light enough to be moved by expected users,

Operation – ascertain availability of clearly printed directions, which should appear on the equipment,

Reliability – ascertain reliability of equipment, based on durability, reputation of manufacturer, recommendations from other users, repair technicians and its ability to function within the environment for which it is purchased,

Safety – ascertain if equipment meets appropriate national, state and local codes. Ensure that the equipment is well-balanced to avoid toppling and that power cords are of sufficient length. All remote control fittings should be designed in a way that eliminates incorrect connections,

Cost – Ensure that the usefulness of the equipment justifies its cost,

Repairability – ascertain if the equipment is easy to repair, whether or not parts are available at reasonable cost and whether the cost of the repair service is reasonable. This includes ascertaining availability of service manuals and whether or not the dealer will install the equipment,

Reputation and warranty – ascertain if the equipment manufacturer and dealer have a good reputation for selling and servicing equipment. It is important to find out if a warranty exists and if it provides free service, as well as parts for a period of time. This warranty should be compared with available warranties on similar equipment.

Ward (1990:97) cited Pickett and Lemcoe (1959), who recommended the use of wooden shelving for magnetic tape. However, Wheeler (2005) and Ward (1990:97) preferred metal shelving, as it is stronger and does not catch fire. Ward (1990:97) stated that individual recordings require larger storage containers and that adequate lateral support should be provided along each shelf for discs. Ward (1990:97) suggested that dividers, with firm fixed tops and bottoms, should support discs in an upright position. Tapes should be stored on their edges in an upright position. Ward (1990:97) suggested that the recommendations of the British Standard (BS) 5454, regarding shelving layout should be accepted.

Lewis (2005) and Klaue (1997:27) stipulated that technical requirements for the equipment must be technology-driven to match the media formats. It is important to

maintain quality standards in line with professional requirements. Operators must be available to operate sophisticated technologies and the equipment must be maintainable. Jenkinson (2004) stated that "tape cleaning equipment not only cleans the tape, it also packs the tape at a constant controlled tension which is advisable before storage". Alternatively, the archive could contract a commercial, professional duplication house (Jenkinson 2004; Harvey 1993:90; Lewis 2005). Harvey (1993:90) cautioned that "good handling is not merely a set of regulations to be enforced on users of archival material". It should equally apply to all staff working in archives, hence the need to control the use of AV materials. This explains why Jenkinson (2004) advised archivists to take great care when handling videotapes.

2.8 Archival legislation

According to Mnjama (1996a:30), the success of a total records management programme largely depends on a carefully constructed and flexible records management law. The author felt that, without such a law, it is not possible to provide an effective record management service from creation to disposal. Archival legislation "provides the legal framework under which national archives operate" (Mnjama 2005:464). Klaue (1997:24) stressed that a legal framework gives AV archives a mandate to function, regardless of whether or not an archive is "integrated into a state archive or exists as an independent institution…". Cook (1986:15) said that "the main purpose of archival legislation is to establish the national service and set out duties and functions". Weber (1997/98:339) and De Lusenet (2002) added that many countries have legislation and regulations governing the protection, conservation and use of archival property (though legislation may vary between countries).

Smith (1993:111) stressed the need for archivists to acquaint themselves with the law in as far as it applies to the following regulatory mechanisms, which are intended to protect the materials.

   i.   Time periods, as they affect records retention or disposal;
   ii. Storage media and methods of transferring archival materials from one medium to another;
   iii. Records-handling practices;
   iv. Reliability of information;
   v.   Accessibility to information;
   vi. Security of information;

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vii.   Use of materials; and

viii.   The information and content of materials.

Smith (1993:131) recommended that ethical standards should be used as guidelines only, to keep the archivists' actions and decisions in check. The author concluded that it was illegal for archives to dispose of records after the expiration of the statutory periods or those records with no specific retention periods. Such advice should be taken seriously in this technological era where archivists are being challenged to digitise their collections.

Mnjama's (2005) study of the archival landscape in Eastern and Southern Africa revealed that most of the archival legislation was outdated. With such a situation, archivists are bound to encounter ethical issues pertaining to individuals' right of access to vast quantities of AV collections. Digitisation of AV materials is bound to complicate access versus copyright issues. It is therefore important to ascertain whether legislation of audiovisual materials in the region covers access and copyright issues. The section below covers legislation for AV materials in ESARBICA national archives.

2.8.1 Legislation for AV archives

According to Cook (1986:15), an archival legislation aims at establishing the national archives service and setting out its duties and functions. The author stated that "the international model presupposes that the work and structure of the national archives service will be guided by legislation" (Cook 1986:15). Kofler (2004) suggested that the organisational structures of archival institutions should include the management of film, video and recorded sound collections. Such an arrangement would facilitate the application of uniform principles to the preservation, restoration, cataloguing and documentation of AV materials. Kofler's (2004) study revealed that the organization of audiovisual archives varied from country to country and from institution to institution. Kofler (2004) observed that it was:

> Unsatisfactory if a multiplicity of institutions exist in a single country without adequate resources to enable them to preserve the material under correct conditions and without a clear definition of their respective mandates.

Matangira (2003b:44) examined general mission statements of nine ESARBICA national archives. They were Botswana, Kenya, Namibia, South Africa, Swaziland, Seychelles,

Zambia, Zanzibar and Zimbabwe. This author reported that the National Archives' Acts acknowledged a need to preserve archives in any media or format. For instance, NAZ's Act 1986 is to "acquire, preserve and provide public access to Zimbabwean documentation in whatever format, in an efficient and economic manner" (Department of National Archives 2007). Similarly, the National Archives of Tanzania Act seeks to ensure proper administration and better management of public records and archives throughout their life cycle ('public records' refer to recorded information, regardless of form or medium) (The United Republic of Tanzania, No. 6 of 1979). However, some Acts such as the Malawi National Archives do not specify a mandate to preserve records in all formats (Malawi National Archives 2007).

The above discussion explains why Chavula earlier (1988:25) observed that, although there were similarities in archival legislation of various East African countries, they differed in interpretation. For instance, the Kenya Public Archives Act of 1965 referred to public archives as public records and others that were housed and preserved in the national archives (National Archives of Kenya 2006). The Lesotho Archives Act of 1967 referred to public archives as any documents (which would include AV materials) received or created in a government office and dealt with according to the provisions of the Act (Chavula 1988:26). This would exclude records or documents that are created or managed by parastatal and private organisations. In Malawi and Zambia, the National Archives Acts referred to "all such public and judicial records and all such records as classified and conserved in the National Archives as public records" (Chavula 1988:26). The mission statement of the National Archives of Malawi states that the archive is mandated to provide custody and preservation services for all documentary heritage "irrespective of media" (National Archives of Malawi 2006). This implies that AV materials are covered by the National Archival Acts of Malawi.

In Namibia, the Archives Act stated that "master film material shall be transferred to an archives depot immediately after completion of the production thereof" (Government Gazette of the Republic of Namibia 1992:7). The Act further requires producers of film material to deposit the master film with the Director of the Archives who has authority to issue directives pertaining to archival materials, including "computer or microfilm projects in respect of archives" (Government Gazette of the Republic of Namibia 1992:7). Similarly, the South African archival Act clearly reflects AV materials. This is due to the fact that the NFVSA is mandated "to collect audiovisual and related materials which were

made in or about South Africa" (National Archives and Records Services of South Africa, Act 1996).

Klaue (1997:24) observed that "whether or not an audiovisual archive is integrated into a state archive or exists as an independent institution, its function must have a legal basis". Klaue (1997) observed that many archives did not uphold regulatory procedures, resulting in various problems, such as:

- Failure to define and incorporate AV materials into appropriate archival goals and laws;
- Failure to define the rights and powers of archives in relation to audiovisual materials and hence inability to reflect them in international legal conventions (Klaue 1997:24).

Kofler (2004) highlighted a lack of an internationally approved model for a standard structure of audiovisual archives. The amended National Archives and Records Service of South Africa, Act No. 43 of 1996, is silent on acquisition, copyright and legal deposit of audiovisual materials. The above Act only pointed out that the National Archivist should determine "the conditions subject to which records may be microfilmed or electronically reproduced..." (National Archives and Records Service of South Africa, Act No. 43 of 1996). The Public Archives and Documentation Service, Act 1966 of Kenya, spells out clearly that the creating office is at liberty to restrict circulation from members of the public, copies of published documents " whether in hard copy or microfilm..." (National Archives of Kenya 2006).

Edmondson (2004b) suggested that a code of ethics for AV archiving should be compiled. Such a code should draw on comparative sources from many countries, bearing in mind particular reference to codes within library science, archival science and museum fields. Edmondson (2004b) concluded that archivists are faced with increasing ethical dilemmas and pressures. These challenges include freedom of access to the information that is kept in the national archives.

2.8.1.1 Access and disclosure

According to Mnjama (2005:465), archival institutions in ESARBICA (with the exception of South Africa), did not address access issues, particularly with regard to electronic records. The National Archives and Records Service of South Africa, Act No 43 of 1996,

as amended, grants the public a right to access public records after 20 years except, for records that are in a fragile condition. The latter defines a 'record' as "recorded information regardless of form or medium" (National Archives and Records Service of South Africa Act No. 43 of 1996)). Abbott (1999:70) cited Kirkwood (1991), who reported that the records in electronic form, as well as source documents and printouts, were covered by the National Archives of South Africa's Act. Matangira (2003b:47) noted that access to AV collections in the region was affected by various factors. These included lack of playback equipment, uncatalogued materials and lack of access copies. The author observed that "in most cases institutions cannot afford to have multiple copies of the same material" (Matangira 2003b:47). In such situations, access was given to the original/master copies.

Benedict (1988:180) advised archivists to promote full access to archival materials, while " carefully observing any established policies restricting the use of records". Benedict (1988:180) cited Groover (n.d.), who felt that the issue of access has been complicated by freedom of information (Freedom of Information Act 2000:2000 Chapter 36) and privacy legislation, which govern the right of individual access to information, and laws that protect the right to privacy. Kirkwood (2002:9) expressed the same reservations with regard to the promotion of Access to Information Act (PAIA) vis-à-vis the National Archives of South Africa Act. While the latter promotes access to any information held by the state or another person as a democratic right, and thus access to closed records, the latter protects some records from public view until they have been in custody for 20 years.

The UNESCO meeting examined the legal and ethical issues, which affect access to AV materials. The meeting acknowledged that there is a conflict "between access and preservation and the protection of rights in the materials" (Harrison 1994). The meeting proposed the following.

   i.   A study of legal problems facing AV archives;

   ii.   A long-term strategy for handling international agreements on AV archiving;

   iii.   A need to co-ordinate the international strategy in various ways, including agreements with rights holders, agreement among AV associations, conventions and international agreements, as well as regional or national conventions;

   iv.   A need for unity between the AV associations in the development of a "joint concept and approach towards legal issues and legislation" (Harrison 1994 UNESCO); and

v.   A need for a clear legislation stating what AV archives are and what they are mandated to do.

The present researcher believes that regional integration and subscription to professional international AV organisations will go a long way towards addressing legal issues pertaining to the use of AV materials.

Smith (1993:118) stated that "inappropriate or inconvenient systems may undermine the retrieval process. …". Bremer-Laamanen and Stenvall (2004:53) cautioned that such a situation did not meet customers' expectations. Smith (1993:122) advised archivists to observe privacy, confidentiality, national security and issues pertaining to commercial advantage. This means that archivists should ensure that a request is legitimate and within the scope of the law, before availing the information to the user. He advised archivists to refer difficult and complex issues to legal professionals (Smith 1993:121). He pointed out that some government agencies could be exempt from compliance with the above requirement. Smith (1993:122) regarded privacy and confidentiality as crucial factors in the release of information, bearing in mind national security and commercial advantage issues. Additionally, accountability and reasonable care for the materials should be taken into consideration inspite of the legal requirement to produce information. Such an approach will take care of privacy, confidentiality and accountability issues.

2.8.1.2 Privacy, confidentiality and accountability

Creators of information have a right to privacy and confidentiality of information resources, while archivists and other keepers of the information are accountable for the misuse of that information. Smith (1993:122) advised that the issue of access to information should be weighed against concerns for privacy and confidentiality. These issues should, in turn, be weighed against the issue of disclosure. Smith (1993:122) foresaw that "archivists will be confronted with the two (often competing) principles of the public's right to know and the individual's right to privacy". Smith (1993:122) cited the Human Rights and Equal Opportunity Commission Guide to Federal Privacy Act (1990), that defined the Act, as "the organisation's right to preserve the confidentiality of its commercial information" (Smith 1993:122). Mokoena (2002:89) recorded ethical and legal issues that South African archivists were confronted with when administering oral history recordings. Mokoena (2002:89) pointed to the dilemma of safeguarding the

interviewer's right to freedom of expression, which could impinge on one's right to privacy and human dignity.

Smith (1993:123) advised archivists to familiarise themselves with their statutory responsibilities. These include legislations that "impose an obligation to disclose or to provide access to certain information under certain circumstances" (Smith 1993:123). SADC nations recently agreed to standardize cyber laws in an effort to uphold privacy and confidentiality. This means that such laws will make it easier to extradite criminals within SADC (Botswana Government Gazette 2000:6) This explains why archivists should familiarise themselves with the legal framework in order to understand how, and in what circumstances, the provisions apply.

Schwirtlich (1993:29) realised a need for a separate archival policy that spells out the conditions under which archival materials are obtained. He advised that the policy should stipulate the following.

   i.   Who has access to the collections;
  ii.   Explain the need for users to register and obtain documented permission prior to using the materials;
 iii.   State the conditions under which archival materials are available for research - these conditions should ensure preservation of materials, respect of confidentiality, privacy, as well as maintaining legal agreements with producers;
  iv.   The policy should clearly explain how archives staff would uphold legal and ethical issues in order to uphold the physical integrity of the materials.

Smith (1993:130) concluded that the above ethical principles should underpin all archival decisions. The present researcher believes national archives in the region should also abide by the above principles.

2.8.1.3 Copyright: an overview
Mokoena (2002:87) defined copyright as "that right which the copyright holder has over his or her original work and protects the copyright holder against unsolicited copying of his work". Copyright covers print and audiovisual materials such as literary works (novels, poems, scripts, books of history), musical works, dramatic works, folklore (folktales, folk songs, folk dances and folk plays), sound recordings, graphic work, photographs, sculpture and other artistic works, films, published editions and computer programs (Botswana Government Gazette 2000; Rosin 2005).

According to Smith (1993:127), "copyright is the exclusive right to the printing or reproduction of a work such as a manuscript, photograph, film or letter." Ward (1990:33) understood copyright to apply to " a property right, which enables the owner to prevent people from copying an original work". Pinion (2004) stated "copyright legislation exists to provide legal protection to the creators and publishers of published works and to prevent unfair copying of original works…". It gives owners of the works the right "…to do and authorise other persons to do certain acts in relation to that work…" (Botswana Government Gazette 2000). Leary (1988:119) earlier observed that AV archivists encountered questions. This arose from the fact that many AV materials were regarded as creative archives entitled to copyright protection. Leary (1988) suggested "archivists must furnish researchers with as much information as possible about the copyright status of any material and advise them of their obligation to respect copyright claims".

Pinion (2004) believed that AV materials such as sound recordings and moving images are 'performance works' and therefore "carry additional rights beyond those which relate to the content of the physical format." These are referred to as 'neighbouring rights' that are owned by those who take part in creating the final product (IFLA 2003; Pinion 2004; SADC nations agree to standardise cyber laws 2005). Rosin (2005) realised a need to distinguish between music works and sound recordings. He explained that a sound recording is a performance by an artist and copyright should go to the first performer. Music work comprises sound recording and composition. In this regard, the author of the musical is the owner of the copyright.

Rosin (2005) pointed out, that in most countries, the first owner of a sound recording and music work are different. In such an instance, the record company owns the copyright. Similarly, the music composer also owns the copyright. It is for such reasons that Rosin (2005) urged archivists to obtain the deeds that transfer ownership of composers and performers. Rosin (2005) realised a need to distinguish copyright from ownership. He stipulated that ownership denotes complete corporal rights of an object and it should be complete. This therefore means that adaptation of a script requires copyright from the owner. He urged archivists to ensure that copyrights are cleared before allowing users to access sound recordings. In cases where one was not clear about copyright clearance, Rosin (2005) advised archivists to put aside 10% of the royalty into an account, in case of complaints from the rightful owner(s). Pinion (2004) stated that the actual 'performance'

of the final product is "subject to performance rights controls through royalties and fees, e.g. the public showing of a film, the broadcasting of a sound recording."

Ward (1990:33) stated that copyright could be given or sold, or even bequeathed. Copyright is thus an intellectual property and it can be owned independently by the concerned property. Brunton and Robinson (1993a:216) supported these views. The authors felt that once one has ownership of copyright in a document, they could control the method and procedures of its reproduction, "within particular legislative limits" (Brunton and Robinson 1993a: 216). What this means is that archival institutions can legally and physically own the materials, without having copyright to the materials. The institution cannot authorise the reproduction of the materials without permission from the owner. This shows that copyright legislation may be difficult to enforce. For instance, Ward (1990:36) observed that the registration system in the United Kingdom (UK) made it difficult for repositories to trace the current owner. This was attributed to the fact that copyright could be transmitted many times during its currency (Ward 1990:36).

Edmondson (2004a) stated that new technology has created diverse means of distribution and access, which have invariably led to new commercial opportunities to access AV materials. It has ultimately led to an increase in AV piracy. Wienand (1997:84) revealed the difficulties of enforcing copyright when it came to copying and re-transmission on digital networks in the U.K. The author gave an example of a cable programme service, which included Internet publications, thereby infringing copyright (Wienand 1997:85).

Muir (2004:67) pointed out that "there may be conflicts between what copyright allows preservation institutions to do and what ...archive laws require them to do". This explains why Ward (1990:36) suggested that repositories should arrange for copyright of recordings at the time of their transmission to the repository. McCausland (1993:284) stressed that "reproductions cannot be provided to researchers without first ensuring that the provisions of the copyright act have not been infringed". Researchers are therefore obliged to submit an application, declaring their intended need to reproduce the material. Archivists, are in turn, required to ensure that "each application includes sufficient detail about each item so that it can be identified and its copyright status determined prior to copying". Additionally, a request form with detailed information about the materials to be copied, published or printed should be given to researchers (McCausland 1993:284). By signing the form, the applicant signifies compliance with the stated conditions. McCausland (1993:285) and Schuursma (1997:84) discovered that broadcasting

organisations are often reluctant to provide copies of their recordings for use outside their own premises because of complications of copyright and contractual obligations.

Muir (2004:67) and Wienand (1997:85) pointed out that the above arrangements could only address most of the copyright problems for textual materials, but not for digital materials. A clear example is the United States copyright policy restrictions on AV materials. Under this policy, "the Nixon Presidential Materials staff and the National Archives and the Records Administration exercise no intellectual property claims to the materials in its holdings and cannot grant exclusive rights for the use of the materials in its holdings" (Nixon Presidential Materials 2005). This means that the National Archives staff and the Nixon Presidential Materials staff are not legally mandated legal authority on questions of copyright law. Rather, the creators of the materials exercise copyright over them. Nevertheless, "the Library of Congress Copyright Office constitutes the sole legal authority in the United States on what is or what is not subject copyright" (Nixon Presidential Materials 2005).

Ethical aspects that result from converging technologies complicated legal deposit for AV materials (Harrison 1994). Information technology is bound to complicate issues of access and disclosure, as observed by various authors such as Bremer-Laamanen and Stenvall (2004) and Muir (2004). Muir (2004:67) was fearful that, without ongoing intervention, digital objects are bound to remain inaccessible. This is due to various reasons such as technological obsolescence and intellectual property issues, which have been highlighted above. The legislation for AV materials should apply to all archival functions. Failure to observe the required legislation is bound to lead to loss, disclosure and eventual depreciation of the AV materials.

2.8.1.3.1 Copyright legislation in the ESARBICA

In the ESARBICA, copyright legislation varies from country to country. For instance, in Botswana, the copyright act covers all works under the direction or control of the state or any department of the government of Botswana (Botswana Government Gazette 2000). Among other rights, the above act clearly stipulates economic rights and moral rights. The economic rights give the owner of the copyright the right to carry out or authorise acts which pertain to reproduction of the work, translation of the work, adaptation, arrangement or other transformation of the work, the first public distribution of the original work and subsequent copies, rental or public lending of the original work, importation of copies of the work, public display of the original or copies of the work,

public performance of the work, broadcasting of the work and other communication to the public of the work (Botswana Government Gazette 2000:26).

Under moral rights, the Act gives the author exclusive right to display or not display his or her name on copies and any other works that are publicly used. Similarly, the author has a right to "object to any distortion, mutilation or other modification of, or other derogatory action, in relation to his work, which would be prejudicial to his honour or reputation" (Botswana Government Gazette 2000:26). In Botswana, broadcasting organisations have a right to authorise any of the following acts (albeit within 50 years after the broadcast): the re-broadcasting of the broadcast, the communication to the public of the broadcast, the fixation of the broadcast and the reproduction of a fixation of the broadcast (Botswana Government Gazette 2000:34).

Section 28 of the Botswana Government Gazette (2000:33) empowers producers of sound archives to carry out of the following:

i.   Direct or indirect reproduction of the sound recordings;
ii.   Importation of copies of the sound recordings, even where the imported copies were made with the authorisation of the producer;
iii. Adaptation or other transformation of the sound recordings;
iv.   Rental or public lending of a copy of the sound recording, irrespective of the ownership of the copy rented or lent;
v.   The first making available to the public by sale, or other transfer of ownership, of the original copies of the sound recordings;
vi.   Making sound recordings available, by wire or wireless means, to enable members of the public to access them from a place or at a time individually chosen by them.

The Act protects sound recordings rights from the "the end of the fiftieth calendar year following the year of publication or if the sound recording has not been published" (Botswana Government Gazette 2000:34). For instance, the Act protects AV works which are produced in Botswana or sound recordings produced by Botswana nationals and those which are first published in Botswana (Botswana Government Gazette 2000:34). The Act respects international treaties in respect of copyright and any other related acts, to which the Republic of Botswana is a party (Botswana Government Gazette 2000:39).

Mokoena (2002:87) cited the South Africa's copyright Act (Number 98 of 1978), which advocated separate copyright protection for cinematographic film. The author noted that,

in the South African Act, originality did not refer to originality of thought. Rather it referred to "original skill of labour in executing the work" (Mokoena 2002:87). For instance, there was a possibility that the true creator of sound recordings could be someone other than the true creator of the work. In that case, the former would qualify as the author of the work (Mokoena 2002:87).

In the case of Namibia, the archive Act gives the Head of Archives authority to duplicate or authorise duplication "of any archives, accessions or original sources…of any archives or accessions" (Government Gazette of the Republic of Namibia 2000:5). The Act further states that the Head of Archives determines the conditions "subject to which any archives may be photographed on microfilm or any format" (Government Gazette of the Republic of Namibia 2000:5).

In Kenya, the Public Archives and Documentation Service Act prohibits the Director of the Kenya National Archives and Documentation Centre from divulging information that is obtained from members of the public or from any other source; "the disclosure of which is by or under any written law prohibited or restricted for certain purposes" (National Archives of Kenya Kenya 2006). Closely associated to copyright is a requirement by all writers or producers to deposit a copy of their work with the national archive.

2.8.1.4 Legal deposit
The primary objective of legal deposit is "the collection and safe guarding of the cultural heritage of a nation, region or the world" (Harrison 1994). Kofler (1997:47) recognised the need for written legal deposit laws for AV materials similar to text materials. However, he observed that such a law is limited by the cost of AV materials and their fragile nature. This problem is compounded by the obligation of private AV archives to deposit material with a public archival establishment (Kofler 1997:47). Kofler (1997) reported that this requirement is only realised "…in a few cases and is often reduced to cinematographic films…" (Kofler 1997:47). He conceded that this problem could be resolved by stipulating those AV materials which should be covered by the deposit regulations. The author referred to the UNESCO 1980 recommendation, which permitted voluntary deposit for films dubbed or subtitled in the original language of a country despite the fact that the films were still considered an integral part of the moving heritage of the country in which there were publicly distributed. Kofler (1997:47) explained that this was done to protect the film-makers from commercial exploitation in a foreign country where they could not exercise control.

2.8.1.4.1 Legal deposit laws worldwide

Although international legislation exists, Klaue (1997:25) alluded to loopholes in some international legislation. It is important to explore legal deposit laws, which apply to various countries worldwide. Pinion (1997:56) stated that "most countries specify the range of formats to be deposited, and in some cases, their subject content". He saw a need for formal agreements or contracts between the creators of AV materials and users of published works. Pinion (2004) noted that legal deposit collections required large financial commitment to maintain a preservation programme. Schuursma (1997:84) revealed that broadcasting organisations were "often reluctant to provide copies of their recordings for use outside their own premises." (Schuursma 1997:84). In the case of sound recordings, the author advocated a national sound archive model, which ensures acquisition of materials from all countries located in one place.

The 1984 UNESCO survey revealed that most member states neither had legislation for AV archives nor the deposit of films and video materials (Harrison 1994). This prompted UNESCO to prepare model legislation or guidelines tailored to individual countries. A UNESCO meeting was concerned about the application of the legislation to commercial organisations, such as television and radio broadcasting, that had their own archives (Harrison 1994). In this regard, the meeting raised two major issues: how to ensure respect for the rights of creators and users and to "…enter agreement with national film, television and sound archives to deposit valued material" (Harrison 1994). Kofler (1997) expressed reservations with the above regulation, since international copyright regulations make provision for the protection of national and international production. He reported that radio and television broadcasts were accorded a special status in cases where they were the archives of the creating organization (s). This applied to cases where the official national archives were not in a position to receive the whole television production.

2.8.1.4.2 Legal deposit laws in the ESARBICA

According to Matangira (2003b:46), the archival institutions in the region "suddenly found themselves with audiovisual materials without proper prior planning on how to handle the collection". Nevertheless, Matangira (2003b:46) stated that the BNARS enforced legal deposit of AV materials through the Botswana Television Corporation. The same applied to Tanzania Television Services. Matangira (2003b:46) reported on the application of legal deposit to AV materials in Zambia where film producers were required to deposit copies with the National Archives. However, the National Archives of South Africa did not have a legal deposit for AV materials. Instead, the NFVSA arranges

contracts with producers. In the case of Namibia, the Archives Act requires producers of films to:

> immediately, upon completion of such production, make available to the Head of Archives the master film material to enable him or her to make copies thereof if he or so requires (Government Gazette of the Republic of Namibia 2000:7).

Proper application of archival functions to AV materials is an integral part of the core business of archival institutions. A discussion of archival functions follows.

2.9 Archival functions

The functions of managing archival information are central to the management of AV materials. These functions are acquisition, accessioning, appraisal and selection, arrangement and description, preservation and access (Cook 1986:37; Cox 1992; Leary 1988:105; Schellenberg 1984).

2.9.1 Acquisition

Schwrtlich and Reed (1993:137) perceived acquisition as a "process by which archives add to their holdings by accepting material as a donation, transfer, purchase or loan". These authors argued that acquisition requires a commitment between the archives and the originator to document the information, store it, control it, protect it and avail it to interested parties. Leary (1988:105) stated that "most guidelines for the archival management of any one type of audiovisual record will also apply to the others, with only slight variations". Nonetheless, Cox (1992:63) subscribed to Faye Phillip's structure for a model collecting policy, which comprises a statement of purpose of the institution and/or collection and types of programmes supported by the collection. These should constitute research, exhibits, community programmes, statements of resource sharing and other information of interest to the general public.

Forde (1990:22) and Schiwrtlich and Reed (1993:147) stipulated that there are two methods of acquisition: passive collection, where the institution accepts material and presupposes evaluation by creators, and active acquisition, where archivists are actively involved in appraisal and selection of archives for preservation. Ward (1990:15) revealed that sound repositories receive three types of recordings: the inherited recordings which are produced by the organisation which runs the repository, deposited recordings which are produced by individuals and bodies outside the employing organisation and recordings which are commissioned by the repository. While Schabert (1987:372) acknowledged the

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fact that different institutions may have different criteria for users, he recommended the following guidelines for acquiring videotapes:

- Video tapes should not be lent out with equipment;
- Borrowers should sign a form which details responsibilities; and
- In the absence of copyright infringement, valuable original tapes may be duplicated and substituted for the original (Schabert 1987: 372).

Ward (1990:15) pointed out that, unlike textual archival repositories, which receive inherited and deposit materials, sound archives rarely keep the above materials. The sound repository is "either run by …a radio organisation or record company, or it is supported by public or private funds to receive deposits of material in a specified geographical or subject area" (Ward 1990:15). In view of Faye's model (Cox 1992:63), one would conclude that acquisition forms a framework on which the appraisal and selection processes are carried out. This means that national archives' mandates should be very clear on the types of programmes supported by their collection. The National Archives of South Africa Act is a good example of Faye's model.

2.9.2 Appraisal and selection

Forde (1990:22) stressed that appraisal is one of the most important duties of an archivist. It entails a determination of what is to be thrown away, hence identifying permanent records. Matuszewski (n.d) was cited to have foreseen the need for appraisal and selection of moving images (Kula 2003:10). The author stated that "the volume of voluntary deposits by cinematographers anxious to have their films permanently conserved would demand an appraisal policy" (Kula 2003:10). Leary (1988:106) defined appraisal as "selection of some and rejection of others. Ward (1990:19) cited Brichford (1977), who defined appraisal as "…the process of assessment and selection". Roper and Millar (1999b:5) regarded appraisal as a "process of determining the value of records for further use, for whatever purpose, and the length of time for which that value will continue." Appraisal involves a decision to preserve some of the archival materials or reject some. Cox (1992:60), who gave a more elaborate definition of appraisal, perceived appraisal to be a process of determining the current administrative, legal, fiscal or research value of records in order to determine their disposition. In this regard, Mwango (1996:22) maintained that appraisal should ensure that "records are created on a lasting medium so that information degradation does not occur".

According to Mwango (1996:22) and Ngulube (2001:257), the process of appraisal requires archivists to make value judgements. The latter concluded that appraisal is a very subjective process, which hampers access to some records (Ngulube 2001:257). It is for this reason that Mwango (1996:22) realised a need for guidelines to guide appraisers. Such guidelines are necessary, since it may not be easy to attach face value to some records. This is because some records have intrinsic value, which may be based on unique factors such as age or circumstances under which the records were created (Mwango 1996:22). Mwango cited a case of negligence in the case of Tanzania. The creating agencies sent records to the national archive without appraising them, claiming that "those records are not needed and they occupy very important space which could be used to store important records…" (Mwango 1996:26). The above scenario demonstrates failure on the part of the National Archives of Tanzania to educate creating agencies on the importance of appraisal. It also demonstrates a need to involve creating organizations to avoid subjective judgement, which is alluded to by Mwango (1996:22) and Ngulube (2001:257).

Reed (1993:158) revealed that there are two basic criteria on which appraisal of records are based: the primary 'evidential value of records and their secondary' informational value. Forde (1990:402) observed that this criterion is bound to differ with AV archival materials. For instance, photographs and moving images carry more informational value than conventional records, whereas sound recordings are said to possess "…any or all of the values associated with traditional textual archival materials (Forde 1990:402). Cook (1986:109) felt that appraisers are expected to read the record in order to document system details. According to Cook (1986:108), the recording process may entail a rerun of part of the programme to ascertain what record systems exist, the information they contain and its value, the functions they serve and the rate at which they grow each year. Cook (1986) referred to guidelines for selection of Machine-Readable and related records in Appendix III.

Roper and Millar (1999a:9) stressed that appraisal should be carried out in the early stages of the records life-cycle. They stated that the appraisal should be a routine function, which requires "an in-depth understanding of the functions and activities that led to the creation of the records" (Roper and Millar 1999a:9). Cox (1992:50) felt that the appraisal function is so crucial that any archival institution lacking a systematic approach to records appraisal would not have a strong archival programme. Such an institution would depend on random acquisition of collections, rather than purposeful selection. The term therefore

encompasses the basic records management processes, undertaken to ensure that records undergo a systematic and orderly process before they are destroyed (Cook 1980:109), that is, creation, utilization, storage, retrieval and disposition. Cook (1980:108) realized a need to appraise machine-readable records just like conventional records. …". Leary (1988:106) pointed out that appraisal of audio-visual materials required a determination of:

> the point at which technology and other factors accelerated production levels sufficiently to require archivists to make selections from the quantities of materials available. That dividing line will differ from country to country and medium to medium (Leary 1988:106).

Leary (1988:108) warned that appraisers of AV materials should be mindful of the fact that AV materials have unique features, which enable them "to document the mundane, the trivial, the everyday texture of life so often ignored by more traditional records". Leary (1988:108) concluded that the archival appraisal standard of uniqueness should be applied to AV materials. Leary (1988) stressed that emphasis should be placed on acquiring camera originals or magnetic masters to "avoid unknowing accessioning of materials that are duplicated at other institutions" (Leary 1988:108). He recommended that consideration be given to a determination of the extent to which information in the AV materials could be duplicated in other medium. Leary (1988:108) opined that the archival value of spoken recordings such as a prepared speech diminishes if a printed version is also preserved. Indeed, the spread of inexpensive video recordings diminishes the value of spoken word recordings. The archival value of reproduced recordings should therefore be tested at the appraisal stage. Leary (1988:109) suggested that:

> Appraisers must emphasize the importance of satisfactory technical quality of AV materials, which includes proper exposure, clear focus, good composition and audible sound. …Appraisers should realistically balance the potential research value against the likely costs of institutional capabilities.

It can be seen from Leary's (1988:109) argument that the informational value is a very important criterion in the appraisal of AV materials. Leary (1988:106) set guidelines for appraising AV materials. These include specific appraisal standards and principles, age, subject content (subject content of AV materials to future researchers should be ascertained), uniqueness (their ability to document the mundane, trivial and everyday

texture of life), quality (good technical quality covering clear focus, audible sound and proper exposure) and quantity (the extent to which technology and other factors accelerate production levels may necessitate weeding and sampling techniques) (Leary 1988:109).

The appraisal guidelines should be coupled with co-ordinated acquisition policies with other institutions to "share the expensive and escalating burden of preserving the audiovisual record…" (Leary 1988:106). Leary (1988) pointed out that the question of who should acquire what is answered differently from country to country, depending on the "mandate of the national archives and the nature of other institutions seriously engaged in accessioning audio-visual records" (Leary 1988:107). This presupposes an existing collaborative relationship among ESARBICA countries. Such a relationship would foster information-sharing on current holdings through professional organizations such as FIAT, FIAF and IASA (Leary 1988:107).

Cook (1980:109) considered appraisal to be a difficult task, particularly in regard to machine-readable records. Cook (1980) noted that there are technical difficulties to contend with when appraising machine-readable records. Cook (1980:109) attributed these difficulties to the physical form of machine-readable records and the fact that archivists are expected to 'read' the machine-readable records prior to preservation or disposal. Cook (1980:109) stressed the need for archivists to "determine and record the system details, ensuring the preservation of the basic documentation with the record." The author referred to the National Archives and Records Services of the U.S.A (NARS) and the Public Record Office (P.R.O.) in U.K, which had appraisal systems for machine-readable records. Dollar (1984:71) predicted that the differences between appraisal practices of machine-readable records and textual records would become more pronounced with developments in computer technology. He believed that computer technology would render current appraisal practices and standards obsolete.

Leary (1988:106) concurred, when she observed that most audio-visual archivists recognized the need to develop guidelines for appraisal of visual and aural materials after a generation of serious attention. Cook (1980:108) and Cox (1992:50) believed that for appraisal to be successfully done, there was a need to apply the records cycle concept in the early stages of the machine-readable record's life, before the record disappears. Cox (1992:50) felt that the changing nature of recorded information is a good reason for archivists to keep the records cycle concept in mind. Leary (1988:110) earlier

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recommended a holistic approach to the management of audiovisual records. The author argued that the fragile nature of AV materials predisposes them to the life-cycle concept. Leary (1988:110) recommended that the AV archivist "...should encourage the use of archival processes and materials to create archival records...". For instance, the scheduling process should constitute all elements and all processes of an AV archival record (Leary 1988:110).

According to Madanha (1996:12), successful appraisal should cover the whole life-span of a record, from creation to disposition. This means that everybody involved in the care of records must be involved. The author warned that active appraisal is not possible unless national archival institutions are actively involved in registry functions through archival legislation. Madanha (1996:12) cited the National Archives of Zimbabwe (NAZ) as an example. The NAZ Act mandates the NAZ to facilitate the appraisal process by controlling the creation, use, maintenance, transfer and disposal of records at an early stage (Madanha 1996:12). This requires an appraisal policy to be instituted by the Director of the national archives, which explains why the integrated records management approach to AV materials is central to this study.

Leary (1988:110) stressed that it is important for audiovisual archivists to identify all elements of the audiovisual records such as negatives, prints and related documents, as part of the scheduling process. This would entail a systematic application of a good filing system (in particular arrangement and description), a separation of valuable materials from trivial ones and a transfer of historical records to appropriate media. Leary (1988) felt that such an approach would ease the burden of archival management. Leary (1988:110) pointed out that archival boxes of audiovisual materials rarely showed signs of informed records management at the time of their arrival. This is a sign of lack of application of the records management cycle to archival materials. It should be noted that records could not be appraised without conducting surveys. The section that follows discusses the role record surveys play tin the conduct of effective appraisals.

2.9.3 Record surveys

According to Paul (1988:45), a records survey should cover all formats of media and should involve all administrative units of an institution. Paul (1988:45) stipulated that record surveys precede appraisal and selection. Surveys are conducted to gather the necessary information for appraisal and to determine retention periods. This information

enables archivists to understand the functions that the records covered. Cox (1992:65) saw a need for all archival institutions to conduct records surveys. Cook (1986:45) advised that records managers conducted surveys to establish what classes of records are produced by their organisation and the production processes used. Paul (1988:45) pointed out that the records manager and the archivist conduct the survey to bring different perspectives to the job (Paul 1988:45). Paul (1988) noted that the survey covers all records in all formats and media and involves the entire institution or administration unit. It requires listing "each type of record or series together with a description" (Paul 1988:45). Each unit of description consists of record series, that is a group of documents, volumes, folders or other records in the same physical form.

Paul (1988:45) reported that records are usually arranged under a single filing system that relates to a particular subject. They should be surveyed, disposed and retained by series. Cook (1986:45) and Paul (1988:45) agreed on the use of a standard survey form. Cook (1986:45) suggested that the form should capture information on the following: name of the administrative unit, series title (supplied by the records manager or archivist), name of the creating office, location of the series, inclusive dates of the records, a description of the files, length of time needed for current use, series volume and rate of accumulation, arrangement or filing scheme, type of series, duplication in other records, frequency of use, statutes that govern retention or disposition and finding aids.

Cook (1986:45) suggested that separate work sheets should be used for each series. On completion of the survey exercise, "the worksheets can be sorted by function and analysed by type of series and frequency of use" (Paul 1988:46). On the other hand, Ambacher (1988:124) looked at the benefits of records surveys, with emphasis on machine-readable records. The author noted the following.

i. It facilitates the identification, scheduling and transfer of records to archival repositories;

ii. It promotes the preservation of magnetic media;

iii. The survey alerts responsible personnel to the existence, volume and value of he machine-readable records within their area of responsibility Ambacher (1988:125);

iv. It enables the archivists to determine how the records will be preserved and thus, improves the planning of archival programmes; and

v.   It can be a means of educating and training records managers and archivists.

Inspite of these benefits, Cox (1992:67) pointed out the shortcomings of records surveys as a result of wrong perceptions by users. Cox (1992:67) maintained that archivists confuse records surveys for "a broad documentation of the institution itself". In so doing, the information contained in the survey does not reflect the overall operations of an institution. It fails to meet the institution's information needs. Furthermore, it does not adequately reflect the institution's operations, policies and procedures. Nevertheless, one can argue that record surveys contribute to the proper documentation of an institution. How else would one know what exists in an institution without conducting a records survey? Justification for the use of records surveys is based on the fact that information gathered from records surveys facilitates the documentation process.

2.9.4 Documentation

According to Ward (1990:59), the act of documentation entails recording the nature, type and volume of collections in an institution. It is a description of the contents of a repository to facilitate retrieval. Ward (1990:59) wrote that, "written or computer-driven documentation is especially necessary for the management and use of sound archives since their nature and contents of recordings are not self-evident..." (Ward 1990:59). Ward (1990) categorised documentation of archival materials into administrative and descriptive processes. Administrative documentation includes accessioning, storage and conservation, while descriptive documentation (also referred to as cataloguing or listing) identifies material for the user, analyses and summarises the contents (Ward 1990:59). Ward (1990) believed that, "the administrative background of the material, including arrangements made in the repository, forms part of its description" (Ward 1990:59). He felt that documentation is both time-consuming and laborious and needs to be carried out on traceable documents. Leary (1988:109) concluded that the most important task of appraisal is to locate and ensure the accessioning of all related documentation. This enables the appraiser to explain the provenance, thereby enhancing the usefulness of an audiovisual collection. The section that follows explains the importance of accessioning and how it is done.

2.9.4.1 Accessioning

Roper and Millar (1999f:31) and Danniels (1988:64) defined accessioning as a continuous process of transferring records to the physical custody and legal control of an archival

institution. In other words, accessioning is proof that the records have been transferred to the archival institution. It gives the institution a mandate to own the materials and it grants it a responsibility for their safe custody. Brunton and Robinson (1993a:207) and Cox (1992:259) stated that the main purpose of accessioning is to control the physical and intellectual materials of a repository. Acland (1993:460) supported those views. An accession register is therefore a vital archival record. It is a source of documentation for basic control information, as it states details of when the collections were acquired, the origination offices and other important information such as copyright restrictions.

Acland (1993:460) said that accessioning is the first level of control over new acquired material. The process involves a systematic documentation of essential information about the new archival consignments. That means keeping a register of the origin of the collections and the date of arrival. It therefore requires archivists to uphold the principle of provenance[2] in the context of AV materials (Klaue 1997:26). The author stressed that AV materials "must be handled in the form in which they were produced, films should be conserved as films not as videocassettes, records as records not sound cassettes" (Klaue 1997:26).

Danniels (1988:64) agreed that documents must be kept in their original form if a usable copy cannot be reproduced. He stressed the need for all documents to retain their full informational character. He concluded that "comprehensive documentation of the appraisal and accessioning provides essential legal documentation of archival ownership, as well as an important information base for processing the records and providing data about them to future users" (Danniels 1988:65).

Harrison (1997:5) portrayed accession as a vital stage of archiving, as it provides information about ownership and copyright. The author suggested that in cases where there are restrictions on the acquired materials, such information should be reflected in the accessions register. Brunton and Robinson (1993a:215) stressed that, regardless of their nature, it is equally important to arrange AV materials before they are preserved for future use. This explains why Weir (1988:131) felt that, "accessioning machine-readable records into an archival repository represents a significant action ...". Weir (1988) stressed the need for computer services to "accession, preserve, and provide reference service on machine-readable records" (Weir 1988:131). Just as for paper records, initial accessioning

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[2] The principle of provenance requires records and archives of an individual or organization to be kept separate from other records

of machine-readable records should include the physical transfer of the materials from the creators to the archives (Weir 1988:131). Weir (1988:131) suggested that, in the case of machine-readable materials, related documentation and technical specifications, which are required to access and use the materials, should be transferred at the same time. This implies that AV archivists should make an effort to observe the above recommendation in order to comprehensively and accurately accession machine-readable records and other formats.

2.9.4.2 Arrangement and description

The organisation of AV materials requires that they are arranged and clearly described for ease of retrieval. Roper and Millar (1999c:61) stated that "arrangement and description achieve control over the holdings of the archival institution". Brunton and Robinson (1993:223b) believed that arrangement and description must fit in with other responsibilities of an archive. The sub-section below gives a detailed description of the archival processes of arrangement and description.

2.9.4.2.1 Arrangement

Desnoyers (1988:87) perceived arrangement to be the "scheme by which items, groupings and collections are ordered to reveal their contents and significance". Cook (1986:79) believed that arrangement is an important aspect of managing archival collections. It can also be viewed as an aspect of conservation, storage and preservation of the materials. It is therefore essential for the administrative control of archival collections and a prerequisite to good archival management (Brunton and Robinson 1993b:224). In this regard, Brunton and Robinson (1993b:222) defined arrangement as "the process of physically organising records in accordance with the accepted archival principles of provenance and original order". Roper and Millar (1999c:64) explained that, while provenance refers to the originating office, original order refers to the way the original office organised the documents. The authors advised archivists to maintain the original order by keeping records of agencies separately (Roper and Millar 1999f: 64).

Cook (1992) concluded that the purpose of archival arrangement is deemed to be that of introducing or restoring order to the materials which make up the mass archival collection. Cox (1992) considered this to be a managerial process, because it requires planning at a level which can ensure control over large quantities of material. Davidson and Lukow

(1997:130) stressed that the basic principle of original order should be the first step in arranging AV materials.

Davidson and Lukow (1997:223) felt that keeping the principle of original order determines subsequent arrangements. These authors suggested that arrangement should be done at the point of collection or before the materials are transferred to the archives (Davidson and Lukow 1997:130). It requires a physical reorganisation of the records into their original order. It may entail "...re-boxing, labelling and shelving the records" (Brunton and Robinson 1993b: 223). These authors acknowledged the fact that some records may not be in their original order and hence need to be reorganised to restore their original order. Davidson and Lukow (1997:131) realised the need to maintain the internal and external order of the collection by documenting the methods used.

Brunton and Robinson (1993b:230) opined that the process of arranging archival documents requires archivists to have knowledge of why and how the records were created and used, hence the application of the principle of provenance. By so doing, the archivist is said to provide a statement of authenticity, known as 'the moral defence of the archives' (Cook 1986:81), which ensures permanent evidential meaning of the archives by retaining their original system or order, as well as their custodial history. This therefore rules out the use of universal classifications "since the material cannot be sorted into predetermined categories" (Cook 1986:81).

Brunton and Robinson (1993b:224) stated that the above principles are followed worldwide and failure to apply them is a disservice to archival materials as it obscures most of their meaning. Paul (1988) believed that the archival principles of appraisal, arrangement and description evolved from Schellenberg's principles of provenance and original order. Paul (1988:34) cited Schellenberg (1984) whose opinion was that "all of the archivist's problems in arranging, describing, appraising, and servicing public records arise out of the way in which such records are handled in government offices". The need to arrange records and archival materials was best captured by Desnoyers (1988:87), as he gave the following objectives of arrangement:

- to restore and present to researchers, the original order of documents as evidence of how their creators used them and why they were created; and
- to provide a rational order in which individual documents or facts can be found with a minimum amount of search and analysis.

Cook (1986:82) stressed that "the division of an archive into levels is always the most important part of its arrangement." In order to apply the principle of moral defence to the acquired materials, the archivist breaks them down into a series of levels of groups. This should be done with their original structure and the overall management needs of the archival service in mind (Cook 1986:82). Cook (1986:82), Cox (1992:119) and Schellenberg (1984:152) noted four commonly used levels of arrangement: groups, subgroups, series and items. Schellenberg (1984:152) maintained that archival materials should be kept separately, as integral units, corresponding to their sources in organic bodies. This then precludes merging records from different sources.

Cox (1992:119) had reservations about original order. He wrote that original order could "… be a deterrent to effective administration of archival records and that some rearrangement might be required" (Cox 1992:119). Cox (1992:119) concluded that archival literature was replete with a wide range of opinions on the issue of arrangement practices. For instance, Leary (1988:111) stated that the principle of original order does not apply to motion pictures and sound and video recordings. It only applies to still photographs. The author therefore rendered irrelevant "…the traditional archivist's concern to discern and perfect an arrangement pattern…" (Leary 1988:111). Harrison (1997:2) realised a need to devise different policies and practices for AV materials, albeit built on existing archival principles and practices (Harrison 1997:2). The author felt that AV materials required different methods of arrangement, organisation, access, security, conservation and preservation. This requires archivists to consider the different policies between various collecting agencies such as museums, libraries and archives. Harrison (1997:2) saw a need to re-examine the concepts which govern the management of AV materials, in particular, and archival materials, in general.

The present researcher believes that there should be some variation in the way the archival principle of provenance is applied to AV materials. For instance, with videocassettes or CDs, one is more interested in the content, the producer and date of production than the originating office. In this regard, the archival principle of provenance may not apply to some AV materials.

Leary (1988:112) advocated a simple, orderly arrangement, such as a numerical system, to facilitate retrieval and therefore recommended item level cataloguing to facilitate access. Davidson and Lukow (1997:133) noted the contradiction between the principle of

provenance and original order in-as-far as news film collections are concerned. Despite the fact that the authors realised a need to arrange films horizontally in their original order, they realised that the order for each series could differ, depending on the pattern of use. They argued that since cans and boxes occupy a lot of space, it would be more cost effective to compile film rollettes into larger reels that occupy less space (Davidson and Lukow 1997:133). Davidson and Lukow (1997:133) realised that such an arrangement would not destroy provenance. Rather, it would enable an archivist to arrange the collection by assigning uniform accession numbers which correspond to a chronological order, thereby saving "precious space, money and time..." (Davidson and Lukow 1997:133). Leary (1988:111) suggested that an appropriate arrangement and descriptive cataloguing should precede preservation. Such an approach facilitates weeding of unnecessary duplicates. It saves archivists the trouble of weeding "...irredeemably poor-quality materials and more careful identification of the items that warrant expensive preservation treatment" (Leary 1988:111).

2.9.4.2.2 Description

Roper and Millar (1999c:76) defined description as "the process of capturing, analysing, organising, and recording information that serves to identify, manage, locate and explain archives and the contexts and record systems that produced them". According to Cox (1992:118), description is done to enable researchers to use the records effectively. It provides intellectual control to the collection, to enable researchers to use the collections effectively (Cox 1992:118; Whitson 1997:139). Description precedes arrangement. This is because the content of the collections must be analysed and described before they are arranged (Davidson and Lukow 1997:139). While arrangement is said to facilitate an archivist's physical control of the collections, description provides concise, thorough and accurate intellectual control of the collections (Davidson and Lukow 1997:139). Desnoyers (1988:90) stated that description is done at two levels; the repository level which lists all the collections held by the repository, regardless of their availability, and collection level, which details "the collection in any national union catalogue of manuscript materials" (Desnoyers 1988:90).

The present researcher disagrees with Leary's (1988:105) assertion that "most guidelines for archival management of any type of audio-visual record will also apply to the other types with slight variations". AV materials differ from non-textual materials in type and nature. They are fragile, and at times, they are not easily accessed due to the technological

obsolescence of equipment. It therefore behoves archivists to have appropriate skills that can be applied to AV materials. The General International Standard Archival Description (ISAD(G)) (Roper and Millar 1999f:76), or the IASA (2004) guidelines on the production and preservation of digital and audio objects, would be more appropriate. The ISAD(G)) are the basic structure for archival description standard for archival materials, regardless of medium or format (Roper and Millar 1999c:76). The ISAD(G) standards were "developed and implemented for the arrangement and description of historical archives" (Shepherd and Smith 2000:5). According to Roper and Millar (1999c:76), the application of the ISAD(G) enable archives to carry out the following activities:

i. Ensure that consistent, appropriate and self-explanatory descriptions within individual archives;

ii. Facilitate the retrieval and exchange of information about archival materials held in individual archives;

iii. Enable the sharing of authority data; and

iv. Make possible the integration of descriptions from different archival institutions into a unified archival system (Roper and Millar 1999c:76).

2.10 Intellectual control over AV materials

Harrison (2004d) opined that intellectual control is a more appropriate term for audiovisual materials than bibliographic control. This is because the latter is commonly used for textual materials, while the former "includes content and physical description to help the user to locate the materials required …" (Harrison 2004d).

Lewis (2005) exposed the risk of item misidentification, which may lead to physical loss of the item or intellectual loss in the description or cataloguing process. For instance, Saye (1987:3) cited cases where bibliographic information was given in different forms, within a given item. Lewis (2005) advised archivists to match numbers or names with containers when recording. He suggested that established rules and procedures for describing audio records should be used in an attempt to maintain the intellectual content. Lewis (2005) concluded that, regardless of the naming system used, one should ensure that individual media and individual containers' identifications match the prevailing system. In addition, the marking system used should meet archival standards. This requires the use of bibliographic formats to control the collections.

Koch (1997:7) and Rogers and Saye (1987:1) explained that the technical complexities of intellectual control for audiovisual materials are due to the characteristics of non-print

materials, the diverse nature of non-print materials and cataloguing practices and procedures. The mere fact that accessibility is restricted makes one question the relevance of audiovisual bibliographies (Koch 1997:6). Nevertheless, Koch (1997:7) stated that detailed cataloguing of AV materials was a requirement, albeit problematic. It entails devising finding aids and setting bibliographic or intellectual standards to facilitate access to the resources.

2.10.1 Finding aids

Finding aids are source documents that lead researchers or information users to the required information (Edgecombe 1993: 248). Finding aids for archival institutions can exist in all formats, including registers, card indexes, guides, pamphlets, books, inventories, optical disks, microfilms and computer databases (Edgecombe 1993:249). This author stated that findings aids range from "a general overview of the archives' entire holdings to descriptions of individual series and to specific items of interest within series" (Edgecombe 1993:249). The information contained in the finding aids should show how and why the information was created, where it was created, the series that were recorded and the relationship between the series and the recording systems (Edgecombe 1993: 248). Lucas (1984:204) advised that such a tool "must be easy to maintain, encouraging updates, changes, and addenda". Lucas (1984) stipulated that potential users should be able to scan and quickly determine whether or not the collection meet their needs. They should be able to locate references to the required items in the finding aid and "to identify precisely that portion of the collection that contains them" (Lucas 1984: 204).

Edgecombe (1993: 249) believed that archivists have an obligation to "maintain a view of the records in the context in which they were created". By so doing, archivists do not merely present their own interpretation of records. Instead, the finding aids ensure maximum flexibility for future users, by enabling archivists to reconstruct the original record-keeping systems (Edgecombe 1993:249). Nevertheless, Edgecombe (1993) observed that researchers experienced some difficulties in relating their inquiries directly to finding aids that are based on provenance. This is due to the fact that most of the inquiries refer to individual or organisational names, dates, geographical areas, subjects or a particular format such as map, plan, photographs and diary (Edgecombe 1993:249). He cautioned archivists to be wary of a gap "between the researcher's information needs and the structure of traditional finding aids" (Edgecombe 1993:250).

Edgecombe (1993:250) advised archivists to bridge the above gap by preparing ancillary aids to assist researchers to link their queries to the creating agencies. Such aids may include indexes, special lists and source analyses (Edgecombe 1993:250). She stressed the need for a well-planned system of finding aids, which enables researchers to retrieve information with minimum assistance from archivists. Ultimately, efficient finding aids lead to maximum utilisation of resources. This translates into improved services to clients through the use of bibliographic standards and cataloguing.

2.10.2 Bibliographic standards

Bibliographic standards enable an archive to have a firm control over its collection. It is a sign of good house-keeping and it ensures that archival materials are available for use.

2.10.2.1 The need for bibliographic/intellectual standards

The need for intellectual standards is a crucial for AV materials, given their complex and fragile nature. Harrison (2004a) urged AV archivists to work on standards and guidelines for their institutions. Maillet (1990:27) opined that the first step in providing access to media is to develop standards for physical description. It is therefore important to provide sufficient information, "to help the user identify appropriate media and make intelligent viewing and purchase decisions" (Maillet 1990:27).

Smith (1993:109) stated that archivists are legally required to respond to requested information within a set time-frame. The IASA cataloguing project was conducted to cover special AV materials. These included musical types such as classical, popular music and jazz and folk and ethnographic music; spoken word such as readings and speeches. The latter would include interviews, oral history, conference proceedings and lectures. Other examples are radio talks, news broadcasts, sport, advertisements and TV and Radio FM simulcasts. Special AV materials include sound effects, actuality, wildlife or scientific recordings/bioacoustics, natural (environmental) sounds, film sounds and any other necessary recordings (Miliano 2004).

The IASA cataloguing rules were tabled as a proposal at a pre-conference symposium, which was held in Helsinki in 1993 (Miliano 2004). The rules were intended to complement other international standards, such as AACR2, ISBD, MARC, and to promote use of computers by facilitating networking between archival institutions nationally and internationally. Adherence to descriptive standards facilitates the preservation of archival

materials in all formats nationally, regionally and internationally. Saffady (1998:53) advocated that electronic records that are generated by video, audio systems or computers be "stored in a manner appropriate to the hardware and/or software that creates, retrieves, edits or otherwise processes the recorded information".

Electronic files need a proper description in order for them to be identified, described, arranged and preserved for future use. This process is carried out by creating metadata, which is "data about data" (De Jong 2005; Malden 2005; Wright and Grimstad 2005). Metadata is the information which adds value and meaning to data, hence making it easy to arrange, describe, manage and share information over time (De Jong 2005; Webb 2004:36; Wright and Grimstad 2005). De Jong (2005) stated that metadata refers to electronic sources that are available within a network. It is an attempt to standardize essential information in a digital environment. According to Webb (2004:36), preservation of metadata entails keeping a record of all information about a digital object, so that it can be presented appropriately to the user and, at the same time, it is easy to manage over time. It is common to find metadata on the Internet according to the area or discipline such as library information, medical or AV catalogues. The latter is of interest to AV archivists (De Jong 2005).

2.10.2.2 Cataloguing AV materials

A catalogue is a pointer to the collections in an archive. Harrison (2004a) explained that the "task of cataloguing is central, for the archive's catalogue is the key which unlocks the collections of an archive and makes them available to staff and users alike".

Malden (2005) identified key data elements that should apply to all AV materials, whether the content is analogue, digital or on-line. The cataloguing process should be based on the following prerequisites: a definition of the data fields, international standards such as Dublin Core, MARC, WORM, validation key data elements, title (working title, main title, series title, sub-title, version title, item titles, news story slugs and photo titles), date, unique identifying number, duration (time or footage), monochrome/colour, copyright and important elements (producers' rights, territory rights, number of showings, extract re-use rights, artists/contributor rights, music rights, photo rights, footage rights, other media rights).

According to Malden (2005), subject catalogues for AV materials should be detailed enough to ensure speedy access to AV collections. The subject catalogue should contain the following details:

i.   Summary entry;

ii. Analytical entry-shot list;

iii. Timings or time code, which are essential to find a specific shot or sequence in a long programme and are also an essential part of a digitised catalogue;

iv. Order of shotlisting-chronological/sequential or thematic or actuality/interviews/ pieces to camera; and

v.   Shot types.

Malden (2005) advised archivists to use genres in the classification of the programme as a whole. Malden (2005) believed that the use of genres satisfies requests such as all music performance programmes or all arts documentaries. This should include people, documentation of holdings, components and accession numbers, i.e. film prints/tracks, and digital files. Malden (2005) suggested that suffixes such as MPEG (Motion Picture Expert Group) or JPEG (Joint Photographic Experts Group) are used to differentiate between different formats when accessioning digital files.

Miliano (2004) and McMullen (2004) stated that FIAF published the IASA Cataloguing rules for audiovisual media covering audiovisual materials and sound recordings. Their report stipulated the elements listed in Appendix IV. The FIAT/IFTA Minimum Data list (MDL), reflected in Appendix V, was published in 1992. It has been proven to provide standard analogue descriptive cataloguing systems for audiovisual archives, internationally (including archives outside television and film) (Miliano 2004). It was published in various languages, including English, French, Spanish, Portuguese, German, Swedish Italian and Dutch. The MDL is arranged in three groups (see Appendix V). These include:

- identification data - title, date, number, producer, "author";

- technical data - content, keywords, carrier, format, language, location of production, dates of broadcasting or shooting; and

- additional technical information and rights - origin of materials, contracts, copyrights and property.

Other international cataloguing rules include FIAF Cataloguing Rules for Film Archives and Dublin Core. Wright (2005) pointed out that Dublin Core consists of coverage, description, type, relation, source, subject and title. Wright (2005) stated that Dublin Core has the following advantages:

i.   The format is simple and can be extended beyond local fields;
ii. It is internationally recognised;
iii. Helps users to find things;
iv. Its structure makes it possible for it to be directly used in websites and databases;
v.   It is maintained in a stable environment; and
vi. Its future development seems assured.

However, despite attempts to simplify the use of AV materials through bibliographic standards, problems of cataloguing AV materials prevail. Some of the problems are discussed below.

2.10.2.3 Problems of cataloguing AV materials

The complex nature of AV materials makes cataloguing problematic. For instance, Harrison (2004d) pointed out that films and video are 'blind'. This means that one needs a machine to know what the media contains. Harrison (2004d) explained that the fact that the above AV materials are 'blind' means that "more has to go into the descriptive entry, especially in the 'content' area" (Harrison 2004d). Harrison (2004d) suggested that still visuals differ from sound recordings in some respects. The former do not need description, since they are only seen.

Harrison (2004d) stated that a lack of standard numbering systems, standard descriptions and inadequate cataloguing rules makes it difficult to locate information about AV materials. Rogers and Saye (1987:17) categorized the problems of cataloguing non-print materials into four groups, namely the characteristics of the materials, the diverse nature of non-print collections, the characteristics and needs of users and cataloguing practices and procedures. Harrison (2004d) attributed the problems to a "lack of a single national organization with a responsibility for collecting audiovisual materials, and a lack of a legal deposit system for AV materials" (Harrison 2004a). These problems are aggravated by the speed with which new recordings are released, the time lag between the release of new styles of music and the creation of Library of Congress (LC) subject updates, the mixture of format types and "the global cross-pollination of music styles…" (Simpkins 2001:2).

This author concluded that cataloguing popular music posed challenges to experienced cataloguers. In the case of cataloguing video recordings, Weitz (2001:70) ponted out that the terms 'publisher', 'producer', and 'distributor', are used loosely. This means that the cataloguer should compare information in the publication, distribution and other areas to "determine if the item in hand has the same (loosely-defined) 'publisher', information as a record found online" (Simpkins 2001:56).

Weitz (2001:68) said that the problem of cataloguing television 'series' as television 'series' differ from bibliographic 'series'. For instance, a television 'series' can be anything from a multi-part dramatization of a novel to a weekly sitcom, to an ongoing regular programme of unrelated hour-long documentaries presented under the banner of a 'series' (Weitz 2001:68). The author explained that in the context of broadcast or cable television, these are all 'series' in the everyday sense, but not necessarily 'series' in the bibliographic sense.

Weitz (2001:69) recommended the use of individual entries under each distinctive title and a series entry in cases where the television 'series' also turns out to be video publisher series. In cases where an episode lacks a distinctive title, Weitz (2001:69) advised cataloguers to use the appropriate sub-field in the series title of the AACR2 rules. Olson (1992:87) recorded the difficulty of cataloguing conference proceedings on sound cassettes. The problems include abbreviated titles on labels, determining names of speakers titles of the speeches, and general information about the conference. Olson (1992) suggested that in cases where bibliographic information could not be obtained in the OCLC for titles, as given on the labels, the person who ordered or donated the tape could be contacted. Olson (1992:87) urged cataloguers to listen to the tapes in order to capture any clues such as actual title, subject matter of each speech, speakers' names, date of the presentation and venue of the meeting.

Olson (1992:87) advised a search of the OCLC for further information about the speakers. Milan (1984:183) concluded that the solution to the problem of bibliographic control was not, universally accepted standards, or procedures adopted by national institutions. The author asserted that the solution depended "on the institution's ability to assess its resources, the content and current state of its collections". Nevertheless, it is important to observe universally accepted standards for AV materials.

2.11 Preservation of AV materials

The need to preserve AV materials has been stressed by various authors, including De Lusenet (2002), IASA (2004:4), Ngulube (2002a:117), Olson (2001:156) and Ward (1990:110). This is because AV materials are more fragile than textual prints and thus need more care.

According to Olson (2001:156):

> all types of audiovisual materials deteriorate-colours change or disappear, film becomes brittle and cracks, adhesives holding particles of magnetic media to their film backing loosen and the particles fall off and the backup gets brittle and breaks.

The above statement, which spells the dangers that AV materials are exposed to, is an urgent wake up call to all archivists. Ngulube (2002a:127) stressed that the various archival formats, coupled with technological developments, posed a great challenge to the archival profession. Olivier (1999:10) had earlier lamented that preservation had reached a crisis point in South Africa. Nevertheless, Olivier (1999:10) enthused that South Africa had boosted its conversion and restoration capacities in response to the crisis. Ngulube (2002a:128) made similar observations, although he wondered if digitisation could be applicable to sub-Saharan archival institutions.

Kathpalia (1985:479) felt that preservation did not pose major problems before the Middle Ages. Kathpalia (1985:479 referred to historical records that were dug out of pyramids. One could argue that, in those days, most of the records were produced on non-print materials, which had good durability. The information technology (IT) era has however, brought about a mass production of information, mostly in digital format. "It has influenced the way in which recorded information is created and managed..." (Arden 2001). This explains why archivists should consider digitising their collections. Nevertheless, digitisation of archival collections should be done cautiously. Ngulube (2003a:79) cited Lehmann (1996), who warned that digitisation was not a panacea for all of the problems of preserving documents. Ngulube (2003a:79) stated that "relying on digital information does not minimize preservation problems; in effect it only increases them". Ngulube (2003a:79) cited Smith (1999), who concluded that digitization has aggravated the preservation problems. Despite the shortcomings of digitization, the current

study believes that transferring AV materials to more durable formats is an aspect of preservation management.

Buchmann (1999:5) viewed preservation not only as a technical issue but also as a policy matter for archivists. This is because the ease with which information is created, copied, updated, transmitted and stored complicates decisions concerning disposition of information (Arden 2001). Buchmann (1999:5) felt that preservation by substitution requires planning appropriate technologies, providing microfilming or scanning equipment and installing technical facilities in the search room to enable researchers to read microfilm, microfiche or any digital images. Harrison (1997:4) stressed that the nature of AV materials necessitates their transfer from one format to another for preservation purposes. According to IASA (2004:4), the purpose of preservation is to ensure that approved current and future users have access to the collections, "without undue threat or damage to the audio item". The need to preserve archival materials could not be expressed in a better way than Ward's (1990:110) statement that "the patient should be kept alive as long as possible in case a cure is discovered". Similarly, Roper and Miller (1999i:36) defined preservation as "the totality of processes and operations involved in the protection of records and archives against damage or deterioration". The processes include maintenance, examination, conservation and restoration. Preservation also covers reformatting and digitisation.

2.11.1 Reformatting

Reformatting is a preservation strategy (Ngulube 2003a:77). It "is generally associated with safeguarding materials on a medium that is threatened by instability or technological obsolescence, it can also be used to shift from original documents" (Ngulube 2002a:119). Harvey (1993:96), Dollar (2000:27) and Hunter (2000:57) viewed reformatting as a standard preservation procedure, which entails copying material from one medium to another. This is done to enhance continued access through microfilming, photocopying or digitisation (Ngulube 2003a:77; Ngulube 2002:119). Other reformatting processes include migration and emulation (Dollar 2000; Hunter 2000; De Lusenet 2002). "Reformatting of electronic records occurs independently of the software application environment used to create them" (Dollar 2000:59).

Ngulube (2002a:119) stated that "while reformatting may preserve the content of a document, it does not always save the actual object". Similarly, Wato (2002:127) had

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misgivings about reformatting. He said that copying from one medium to another "only works when the information is encoded in a format that is hardware and software dependent" (Wato 2002:127). Wato (2002) explained that software obsolescence renders previous versions obsolete. This implies that "newer versions are not always compatible with the earlier ones" (Wato 2002:127). Ngulube (2003a:77) raised the fact that reformatting raises intellectual property issues. Wato (2002:128) saw a need for archivists to uphold the archival principle of provenance. Wato (2002:128) suggested that "to preserve the integrity of an information object, digital archives must preserve a record of its origin and chain of custody". Despite the above shortcomings, Ngulube (2002a:119) urged archivists to make informed decisions, as "reformatting remains the only feasible long-term strategy for dealing with the preservation problems posed by deteriorating media". The different reformatting strategies which are applicable to AV materials are discussed below.

2.11.2 Converting

Converting is a process involves the automatic import or export of electronic media from one software environment to another, without losing the structure, content or context, albeit with some alteration to the underlying bit stream (Dollar 2000:65; Hunter 2000:57). Conversion is carried out to address challenges that archival repositories are faced with. These include various software packages and software formats that are used to create and use electronic records, electronic records that are software dependent and obsolescence, which leads to a replacement of older software by newer operating systems. Wato (2002:127) stressed that copying of material could only be carried out successfully "if information is encoded in a format that is hardware and software independent". This means that "storage repositories will periodically have to transfer electronic records from their current software environment to newer ones" (Dollar 2000:65). Such a situation poses problems for those archival institutions that cannot afford to create and maintain a digital collection (Wato 2002:126). Ngulube (2003a:79) had reservations about digitisation when he identified some of the risks involved digitisation, which include obsolescence of electronic data, hardware as well as cost. Nevertheless, Ngulube (2003a:79) recommended data emulation and migration processes in an endeavour to maintain the integrity of data.

2.11.3 Migration

Migration is the transfer of electronic records from one hardware or software configuration to another, or from one generation of computer technology to another (Hunter 2000:58; Dollar 2000:30; Webb 2004:38). It may entail the transfer of information to a more stable non-digital medium such as microfilm. This process entails refreshing or copying of digital information without changing it, though the copy is not an exact replica of the original (Webb 2004:38). According to Dollar (2000:30), the process of migration includes "copying and reformatting digital storage media, replacement of storage devices, and transfer of electronic records from one technology application to a newer one without loss of records integrity".

Hunter (2000:2) had reservations about the longevity and reliability of migrated objects or archival materials. De Lusenet (2002) saw a need for a legislative framework to address issues regarding intellectual rights, legal deposit, access, confidentiality and security. This is because the legislation that applies to textual materials are not applicable to the digital environment. For instance, it may not be possible to apply the legal deposit requirement to some types of digital media (De Lusenet 2002). Amidst all this, De Lusenet (2002) advised governments and policy-makers "to be aware that preservation of digital heritage is an urgent issue and that solutions cannot be found overnight". It is for this reason that research is under way to address the problems of preservation of digital information. The research includes the emulation strategy, promoted by Jeff Rothenberg and Steve Gilheany (Hunter 2000:6; De Lusenet 2004).

Dollar (2000:30) viewed shortcomings of migration as a preservation technique. Dollar (2000:30) suggested non-migration options. These are devising policies and procedures that aim at reducing degradation of structure, content and context; creating a surrogate of the electronic record, capturing the information content without reproducing it in its full original form; and transferring the electronic records to microfilm or paper while maintaining the structure, content and context of the records. Dollar (2000:30) felt that the above non-migration options improve the records' authenticity, while eliminating the problem of software obsolescence.

2.11.4 Emulation

Emulation is a process of mimicking software or hardware in order to "preserve the functionality, of and access, to digital information which might otherwise be lost due to technological obsolescence" (Webb 2004:39). Webb (2004:39) predicted that emulation

was a viable strategy to ensure access to digital information in the future. This is because, unlike migration, the original data is not altered. Nevertheless, the technique has not been tested. In an effort to minimise deterioration, and eventual destruction, of audiovisual materials, it is important that archivists understand the causes of deterioration and methods that can be used to curb the deterioration process.

2.11.5 Digitisation of AV materials

Wato (2002:126) defined digitisation as "the conversion of paper records into machine-readable format through scanning of the original document and storing the images in magnetic or optical media". At the sixteenth General Conference of ESARBICA, Yahaya (2002:64) presented a keynote address in which he highlighted the immense benefits of digitisation as a preservation strategy. The benefits include ability to preserve original material and make it "accessible to the widest possible audience" (2002:64). Hughes (2004) and Ngulube (2002a:73) shared these views.

Barata (2004:63) cautioned archivists to be involved early in the life-cycle of records if they are to have an impact on the digital era. Barata (2004:63) suggested that, in order for archivists to be actively involved in the current and semi-current stages of the life-cycle of records, the archive would take responsibility for the records management programme of its parent organization/or the creating organization. Jones and Beagrie (2003:95) realised a need for a preservation strategy for digital resources. Jones and Beagrie (2003:95) wrote that such a strategy would ensure maximum efficiency between data creation, preservation and use.

Frambourt (1986:115) foresaw a need to restore and preserve recording material when he observed that age renders radio recordings and television programmes obsolete. They observed a loss of image characteristics when some films on cellulose nitrate base are transferred onto more recent film or video. Frambourt (1986:115) stressed that there is a need for copies to be made through optical or electronic processes. Nevertheless, Wato (2002:128) advised archivists to ensure that digital materials preserve integrity and provenance. He believed that digital media should be able to establish the identity of individuals "who are the sources of objects and to trace the chain of custody to arrival in the archives" (Wato 2002:128). The author was wary of the ease with which digital information could be manipulated. In view of this, Wato (2002:131) saw a need for archivists to devise stringent measures to maintain integrity and reliability of digital

objects. Failure to do this could lead to distortion or disappearance of the digital objects (Wato 2002:131).

Hughes (2004:9) reported that many cultural institutions digitise unique and fragile materials because of their value. Hughes (2004:9) revealed that audio recordings of the US Supreme Court proceedings could be accessed electronically. Hughes (2004:9) felt there was a the possibility of integrating digital images or texts with other materials to create enriched archival materials similar to those at the Blake and Rossetti Archives at the University of Virginia's Institute for Advanced Technology.

Digital technology can be accessed in spoken word or sounds. Hughes (2004:10) cited the Vincent Voice Archives, in the U.S.A., as an example of this technology (Hughes 2004:10). The National Archives of Seychelles planned to digitise all their AV collections by the end of 2006 (Seychelles 2006). Hughes (2004:209) cited the Columbia University Libraries that had misgivings about digitisation. The Columbia University Libraries argued that digital images could not replace original materials. In that regard, digitisation can only be used through surrogates to lessen or eliminate any possible risk to documents. The Columbia University Libraries therefore concluded that digitisation is not a viable preservation medium (Hughes (2004). In view of this, the problems of digital preservation are examined below.

2.11.6 Problems of preserving digital materials

Ngulube (2003a:78) pointed out that digitisation was not a panacea to all preservation problems. He felt that digitisation increased preservation problems. Ngulube (2003a:79) advised archivists to consider digitisation as one of the tools of a preservation toolkit. Klaue (1997:25) stressed that there could be no audiovisual inheritance unless all the technical problems associated with them are recognised and overcome. The technical problems of AV are attributed to their nature and the IT era, which has brought about "a new and complex environment, not only the media are new, the contents and the means of distribution have also changed" (De Lusenet 2002).

Barata (2004:64) believed that long-term preservation of digital records posed a major challenge to archivists. Technological obsolescence is a result of technological revolution. Newer technologies replace older, established storage media, operating systems and software applications (Dollar 2000:65). Consequently, "programmes and machines

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succeed one another so quickly that it is a matter of years, rather than decades, before materials become inaccessible as a result of compatibility problems" (De Lusenet 2002). The technological obsolescence therefore renders information, which relies on obsolete technologies inaccessible, resulting in a need to migrate information onto more durable up to-date-medium (Dollar 2000:65; De Lusenet 2004).

Various authors, such as Bereijo (2004a:326), Bereijo (2004b:374), De Pew (1991:189), De Lusenet (2004), Muir (2004:74), Ngulube 2003a:63, Schuller (2004b:113), Webb (2004:35) and Wienand (1997:84), examined the problems of preserving the new media. Strategies to deal with technological obsolescence include copying or refreshing from old storage media to new media, migration of records from one software environment to another, emulation of obsolete systems and the preservation of obsolete technologies (Dollar 2000:58). These strategies were highlighted in the previous section. Nevertheless, Webb (2004:38) cited Rothenberg (1998), who pointed to the high costs of migration. The latter was wary of the enormous efforts required to support migration efforts over long periods of technological change. Ngulube (2003a:161) said that digital surrogates were subject to decay, hence "long-term costs, whether of re-scanning the material or moving the existing digitised images to new platforms before they become unreadable, could be prohibitive" (Ngulube 2003a:161). He advocated that the best approach to the provision of access to archival electronic records was to retain those records within a technological environment. That way, one can be assured of accessibility to the records in question, authenticity and as conformity with technological developments (Ngulube 2003a:161).

Kenny and Conway (1998:74) identified the following disadvantages associated with rapidly changing technology:
  i.   Obsolescence and incompatibility of software and hardware;
  ii. Lack of standards for image capture, file format, compression and transmission;
  iii. Lack of experience with library/archival applications; and
  iv. Digital files are vulnerable to loss as they are not eye readable. This means that users are solely dependent on system configuration to "read" the digital files (Kenny and Conway 1998: 74).

Klaue (1997:27) realized a need for regional co-operation when it comes to maintenance of AV materials, because "not every country can provide for itself materials and technical conditions for the conservation of audiovisual materials" (Klaue 1997:25). Other strategies

that prolong the preservation of archival records (including AV materials) are risk assessment and risk reduction. These are discussed below.

2.12 Disaster management

Cannon (2003:47) cited Mansell (2000), who defined risk assessment as a process of "collecting, organising and analysing information about risks". A risk management plan or programme is when this information is used to develop strategies to counter risks. This is the first step in developing a disaster plan (Cannon 2003:47). Risk assessment is a prerequisite to security procedures in any archival repository.

Smith (1993:132) explained that risk management entailed a reduction of potential liabilities which could exist in the record-handling systems. It requires archivists to define decisions that are discretionary and which do not expose staff or employers to adverse situations. Archivists would be required to define those decisions that require a more systematic approach and professional advice. Additionally, Smith (1993:132) pointed out that risk management could also apply to instances where certain information may harm employees. Such a situation would require a concerted effort on the part of archivists to critically explore all aspects of retention or disposal. For instance "it is quite possible that, although certain documents may be harmful in one situation, they may be absolutely vital in another" (Smith 1993:133). Smith (1993) felt that the application of risk management to archival processes requires that expectations, legal requirements, ethical principles and administrative practicalities are thoroughly assessed, to bring about a balanced and credible programme (Smith 1993:133).

"Disaster management is planning and being prepared for the unexpected…in dealing with disasters effectively as they occur" (Mathews 2003:3). Roper and Millar (1999c:5) felt that it was not possible to prevent many disasters but their effects could be curbed. Roper and Millar (1999d:5) advised organisations to identify and assess possible risks to the buildings. These authors warned that a risk could become an emergency if it happens unexpectedly. Thus records should be protected "against everyday threats such as mildew, pests, rodents, mould, light, dust, hazards, chemicals and improper humidity and temperature controls" (Roper and Millar 1999d:6). They further suggested that risk assessment should be preceded by an emergency plan. The plan should stipulate policies and procedures which an organisation should use during an emergency or disaster. The plan ensures that "the right measures are taken at the right time in the event of an

emergency or disaster" (Roper and Millar 1999d:33). The plan also helps organisations to stabilise and recover damaged materials (Roper and Millar 1999d:33). Roper and Millar (1999d:1) proposed that the emergency plan should feature readiness, which is careful planning in minimising the risk of a disaster arising. The plan should constitute preventive measures, to forestall emergencies or disasters, and strategies to deal with disaster if they occur.

Ngulube (2003a:108) and Vumbunu (2001:123) believed that disaster plans are a key to disaster management, as they have a catalytic effect on the safety and security of materials, the repository and human beings. Ward (1990:104) and Vumburu (2001:123) stressed the need for a written disaster plan. Ward (1990:104) opined that a disaster plan should reflect potential hazards to the collections and preventive measures to be taken. Lewis (2005) stressed that archivists should be concerned about how various recording media, and their matching equipment, are handled to eliminate or minimise potential damage to the media and their equipment. Despite the emphasis put on disaster preparedness by various authors (Ngulube 2003b; Vumbunu 2001; Ward 1990), Moyo (2002:111; Vumbunu (2001:122) revealed that the National Archives of Zimbabwe (NAZ) did not have a disaster plan. However, Chida (1994:31) earlier pointed out that, due to financial constraints, the NAZ focused on disaster prevention and protection, rather than on costly recovery. Chida (1994:31) reported that the NAZ disaster plan concentrated on theft, water, fire, biopredation, war and bomb threats.

Ward (1990:104) suggested that detailed instructions on what to do in the event of a fire or a flood should be accompanied by staff training. Roper and Millar (1999d:41) and Ward (1990:104) advised archivists to ensure that equipment that will be needed in the event of a disaster is readily available. Roper and Millar (1999d:46) saw a need for listing the emergency equipment and supplies, as well as possible external suppliers. Harvey (1993:99) stated that most disaster plans were in four parts, namely prevention, preparedness, reaction and recovery.

2.13 Building design
According to Buchmann (1999:5), preservation has a direct bearing on the planning and construction of all areas of an archive building. Schwirtlich (1993a:84) stressed that an archive building should "be secure, clean, temperate and protected from violent swings in climate" (Schwirtlich 1993a:46), regardless of type of structure/building. Fortson

(1992:26) recommended concrete buildings, which can withstand windstorms with less damage. Fortson (1992:27) cited Leighton, who advocated the use of composition tar and gravel roofs, tile roofs or shake roofs. Fortson (1992:27) cautioned against the use of flat roofs, "since dirt and debris can accumulate on them, leading to retention of water and deterioration of the roofing material".

Fortson (1992:28) advised archivists in coastal areas, which are prone to tornados, to use wooden frames and impact-resistant glass. Fortson (1992:28) recommended the installation of auxiliary sources of electricity, such as a reserve supply of flashlights and battery-powered radios. Tregarthen (1987:9) suggested that the basement area should be at least 3-5 cm off the ground. He recommended that "all possible areas of threats (such as gutters, drain pipes and drains) should be checked as soon as possible" (Tregarthen 1987:9). Fortson (1992:28) discouraged the use of carpeting in stack areas, because carpets retain water. He stressed that proper drains should be provided for all stack areas, backed up with routine inspections to ensure that they are clear of debris. Additionally, water alarms should be placed in areas which have water problems.

Mazikana (1997/98:145) reported that many archival buildings in Africa were inadequate. Nevertheless, as indicated in Chapter 4 and Chapter 5, archival buildings contribute to preservation problems only in ESARBICA countries. Other problems include equipment that maintains temperature and humidity, appropriate and adequate light, untrained staff, abuse and mishandling of archival materials and hazards such as biological agents, dust, smoke and natural disasters.

2.14 Environmental control

Kathpalia (1985:480) stated that proper environmental conditions were required to ensure longevity of records. The storage area should be free of biological pests, light, extreme temperatures and humidity, atmospheric pollution and dust. Kathpalia (1985) advised that, in order to meet the above requirement, archival materials should be housed in an appropriate environment. This is more crucial for AV materials than textual documents. Schuller (2004b:113) realised that each detail of audiovisual document is potential information and any damage leads to loss of information. The author observed that a speck of mould could cause a significant loss of information or unreadability to an AV carrier.

Schwirtlich (1993:47) grouped environmental hazards into temperature and relative humidity, vermin and insects, dust, light, water and fire. Weber (1997/98:340) added mishandling to the above list. Weber (1997/98:340) stated that a large amount of damage is caused by human incompetence leading to mishandling.

2.15 Controlling temperature and relative humidity

The control of environmental conditions is an important aspect of management and preservation of AV materials (Bereijo 2004b:374). This is why Feather (1996:36) earlier reported that:

> all organic materials have a preferred temperature at which their useful life
> is maximized...there are certain precautions that have to be taken to ensure
> that even though unpreventable change will happen, the usefulness of the
> object will be preserved.

Feather (1996:40) believed that controlling storage temperatures was more critical for non-textual media. Equally important is the need to control RH, since "the wrong relative humidity can lead to serious irreversible damage to storage materials" (Feather 1996:40). Feather (1996:40) saw a need to observe ideal storage temperatures and RH for each medium. Kathpalia (1985:482) stated that heat and moisture "cause most damage in tropical and subtropical countries". Control of temperature and humidity is therefore a prerequisite to preserving AV materials. Roper and Millar (1999i:16) pointed out that lack of environmental controls is a security hazard to the holdings. Weber (1997/98:339) stressed that endogenous and exogenous factors threaten the continued existence of archives. Endogenous (mostly chemical) factors are intrinsic to the information medium. Exogenous factors act on the media or text from outside. Weber (1997/98:339) emphasised that the combined action of the above factors causes damage to archival materials. He stated that the degree and rate of endogenous deterioration are greatly affected by exogenous factors such as temperature, humidity and oxidizing or acid-forming gases.

Chida (1994:27) reported that archival institutions in tropical regions were faced with harsh environmental conditions, making it difficult for them to meet the recommended climatic controls. Chida (1994:27) concluded that "preservation management ...has to be promoted to foster the preventive aspects of conservation and to off-set the inhibitive costs of restoration". The author warned that tropical countries that face harsh climatic

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conditions cannot afford to acquire or maintain air conditioning equipment (Chida 1994: 27). He observed a defunct air conditioning system at NAZ and a roof that had leaked for several years without maintenance (Chida 1994: 27). Moyo (2002:110) later confirmed these observations when she revealed that the NAZ lacked a preservation programme. Thus, "documents of the whole nation were deteriorating each passing day" (Moyo 2002: 110).

Qobo (2004:101) depicted a different picture of the Mofolo Library of the National University of Lesotho, which housed archival materials. The author argued that the library was suitable to house archival materials because of the moderate climatic conditions in Lesotho. "The monthly average temperature in Maseru is 8°C in the coldest months of June and July and is highest at 24°C in January." This negates Chida's (1994:27) generalisation above, that archival institutions in the region face harsh climatic conditions. Nevertheless, the present researcher believes that, since different AV materials have different climatic requirements, each country should strive to meet the set standards, regardless of the prevailing climatic conditions in a particular country.

Schou (2004) felt that preservation of films without air conditioning is impossible in hot and humid climates. To solve the humidity problem, Schou (2004) recommended sealing films and magnetic tapes in vapour-tight bags. The author advised that sealing should be carried out after materials have been stored in an environment of approximately 20°C (68°F) and 30-50% RH. He suggested that this should be done until the water content stabilises. He recommended a quicker way of solving the humidity problem in hot and humid countries by using a conditioning apparatus, 'FICA', which is produced by the Swedish Film Institute (Schou 2004). The author cautioned against sealing acetate film in bags "unless it is absolutely stable with no sign of decomposition". This is because acetate films emit acetic acid during decomposition, which accelerates the decay of the film. This process is aggravated by acid, which can be trapped in the sealed bag (Schou 2004). It is for this reason that the author cautioned against wrapping nitrate film in plastic bags.

Swartzburg, Bussey and Garretson (1991:124) pointed out that "an HVAC system that too rigidly controls the temperature and humidity level of a building throughout the year can also cause serious problems" The authors believed that fluctuations of about 10 to 12 degrees Fahrenheit in temperature and 10% to 15% in humidity were acceptable. Nevertheless, the need to protect archival materials from climatic changes is not in

question. It is therefore necessary to examine the standard control measures in an effort to determine the most appropriate climatic standard for AV materials in the ESARBICA region.

2.16 Recommended standards for storing AV materials

Bereijo (2004b:376) noticed a lack of consistency in recommended temperatures and humidity. He documented "a disagreement about the environmental conditions in which the different types of materials are to be kept" (Bereijo 2004b:376). Buchmann (1999:7) suggested that figures for storage conditions should relate to specific archival materials, depending on whether or not the material "in question is available for research or kept largely untouched in the stacks as an archival copy" (Buchmann 1999:7).

2.16.1 Temperatures and humidity

Despite the fact that the British Standard (BS 5454) recommendations for storage of archival documents were frequently cited, Buchmann (1999:7) stated that archivists did not seem to reach an agreement on precise standard temperature and humidity figures for AV materials. Buchmann (1999:7) questioned some figures in the BS 5454 standards. He referred to other publications such as Guidelines for the preservation of microforms and International standard: document storage requirements for archives and library materials (ISO/DIS 11799), which had questionable climatic conditions (Buchmann 1999:7). Table 3 reflects the different levels in temperature and RH prescribed by various authors.

Table 3: Climatic conditions recommended for AV materials

Views by Authors	Archival Buildings		Photographs		Video discs		Magnetic media		Films and Microforms		Slides	
Source	Temp °C	RH %	Temp °C	RH %	Temp °C	RH %	Temp °C	RH %	Temp °C	RH %	Temp °C	PH %
Gordon and Wright (1984)	–	–	18-20	40	18-24	40-45	18-21	40-45	18	40	18-21	35-45
Roper and Millar (1999)	18-20	35-40	0-15	30-35	–	–	18-20	40-50	–	–	–	–

Views by Authors	Archival Buildings		Photographs		Video discs		Magnetic media		Films and Microforms		Slides	
Swatzburg, et al (1991)	21	45-55	–	–	–	–	–	–	–	–	–	–
Harvey (1993)	20	50	–	–	–	–	–	–	–	–	–	–
Bereijo (2004b)	–	–	–	–	–	–	5-10	30	–	–	–	–
Bereijo (2004b) cited Wheeler	–	–	–	–	–	–	5-22	20	–	–	–	–
Bereijo (2004b) cited Bogart	10.5	62	–	–	0-10	20-40	–	–	20	30-40	–	–
Wiener (1987)	–	–	–	–	–	–	–	–	17-20	30-50	–	–
Roberts (1993)	–	–	–	–	–	–	–	–	0-10	20-40	–	–
Schou (1997) cited FIAF	–	–	–	–	–	–	–	–	4 +-1	50+-2	–	–
Schou (1997)	–	–	–	–	–	–	–	20-50	16 +-1/-5+-1	30-60/30-39	–	–
Walker (1987)	–	–	–	–	–	–	–	–	21	30-50	16-21	15-40
Schabert (1987)	–	–	–	–	18-23	–	–	–	–	–	–	–
Yerkey (1987)	–	–	–	–	–	–	10-48	40-50	–	–	–	–
Defilice (1987)	–	–	18	30-40	–	–	–	–	–	–	–	–
Coleman (1987)	–	–	–	–	–	–	–	–	–	–	–	–
Jones and Beagrie (2001)	–	–	–	–	–	–	–	–	21	50	–	–
Kathapalia (1985)	20	45 – 55	–	–	–	–	–	–	–	–	–	–

Kathpalia (1985:482) found no uniformity in temperatures and RH throughout the world. This is reflected in Table 4.

Table 4: Required temperatures and RH in archival buildings

Country	Temperature (^{o}C)	Relative Humidity (%)
Canada	17	50 – 55
U.S.A	20 – 24	46 – 54
Malaysia and Singapore	21 – 24	50 – 65
Europe	14 – 21	40 – 65

Source: Kathpalia (1985:482).

With such varying environmental storage requirements for AV materials of different formats, Harvey (1993:86) recommended ideal levels of $20^{o}C$ and 50% RH for multi-purpose repositories. Considering that the climatic conditions differ from country to country, the present researcher believes that establishing international standard temperature and humidity conditions for all countries is a myth. Rather, Kathapila's model, illustrated in Table 4, could be extended to different countries, including tropical countries.

Bereijo (2004b:374) recommended that 'ideal levels' should be based on the format of the AV materials and that different formats should be stored in different buildings, which should be well-ventilated to minimise the detrimental effects of nitrogen dioxide. Bereijo (2004a:325) warned that the degradation of acetate and cellulose nitrate could endanger photographic materials and human beings. He cautioned that the materials were "hazardous to health, causing respiratory irritations and skin and eye injuries" (Bereijo 2004a:325). Kathpalia (1985: 485) added that the recommended climatic conditions were not ideal for prolonged human occupation.

Bereijo (2004a:326) illustrated the danger of cellulose nitrate films by referring to a fire which destroyed the Fergusin film exchange building in Pittsburgh in the U.S.A in 1991. The fire resulted from decomposed nitrate films. Similar fires destroyed the National Archives in 1977 and the George Eastman House in 1978, in the U.S.A. Bereijo (2004a:326) named similar disasters in France, where the Cinemateque Francaise warehouse was destroyed in 1982, and in Mexico, where the Library of Congress was

destroyed in 1993. In response to the disasters, Bereijo (2004a:326) referred to a set of norms, for storing and handling cinematographic cellulite nitrate films that were published by the National Fire Protection Association (NFPA 40).

Bereijo (2004a:325) suggested that workers should use neoprene gloves and protective clothing. He cautioned workers against the use of contact lenses and breathing masks in areas where cellulose nitrate films are stored. This would necessitate moving the materials from one environment to another for public consultation to make an allowance for materials to re-acclimatize before they are used. For instance, colour photographs, which are stored below room temperature, ought to be put in another room "for their gradual raising and lowering again for use" (Roper 1982:107). The author explained that such a process is carried out to avoid sharp temperature changes, which may damage the materials. The process would incur additional costs.

Chida (1994:27) bemoaned the fact that efforts by most of ESARBICA member states to maintain the recommended environmental conditions were curtailed by limited financial resources. Harvey (1993:85), however, argued that lack of resources should not be used as an excuse for neglecting archival resources.

2.16.2. Equipment used to protect AV materials

Maintaining temperature and humidity levels requires special equipment. Schmidt and Rieck (2000:139) recommended preventive maintenance to prolong the life of equipment and materials. They cited Robert Heinich, Michael Molenda and James Russell (1989), who stated:

> the most fundamental element of effective media use is simply keeping the equipment…running and being able to cope with the snags that always seem to occur at the most inopportune times (Schmidt and Rieck 2000:121).

Kathpalia (1985:489) pointed out that buildings without air-conditioning (particularly in tropical countries), could keep temperatures within a reasonable range by using rooms in the interior of the building or rooms with a veranda around them. The author maintained that, in summer, the installation of room coolers in the windows could maintain temperatures. RH could be maintained by air-circulators, fans and exhaust fans, which counteract the effect of high RH and prevent the formation of stagnant air in the storage

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area (Kathpalia 1985:482). The author recommended the use of humidifiers to control humidity. He suggested that humidifiers should run twenty-four hours a day to be effective. Moyo (2002:110) countered that air conditioning systems were the most effective means of caring for collections, although expensive to install and maintain.

Kathpalia (1985:483) recommended that there was a need for each archive to have equipment for measuring temperature and relative humidity and to keep a record of the readings on a regular basis. Other equipment that could be used to control humidity include dehumidifiers, heat pipes and silica gel (Kathpalia 1985:483). Kathpalia (1985:482) and Harvey (1993:87) advocated a good level of air circulation to deter microbiological agents and other chemical pollutants. Kathpalia (1985:482), Harvey (1993:85) and Trinkaus-Randall (1995:29) advised the use of a functional twenty-four hour air conditioning system throughout the year. This could be achieved through a well-designed and well-maintained HVAC system.

Moyo (2002:110) decried the fact that the National Archives of Zimbabwe did not seem to see the need for an air-conditioning system. Moyo (2002:110) concluded that "maintenance and housekeeping programmes for archival holdings at National Archives of Zimbabwe are inadequate". Trinkaus-Randall (1995:29) recommended the following equipment: a digital 24-hour sling hychrometer/hygrothermogragh, 24-hour digital non-recording thermohygrometers and hygrometers and data loggers. This equipment takes recordings that can be read on a computer (Trinkaus-Randall, 1995:29). The author further suggested installation of dehumidification and humidification, to supplement air-conditioning systems.

Fire extinguishers and smoke, heat and ionisation detectors must be provided to reinforce security to the repository (Trinkaus-Randall, 1995:29). The latter recommended type 'A' fire extinguishers for archival repositories, as opposed to type 'ABC', that are corrosive and have a chemical component. Kahn (1998:24) stated that the operation of the variety of equipment mentioned above requires a trained disaster response team, which is responsible for overseeing the response operation of each archival repository. Kahn (1998:24) stipulated that smoke and heat detectors should have the following features:

   i.   The smoke and heat alarms should be connected to the activation of the sprinkler system;
   ii. Smoke detectors and alarms must ring outside the building, as well as inside;

iii. The sprinklers must be zoned in order to activate one or two sprinkler heads over the fire; and

iv. Sprinkler heads should shut off automatically when the fire is out and reactivate if the fire flares up again (Kahn 1998:24).

If correctly applied, the above measures would improve the disaster response efforts and salvage any collections in danger of destruction. Lekaukau (1989:35) complained that, unlike AV archivists in developed countries, who are well equipped with support equipment and supporting staff, "their counter-parts in developing countries lack the necessary equipment, let alone competent staff, to handle these traditional media" (Lekaukau 1989:35). Feather (1996:36) stated that "modern technology has given us greater control over the internal environmental..." It therefore behoves all archival institutions to acquire basic equipment to protect the cultural heritage from deterioration. It should be noted that natural and/artificial light is also harmful to AV materials (Schuller 2004b:121; Swartzburg 1995:81). It is therefore equally important to control light.

2.17 Damage caused by light

According to Appelbaum (1991:65), "deterioration from light is cumulative and irreversible. No conservation treatment can restore the damage done by light". This author saw a need to protect AV materials from light. Swartzburg (1995:202) advised that tapes and disks should be kept away from heat sources, as exposure to direct heat destroys them. Bereijo (2004a:327) and Swartzburg (1995:202) wrote that all light is harmful to archival materials and causes fading of images. The authors stated that photographs were sensitive and deteriorated easily in the presence of light. Bereijo (2004a:327) warned that ultra-violet light from sunlight and fluorescent light is the most harmful.

Swartzburg, Bussey and Garretson (1991:128) cautioned that materials that had been exposed to natural light were immediately damaged "from the radiant energy that accelerates internal deterioration." These authors advised archivists to use incandescent light, as opposed to fluorescent light. This is because the former does not emit as much ultraviolet radiation as the latter. Lewis (2005) disagreed, saying that, apart from new media discs that contain sensitive dyes, audio media are not sensitive to light. The present researcher tends to disagree with Lewis (2005), as the ultra-violet rays are certain to damage all formats of AV materials. It is therefore important to protect AV materials from direct ultra- violet rays, which are very damaging.

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Despite the advantages of incandescent light, Swartzburg, Bussey and Garretson (1991:128) observed that most archival institutions used fluorescent light because it uses less energy and is cheaper and easier to maintain. Bereijo (2004a:372) advised that ultra-violet radiation levels should not exceed 75 microwatts/lumen (lux). Roper and Miller (1999a:21) recommended the following ideal light levels for archives:

- Less than 100 lux in storage areas, where lights are off when the rooms are empty;
- No more than 100 lux in a reading room or reference area;
- Up to 50 lux when displaying materials.

Swartzburg, Bussey and Garretson (1991:128) recommended that fluorescent light and natural light could be reduced with the use of ultra-violet filters/blinds, which could last up to a decade. They said that ultra violet filters "should be installed in all areas where materials are exposed to both fluorescent and natural lighting" (Swartzburg, Bussey and Garretson 1991:128). Although Roper and Millar (1999a:20) admitted that some filters were poor quality, and thus not long lasting, they advised that, " ideally, records and archives should not be exposed to any light, as long as they are in an environment with controlled temperature and relative humidity." Chida (1994:28) reported that all repositories at the National Archives of Zimbabwe had no windows, while photographic studios, the computer room and the display gallery had light breakers and recessed windows to control sunlight. Dark curtains were used to protect sensitive materials. The reading room was constructed with eaves to control the flow of light into the search room, thereby protecting the readers (Chida 1994:28). Closely associated to light, but more dangerous, is damage by fire and water.

2.18. Damage caused by fire and water

Roper and Millar (1999a:326) stated that fire and water were a threat to archival materials. This is because records destroyed by fire are lost forever, whereas water is equally damaging to records. The authors were quick to point out the irony that the damage caused by fire is usually water damage, due to the fact that water is used to extinguish the flames.

2.18.1 Damage from water

Bereijo (2004b:374) discouraged the use of water sprinklers to fight fires as they cause more damage to the collections. This does not necessarily mean that archivists should relax their efforts to protect archival collections from fire. Rather, this author advised

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archivists to take precautions to protect their collections from water damage. Forston (1992:23) felt that water damage resulting from violet storms was "more prevalent as natural disasters with broad consequences", than damage from fire. Lewis (2005) wrote that reducing the risk of water damage is collateral to physical protection. It starts with site selection as a protection "against acts of nature, eliminating all overhead piping other than possibly a water fire suppression system, and maintaining a sound building envelope, especially roofs, windows, and skylights". Fortson (1992:23) supports Roper and Millar (1999d:7) about the danger of water. Roper and Millar (1999d:7) and Fortson (1992:23) added that water damage includes floods from rains and high tides. Poor building structures, poor drainage, leaking office sinks and malfunctioning air conditioning systems also cause water damage. Roper and Millar (1999d:7) described the long-term effects of water, which lead to the development of mould. Despite the damage that water could cause in the process of extinguishing fire, Ward (1990:95) was in favour of zoned areas, where sprinklers could only be used where smoke or heat had been detected.

Lewis (2005) and Ward (1990:96) recommended the installation of a water detection system and a water emergency recovery plan, which would cater for the media, the equipment, the finding aids and the administrative records. The author warned archivists not to use 'deluge' systems, "where all the sprinkler heads are triggered at once, even in cases where they are not needed". Ward (1990:96) strongly advised archivists to ensure that all detectors and circuits that set off the sprinklers are well maintained. He also advocated the use of gas systems to extinguish fire.

2.18.2 Damage from fire

Roper and Millar (1999c:7) and Fortson (1992:1) rated fire as one of the most damaging hazards to records and archival materials. The authors recorded that fire could result from natural occurrences such as earthquakes, lightning, electrical faults, power failure or arson. Fire could also be caused by "heat and natural combustion damage, as well as smoke and water damage. Ward (1990:104) observed, however, that water was not a serious hazard to sound media. He said that "it is possible to prevent major damage by sealing recordings in water-proof containers". Ward (1990:104) acknowledged the fact that polyester-based magnetic tape could easily disintegrate in water. This means that water can be a serious damage to AV media.

Ward (1990:104) described how high temperatures "can distort, disfigure or melt…sound archive media". While water-damaged recordings could successfully be rescued, heat

damage was irreversible. Ward (1990:104) cautioned against fire disasters in sound archives due to the vulnerability of the recordings. Ward (1990:104) advised archivists to remove potential fire hazards such as "any form of exposed heating or redundant wiring, and any unnecessary combustible material such as furniture, unshelved recordings or paper wor". He suggested that recordings such as cylinders and acetate discs should be given extra protection. Kathpalia (1985:483) acknowledged the fact that "nearly all archives have taken steps against accidental fire by encasing electric wiring in conduits and providing main control switches outside storage areas". Other fire protection devices include smoke detectors, water sprinklers with heat control, water pipes and hoses and automatic dampers in ducts of air-conditioners (Fortson 1992:10; Kathpalia 1985:483).

Tregarthen (1987) saw a need for detailed fire regulations, which should include "aspects of fire precautions, including …the procedures for ensuring staff awareness, and training in use of various types of fire fighting equipment available in the institution". Fortston (1992:8) advised that fire-preventive measures should begin with the building structure. The author suggested that codes for archival buildings should ensure that "basic construction elements meet the guidelines for fire prevention or control" (Fortson 1992:8). The author cited Johnson, who recommended the use of "reinforced concrete, or steel and mansonry with steel structural supports enclosed in concrete…" (Fortson 1992:8).

While Lewis (2005) advised that basements or attics could be used for storage, Roper and Millar (1999e:24) disagreed. The latter maintained that attics and basements are "highly susceptible to fires and to water damage from flooding by rain water." The authors suggested that archives could be built above the calculated 100-year flood level and that staff should be trained not to store archival materials on the floor. Instead, they should use storage furniture, which is raised at least four inches above the floor level. Ward (1990:96) supported this and recommended the use of water, gas, foam and powder to extinguish fire. The dangers of gas as a protective measure are discussed in the section that follows.

2.19 Damage from gas

Ward (1990:96) supported the use of high-expansion foam to smother a fire outbreak. He advised archivists to use foam which does not endanger the collections. Ward (1990) warned that "carbon dioxide is effective but liable to suffocate anyone unfortunate enough to be trapped in the store" (Ward 1990:96). Ward (1990:96) further warned that a CO2 gas system is particularly dangerous, as it can shut off ventilation, unleashing a lethal gas,

which can easily mix with smoke from the fire. This poses a danger to anyone in the area. This then explains why fire fighters need breathing apparatus to gain access to such areas. Ward (1990:96) recommended Halon 1301 gas, as it was less harmful to human beings. Fortson (1992:15) shared these views and supported the use of Halon to suppress fire. Fortson (1992:15) opined that Halon 1301 was "the least toxic of the currently used halogenated agents; vision obscuration and chilling of the atmosphere are minimal with this variant". The author pointed out that only 5 to 6 percent of the gas was required to extinguish a fire. Nevertheless, gas and other chemicals lead to air pollution

2.20 Damage from air pollution

Most people do not regard deterioration from air impurities to be as serious as deterioration from other sources, yet it has devastating effects on archival materials (Appelbaum 1991:97). Swartzburg (1995:183) stressed that "air pollution contaminates the atmosphere with noxious gases, particularly sulphur dioxide, which can be absorbed in paper and film". The author suggested that disks and tapes should be kept in a clean environment, to prevent damage from air pollutants.

Kathpalia (1985:483), Bereijo (2004b:374) and Lewis (2005) pointed out that environmental hazards are a potential danger to archival materials. This is because they release chemical compounds, which make archival materials acidic, thus hastening the deterioration of the materials. The fact that some national archives or audiovisual archives are located in urban areas means that "their natural air supply is likely to contain sulphur and nitrogen compounds and ozone" (Lewis 2005). According to Lewis (2005), "man-made materials used in building components, in insulation, and in furniture can introduce formaldehyde". Cellulose acetate products that carry acetic acid into the space aggravate this condition. This explains why Lewis (2005) concluded that risk reduction should include selection of the site for the archival facility, selection of materials, air filtration systems, as well as measuring and tracking pollutants.

Swartzburg, Bussey and Garretson (1991:125) stated that "contaminating particles in the air are made up of mould, fungi, dirt/dust, smoke and a variety of chemicals, all of which accelerate the deterioration of all materials". Roper and Millar (1999e:22) and Schou (1997:244) stressed that industrial areas are polluted with gases such as nitrogen oxide (given off by nitrate film), sulphur dioxide, hydrogen sulphide, ozone (caused by photocopiers), car exhaust gases and other toxins. Roper and Millar (1999i:22) recorded

that other sources of air pollution can be found in buildings, photocopiers, tap water, sea water, cleaning supplies, paints, untreated woods, adhesives and some plastic materials, dirt, dust, poor-quality paper products such as newspapers, cigarette smoke, plants, floor polishes, drying oils in paints and vanishes, synthetic adhesives, polystyrene and polyvinyl chloride, cellulose acetate and diacetate triacetate, which emit acetic acid (Appelbaum 1991:99; Roper and Millar 1999e:22). Kathpalia (1985:483) revealed that dust has hygroscopic properties, which increase moisture content and cause stains and damage to archival materials. The author warned that nuclear dust aggravated the deterioration of archival materials. This means that extra care should be taken to protect AV materials from air pollution, as they are more vulnerable than the text materials.

Swartzburg, Bussey and Garretson (1991:126) stated that photographs, films, magnetic tapes and computers are susceptible to air pollutants. Roper and Millar (1999e:23) described how the pollutants are embedded in the surface of materials and weaken them through physical and acidic chemical action. Roper and Millar (1999e:22) realised the difficulties involved in controlling pollution in archival institutions. The authors advised that, ideally, an archival institution should install filter systems to purge the polluting air particles. Schou (1997:244) concurred, but suggested that a vault for storing archival films should be placed in a well-ventilated area. Roper and Millar (1999e:23) realised the difficulties involved in controlling air purity. They concluded that it is not always possible to control air purity because of high purchasing and maintenance costs.

Kahn (1998:24) referred to 'indoor air quality and sick building syndrome'. Kahn (1998:24) felt that such conditions were caused by an imbalance in the internal environment, which, in turn, could lead to the growth of mould (the most common type of sick building syndrome and indoor air purity problem in cultural institutions). Kahn (1998:24) stated that "when mould growth is not controlled, it can cause a sick building". The author advised archivists to watch out for conditions that cause mould, which are poor environmental conditions, increased levels of moisture and high humidity (Kahn 1998:24). Attempts to safeguard AV materials from natural and environmental hazards should be coupled with appropriate storage conditions. This is because the quality of some storage containers may contaminate and damage archival materials. For instance, Appelbaum (1991:99) believed that "when a source of contamination is sealed inside a container with an object, damage can be quite severe and fast-moving". This means that AV materials must be stored in appropriate containers and storage equipment.

2.21 Control of biological pests

This section aims at pointing out the dangers of biological pests the AV materials. It suggests on how to minimise or eliminate them from the storage environment. Biological pests can cause rampant damage to archival materials if precautions are not taken to deter their onset. Biological pests include mould, insects and rodents. Roper and Millar (1999e:25) stated that these agents thrive in environments with high temperatures, high RH in dark areas and where there are food particles. It is therefore important to understand the nature of biological pests in order to protect AV materials from their damage

2.21.1 Mould, mildew and fungus damage

De Pew (1991:72) described mould as "a multi-cellular, microscopic vegetable plant, which forms cobweb-like masses of branching threads from the surface of which tiny fertile threads project into the air, bearing the part of the plant from which spores develop." The author explained that mildew is a fungus that appears on organic matter and other materials. It tends to grow in dark, damp, hot environments. De Pew (1991:72) warned that temperatures above $70^{\circ}F$ and 68% RH are ideal for the creation and germination of spores for the growth of mould. The danger of these organisms was best described by Parker (1987), who was cited to have stated that "the mould mycelia exude liquids that dissolve the substrate, and this food is then used in the production of more mycelia and, eventually millions of spores" (DePew 1991:72). Kahn (1998:24) pointed out that "mould likes warm, moist, dark places and will grow in carpets, under paint, in air ducts, and on collections".

Kahn (1998:72) suggested the following methods of controlling mould:
  i.   Check and maintain temperature below $70^{\circ}F$ and RH below 60% (ideally between 45% and 50%);
  ii.   Turn on lights to slow growth of mould;
  iii. Check air circulation to prevent stagnant air and moist conditions;
  iv.   Check intake, heating and cooling ducts for obstructions to air flow;
  v.   Check heating-exchange coils and clean coils with disinfectant (as mould on the coils spreads throughout the building);
  vi.   Check air ducts and clean any infected ducts with a fungicide or microbial cleaner;

vii.   Fix or eliminate the mould problem at the source to avoid a re-infection. Isolate the infected materials in a room or area and extract the air to the outside, to prevent spreading mould into the air ducts (Kahn 1998:72).

Mould is very harmful to AV materials and efforts should be made to eliminate or minimise its growth in archival and media organisations.

Lewis (2005) believed that sound recordings are mostly associated with mildew problems, as well as insect or rodent infestation:

> In reality, though, our audio recording media and/or their packaging are subject not only to the "no-see-um" spores that bring mould but also the "macro-critters" like insects and rodents that thrive on the cardboard packaging, paper labels, and adhesives(Lewis 2005).

Roper and Millar (1999e:26) recommended the setting of temperatures and RH close to ideal levels. They suggested the use of lights in some places to reduce RH levels. Roper and Miller (1999i:27) stressed that dust and food attract mould and they should be removed. Archival materials should be thoroughly inspected on arrival and, if moisture is detected, such materials should be separated and dried with vacuum cleaners in a well-ventilated area. Fumigation is another option that can be used to prevent mould. Lewis (2005) advised archivists to use an integrated pest management system to identify a specific problem and to solve it. The author cautioned archivists against using broad-spectrum pesticides. De Pew (1991:72) warned that air contains thousands of mould spores, which render any attempts to kill mould and mildew futile. The National Film Preservation Foundation (2004) reported that films stored under humid conditions become easy targets to mould, mildew and fungus. These organisms attack from the outside edge of the film and damage the film roll, causing significant damage to the emulsion. It was said that "once the organisms have eaten into the emulsion... the image loss is irreversible" (National Film Preservation Foundation 2004).

Based on the dangers that mould poses to archival collections, De Pew (1991:72) suggested that the ideal temperature and RH should be maintained, otherwise "germination and production of more mould and mildew will result" (De Pew 1991:72). Lewis (2005) advocated fumigation as an alternative strategy to deter the growth of biological pests but DePew (1991:72) disagreed. The latter author pointed out that

"fumigation will kill fungi but does not have any residual effect" (De Pew 1991:72). He believed that fumigation could be effective in eliminating insects which damage archival materials. Appelbaum (1991:127) and Harvey (1993:86) warned that the chemicals used in fumigation were harmful to humans and they were banned in many countries. He suggested the use of fumigation as a last resort. Appelbaum (1991:127), Child (1999:148), De Pew (1991:81), Harvey (1993:86) and Lewis (2005) advocated a policy of integrated pest management, which is a combination of techniques to prevent and control biological pests. It requires regular inspection of repositories to identify problem areas, control of temperatures and RH to avoid growth or multiplication of biological pests and general housekeeping to remove dust, insects, food and water that may attract biological pests. Harvey (1993:87) advised archivists not to place features of archival buildings, such as lights, in places where insects, pests or stagnant air can easily be attracted. Harvey (1993:86) suggested the removal of affected materials from storage areas and treating them by freezing, radiation, or placing them in a low oxygen area, and chemical fumigation.

Child (1999:148) recommended anoxic fumigation and conventional fumigation using insecticide gases. While the former method deprives insects from oxygen, the latter method did not provide residual protection to the objects (Child 1999:148). Child (1999:148) therefore advised that residual insectides should be used with care and under guidance. Appelbaum (1991:126) advocated the use of chemicals as a last resort in preventing infestation, as a last resort. The author reckoned that such an approach prevents a great deal of damage to the collections, the personnel and the environment.

In the event of fumigation, Harvey (1993:87) advised that infected materials be quarantined in a special section of the archive. He cautioned archivists against carrying out fumigation as it is not an archival task. Advice should be solicited from experts. As Appelbaum (1991:131) warned, "fumigants are extremely toxic materials which must be used in vacuum chambers designed specifically for that purpose". It is important to take the necessary steps to save peoples' lives and further damage to the materials. Child (1999:148) felt that " a clean, cool, dry environment can do more to prevent and limit pest problems than many other measures". Given the fact that most fumigants are toxic, the present researcher believes that fumigants should not be an option in archival repositories.

2.21.2 Insect damage

Appelbaum (1991:121) identified common collection pests as carpet beetles, powder post beetles, clothes moths, silverfish, booklice and cockroaches. Child (1999:145) explained that insects are mobile and spread rapidly.

Appelbaum (1991:117) stated that "damage from insects can proceed to a point where wood pieces are represented by only a crunchy skin of wood, or where feathers have lost their fuzz" (Appelbaum 1991:117). De Pew (1991:82) pointed out that insects tend to thrive in damp, dark places. Child (1999:145) elucidated to the most common methods of introducing infestation into archival repositories. These include:

- New acquisitions or materials on loan could return in an infested condition;
- Infestation via windows and doors; and
- Temperatures over 20°C.

According to Wellheiser (1992:4), "infesting insects are ubiquitous in temperate and tropical climates. Some are regular inhabitants and others come on an irregular basis from nearby, or in some cases, faraway materials or premises to infest collection". Wellheiser (1992:4) cited Cunha (1971), who reported that colour slides were damaged by carpet beetle larvae. In the case of the Thomas Mofolo Library of the National University of Lesotho, which houses archival materials, Qobo (2004:101) revealed that library staff and users brought food and drinks to the library.

Child (1999:145) and Roper and Millar (1999i:27) discouraged food and drink in storage areas. Roper and Millar (1999i:27) suggested that materials that are brought with insects and/or larvae should be separated and cleaned thoroughly. They recommended that such materials should be frozen for seventy-two hours in an ordinary chest freezer (regulated to a low temperature), before they are mixed with other materials. The authors observed, however, that although freezing kills insects and larvae, it does not stop mould. Other non-chemical efforts to eliminate or minimise insects include placing screens on windows and doors, plugging cracks and holes along floors and walls to limit entrance of insects and avoiding indoor plants, as they attract insects (Appelbaum 1991:127; Roper and Millar 1999i:28). Wellheiser (1992:19) advocated non-chemical methods, as opposed to fumigation with harmful toxic products such as methyl bromide, phosphine, sulphuryl fluroride, hydrogen cyanide and ethylene oxide, all of which have been banned in the U.S.A. and Canada (Wellheiser 1992:16). The author suggested deep-freezing, low-energy

radiation using microwaves and a modified atmosphere with decreased oxygen (Wellheiser 1992:62).

Kathpalia (1985:481) recommended "sterilising against pests by exposing records to a temperature of 65°C in a chamber for a short duration". This technique destroys the insects, their larvae and pupae. However, Harvey (1993:87) conceded to the use of chemical fumigation if the above options fail. Roper and Millar (1999i:26) concurred and recommended cleaning of buildings, "particularly behind shelves and in dark areas". Appelbaum (1991:125) suggested that good housekeeping for pest control should include inspection of the collections, as well as vacuuming all interior spaces, including attics, downspouts and basements. This should be accompanied by regular cleaning of gutters, eaves and sills to remove debris. Appelbaum (1991:125) advised that all windows should be tightly screened. All entry points, including air conditioners, should be sealed off and they should be periodically inspected and cleaned. In addition to the above measures, Appelbaum (1991:125) suggested that all food service facilities should be supervised, to ensure removal of all garbage. Any source of water especially leakages, should be stopped and dried out. Appelbaum (1991:125) cautioned against planting shrubs or flowers next to the entrance and keeping exterior lights a distance from the doors, as they attract insects.

Non-chemical methods of killing insects involve alteration of the environment. This entails placing infested materials in cold storage. The use of microwaves was also recommended, as the radiation can kill insects. Appelbaum (1991:136) cautioned against using microwave radiation on metal objects. The author described the technique of freezing temperatures to kill insect pests. The latter requires the use of two applications "with a proper warming time between to give the viable eggs time to hatch" (Appelbaum 1991:136). The author advised that precautions should be taken to "avoid condensation when cold objects are brought back into warm surroundings" (Appelbaum 1991:136). Another technique involves the use of heat produced by infrared, ovens or normal heating plants. However, with high temperatures, precautions should be taken to protect the materials from fluctuations in RH. Appelbaum (1991:137) recorded that gamma radiation was another promising non-chemical technique. It "penetrates materials so well that objects can be treated without being removed from their containers, thus sparing the dangers of handling" (Appelbaum 1991:137). Other biological pests that pose a great danger to archival materials are rodents.

2.21.3 Rodents

Rodents such as rats and mice eat archival materials (Roper and Millar 1999e: 28). They tend to thrive in warm, dark places and they can easily enter a building through cracks, holes or passageways to the outside. Rodents chew the insulation on electrical wires, causing short circuits and electrical fires. Roper and Millar (1999e:28) advised that entrance points should be blocked and doors and windows should be shielded with screens. Appelbaum (1991:137) and De Pew (1991:85) observed that dead mice attract carpet beetles and other insects. In cases where traps are used, a record should be kept of where they are kept so that they can easily be traced. The foregoing discussion points to the need to handle AV materials in a professional manner. This responsibility applies to archival staff and users.

2.22 Abuse and mishandling

According to Qobo (2004:101) and Weber (1997/98:340), abuse and mishandling of archival resources is of human origin. Hunter (2000:57) cited Beebe and Meyers (1999), who stated that "human carelessness and maliciousness, always threats to preservation of a document, may be even more dangerous for electronic products". Roper and Millar (1999e:28) concurred with Hunter (2000:57), when they opined that "intentional and accidental abuse can damage records and archives and lead to the loss of valuable information." The authors warned that people pose a danger to archival materials. Roper and Millar (1999i:29) identified various ways in which people can damage archival materials. These include rough handling of materials, poor photocopying practices, poor retrieval and filing practices, inappropriate storage, faulty or inappropriate equipment, excessive use of materials, spilling food or drink on materials, handling materials with dirty hands, poor cleaning or housekeeping, deliberate acts of vandalism, theft of materials and inadequate security. The case of the Thomas Mofolo Library of the National University of Lesotho is proof of the above (Qobo 2004:101). Chida (1994:31) stated that staff and researchers at the National Archives of Zimbabwe were potential threats to the archives. The author reported that "all new members of staff are vetted and random searches are conducted without bias as part of an integral preservation programme" (Chida 1994:31).

Lewis (2005) pointed out that improper positioning of AV media has long been realised as a risky practice. "The risk is generally related to the force of gravity pulling downward on media over long periods of time." Unlike linear media with wire recordings, which are not

affected by the force of gravity, tapes, and discs should be stored vertically. This protects the edges of tapes from deformity and edge damage caused by pressure. Discs should be stored vertically to "prevent warping and to prevent stacking too much weight in a pile of discs and causing breakage in the lower ones". Lewis (2005) recommended winding only for linear media such as magnetic wire, open reel tape and tape in cassettes and cartridges. He observed that wire posed a risk of entangling during play.

Poor winding of tape media could result in possible snapping of acetate tape and stretching of polyester tape in the process of playing the tape through. Another school of thought preferred not to tamper with the tape unless it was faulty. Lewis (2005) stated that, while one school of thought supported playing the tape from end-to-end and leaving it unwound, another school promoted the idea of periodic rewinding of tapes. Yet another school of thought discouraged tampering "unless there has been some major environmental change in the storage area that might have caused the tape to expand or contract" (Lewis 2005). Lewis (2005) and Wheeler (2005) supported the idea of playing the tape, provided the machine was properly adjusted and aligned. Lewis (2005) cautioned that failure to adjust and align the machine would result in a destructive ghost signal, which was perturbing to the human ear. Indeed, Swartzburg (1995:208) warned that the ghost signal does not merely cause human discomfort but it damages the tapes. This is because "a major problem with cassette tape recordings is the nonalignment of the tape within the cassette" (Swartzburg 1995:208). The present researcher therefore supports the idea of playing the tape periodically.

Roberts (1993:404) pointed to the risk of damaging tapes and films during use. Roberts (1993:404) cautioned that magnetic tapes and films could easily be scratched or damaged by dirt or grease from hands or running tape or film through equipment. Wheeler (2005) summed up the most common tape problems:

i.   Sticky-shed syndrome – This is characterised by a powder or gummy residue on the surface of the tape (Bereijo 2004a:326; Wheeler 2005). "When the tape is played this residue attaches to the playback heads, with results ranging from poor (or no) playback to a jammed machine". Using a tape-cleaning machine that removes the powder from the tape's surface could rectify the problem. However, Wheeler (2005) warned that unless the tape is stored in a cool, dry environment to reduce deterioration, the sticky-shed syndrome would persist;

ii. Bad playback signal - operating errors on magnetic recordings cause bad playback signal. These properties were later confirmed by (Bereijo 2004b:375). Wheeler (2005) quoted instances where tracking adjustments on tapes would not permit high-quality video playback. The author therefore recommended "cleaning the tape guides, adjusting the tape tension, or playing the tape on another tape recorder…", to correct the problem. Wheeler (2005) showed that another way of correcting the problem was to connect the output of the tape recorder to a Video Processor or Time Base Corrector (TBC);

iii. Edge damage or warped tape - age damage and warping of tapes are caused by poor storage conditions, which may, in turn, distort the sound of magnetic recordings (Wheeler 2005). Realising that polyester could easily be deformed and reformed, Wheeler (2005) suggested that deformed tapes should be restored by forwarding them to the end, rewinding them to the beginning, then playing them to the end; and Unstable video - Wheeler (2005) stated that unstable videos show signs of tear, roll vertically or jiggle. In such instances, the author suggested using a Video Processor or a Time Base Corrector to rectify the problem.

2.23 Storage conditions

Storage conditions include good house-keeping, maintenance of ideal climatic environmental conditions, proper handling and general security of the repositories and the premises where archival materials are stored. Matangira (2003b:46) noted that the majority of the audiovisual materials in archival institutions in ESARBICA "were kept under very inadequate conditions…most institutions lack the resources and skills required for managing audiovisual materials". In order to carry out an effective maintenance regime, it is important to reinforce the general security and safety of the archival environment. Wheeler (2005) recommended the tape storage conditions described below.

2.23.1 Tape storage and use of rooms or areas

Since magnetic tapes are very sensitive to extreme temperatures and RH (Swartzburg 1995: 207), there is a need for archival institutions to obey some guidelines in an attempt to prolong their preservation. The following guidelines must be adhered to in an effort to prolong the life-span of tapes:

i. Ensure that the room is fireproof and does not contain wooden boxes or wooden shelving;

ii.   Shelves must be designed in such a way that tapes are not damaged from water in cases where water sprinklers are used;

iii.   Tapes must not be stored on the floor;

iv.   Ensure a steady air circulation and low humidity around the tapes to prevent mildew;

v.   Walls, floors and the ceiling should be made of dust-free material;

vi.   Carpets should not be used;

vii.   Use a vacuum cleaner with a 95% HEPA filter, a water vacuum cleaner or one with an outdoor exhaust hose;

viii. The room should not have windows, but should be well-ventilated;

ix.   The floor should have a large drain in case a water pipe breaks or the sprinkler system discharges;

x.   Use a sticky floor mat at the doorway of the entrance to prevent debris from shoes entering the room;

xi.   Protect tapes from exposure to dust by providing a room for opening boxes of tapes; and

xii.   Copy all tapes and store master copies in separate parts of the building.

2.23.1.1 Cleaning magnetic tape

Magnetic tapes should be cleaned periodically to remove dust, mould or any other biological agents and to prevent misalignment, which can cause damage (Swartzburg 1995:208). Wheeler (2005) believed that tapes should only be cleaned when they have powder shade or gummy residue. He recommended that only professional technicians should clean tapes, using a long-fibre paper wipe called pellon. However, Wheeler discouraged the cleaning of mouldy tapes before the fungus is killed.

2.23.1.2 Tape handling

According to Roberts (1993:399), "the greatest danger, both to film and videotape, lies in the risk of damage during use." Wheeler (2005) stipulated the following precautions for handling tapes:

i.   Cassette tapes must always be wound to one end before ejecting;

ii.   Tapes must only be touched at the end or beginning of an open reel;

iii.   Open-reel tapes should only be handled by the hub, taking care not to squeeze the flanges;

iv.   Cassette tapes should not be handled by the movable door;

v.   Reels of tape and cassettes should always be placed on a clean, flat area;

vi.   Tapes should be kept from direct sun; and

vii. Tapes should not be placed near a heat source, an electric motor or a transformer.

Swartzburg (1995:205) suggested that tapes should not be handled with oily fingers and they should be held between finger and thumb. The author suggested that the blank side of the tape should be dust-free before it is placed in the player. Lint gloves should be used when handling tapes. Swartzburg (1995:205) recommended the use of a soft, lint-free cloth to clean tapes and he discouraged the use of markers or gummed stickers to label compact disks.

2.23.1.3 Tape recorder maintenance

Wheeler (2005) stressed that proper maintenance of tape recorders was critical. Wheeler (2005) warned that "a misaligned or dirty tape recorder will produce unusable recordings". Archivists should clean recorders regularly. Wheeler (2005) suggested weekly cleaning of recorders that are used often and monthly cleaning if recorders are used infrequently. The author recommended that recorders that are frequently used should be cleaned thoroughly, making sure to check "for alignment by a tape recorder technician on an annual basis" (Wheeler 2005).

2.24 General security

Weber (1997/98:339) stated that "many countries have legislation and regulations governing the protection, conservation and use of archival property". This is because general security of the archival premises and the collections is crucial to any preservation programme. Ward (1990:93) realized a need for security in the archival repository. He believed that the archivist's priority should be the security of the collections. This is particularly important with archival recordings, which may be vulnerable to vandalism and theft if there is no proper supervision in the search rooms.

2.24.1 Security of archival premises

McCausland (1993:278) and Schwirtlich (1993:46) felt strongly that security of the archive's facility should be regarded as top priority, given the unique and delicate nature of the collections. They believed that, unlike individual published items, which can easily be replaced, archival materials cannot be replaced easily, if damaged. This means that more stringent measures are required to protect the archival premises.

Mackenzie (2000:7) recommended the use of a Blue Shield symbol, which signifies security of cultural sites. The International Committee of the Blue Shield (ICBS) instituted the Blue Shield to bring together knowledge and experience, as well as international networks of experts. Mackenzie (2000:5) reported that the ICBS protects the world's cultural heritage by carrying out the following activities:

i.   Encourages the safeguarding of cultural heritage and promotes risk preparedness;

ii.   Trains experts at national and regional level to prevent, control and recover from disaster;

iii. Facilitates international responses to threats or emergencies endangering cultural heritage; and

iv.   Co-operates with other bodies such as UNESCO, the International Center for the Study of the Preservation and Restoration of Cultural Property (ICCROM) and the International Committee of the Red Cross (ICR).

Mackenzie (2000:9) pointed out that the Blue Shield is not only meant for politically troubled regions, it also applies to democratic and peaceful states. By pooling expertise and resources from different professionals, military authorities and emergency services, the "Blue Shield is a potentially powerful model for managing disaster risks at the national level" (Mackenzie 2000:9).

2.24.2 Security of archival materials

According to Chida (1994:29), archival security is a preservation management matter. Roper and Millar (1999i:138-141) listed the following security measures to protect archival materials and staff:

i.   Conduct a security assessment to identify the current security needs of the repository;

ii.   Examine security equipment and supplies to protect the facility from theft or damage;

iii. Put in place measures to apply, in the event of breach of security;

iv.   Screen new employees to ascertain their loyalty and to ensure that they understand the need to protect archival materials;

v.   Train staff on security procedures and expose them to all techniques of addressing cases of mishandling or abuse of archival materials;

vi.   Ensure that all staff and contractors wear appropriate identity cards; and

vii.   Security officers should monitor the use of archival materials and ensure the safety and security of individuals.

Schwirtlich (1993:46) recommended that "the use of archival materials must be confined to the archives itself". The author suggested that archival records should be locked up, when not in use, and their use should be supervised. This is done to protect the materials from loss, damage, misfile or tampering (McCausland 1993:278). Roper and Miller (1999f: 9) believed that, although all formats of archival materials require protection throughout their life-cycle, some materials require more attention, as they are difficult or impossible to replace. Lewis (2005) emphasised the need to protect AV materials from shock and vibration. He warned that failure to do so would result in serious damage, including breakage of the recording media itself, problems with reels and cassette shells, broken containers and major shocks that might cause disarrangement to magnetic particles. Bereijo (2004b:373) and Lewis (2005) held similar views. The latter recommended risk elimination through training of staff and users. Other strategies include disabling the record function on the equipment, disabling media with an anti-recording interlock and protection from strong electromagnetic fields.

On the issue of playback of recordings, Ward (1990:84) named two fundamental rules which should be enforced. Staff should be the only ones permitted to handle original copies. If, for some reason, a user wishes to see the original, this should be done under close supervision by staff. This requires arrangement of playback facilities in such a way that users are not required to play original recordings on their own. Ward (1990:85) suggested that this type of arrangement should be in line with "the repository's conservation policy and the level of resources available". Secondly, Ward (1990:85) recommended that originals "should not be used for playback, even by staff". This is due to the fragile nature of sound recordings. He advised that copies be made to protect originals from rapid deterioration. "These copies should be on a reliable medium with good keeping characteristics…" (Ward 1990:85). Ward (1990:85) recommended reel-reel tape as a good medium for copies. Such copies should be separated from the originals.

Nevertheless, Ward (1990:85) suggested that, ideally a third copy should be made for the processes of cataloguing, transcribing and listening, while a second copy is kept "for security and for use as a master from which all subsequent copies are run off" (Ward 1990:85). Ward (1990:94) stressed that duplicate copies for researchers could be kept

under lock and key, in a room adjacent to the search area, while original copies are locked up in a store which is restricted to staff. Roberts (1993:405) suggested that there should be a copy that is used as a reference/viewing copy by clients. In an attempt to strengthen security, Ward (1990:94) believed that staff should accompany authorised visitors to the reference areas. This would require that the same door be used for entrance and exit and bags should be left in lockers on entry to the study area (Ward 1990:94). Such security precautions require staff training. Swartzburg (1995:44) was of the opinion that the key to successful collection management and preservation is a training programme in which all staff members are taught to respect the materials in their care".

2.25 Staff training

Harrison (2004b) stated that education of AV archivists is the key to the development of sound, film and television archives. Matangira (2003a:35) felt that lack of technical skills and knowledge was one of the problems in the region. She pointed out that "…most of the archivists responsible for the audiovisual collections in these institutions, lack the necessary technical know how for handling and storage of archives in those media" (Matangira 2003a:35). Matangira (2003a:37) believed that archivists should be exposed to AV archiving through informal and formal training. Njovana (1989:24) felt that the training should be relevant and of high standard.

2.25.1 Specialised training for AV archivists

Harrison (1997/98:187) revealed a growing gap between the provision of AV education and the provision of professional education, in both developed and developing countries. The author believed that all archivists should be equipped with professional knowledge of archival principles and special knowledge of the distinctive characteristics of AV materials and special knowledge of the distinctive characteristics of AV materials and their equipment (Harrison 1997/98:187; Leary 1988:120). Matangira (2003a:37) noted that funding was a major barrier to formal training.

According to Harrison (2004b), the special skills required of an AV archivist do not come unaided or untaught. Harrison (2004b) stated that skills such as bibliographic description, handling, storage and conservation require a different approach from contemporary techniques of handling text materials. Wato (2002:129) and Mnjama (2002:140) saw a need for multidisciplinary training, which equips archivists with information technology (IT) skills. Edmondson and Members of AVAPIN (1997: 21) believed that:

the aesthetic skills, historical knowledge and ethical judgements involved in preservation work are integral to the character of the AV media and will always be needed.

Swartzburg (1995:44) suggested that training for archival staff should include.

- A brief discussion with all new staff on the care of the collections;
- Detailed instruction manuals;
- In-house training programmes; and
- Encouraging staff to participate in continuing education.

Cook (1986:29) referred to the international model which advocated that professional staff "should be graduates who have completed a specialised training in an archive school" (Cook 1986:29) and that para-professionals should obtain a basic secondary education level, accompanied by specific training such as in-house training courses. Cook (1986:29) suggested that specialist training should be provided in specialist schools. The present researcher believes that such specialist training would be appropriate for AV archivists in Southern Africa.

Mnjama (2002:140) believed that professional skills enable archivists to fit into the job market. Wato (2002:129) and Mnjama (2002:140) suggested that the training should include workshops and refresher courses. Mutiti (1999:16) stated that, in addition to workshops, archivists should be attached to other institutions in the region. Currently, there is provision for study attachments at the NFVSA, which benefits archivists from other ESARBICA countries. Wato (2002:129) felt that archival institutions should join professional associations such as ESARBICA, IASA and FIAF, in order to exchange technical ideas and practical experiences. The present researcher, who attended two professional conferences during the course of this study, concurs with Wato (2002:129).

Klaue (2004b) reported that sceptism towards audiovisual archives contributed to "serious deficiencies in the training of staff for audiovisual archives...". Harrison (2004b) suggested that archivists should be trained up to tertiary educational level or first degree level. Such training should be coupled with training in archival principles and practice. Mnjama (2002:140) recommended that:

> Education and training should include full-time courses for qualified personnel, short-courses for specialist topics and personnel, workshops, seminars and symposia to present new knowledge, in-service training of

skilled workers for specific jobs, hands-on experience and other updating activities…".

Harrison (2004b) stated that it is imperative to continue educating top and middle management personnel in AV archiving, to enable them to cope with their duties. While Harvey (1993:91) supported the above views, he saw a need for archivists to continuously educate and train users of AV materials through search room regulations, which users "must read and acknowledge by signing" (Harvey 1993:91).

Forde (1990) realized that formal sessions for individual users of archival material were "unlikely to be well-attended…". The author urged archivists to demonstrate good housekeeping in all parts of the archive. Arranging group visits, where archivists could stress the importance of good handling habits, could do this. Short in-house videos could be used as teaching aids and staff demonstrations. Documents that illustrate the fragile nature of certain AV materials could be displayed, so that users understand and appreciate "the reasons for rules about handling" (Forde 1990).

2.25.2 Strategy for training AV archivists

Harrison (2004b) reported that UNESCO considered training of AV archivists a priority area when the organisation launched a Memory of the World project in 1993. In 1990, a Curriculum Working Group presented a report at a special meeting held in Brussels. Representatives at the meeting were from various AV organisations, including FIAF, FIAT, IASA, IFLA and TCC. Lack of professionally trained archivists was among the issues raised. The problem of lack of training in the AV archives was found to be common world-wide, as revealed by Klaue (2004). This then explains why the Curriculum Working Group recommended that education of audiovisual archivists should be integrated into existing institutions (Harrison 2004b).

Earlier in 1980, a UNESCO document on safeguarding and preservation of moving images emphasised the importance of training programmes on the safeguarding and restoration of moving images (Klaue 2004). Regional seminars were held in Mexico, Poona, Sao Paulo, Rio de Janeiro and Maputo. In a bid to educate the archives community, UNESCO supported the publication of various basic manuals on the problems of audiovisual archives, including a *Handbook for Film Archives* by FIAF, *Panorama of Audiovisual Archives* by FIAT and *Preservation and Restoration of Moving Images and Sound* by FIAF (Klaue 2004).

UNESCO continues to subsidise individual fellowships, projects and regional training courses (Klaue 2004). Klaue (2004) reported that, in 1987, UNESCO organized a round table on training staff for AV archives. Representatives of various NGOs, such as FIAF, FIAT, IASA, ICA and IFLA, attended a meeting in Berlin (Klaue 2004). The NGOs made the recommendations stipulated below.

i. A regular exchange of information about training courses run by NGOs and their members;

ii. A record of teaching programmes which could be used for in-service training;

iii. A need to identify the archives' need for qualified staff in various fields;

iv. Identification of institutions willing to train audiovisual archivists; and

v. A need to compile a list of suitable instructors;

vi. Draw up a feasibility study on how existing institutions in Asia, Africa and Latin America could be used to support training of audiovisual archivists;

vii. Incorporate in-service training measures for specialists in audiovisual archives and for instructors into its programme; and

viii. Assist in a preliminary study on how to exploit the potential for distance education for AV archivists and facilitate another meeting of experts in 1989 ((Klaue 2004).

Njovana (1989:26) and UNESCO (2007b) proposed a regional training institute, which would offer higher degree courses to archivists in the region. This was because there was a lack of training facilities in the region and hence the dependency on overseas training. Njovana (1989:23) pointed out that training was expensive in some instances and it did not meet archival conditions in Africa. UNESCO (2007b) proposed a combined and non-specialist education curriculum because of a need to integrate AV materials in an individual archive or department of a larger institution, common features in the preservation, cataloguing and use of AV materials and greater flexibility of placing AV archivists, after the training. According to UNESCO (2007b), AV archivists should undergo an integrated specialist education, comprising history, archive science, librarianship, information science, documentation, museology, media science and technical sciences. It was suggested that such education should incorporate work in film, television and sound archives. The training should include several weeks of practical attachment. The section below examines the training programmes in the region (UNESCO (2007b)).

2.25.3 Training programmes in the ESARBICA

Njovana (1989:23) regretted that, after 20 years of ESARBICA's existence, archival institutions of member states still depended on external training. Mutasa and Ncube (2004:147) revealed that archivists from Zimbabwe used to obtain training outside the southern African region. This could be attributed to the fact that Africa lacked training facilities for professional and technical staff (Mazikana 1997/98:146). Kaniki (1992:244) and Ngulube (1999:30) attributed the above problem to the social and economic changes which affected the African continent in the 1960s. Ngulube (1999:31) observed that lack of professionally trained staff, coupled with failure to retain the few professional staff, was a major draw-back for the National Archives of Zimbabwe.

Matangira (2003a:35) and Paton (1999:188) reported that many archivists had come to terms with the fact that they were not adequately trained to handle recording media and hence failed to manage and preserve audio collections. Mazikana (1997/98:152), Mnjama (2002:140), and Lewis (2005) supported these views. Lewis (2005) stressed that the success of the activity depends on the selection, training and dedication of staff members and the leadership they are given. Lewis (2005) realized the need for archivists "to be trained in the legacy media they are custodians of, trained in the new media of the users, and trained and knowledgeable in the collection they are responsible for." Lewis (2005) also realised a need to train AV staff in customer service.

Mutasa and Ncube (2004:145) pointed out that the void for university-based training programmes in the archival profession in Zimbabwe was filled in 2000. Mazikana (1997/98:150) reported that a number of countries had established training facilities at national level. He cited Botswana, Kenya and South Africa. In the case of Botswana, the School of Library and Information Studies introduced a certificate course in Archives and Records Management in 1995/96 (Mnjama 2002:141). Courses in Archives and Records Management are offered up to Masters level. The need to offer postgraduate and a Masters programme emanated from concern that graduate level training received little attention in the ESARBICA region (Mnjama 2002:141).

Mnjama (2002:141) realised that local trainees in the business sector, as opposed to those who are trained abroad, also contributed to the current programmes. Taylor (1992:5) had the same concern about Namibian archives. The author was concerned about lack of formal tertiary training for Namibian archivists. This explains why Njovana (1989:23)

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earlier advocated a regional training school for archivists in ESARBICA. Chida (1994:24) regretted the absence of a regional school for archivists in Sub-Saharan Africa. Chida (1994:24) concluded that, because of the absence of such a facility, most archival institutions are faced with a problem of decaying materials. Matangira (2003a:36) was concerned about a lack of a regional body for archivists. Matangira (2003a:36) reported that 60% of the archival institutions preferred an established body such as ESARBICA and IASA. "Others felt that IASA would be more appropriate as it specifically represents the interests of sound and audiovisual archives" (Matangira 2003a:36). She noted that 30% of the archival institutions preferred an autonomous body albeit. However, Matangira (2003a:36) felt that the regional body "may fail to take off due to financial constraints".

Matangira (2003b:47) decried the progress regarding training of archivists in the ESARBICA region, when she asserted, "none of the archivists in the region have received any formal training." She observed that most archivists only received on-the-job training. The need to equip archivists with skills was said to be more urgent than ever before in the new information age (Wato 2002:129). Wato (2002) urged archivists to learn new skills, because people create documents using new technology. Mnjama (1994:24) cited Thurston (n.d.), who advocated a radical translation of archival training to meet the needs of African nations. Klaue (1997:26) recommended that educational institutions should cater for specialised educational programmes for archivists to enable them to address problems such as handling AV materials, conservation and exploitation of AV materials and legal and administrative problems of AV archives. He advised that organisations like UNESCO, FIAF and FIAT should support the training programmes. The 16th Bi-Annual Conference of ESARBICA, which was held in Harare, endorsed the idea of harmonising and standardising archival training in the region (Conference Resolutions 2002:148).

Mutasa and Ncube (2004:147) raised the problem of insufficient teaching staff in some of the tertiary archival institutions in Zimbabwe. The authors attributed the problem to lack of people with suitable qualifications, at Master's or Doctoral level. Mutasa and Ncube (2004:147) stressed that non-availability of reading materials specific to records management and archives programmes aggravated the problem. These authors believed that low salary scales for the archivists' cadres led some professional archivists to look for 'greener pastures'

2.26 Previous studies done in the area of AV management

As Creswell (1994:21), Leedy and Ormrod (2005:64) and Saunders, Lewis and Thornhill (2000:43) indicated, the review of earlier literature helps a researcher to understand the relevant previous research and the trends that have emerged. The literature therefore provided a benchmark for comparing the results of the present study with other findings (Creswell 1994:21). Review of related studies enabled the present researcher to fill in gaps from the previous studies. This provided justification for the study. The current study started by reviewing work that was conducted worldwide.

2.26.1 Studies done worldwide

Boston's (2003) comprehensive survey of endangered audiovisual carriers was the most relevant empirical study on the topic. The technical committee of IASA, undertook a study which included seven ESARBICA countries, namely Botswana, Kenya, Lesotho, Malawi, Mozambique, Namibia and Zimbabwe. However, responses were only received from Kenya and Zimbabwe. Boston's (2003) survey, which used questionnaires, was very important, in that its results "confirmed some fears about the rate of decay of carriers of recorded sound and allayed others", worldwide. The IASA Technical Committee (ITC) used the results of the survey to improve and advise custodians on the preservation of AV materials. Unfortunately, the response rates from the two surveys (1995 and 2003) were very low. The response rate for the 1995 survey was 16.5%, while the response rate for the 2003 survey was 5.6% (Boston 2003). Considering the fact that only two countries from ESARBICA (14%) responded, the results of the survey were not representative of the ESARBICA region.

Klaue's (1997) paper provided information and background history of AV documentation worldwide. The information included the need for legislation for AV archives, the need to preserve AV materials, the need for financing AV archives and the need to train AV archivists. Although non-empirical, the paper alerted the archival professionals to the challenge of the 'audiovisual age', as the author advised archivists to hand down archival products which were produced in the 20th century (Klaue 1997:27).

Harrison's (1997/98) non-empirical report on audiovisual archives worldwide was very informative, in that it referred to surveys such as the ones carried out by the Library of Congress and the Map-TV-Film and Television Collections in Europe. Both studies identified large collections of film, radio and TV. Harrison (1997/98:187) appealed to the international community "to support the establishment and development of audiovisual

archives worldwide" (Harrison 1997/98:187). Harrison (1997/98:187) identified professional organisations for AV archives that are reflected in the introductory chapter of this thesis.

2.26.2 Studies done in Africa

Mazikana (1997/98:152) depicted the most relevant landscape of AV archives in Africa. The report gave a historical background to the development of national archival institutions on the continent. The problems identified included political instability, disintegration of archival technical facilities and pre-independence infrastructure, dysfunctional registry systems, untrained or uncaring registry staff and mismanaged electronic media in most archival institutions in Africa. Inspite of the above problems, Mazikana (1997/98:154) pointed out that some of the archival systems in Africa were on a par with other institutions worldwide. Given the fact that the author used statistics to depict the nature of the problems, it is assumed that questionnaires were used to gather data. However, Mazikana's survey (1997/98) was too general. It did not specifically focus on audio-visual materials, which are the focus of the present study

2.26.3 Studies done in the ESARBICA

Although some empirical studies were conducted in the ESARBICA, most of the literature on the topic is in the form of commissioned, non-empirical papers presented at conferences to share information on the status of the archival institutions in the region. Abbott (1999), Chida (1994), Derges (1992), Hamoya (2003), Mnjama (2005), Mnjama (1996a), Mwangwera (2003), Ngulube (1999), Ngulube (2002a), Ngulube (2003a), Matangira (2003a; 2003b), Mutotekwa (2002), Sejane (2004), Setshwane (2005) and Ngulube and Tafor (2006) conducted the most relevant studies on the topic. Hamoya (2003) and Mwangwera (2003) gave detailed reports about Zambia National Archives and Malawi National Archives, respectively. Both authors identified common problems, which included limited financial resources, lack of appropriate equipment and lack of technical expertise.

Other problems experienced by the National Archives of Zambia and the National Archives of Malawi included lack of appropriate storage infrastructure in Malawi. Mwangwera (2003) warned that quality of sound and pictures was deteriorating at a fast rate. Hamoya (2003) cautioned that, although the National Archives of Zambia tried to

fulfil the expected storage environmental conditions, financial constraints made it difficult for the National Archives to maintain all the AV collections. This explains why, in the 1980s, the National Archives of Zambia discontinued acquisition of magnetic sound recordings, except for audiocassettes. Film media libraries in Zambia stored film materials. The National Archives of Zambia preserved copies of films only in air-conditioned repository. Hamoya (2003) mentioned that access to films which did not have reference copies was restricted. Hamoya (2003) noticed that some old television programmes were not deposited with the National Archives of Zambia. Thus, the National Archives of Zambia was faced with a challenge of ensuring that all films and sound recordings of enduring value were preserved (Hamoya 2003). However, the above reports were not backed by empirical evidence.

Derges (1992), Matangira (2003a; 2003b) and Mnjama (2005) conducted the most relevant empirical studies. Matangira's (2003a; 2003b) survey, which resulted from a workshop for archivists in the region, revealed a need for a regional professional body for archivists. The above studies used questionnaires to gather data. While Derges (1992) covered nine countries, which by then constituted the ESARBICA region (namely Botswana, Kenya, Lesotho, Malawi, Namibia, Swaziland, Tanzania, Zanzibar and Swaziland), Matangira (2003b) covered members states of ESARBICA including South Africa. Derges (1992) focused on different types of AV materials collected, sources of audiovisual materials, storage conditions; equipment and resources for restoration, cataloguing and documentation, membership to international organizations, training needs and migrated archives. Derges' (1992:100) study revealed that all archival institutions kept some form of AV materials, but they were faced with storage problems, shortage of equipment, lack of, or inadequate, trained staff and failure to observe ideal climatic conditions for AV materials. The author further revealed that some AV materials were kept by film institutes or broadcasting corporations.

Although Derges' (1992) study was exhaustive, it did not cover specialized AV archives such as the South African Film and Video Archives and other media archives in the region. Matangira's (2003a; 2003b) studies gave a representative picture of the current state of AV archives in the region. It is interesting to note that Matangira (2003a; 2003b) revealed problems similar to Derges (1992). Derges (1992) and Matangira (2003a: 2003b) revealed that most archival institutions still suffered from severe shortages of skilled, trained staff, finances and proper facilities. What is clear from Matangira's (2003a:33)

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study is that, although archival institutions had increased the volume of AV materials, most of the institutions did not have legislation in place for AV archives. Mnjama (2005:465) recorded that most of the archival institutions in ESARBICA operated under outdated legislative Acts. The Acts did not "address issues relating to electronic records" (Mnjama 2005:465). Mnjama (2005) did not specify how many countries had AV materials in their Acts. Matangira (2003:45-46) discovered that many institutions kept videocassettes in VHS format, which are not designed for long-term storage. This is because most archival institutions could not afford other technology such as digital formats (Matangira 2003a:35). Matangira (2003b:47) reported that archivists formed a steering committee at a regional workshop. The committee was assigned to look into the possibility of forming a regional body to represent AV archiving. However, Matangira (2003b:47) lamented "despite the eagerness shown by participants, the committee's work failed to take off due to lack of funding".

Although the present study is closely related to those of Derges (1992) and Matangira (2003a; 2003b), it delved more into the problems of managing AV archives in the region by including media archives. The present researcher used the observation technique to augment the questionnaires. In addition to employing the observation technique, the current study thoroughly assessed how ESARBICA institutions applied the records cycle model to the archival processes. The present researcher recommended a model which may go a long way towards solving some of the problems archival institutions in the region are currently experiencing.

Chida's (1994) paper explored preservation management in tropical countries, with reference to Zimbabwe. It revealed problems that are common to most archival institutions in the region. These problems were discussed in Chapter One. Chida's (1994) study, however, was non-empirical and it focused on traditional archival formats. Chida's (1994) study informed the ESARBICA community of problems that the National Archives of Zimbabwe was experiencing. Ngulube's (2002a) study, which focused on preservation reformatting strategies, was conducted on archival institutions in sub-Saharan Africa (SSA). Given the problems of paper-based materials and poor environmental storage conditions in the region, Ngulube (2002a:119) recommended reformatting. The author used Internet and electronic mail communication with some Directors of National Archives. The study covered all ESARBICA states except Zanzibar. Although Ngulube's (2002) study did not focus on audiovisual materials *per se*, he maintained that

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fundamental preservation principles apply to all formats. The author highlighted problems of digitising archival materials. Ngulube (2002:72) argued that digitisation increased the problems of preserving archival materials, as preservation may increase the demand for access and display of original materials. He stated that digitisation focused more on access than preservation. Despite Ngulube's (2002:72) pleas, Mnjama (2005:463) later noted that digitisation still "remains a dream to many archival institutions in the region".

Ngulube (2003a:341) conducted a study on preservation and access to public records and archives in South Africa. He reached the following conclusions:
i.   Research on preservation issues was limited;
ii.   The was an acute shortage of skilled staff in areas such as AV materials, digitisation, environmental and disaster planning and recovery;
iii. Archival materials were not adequately protected from natural disasters and environmental hazards;
iv.   There was limited access to records and archives due to inadequate preservation strategies;
v.   Most archival institutions had no control over the preservation of electronic records;
vi.   Preservation policies were scanty;
vii. Preservation standards and guidelines were not adequately addressed; and
viii. Problems of digitising AV materials included hardware and software obsolescence, user training, media transfer expenses and storage and maintenance problems.

Ngulube (2003a:355) recommended a need for further research in the care of AV materials.

Abbott (1999) conducted a study on the way the National Archives of South Africa managed electronic records. The author used non-scheduled interviews and content analysis to gather information. He used a sample which was recommended by the Director of the National Archives of South Africa. The sample consisted of the Director of the National Archives, Deputy Director responsible for records management and information systems, Deputy Director of the National Archives and the Principal Archivist responsible for electronic records management. In addition, Abbott (1999:106) discovered that obsolescence of hardware and software were a challenge to the long-term preservation and

continued access to electronic records. Given the nature of Abbott's (1999) study, the methodology would have been enriched, with observations.

Sejane (2004) employed a case study to assess the management of electronic records management in the Lesotho public service. The author employed a combination of interviews and observations. The following findings were made:

- The public sector in Lesotho was not managing electronic records satisfactorily;
- There was no legislation to deal with electronic records; and
- There were no qualified and skilled personnel to manage electronic records.

Mutiti (2001) conducted a survey of ESARBICA states to ascertain the computerization level of archival institutions. The survey received responses from all ESARBICA states except Lesotho, Namibia and Zambia. The responses to the questionnaires revealed that only four national archival institutions were given a mandate to manage electronic records systems. These were Botswana, Kenya, South Africa and Zimbabwe. Nevertheless, all countries except South Africa were beset with problems of lack of clear policy, limited financial and human resources and lack of technical expertise to install and manage electronic records. Mutiti (2001:5) found that South Africa was the only country that had a strategy in place to ensure that no electronic records were destroyed or erased without authority from the National Archivist. The nature of Mutiti's (2001) study would have necessitated personal observations to verify the nature of the technology on the ground.

Setshwane's (2005:78-79) used a case study approach and focused on the preservation of sound recordings in the Radio Botswana music library. The study revealed:

i.   Most of the sound recordings had deteriorated;
ii.   The sound recordings were not stored under suitable environmental conditions;
iii. Storage areas were inadequate;
iv.   Lack of trained personnel (in the preservation of sound recordings);
v.   Most of the problems associated with the management of sound recordings were due to lack of funds;
vi.   The floors were carpeted and the library was dusty;
vii. The phonographic library and the magnetic tape library had leaking roofs;
viii. Dust, scratch marks, fingerprints, torn casings and stained covers led to the deterioration of the materials; and
ix.   There collections were not protected against disasters.

Although the above study did not cover all formats of AV materials, its findings gave an indication of problems that other institutions in the region could be faced with. Setshwane's (2005:88:) recommendation were:

- A study should be conducted to ascertain the impact of the relocation of Radio Botswana to the new Mass Media Complex;
- A comparative study should be conducted in neighbouring countries (i.e. within southern Africa); and
- Research should be conducted in bureau offices in different parts of Botswana where the Department of Information and Broadcasting has offices.

The current study, which was more comprehensive in nature, covered the first two of these recommendations. Setshwane's (2005) study was conducted before the Department of Information Services, which houses the Music Library, moved to the new Mass Media Complex, which is better equipped to house AV materials.

2.27 Summary

According to Mouton (2001:90), a literature review should end with a summary, which gives the main conclusions from the literature. This chapter reviewed literature pertaining to the management of AV materials. The theoretical framework evaluated models that govern the management of textual and non-textual materials. The archival principles that govern the management of records were examined and their application to archival materials was noted. Emphasis was placed on the important variables that affect the preservation of AV materials. These included biological pests, natural disasters, environmental factors, human negligence, legislative issues, including ethics, copyright requirements, policies, intellectual property laws and the application, or lack, of a records life-cycle. Issues of security and confidentiality, as well as risk management and disaster management, were thoroughly examined.

Bibliographic control methods and procedures were examined with a view to applying international standard formats that apply to archival materials, generally, and, in particular, to AV materials. An overview of the development of AV materials worldwide, in Africa and the ESARBICA, region was given. The review included an examination of how AV archives are administered. The chapter culminated in a review of various environmental standards for different AV formats. It was clear that different authors

prescribed different climatic conditions for storing AV materials. It appears from the review that tropical countries require different climatic and storage conditions from temperate regions, albeit with differences from country to country. It was clear that most ESARBICA countries had problems of inadequate storage for AV materials, poor environmental conditions, inadequate equipment to maintain AV materials and shortage or absence of specialised AV skills. The need to train archival staff in the technicalities of preserving AV materials was obvious.

The review revealed a combination of various methodologies that included questionnaires, interviews and observations. The present researcher was therefore confident about the use of the above methods, as they seemed appropriate for the problem under investigation. By examining the findings, methodology and recommendations used by previous studies, the present researcher was able to cover audiovisual materials exhaustively. The researcher took a cue from Matangira (2003a), that a study on audiovisual materials in ESARBICA should be carried using observations to supplement questionnaires and interviews. Setshwane's (2005:88) observation of a gap for a study in southern Africa and, in particular, a study after the relocation of the Music Library to the new Mass Complex building, was confirmed by this study. This study will make a contribution to the area of AV archiving by revealing more causes of poor management of AV materials. By recommending an appropriate model for managing AV materials, the study will add to the existing theoretical literature. The study will guide policy-makers in devising appropriate policies and legislation that address efficient management of AV materials. It is hoped that the proposed model will demonstrate a break-through in the current preservation problems of AV materials in ESARBICA.

CHAPTER THREE: METHODOLOGY

"A research methodology focuses on the research process and the kind of tools and procedures to be used" (Mouton 2001:56).

3.0 Introduction

Gay (1981:6) defined research as a "formal systematic application of the scientific method to the study of problems". Payne and Payne (2004:148) explained that the term 'methodology' denotes the conceptual and philosophical assumptions that are used to justify the use of particular research techniques. These authors concluded that methodology is a study of methods, that is, an examination of "the characteristics of methods, the principles on which methods operate and the standards governing their selection and application" (Payne and Payne 2004:150). Payne and Payne (2004:151) believed that methods show how research questions are derived, while methodologies are the strategies used from prior orientations and knowledge.

This chapter describes how the study was conducted. It gives an explanation of why the research design was selected to enable the reader to evaluate the appropriateness of the methods and their reliability and validity. The idea behind a description of the research methodology is to enable other investigators to replicate the study if they so desire (American Psychological Association 1994:12). Payne and Payne (2004:149) explained that the description of methodology is done to inform readers how well a research tool is used and to justify why it was the right method. The present study adopted a descriptive survey methodology, which suits the problem under investigation. The descriptive survey methodology is applicable to the research objectives and research questions of this study. The study was guided by research objectives and specific questions of the "who, what, when, where, why, and how, of the research" (Churchill 1995:165). In other words, the study was a fact-finding mission of the phenomenon under investigation

3.1 Research design

A research design has been described in many ways. Rowley (2002:18) described research design as the logic that links collected data to the conclusion of the study. Shajahan (2004:44) defined a research design as guideposts that point a researcher in the right direction. Robson (2002:79) perceived a research design as a tool that turns research questions into projects, while Babbie and Mouton (2001:72) defined a research design as a plan for finding out something. The present study adopted Cooper and Schindler's

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(2001:134) definition of a research design as a blueprint "for the collection, measurement, and analysis of data." Babbie and Mouton (2001:75) drew a clear distinction between methodology and research design. They stated that, while a research methodology focuses on the research process and the tools and procedures to be used, a research design is the desired end-product or results of the study (Babbie and Mouton 2001:75). Robson's (2002) framework (Figure 2) summarises the above views concerning a research design.

Figure 2: Framework for a research design
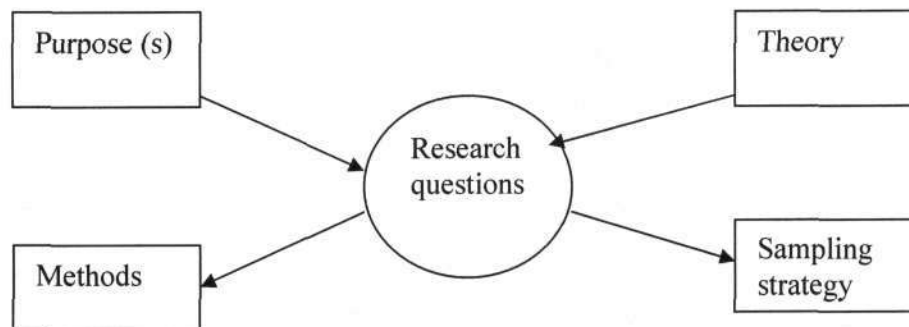
Source: Robson (2002:82).

Robson (2002:81) summarised the components of the model in Figure 2 as: purpose(s) which indicates why the study is being done and what it intends to accomplish, theory which links the phenomena under study and an explanation of how the researcher understands the findings; research questions which address the purpose of the study; the methods where the researcher indicates the specific techniques that will be used to collect and analyse the data to justify the findings and the sampling strategy, where the researcher indicates the units of analysis that will provide the data and where and when the data is to be obtained.

Robson (2002:81) believed that the above aspects or components of the research design model are interrelated and should be kept in balance. The author wrote that "a good design framework will have high compatibility among purposes, theory, research questions, methods and sampling strategy (Robson 2002:82). Saunders, Lewis and Thornhill (2003:82) visualized a research design to be a research approach in the form of an 'onion', which constitutes layers which need to be peeled away by a researcher. These layers are research philosophy, research approaches (deductive or inductive), research strategies, time horizons and data collection methods (Saunders, Lewis and Thornhill 2003:82). These layers are discussed in the next section.

3.1.1 Research philosophy

Saunders, Lewis and Thornhill (2003:83) stated that a research philosophy is fundamental to the development of knowledge. It determines the way the researcher thinks and thus affects the way the research is conducted. Saunders, Lewis and Thornhill (2003:83) identified three views that dominate the research literature: positivism, interpretivism and realism. These are mutually exclusive views, which have an important role to play in the way research is conducted. Creswell (1994:4) referred to the above approaches as research paradigms, while Robson (2002:87) referred to them as fixed strategy (quantitative) or flexible strategy (qualitative). Creswell (1994:4) believed that research paradigms are the backbone to research. They aid a researcher's understanding of the phenomenon under investigation. Firestone (1987:16) cited Kuhn (1970), who explained that the quantitative and qualitative methods are based on paradigms with differing worldviews of the social world. The differences between the paradigms are discussed below.

3.1.1.1 Assumptions about the world

Firestone (1987:16) cited Kuhn (1970), who wrote that quantitative research was "based on a positivist philosophy which assumes that there are social facts with an objective reality apart from the beliefs of individuals". Saunders, Lewis and Thornhill (2003:83) and Cohen, Manion and Morrison (2002:9) likened the positivism approach to natural science. These authors recommended that researchers objectively observe social reality, using questionnaires or any other instrument. The collected data are quantified in a structured manner to facilitate interpretation.

3.1.1.2 Researcher role and approach

Firestone (1987:17) cited Powdermaker (1966), who observed that while "the ideal quantitative researcher is detached to avoid bias, the qualitative researcher becomes immersed in the phenomenon of interest". Creswell (1994:4) and Saunders, Lewis and Thornhill (2003:83) shared these views. Creswell (1994:4), who referred to the positivism philosophy as 'the quantitative paradigm', explained that quantitative researchers control bias in surveys and experiments by selecting samples. He advised that quantitative researchers kept values out of the project. This was done by omitting value statements, while focusing on facts (Creswell 1994:6). Robson (2002:87) elucidated: "a fixed design strategy calls for a tight pre-specification before you reach the main data collection stage...data are always in the form of numbers". Similarly, Firestone (1987:17) cited

Cronbach (1975), who argued that quantitative researchers use experimental or correlational designs to reduce error.

Struwig and Stead (2001:4) distinguished between quantitative research and qualitative research by highlighting the characteristics of the former. The authors stressed that "quantitative research examines constructs (variables) which are based on the hypotheses derived from a theoretical scheme" (Struwig and Stead 2001:4). These authors explained that the nature of quantitative research requires the researcher to precisely define how the constructs are to be measured. This is achieved through the use of independent and dependent variables (Struwig and Stead 2001:5). The causal effect therefore aims at an explanation of the way things are, by showing their causes, hence the statement of dependent and independent variables. Struwig and Stead (2001:5) concluded:

> This preoccupation with causality is a consequence of the tendency among quantitative researchers to seek to absorb methods and assumptions of the natural scientist, which generally have been interpreted in positivistic terms.

Struwig and Stead (2001:4) felt that quantitative research is characterised by a weak account of how constructs are derived and yet they are central to quantitative research.

3.1.1.3 Purpose

Firestone (1987:16) cited Taylor and Bogdan (1984), who stated that quantitative researchers use objective measurements and quantitative analysis to explain why social facts change. Qualitative researchers are more interested in understanding "the social phenomenon from the actor's perspective through participation in the life of those actors" (Firestone 1987:16). Cohen, Manion and Morrison (2002:27) believed that the positivist and interpretive paradigms are essentially concerned with understanding phenomena through two different lenses. That is, while positivism strives for objectivity, the interpretive paradigms strive to understand and interpret the world in terms of its actors. Cohen, Manion and Morrison (2002:27) concluded that phenomena are important in positivism, while meaning and interpretations are paramount in interpretivism. Another distinction between qualitative paradigm and the quantitative paradigm is based on theory building. While the quantitative approach uses deductive logic to come up with theories and tested hypotheses, the qualitative approach uses inductive logic by using data to develop theory, which is then used to explain a phenomenon (Creswell 1994:7; Saunders, Lewis and Thornhill 2003:87).

The interpretivism or anti-positivist philosophy holds that "rich insights into this complex world are lost if such complexity is reduced entirely to a series of law-like generalisations" (Saunders, Lewis and Thornhill 2003:84). The proponents of the interpretivism approach believed that the uniqueness of organisations in a changing world negated generalisability. Saunders, Lewis and Thornhill (2003:84) reinforced this point when they cited Remenyi, Williams, Money and Swartz (1998), who believed that the interpretivism approach aimed at discovering the details of the situation in an attempt to unearth the reality behind them. The interpretivists therefore realised a need to understand the subjective reality of their subjects (those they study), "in order to make sense of, and understand, their motives, actions, and intentions in a way that is meaningful for these research participants" (Saunders, Lewis and Thornhill 2003:84). According to Cohen, Manion and Morrison (2002:19), anti-positivists reasoned that the researcher sharing their frame of reference could only understand individuals' behaviour. This requires an understanding of individuals' interpretation of the world around them, which must come from within, not the outside, as projected by the positivists.

Creswell (1994:4) and Robson (2002:87) referred to the interpretivism approach as 'the qualitative paradigm'. Creswell (1994:6) stated that the qualitative researcher is aware of the value-laden nature of this approach. Thus, the researcher "actively reports his or her values and biases, as well as the value nature of the information gathered from the field" (Creswell 1994:6). The idea behind the qualitative philosophy is that the researcher minimises the distance between him or her and the objects or informants of the study, in order to have a true picture of the situation under study. Robson (2002:87) concluded that since qualitative strategies are in the form of words, the data are typically non-numerical. Robson (2002:87) explained that a research design could be both quantitative and qualitative, that is, the design could have a qualitative phase, followed by a quantitative phase and *vice versa*. The present study was both quantitative and qualitative. The combination of the qualitative and the quantitative paradigms was based on the nature of the problem under study. Preliminary investigations were carried out using interviews, while the data collection instruments for the major study were questionnaires, interviews and observation techniques. The quantitative paradigm was predominant in this study because interviews and observations were only used to augment and verify responses from the questionnaires.

Payne and Payne (2004:170) pointed out another paradigm, which they referred to as 'realism'. Realism represents the underlying real order that is observable as phenomena.

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In other words, "a reality exists that is independent of human beliefs" (Saunders, Lewis and Thornhill 2003:84). These authors stated that realism is based on the premise that there is a reality that is external and independent of human thoughts and beliefs, which affects their perception of the world. This implies that "…people are not objects to be studied. This is because there are broader social forces that influence and perhaps constrain, the nature of people's views and behaviours" (Saunders, Lewis and Thornhill 2003:85). Realism is therefore less fixated on the empirical approach because it does not perceive the 'truth' of theory to be demonstrated by its capacity to predict accurately. In other words, realists disagreed with the interpretivism approach of deducing meaning from observations.

Payne and Payne (2004:172) cited Bhaskar (1978), who believed that realism challenged the idea that scientific knowledge was the sole truth. Bhaskar (1978) stated that the natural sciences did not work in the simple way suggested by positivists. Rather than seeing observable phenomena as being the totality of the real world, the realism approach accepts the less observable forces behind the phenomena (Payne and Payne 2004:172; Saunders, Lewis and Thornhill 2003:85). Realists were therefore seen to be advocating the primacy of external world (external influence on people's interpretations and their behaviour), rather than the actor's interpretation of the world (Payne and Payne 2004:172).

Robson (2002:38) felt that the nature of a study determines the choice of philosophy. Churchill (1995:145) explained that the research design stems from the problem and thus each type of research design "is appropriate to specific kinds of problems". Churchill (1995:145) concluded that certain types of research designs were more suitable to some purposes than others. Robson (1993:42) advised that research strategies could be classified in terms of their purpose, that is, exploratory, descriptive and explanatory. While exploratory research assesses a phenomenon by asking questions and seeking new insights, descriptive research gives a detailed and accurate profile of persons, events or situations (Robson 1993:42). Explanatory research aims at explaining a situation or problem, usually in the form of causal relationships (Robson 1993:42; Saunders, Lewis and Thornhill 2003:97). The present study was both exploratory and descriptive.

Barker and Pistrang (2002:91) and Bulmer (1993:9) pointed out that there is no ideal research approach. Bulmer (1993:9) concluded, "all data collection in social science is liable to error and no method is free from error". Bulmer (1993:9) and Saunders, Lewis and Thornhill (2003:90) suggested that the choice of philosophy should be based on the

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research questions and the research objectives the researcher seeks to answer. Creswell (1994:9) believed that the choice between the qualitative and the quantitative paradigms should be based on the researcher's worldview, training or experience of the researcher, the researcher's psychological attributes, nature of the problem and audience of the study.

Bulmer and Warwick (1983:10) emphasised that different methods should complement each other, rather than compete with each other (Bulmer and Warwick 1983:10; Guion 2006). The type of research questions and the objectives of the current study (as reflected in Table 1 in Chapter One), were the major driving forces in the decision to combine quantitative and qualitative paradigms. The time attached to the completion of this study led the present researcher to be more inclined towards the quantitative rather than the qualitative approach. The study took into consideration the audience of the published findings of the study, that is, policy-makers, graduate students, faculty, journal editors and other readers. A discussion of different types of research designs follows.

3.1.2 Types of research designs or strategies

Various authors, including Babbie and Mouton (2001), Churchill (1995), Creswell (1994), Mouton (2001), Powell (1999), Robson (2002) and Sekaran (2003), discussed research designs or strategies. Powell (1999:95) cited Kim (1998), who wrote a comprehensive review of research strategies used by social scientists. The author categorised the research strategies into four groups:

   i. Theoretical/philosophical inquiry entails the development of conceptual models or frameworks;

   ii. Bibliographic research includes descriptive bibliographic studies which require examination of books and systematic enumerative bibliographies;

   iii. Research and Development (R&D) usually employs a combination of qualitative and quantitative strategies and involves a development of storage and retrieval systems; and

   iv. Action research employs a combination of qualitative and quantitative strategies. Organisational participants are required to take part in their own problem-solving. The strategy entails collection of information to effect change in specific settings.

Powell (1999:96) broke down the above broad research categories into qualitative and quantitative driven strategies, as will be demonstrated in the section that follows.

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3.2 Quantitative driven strategies

Quantitative research focuses on quantification of constructs. It uses variables to describe and analyse human behaviour and it ensures control of errors through the use of experiments (Babbie and Mouton 2001:49). The discussion below lists the different quantitative strategies that researchers often employ.

3.2.1 Causal studies/experimental studies

Churchill (1995:145) and Cooper and Schindler (2001:151) believed that causal research design studies were experimental, since they are more concerned with cause and effect relationships, that is, "how one variable affects or is responsible for changes in another variable" (Cooper and Schindler 2001:151). This calls for hypothesis testing, to ascertain or negate any relationship between the variables under investigation (Cooper and Schindler 2001:151).

3.2.2 Exploratory studies

Churchill (1995:146) explained that exploratory studies are conducted to gain insights and ideas about unknown phenomena. That means that exploratory studies are useful at the beginning of an investigation. They generate information about the problem and they clarify concepts and increase the researcher's familiarity with the problem, particularly when the subject of the study is relatively new (Babbie and Mouton 2001:79; Churchill 1995:149; Sekaran 2003:119). Churchill (1995:145), Cooper and Schindler (2001:139) and Sekaran (2003:119) stated that exploratory studies assist researchers to get a deeper insight of the problem. They are undertaken when there is scanty information about the phenomenon or no past record of the situation. This necessitates extensive preliminary work to have thorough knowledge of the phenomenon (Sekaran 2003:119).

The present study combined exploratory and descriptive research strategies. The exploratory approach was employed at the beginning of the study. The researcher made contact with key people in the area of study to clarify the problem under study. Further contacts were made at the ESARBICA conference held in Gaborone (Botswana) in July 2005, where the researcher pre-tested the research instruments.

3.2.3 Predictive/explanatory studies

Powell (1999:96) wrote that predictive/explanatory studies are "non-experimental studies designed to test for hypothesized relationships among variables for purposes of explanation or prediction". Leedy and Ormrod (2001:97) pointed out that explanatory studies focus on a situation or problem "in order to determine or explain the relationships between the variables".

3.2.4 Content analysis

According to Leedy and Ormrod (2005:108), content analysis is "a detailed and systematic examination of the contents of a particular body of material for the purpose of identifying patterns, themes or biases". Content analysis focuses on forms of human communication such as books, films, newspapers, music, videotapes of human interactions, art and transcripts of conversations and other forms of communication that examine patterns or frequency of words, phrases, concepts, images, themes, characters or roles (Leedy and Ormrod 2005:142; Powell 1999:96). Powell (1999:96) added that content analysis includes readability research. Leedy and Ormrod (2005:142) stressed that content analysis requires careful planning at the beginning of the project. The researcher has to define "a specific research problem or question at the very beginning" (Leedy and Ormrod 2005:142). The researcher is also expected to identify the sample to be studied, as well as the method of analysis at the onset of the project.

The present study applied the above guidelines at the preliminary stage, when a sample of archival institutions and media organisations was selected for observation (see Appendix I and II, respectively).

3.2.5 Bibliometric studies

Bibliometrics is a research method commonly used in Library and Information Science. It is used to determine the frequency of publications by authors in a given journal, to determine the number of core journals in a given field and to predict the frequency of words within a text. It applies "quantitative analysis and statistics to describe patterns of publication within a given field or body of literature" (Wikepedia, the free encyclopaedia 2006). This method is also used to trace citations using Social Science Citation Index, the Science Citation Index or the Arts and Humanities Citation Index (Wikepedia 2006).

3.2.6 Operations research studies

Operations research, also referred to as management science, is used to clarify complex problems that lend themselves to quantification (Sekaran 2003:49). It "uses higher mathematics and statistics to identify, analyse, and ultimately solve, intricate problems..." (Sekaran 2003:49). Operations research is an additional tool, which managers use to supplement personal judgement in decision-making (Powell 1999:96; Sekaran 2003:49).

3.2.7 Descriptive studies

According to Powell (1999:96), descriptive studies are surveys or observational studies, not meant to test hypothesized relationships between variables. They are more concerned about "determining the frequency with which something occurs or the relationship between two variables" (Churchill 1995:145). With descriptive studies, the researcher is able "to describe characteristics of the variable of interest to the situation" (Sekaran 2003:121). This is why Robson (2002:59) believed that descriptive studies depict an accurate profile of persons, events or situations. Saunders, Lewis and Thornhill (2003:97) realised a need to use descriptive studies as a forerunner to exploratory research in order to "have a clear picture of the phenomena on which you wish to collect data prior to the collection of data" (Saunders, Lewis and Thornhill 2003:97).

3.3 Survey research

Babbie and Mouton (2001:230), Ngulube (2005a:131) and Saunders, Lewis and Thornhill (2003:99) stated that survey research was the most frequently used research strategy in social sciences. This is because the survey technique uses questionnaires to reach a wide audience. It enables a researcher to collect large amounts of data, in a cost-effective manner (Babbie and Mouton 2003:231; Bulmer and Warwick 1983:31; Saunders, Lewis and Thornhill 2003:92). Saunders, Lewis and Thornhill (2003:92) added that the survey is considered an authoritative technique, as it is used to report information to the general public. It therefore gives a researcher "...more control over the research process" (Saunders, Lewis and Thornhill 2003:92).

Babbie and Mouton (2001:231) cited Mugyenyi (1997), who had dissenting views about surveys. The latter author argued that social surveys were not so popular in South Africa and other developing countries because the technique is based on the worldview of the western world. Bulmer (1983:12) had similar views about studies in India. However, studies such as those of Ngulube (2005a) and Powell (1999) dispelled the negative

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perceptions about social surveys. Ngulube's (2005a) study, which investigated research procedures used by Masters of Information Studies students at the then University of Natal, discovered that the survey method accounted for 69.14% of research methods (Ngulube 2005a:131). Powell's (1999:99) study, which was based on abstracts from an International Conference in Library and Information Studies, revealed that the survey method accounted for 66% of research methods in the special library literature.

The present researcher was attracted to social survey as a research method because of its ability to cover a wide geographic population. The researcher took a cue from a similar study conducted by Ngulube (2003a:199), who opined that preservation studies typically employ surveys. This is because such studies are designed to collect data on the policies, storage conditions and climatic conditions where archival holdings are housed, general standards of the repositories of archival holdings, standards for the preservation of archival materials, education level of personnel who deal with preservation matters, procedures regarding access to records and archives, housekeeping, handling and emergency preparedness practices, as well as records survey activities. Surveys are categorised into two types, that is, cross-sectional or longitudinal.

3.3.1 Cross-sectional studies

Churchill (1995:166) pointed out that "the cross-sectional study is the most common and most familiar". Churchill (1995:166), Cooper and Schindler (2001:136) and Dooley (2003:125) recorded that, with cross-sectional studies, researchers take a sample of members from the population of interest and measure them once. Dooley (2003:125) cautioned that results from cross-sectional sampled population surveys could only be generalised at the time of the study. This implies that cross-sectional studies are snapshots of a phenomenon at a particular time (Cooper and Schindler 2001:136; Saunders, Lewis and Thornhill 2003:96). Saunders, Lewis and Thornhill (2003:96) attributed the time horizons to the fact that most research projects are conducted for academic purposes, which are, in most cases, time constrained. Although Churchill (1995:166) reasoned that cross-sectional studies are familiar and very popular, they have drawbacks too. For instance, Leedy and Ormrod (2005:183) warned that different environmental conditions could contribute to differences in a sample of different age groups. The authors stated that, with cross-sectional designs, one could not "compute correlations between characteristics at different age levels".

3.3.2 Longitudinal studies

Longitudinal studies are repeated over a period of time (Cooper and Schindler 2001:166; Dooley 2003:125; Saunders, Lewis and Thornhill 2003:96). Longitudinal studies enable a researcher to exercise control over the variables under study (Saunders, Lewis and Thornhill 2003:96). However, longitudinal studies have drawbacks, too. For instance, Saunders, Lewis and Thornhill (2003:201) pointed out that comparative research could only be feasible with the availability of comparable data. Saunders, Lewis and Thornhill (2003:201) advised researchers to ensure that the data that are compared were collected using comparable methods. These researchers cautioned that "comparisons relying on unpublished data or data that are currently unavailable in that format...are likely to be expensive..." Saunders, Lewis and Thornhill (2003:201). This explains why Leedy and Ormrod (2005:183) concluded that, unlike cross-sectional studies, which permit a researcher to collect data at a single time, longitudinal studies require researchers to track down people. This exercise proves difficult in cases where people may have "relocated to various points around the globe" (Leedy and Ormrod 2005:183). Leedy and Ormrod (2005:183) wrote that if the same measurement instrument is used over time, "people are likely to improve simply because of their practice with the instrument, even if the characteristic being measured has not changed at all". Similar to previous studies in the area of AV archiving (such as Derges 1992; Matangira 2003a; Matangira 2003b; Ngulube 2003a), the current study was cross-sectional. It captured the state of AV materials in the region at the particular time of the study.

3. 4 Population

The population or universe of the study is the targeted group or units that the researcher intends to cover. Gay (1981:86) described a population as "the group of interest to the researcher, the group to which she or he would like the results of the study to be generalizable". Similarly, Powell (1997:66) understood the term 'population' to refer to the aggregate of units (units of analysis) to which the researcher wishes to generalise the research results.

3.4.1 Selection of the population

Powell (1997:66) advised that the population should be selected with care, bearing in mind the selection criteria, desired size and the parameters of the survey (Powell 1997:67). In addition, other resources such as money and time are considered when selecting the population. The present study targeted all fourteen national archives and national media

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organisations in the ESARBICA region. This brought the units of analysis to twenty-eight. A sample frame for national archival institutions was obtained from the ESARBICA website. Churchill (1995:82) defined a sampling frame as "the list of population elements from which the sample will be drawn". The sample frame provided a list of names of the various national archival heads. The sampling frame included e-mail addresses, telephone numbers, postal addresses and fax numbers of the above organisations. Most of the contacts from media archives in ESARBICA were obtained from the delegates at the Southern African Workshop on Film, Video and Sound Archives that was held in Johannesburg in October 2005. Other contacts for media archives were obtained from the directors of national archives in ESARBICA. Furthermore, personal contacts were useful in obtaining links to media organisations in the region. This was done through word of mouth, e-mail and telephone communication.

3.4.2 Sampling

Babbie and Mouton (2001:164) defined sampling as a "process of selecting observations". The present researcher purposively selected four countries where observations and interviews were conducted. The countries were grouped into four categories according to their level of development in the area of audiovisual archives, as reflected in Appendix I. Thus, one country (with the exception of group one) was randomly selected from each group. South Africa was purposively selected because it is ahead of the rest of the region. This information was gleaned from the literature and presentations made at the ESARBICA conference, which was held in July 2005 in Gaborone, Botswana, and the IASA and FIAT conference held in Johannesburg, South Africa, in October 2005. The National Film Video and Sound Archives (NFVSA) of South Africa was purposively selected for observations and interviews. The other countries (which were randomly selected from their respective groups) included Botswana, Namibia and Swaziland. The researcher targeted audiovisual archivists and media archivists or librarians responsible for AV materials. The audiovisual units or repositories and audiovisual materials were the focus of the observations.

3.5 Data collection methods

Cooper and Schindler (2001:615) referred to data collection as "the specifics of gathering data". The methods used to gather survey data range from observations to large-scale surveys, using questionnaires or interview schedules as data collection instruments. According to Cooper and Schindler (2001:615), the choice of data collection methods

depends on the research design. Saunders, Lewis and Thornhill (2003:281) advised that the choice of data collection method(s) should be based on the research question (s) and research objective(s). In this study, a mixed-method, commonly referred to as triangulation method, was used to collect data from the units of analysis, using questionnaires, interviews and observations. Sekaran (2003:258) suggested that cross-country surveys should be conducted within three to four months to avoid too long an interval lapse in collecting data between countries. This could result in many changes in some countries or all countries. Due to a slow response rate, data was collected during five months, between November 2005 and March 2006.

3.5.1 Triangulation: enhancing the validity of data collection

Various authors, including Babbie and Mouton (2001:275), Bowling (1997:180), Creswell (1994:174), Guion (2006), Gorard and Taylor (2004:43), Moore (2000:13) and Saunders, Lewis and Thornhill (2003:99) supported the use of triangulation in data gathering. Triangulation is a technique that uses a combination of data collection methods in one study to ensure validity. It could involve a combination of research paradigms such as qualitative or quantitative, a combination of data collection methods such as interviews, questionnaires and observations, or the of use of different researchers and data sources (Creswell 1994:175; Guion 2006; Saunders, Lewis and Thornhill 2003:99). Triangulation is used "to check and establish validity…in studies" (Guion 2006). The triangulation method allows for cross-checking of information gathered in different ways (Babbie and Mouton 2001:277).

According to Moore (2000:13), triangulation enriches the study in breadth and depth. Bowling (1997:180) cited Denzin (1989), who pointed out that triangulation shields the researcher against personal biases that are commonly found in single methodologies. Barker and Pistrang (2002:91) and Saunders, Lewis and Thornhill (2003:99) concurred, when they stated that triangulation permits the cancellation of 'method-effect' that is associated with different methods. It therefore results in greater confidence in the researcher's conclusions. Saunders, Lewis and Thornhill (2003:99) believed that triangulation allows different methods to be used for different purposes in a study. In this regard, triangulation neutralises any bias inherent in any particular data sources, investigator or method (Creswell 1994:174).

Gorard and Taylor (2004:4) stressed that qualitative and quantitative methods were best combined than used in isolation. That is, "both the qualitative and quantitative traditions should be in evidence in any...research group or project" (Gorard and Taylor 2004:4). Creswell (1994:7) did not support the idea of combining qualitative and quantitative designs in a single study, due to the fact that such a strategy could be "expensive, time-consuming, and lengthy". Saunders, Lewis and Thornhill (2003:100) maintained that researchers should use different methods to cancel the 'method effect'. Thus the qualitative and quantitative paradigms may be used together to demonstrate concurrent validity (Cohen, Manion and Morrison 2002:112). For these reasons a combination of qualitative and quantitative designs was employed in the current study. The survey was conducted with the aid of questionnaires (see Appendix VI), interviews (see Appendix VII, and VIII) and an observation checklist (see Appendix IX).

The researcher used observations to ascertain some information that had been gathered about the phenomenon under study. The spot-checking of the AV storage areas assisted the researcher in answering some of the research questions. Gall, Gall and Borg (2005:180) recommended the use of questionnaires and individual interviews for data collection in survey research. The present study employed self-administered mailed questionnaires. By and large the instrument was an adaptation of questionnaires used in related studies (Derges 1992; TAPE 2005). Questions on security relevant to facilities and buildings were adapted from Roper and Millar (1999b). Saunders, Lewis and Thornhill (2003:290) recommended questionnaire adaptation, in instances where a researcher wished to replicate or compare findings with other studies. The present researcher wanted to compare findings with previous studies, in an attempt to recommend more appropriate ways of managing AV materials in the region. The various research tools that the researcher used are discussed below.

3.5.1.1 Questionnaires

Questionnaires are the most widely used data collection tools in surveys (Moore 2000:108; Moser and Kalton 1979:257). De Vaus (2002:94) defined a questionnaire as a data collection technique where respondents answer the same questions, in a predetermined order. There are different types of questionnaires: self-administered questionnaires, on-line questionnaires, postal or mail questionnaires, interviewer-administered questionnaires, telephone questionnaires and interview schedules (Saunders, Lewis and Thornhill 2003: 282). These authors identified two major types of

questionnaires: self-administered and interviewer-administered. Self-administered questionnaires include on-line questionnaires, postal questionnaires and delivery and collection questionnaires. Interviewer-administered questionnaires comprise telephone interviews and structured interviews. The current study employed postal questionnaires and structured interviews to collect data from various respondents. Questionnaires were either posted or sent by e-mail to national archival institutions and national media organisations in ESARBICA. Interviews and observations were conducted in selected organisations as indicated in the questionnaire (Appendix VII), the interview guide (Appendix VIII) and the observation checklist (Appendix IX).

Saunders, Lewis and Thornhill (2003:282) cautioned that the design of a questionnaire depends "on how it is administered, and in particular the amount of contact you have with the respondents". The present researcher believes that the way questionnaires are designed and administered has a large part to play in the outcome of any survey. Regardless of the level of development, if questionnaires are not properly designed, the potential respondents are bound to misunderstand or misinterpret them.

3.5.1.1.1 Design of the questionnaires, length and layout
The planning stage precedes the actual design of the questionnaire (Babbie and Mouton 2001:239; Moser and Kalton 1979:304; Powell 1993:90). With a proper plan, the researcher then designs the questionnaire. Various authors outlined guidelines on the wording of questions, content (which includes the type of questions to ask or avoid asking), format, arrangement, sequencing and printing of questionnaires (Babbie and Mouton 2001:239; Gay 1981:161; Pelosi, Sandifer and Sekaran 2001:154; Saunders, Lewis and Thornhill 2003:251). Gay (1981:160) recommended that questionnaires "should be as attractive and brief, and easy to respond to, as possible". This means that all respondents must understand the questions. Babbie and Mouton (2001:234), De Vaus (1986:71), Fowler (1998:343), Moser and Kalton (1979:256), Payne and Payne (2004:189) and Robson (2002:245) identified the pitfalls of questionnaire design as ambiguity and technical language, double-barrelled questions, threatening or intimidating questions, positively and negatively worded questions and emotionally charged questions. These pitfalls are discussed below.

3.5.1.1.2 Pitfalls to be avoided
Payne and Payne (2004:186) and Sekaran (2003:240) stressed the need to use simple, unambiguous and non-technical language in the design of questionnaires. The authors

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advised researchers not to use double-barrelled questions or leading questions. Payne and Payne (2004:186) added that threatening or intimidating questions must be avoided. Positively and negatively worded questions, leading questions, loaded questions (which are emotionally charged), socially desirable questions (which elicit desirable responses) and recall-dependent questions (which require respondents to recall experiences) should be avoided, as they are biased (Sekaran 2003:240). Fowler (1998:349) advised researchers to use common definitions when classifying people or counting objects or events. This requires researchers to identify simple, easy questions that can provide a basis for classification.

Fowler (1998:350) cautioned against questions where respondents lacked knowledge. Fowler (1998) pointed out that, in most cases, "the problem of asking people questions to which they do not know the answers is one of respondent selection rather than question design" (Fowler 1998:350). Fowler (1998) cautioned further that, in some instances, respondents did not have the required information. Fowler (1998:350) therefore advised researchers to ensure that questions to which respondents do not know the answers are not included in the survey instrument. He advised, "if the researcher wants to find out something that is not commonly known by respondents, the researcher must find another way to get the information" (Fowler 1998:350). In the current study, the researcher used the interview guide to gauge complex issues in the area of AV archiving.

3.5.1.2 Types of questions

Saunders, Lewis and Thornhill (2003:286) stressed the need to set clear questions prior to data collection. This is because, unlike in-depth and semi-structured interviews, it is not possible for the researcher to prompt and explore issues with the respondents. Questions are either open-ended or close-ended. Sekaran (2003:239) explained that, while open-ended questions give respondents a chance to answer the questions in any way they choose, close-ended questions ask respondents to choose from alternatives. Such questions facilitate coding of data and the subsequent analysis. Sekaran (2003:239) advised that, where alternatives are given, researchers should ensure that questions are mutually exclusive and collectively exhaustive. The present researcher met this requirement through pre-tests of the questionnaires and interview schedules. Both open-ended and close-ended questions were used.

3.5.1.3 Layout of questionnaires

Babbie and Mouton (2001:239) stressed that the questionnaire format was as important as the nature and wording of the questions. The authors discouraged the use of poorly laid-out questionnaires, as they mislead and confuse respondents. They suggested that the questionnaire should not be cluttered, that is, questions should not be squeezed on one line or on a page and boxes should be adequately spread apart. Alternatively, the researcher could provide code numbers against options and ask respondents to circle the appropriate number. Babbie and Mouton (2001:224) suggested that contingency questions (which are followed with further questions) should be clearly followed with clear instructions. Sekaran (2003:239) advised that questions should be simple, short and sequenced from general to specific issues.

Although the questionnaire for the current study was long, the researcher designed it according to the suggestions from the literature that were outlined in the preceding text. Cooper and Schindler (2001:314) conceded that there was no empirical evidence against the use of long questionnaires. While experts such as Professor Terry Cook, Ms Kate Murray (Woodruff Library, Emory University) and Professor Nathaniel Mnjama (see section 3.5.1.6) adjudged that the questionnaire was lengthy, they agreed that it was very comprehensive and captured all the important aspects of the problem being investigated. The experts advised that the researcher should not dwell on electronic records, as this was not the focus of the study. Most of the questions concerning electronic records were omitted. Other suggestions involved re-arranging and refining some of the questions (see section 3.5.1.6).

3.5.1.4 Advantages of mail questionnaires

Bowling (1997:228), Cooper and Schindler (2001:312), Powell (1997:229) and Shajahan (2004:115) pointed out that questionnaires might cover a large group of people in different geographic locations without increase in cost. A questionnaire is therefore a powerful research tool, as it is relatively flexible. Powell (1997:90), Moser and Kalton (1979:257) and Shajahan (2004:127) identified other advantages of questionnaires. These include: anonymity, elimination of verbal interviewer bias and errors, availability of time of and space to complete documents more accurately, freedom to make critical comments and answer embarrassing questions, the researcher can have fast access to computer-literate respondents, the ability to collect and analyse quantitative data and questionnaires are relatively economical, particularly where the population is widely spread and funds are limited. Questionnaires, however, have some disadvantages, which are discussed below.

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3.5.1.5 Disadvantages of mail questionnaires

Cooper and Schindler (2001:313), Moser and Kalton (1979:257) and Shajahan (2004:127) admitted that, although mail questionnaires seem to be a quick and convenient method of conducting a survey, returns and follow-ups might take longer (as in the case of the present study, where the researcher took five months to get back the mailed questionnaires). Bowling (1997:228) cautioned that the structured nature of questionnaires leaves no room for flexibility. This is because questionnaires do not give room for probing beyond a given answer (Cooper and Schindler 2001:314). As a result, some respondents may not fully understand pre-coded responses, resulting in inappropriate recordings. This is why the present study post-coded the questionnaires.

Bulmer and Warwick (1998:38) and Moser and Kalton (1979:260) warned that questionnaires are not suitable for complex issues; they are best applied to simple issues, which require straightforward questions. Moreover, questionnaires yield best results when 100% of the population is literate, speak a common language and share a common culture (Bulmer and Warwick 1998:38). Shajahan (2004:127) observed that "questionnaires cannot elicit replies from people who are illiterate and less educated". This explains why Moser and Kalton (1979) earlier recommended leaving out some respondents due to low education or illiteracy. Shajahan (2004:127) stated that in cases where the population was illiterate, "ambiguity, vagueness, technical expressions ...might dampen their motivation". It is therefore important for researchers to simplify questions. The present researcher minimised these problems by targeting AV archivists or officers responsible for AV materials. In cases where the respondents were not clear about some aspects of AV archiving, permission was sought to clarify issues with senior personnel, during interviews. After the questionnaires were returned, the researcher made follow-ups by telephone, to rectify unclear responses to some of the questions.

Fowler (1998:359) discovered that it was difficult to get consistent measurements across languages when scales are defined objectively. Thus, Fowler (1998) realised a need to use numerical scales to "improve the comparability of data collected across languages" (Fowler 1998:360). This is done to facilitate translation of the questionnaire to a local language and hence reduce the non-response rate (Sekaran 2003:244). The present researcher did not translate questionnaires to local languages, because all the respondents understood English. The researcher ascertained this at the IASA/FIAT Workshop, where she was able to interact in English with Portuguese-speaking respondents from Mozambique.

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Cooper and Schindler (2001:313), Moser and Kalton (1979:216) and Shajahan (2004:127) noticed that, in some instances, it was difficult for researchers to ascertain that people it was intended for, completed the questionnaire. This is because the questionnaire method does not give the surveyor an opportunity to supplement answers with observations (Cooper and Schindler 2001:313; Moser and Kalton 1979:261). Cooper and Schindler (2001:313) observed anxiety among respondents in mailed questionnaires. This could partly be attributed to the fact that mail questionnaires do not make provision for interviewer intervention (to probe or explain complex issues) (Shajahan 2004:127). Other disadvantages of mail questionnaires were inability to check and accept answers to questionnaires. This is due to the fact that the instrument is not suitable where spontaneous answers are needed, or where sensitive issues arise. This means that responses from mail questionnaires could be skewed (Cooper and Schindler 2001:313; Shajahan 2004:127). Welman and Kruger (2001:147) warned that "the researcher's lack of control over the completion of the questionnaires may result not only in poorly completed questionnaires, but also a poor response rate". In view of the above disadvantages, Shajahan (2004:128) recommended a combination of questionnaires with interviews.

The present study combined questionnaires with interviews to minimise the described shortcomings of mail questionnaires. The researcher personally collected some of the questionnaires (as in the case of Botswana and South Africa) to minimise non-response. The researcher was able to solve difficulties and check answers, to ensure completeness. Moser and Kalton (1979:261) supported this approach.

3.5.1.6 Pre-testing questionnaires and interview schedules

Various authors such as Babbie and Mouton (2001:209), Gall, Gall and Borg (2005:133), Churchill (1995:436), Saunders, Lewis and Thornhill (2003:308) supported pre-testing of questionnaires to remove any ambiguities or incompleteness in the recorded list of responses and to ensure validity and reliability. Churchill (1995:436) stated that the questionnaire pre-test was vital because it tests how the questionnaire would perform "under actual conditions of data collection" (Churchill 1995:436). Babbie and Mouton (2001:244) emphasised that pre-testing was more crucial "where more than one cultural or language group is included in the study". Saunders, Lewis and Thornhill (2003:308) cited Mitchell, who advised that the initial pre-testing should be done with an expert or a group of experts "to comment on the representativeness and suitability of your questions".

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Babbie and Mouton (2001:244) suggested that the questionnaire be pre-tested on a group of ten friends, provided the questionnaire is relevant to them. The authors pointed out that the pre-test subjects did not have to represent a representative sample of the survey. Fowler (1998:369) believed that a survey instrument should be pre-tested on fifteen to thirty-five people who are similar to the respondents in the final survey. Fowler (1998:369) felt that such an approach encourages suggestions to be made on the structure of the questionnaire, which, in turn, improves content validity. Pre-testing also helps to determine the range of answers to questions, which ultimately improves questionnaire format and measuring scales.

Given the technical nature of the problem under investigation, the research instrument was pre-tested on twenty experts in information studies. These included prominent experts such as Professor Terry Cook from Canada, who delivered the keynote address at the ESARBICA Conference in July 2005, in Gaborone, Botswana, and Mr. Ray Edmondson from Australia, who made a presentation at the FIAT/IASA workshop in October 2005, in Johannesburg, South Africa. Experts from academic institutions included Dr. Nathaniel Mnjama and Dr. Justus Wamukoya from the University of Botswana, Miss Shannon Faulkhead from Monash University, in Melbourne, Australia and Mrs Helen Morgan from the University of Melbourne. Others included Ms. Kate Murray from the Media Collections Library of Emory University in the U.S.A and archivists from various archival institutions in ESARBICA. Eleven out of the twenty people completed and returned the trial questionnaires. Some changes were made to improve the structure and the content of the questionnaire. Questions that were deemed irrelevant were excluded, while other questions were included. The pre-testing exercise revealed a need to include media archives in the study.

3.5.1.7 Administration of questionnaires

Shajahan (2004:124) stated that the administration of the questionnaires is the final stage following the design, pre-test and amendment of the questionnaire. Postal self-administered questionnaires were sent with a covering letter (Appendix X), which clearly explained the purpose of the study why it was important for the respondents to take part in the study and why they had been selected. The letter generally appealed for the respondents' co-operation by assuring confidentiality of the findings. The letter was attached to all questionnaires that were sent out (including E-mails and pre-tests). Self-addressed envelopes with reply coupons were used to facilitate convenience of responding (Dillman 2000:18). The letter ended with a 'thank you' line.

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Babbie and Mouton (2001:261) believed that "two or three weeks are a reasonable space between mailings". Babbie and Mouton (2001:261) suggested that three mails (which included the original and two follow-ups) were most efficient. After two weeks of sending the questionnaires, E-mail reminders were sent to non-respondents. After a further two weeks, postal reminders were sent to non-respondents, together with another set of questionnaires. The researcher stressed why the respondents' contributions were valued. After another two weeks, follow-ups were made through telephone calls. In certain instances, such as Zambia, Malawi, Zimbabwe and Seychelles, an electronic copy of the questionnaire followed the postal questionnaire. In other cases, personal contacts were used to reach the non-respondents.

The first completed questionnaire was received after two months. The questionnaires were later supplemented with interviews and observations. In the present study, the researcher did not promise any financial incentives to the respondents. The contacts that the researcher made at the ESARBICA Conference in July 2004 and the FIAT/IASA Conference in October 2005 were very useful. It is through such contacts that the present researcher was able to access some of the institutions in which observations were conducted.

3.5.1.8 Response rate

Babbie and Mouton (2001:261), De Vaus (2002:84) and Welman and Kruger (2001:147) said that the biggest problem associated with questionnaires (particularly mail questionnaires), is low response rate or non-response. According to Saunders, Lewis and Thornhill (2003:157), non-response is caused by four interrelated problems, namely;

- Refusal to respond;
- Ineligibility to respond;
- Inability to locate respondent; and
- Respondent located but unable to make contact.

Welman and Kruger (2001:147) warned that the researcher's lack of control over the completed questionnaires could result in poorly completed questionnaires and a poor response rate. Ways of addressing the problems of non-response included proper design and layout of questionnaires, enlisting respondents' co-operation, respecting respondents' confidentiality, an explanation of the study's purpose and usefulness, an explanation of how the respondent was selected, the use of proper postal procedures, such as self-

addressed envelopes with accompanying cover letters, follow-ups or reminders, preliminary notification prior to the survey, financial incentives, an indication of what will be done to the results of the survey, use of appropriate sampling techniques and the position of the researcher (De Vaus 2002:84; Dillman 2000:299; Fowler 2002:46; Shipman 1997:63).

In order to minimise the above problems, the researcher adapted part of Dillman's (2000:4) Total Design Method (TDM), which was tested and published in 1978. This method is said to have improved the response rate of mail surveys by using the principles of social exchange theory. The TDM approach appealed to respondents by using respondent-friendly questionnaires, emphasizing "the survey's usefulness and the importance of a response from each person in the sample". The TDM method invariably creates respondent trust and commits the respondents to the outcome of the survey. According to Dillman (2000:5), researchers attested to the fact that the mixed-mode approach of TDM surveys, which enabled a combination of interviews and questionnaires, "can help overcome the difficulty of obtaining adequate response rates using a single method…" The triangulation method and the procedure described in 3.5.1 improved the response rate in this study.

In the present study, lack of knowledge about the subject matter could have contributed to a high rate of non-response items such as given in Appendix VIII: sections C, E, F, and G, (particularly respondents from national media organisations). Ineligibility to respond was not a serious matter, as the researcher's preliminary investigations revealed the key people in each organisation. In some instances, where the concerned person did not have sufficient information, the researcher was referred to another person within the section/organisation. The researcher was able to locate all the respondents.

Babbie and Mouton (2001:261) stated that "response rate is a guide to the representativeness of the sample respondents". All in all, a low response rate is bad news for the researcher and it renders the results of the survey unreliable and invalid (Babbie and Mouton 2001:261). Different percentages are set as 'acceptable response rates'. For example, Moore (2000:261) suggested a response rate of 60% or above as acceptable, anything between 50% and 60% to be treated with caution and response rates below 50% erroneous. Saunders, Lewis and Thornhill (2003:159) cited different response rates for mail questionnaires. For instance, the above authors cited various response rates, which included those of Owens and Jones (1994), whose acceptable response rate was 30%,

Neuman's (2000) response rate was 10-50%, Kervin's (1992) response rate was 50%, that of Healey (1991) was 75%, and Neuman's (2000) was 90% (Saunders, Lewis and Thornhill 2003:159).

Babbie and Mouton (2001:261) regarded a response rate of 60% as good, 70% very good and 50 % adequate. Cooper and Schindler (2001:314) believed that a 30% response rate from mail surveys is acceptable. The present researcher tends to agree with the moderate percentages Babbie and Mouton (2001:261). The authors cautioned that the above percentages were mere estimates; "a demonstrated lack of response bias is far more important than a high response rate" (Babbie and Mouton 2001:261). The response rate for the present study was nine countries out of fourteen[3], that is, nine (64.28%) out of fourteen archival institutions. Judging from this percentage, the present researcher can confidently conclude that a response rate of nine (64.28%) for mail questionnaires was good and a response rate of four (100%) for interviews was very good.

3.6 Interviews

Shajahan (2004:104) defined an interview as "a purposeful discussion between two or more people". Babbie and Mouton (2001:249) regarded an interview as a social interaction between an interviewer and an interviewee, with the deliberate aim of obtaining information from the latter (in most cases, using pre-rearranged questions). Interviewing is a widely used research methodology in the social sciences (Shajahan 2004:104). The researcher or interviewer directly asks and gets answers from the interviewee. Moore (2000:117) pointed out that interview surveys have a lot in common with self-administered questionnaires, in that they require structured interview schedules. There are different types of interviews, which are used depending on the depth of the response sought. These include mail interviews, face-to-face interviews and focus group interviews. They can be structured, semi-structured or unstructured (Saunders, Lewis and Thornhill 2003:246).

Saunders, Lewis and Thornhill (2003:246) and Shajahan (2004:105) stated that, while structured interviews are based on a pre-tested and predetermined questionnaire, with standardised or identical questions, the semi-structured and unstructured interviews are non-standardised. In this instance, the researcher has a list of questions or themes to be covered, but questions may vary from interview to interview (Saunders, Lewis and

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[3] The National Archives of Swaziland returned uncompleted questionnaires, since they did not have custody of AV materials. It was subsequently considered a non-response. Th researcher was reffered to SBIS, where interviews and observations were conducted.

Thornhill 2003:246). In this regard, the researcher may omit some questions or change the order of questions from one interviewee to another (Saunders, Lewis and Thornhill 2003:247). Robson (2002:270) explained that semi-structured interviews have "predetermined questions, but the order can be modified based upon the interviewer's perception of what seems most appropriate." Shajahan (2004:107) believed that semi-structured interviews "provide much more scope for discussion and recording of respondents' opinions and views". The author maintained that the interview schedule consists of fairly specific questions, which may include open-ended questions. Shajahan (2004:109) suggested that the researcher use probes to attain more information from the interviewee.

The present study used face-to-face, semi-structured interviews. The researcher found semi-structured interviews appropriate, as she conducted them herself. The researcher was able to change the order of the questions to suit different interviewees. In some instances, the researcher omitted questions that did not apply to some interviewees. For example, at the NFVSA of South Africa, there were four units, namely, Special Projects, Client Services and Outreach, Sound Section, Legal Deposit and Cataloguing and Audio Visual Section. Here the researcher asked questions appropriate to each sub-unit. The audiovisual archivists or librarians, who managed AV materials at the media archives in the region, seemed ignorant of the records cycle. Questions concerning the application of the records cycle were not adequately answered (see section E of Appendix VI). Similarly, question E4 did not apply to media organisations, since most of their collections were in-house.

The present researcher took cognisance of the advice of Saunders, Lewis and Thornhill (2003:254) concerning effective interviewing. The researcher prepared the interviewees by providing sufficient information on the purpose of the interviews. The researcher's appearance was formal and she reported for the interviews at the appointed time. During the interviews, the researcher asked for clarification where necessary and every effort was made to put the interviewees at ease.

3.6.1 Advantages of interviews

Unlike questionnaires, interviews enable researchers to gain an in-depth insight of the problem by clarifying issues with the respondents (Bowling 1997:231). With structured interviews, the researcher reads out the questions and records the interviewee's responses. Babbie and Mouton (2001:249) pointed out that face-to-face interviews are popular where

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levels of literacy are relatively low. This is why they are commonly used in national surveys in South Africa (and elsewhere in the developing world) (Babbie and Mouton 2001:249). Bowling (1997:231) and Cooper and Schindler (2001:313) recorded various advantages of face-to-face interviews. These include ability to reach literate and illiterate respondents, ability to probe fully for responses and, at the same time, clarify ambiguities, inconsistencies or misinterpretations, ability to ask structured questions in a predetermined manner and, in some cases, open-ended questions enable interviewees to fully express their opinions about complex issues. Interviews invariably lead to higher response rates compared to questionnaires. Bowling (1997:231) believed that, if conducted carefully, structured and semi-structured interviews could yield highly accurate data. Like any other social survey method, interviews have some loopholes, which are discussed below.

3.6.2 Disadvantages of interviews

Interviewer or interviewee bias is a major cause of problems in interviews, which pose a threat to the validity of the interviews (Bulmer 1983:206; Fowler 2002:135; Saunders, Lewis and Thornhill 2003:252). This is due to the contextual and interactive nature of the interview process. Unlike mail surveys, which are based on written communication, rapport is an important aspect of the interview (Dillman 2000:4; DeLamater 1982:38). The authors named various factors that could bias survey results. These include the interview's personal manner, the manner in which questions are asked (some questions are sensitive), ambiguity of questions (which may affect validity), difficult questions, which respondents cannot easily understand, order effect (where earlier items bias the responses to later items), as well as ethical problems. The present researcher had a good rapport with most of the interviewees. Referring back to the objectives of the questionnaire allayed any differences of opinion or fears. In some instances, reference to the letter, which granted the researcher permission to conduct the study, helped to get the interviewees' co-operation.

Dillman (2000:239) and Pelosi, Sandifer and Sekaran (2001:147) suggested that the interview problems could be minimised through training of interviewers and proper design of interview questions. This is because interviewing is a skill that can only be acquired with experience. According to Gay (1981:166), "the interview requires a level of skill usually beyond that of the beginning researcher. It requires not only research skills, but also a variety of communication and interpersonal relations skills".

The knowledge acquired on the doctoral programme enabled the present researcher to conduct the interviews. It must be stated that the research design, available time, available financial resources, the timing and the target population were some of the factors that contributed to the success of the interviews. The researcher was thus able to travel to some of the study locations, such as the Botswana National Archives and Record Services, the Botswana Television Service, Radio Botswana, the NFVSA of South Africa, the Swaziland Broadcasting Corporation, Swaziland Television Service, Namibia Broadcasting Corporation and the National Archives of Namibia. Observations were employed to cross-check some of the information gathered through questionnaires and interviews.

3.6.3 Administering interviews

Interviews were administered in four countries using the interview guide in Appendices VII and VIII. One archival institution was selected from each country, as indicated in Appendix I. These were the NFVSA of South Africa, the National Archives and Records Services (in Botswana), Namibia National Archives and the National Archives of Swaziland and media institutions (which kept a substantial number of AV materials) from each of the selected countries. The latter are reflected in Appendix II. The findings from media organisations in each country were aggregated under 'one national media organisation'. The researcher made e-mail and telephone contacts prior to the planned interviews. On average, interviews lasted about 45 minutes. The researcher communicated this information to the interviewees prior to the interviews, to enable them to adjust their schedules. Confidentiality and anonymity were assured at the onset of the interviews.

3.6.4 Overcoming data quality issues

Shajahan (2004:110) cautioned that lack of standardisation in semi-structured and in-depth interviews could raise reliability issues, forms of bias and validity and observations issues. Such concerns emanate from interviewer bias and interviewee or response bias. The latter is bound to happen with sensitive matters, where interviewees could "choose not to reveal and discuss an aspect of the topic that you may wish to explore..." (Shajahan 2004:110). Shajahan (2004) warned that bias could be exacerbated by the time-consuming nature of the individuals or the interviewing process. This results in "the reduction of the number of people you would like to talk to" (Shajahan 2004:111). The author advised researchers to guard against reducing the number of interviewees, as it could lead to a biased data

sample. Shajahan (2004:111) identified various ways of overcoming data-quality issues. The author stated that researchers should not expect to replicate findings from non-standardised interviews, as they represent complex and dynamic issues.

The strength of the qualitative, non-standardised approach lies in its flexibility, which could be used to explore a complex topic (Leedy and Ormrod 2001:159; Saunders, Lewis and Thornhill 2003:247; Shajahan 2004:111). Shajahan (2004:111) pointed out that interviewer and interviewee bias could be avoided by conducting the interview in a professional manner. Saunders, Lewis and Thornhill (2003:261) and Shajahan (2004:111) advised researchers to develop competencies when conducting semi-structured and in-depth research interviews. These include starting the interview with a motivating open question, using appropriate language and asking questions professionally and systematically. Cues should be employed to gauge the interviewee's understanding of the questions. Data should be recorded carefully and skilfully.

The present researcher bore the above criteria in mind when conducting the interviews. The researcher made appointments prior to each interview, to ensure the respondents' availability and readiness for the interviews. Observations were made in selected institutions that the researcher visited.

3.7 Observations

Churchill (1995:379) noted that observation was a fact of life. Churchill (1995) believed that people and events are observed in order to secure information about the world. Churchill (1995:379) opined that some people made more use of observation in their day-to-day activities than others. Payne and Payne (2004:155) stated that "research findings depend on the researcher's interaction with those being researched". This implies that a researcher is deeply immersed "in a personal and subjective process of mutual discovery with the informants" (Churchill 1995:379).

Unlike questionnaires and interviews, which depend on information or data provided by the respondent, observation requires the researcher to use his or her ears to listen as well as his or her eyes to see the objects or phenomena under study (Gall, Gall and Borg 2005:135; Payne and Payne 2004:157; Suen and Ary 1989:4). Suen and Ary (1989:4) believed that, with observation, "what is being observed is in fact what is being studied. What is being studied is there as plainly as the eyes can see". In other words, the technique

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involves gathering "live data about individual behaviour as the behaviour occurs" (Gall, Gall and Borg 2005:181). Observation is therefore a deliberate, structured and systematic process (Payne and Payne 2004:158). Cohen, Manion and Morrison (2002:304) concluded that observation, as a method of scientific enquiry, should suit the population or sample under study and it should be reliable and objective.

Observations could either be structured or unstructured. Structured observations entail a predetermined set of items or categories to be studied (using a checklist). These are "specifically designed and tailored to each study to suit the goal of that research" (Sekaran 2003:253). Dooley (2003:270) advised that interviewers use written or memorised checklists of topics, which serve as a reminder of what they want to cover. The topics are arranged "in an order that seems likely to promote rapport". Provision is made for the researcher to record environmental and other factors of interest. In the present study, structured quantitative observations were used with the aid of a checklist (Appendix IX). Conversely, unstructured observation is spontaneous and the researcher records everything that he or she sees (Suen and Ary 1989:5). These authors felt that structured observations do not necessarily lead to a researcher's control of the subjects' behaviour. Rather, the control is on:

i. What to observe;
ii. When to observe;
iii. Where to observe;
iv. Other actions taken by the observer;
v. The method of recording events and behaviour;
vi. The method of analysing the information gathered; and /or
vii. The environment under which observations are made is rigidly prescribed and the subsequent prescribed procedures rigidly followed.

The nature of the observation technique gives it a strong advantage over interviews and questionnaires. Various authors such as Babbie and Mouton (2001:293), Cooper and Schindler (2001:385), Cohen, Manion and Morrison (2002:305); Gall, Gall and Borg (2005:181), Leedy and Ormrod (2005:179), Saunders, Lewis and Thornhill (2003:230), Sekaran (2003:253) and Struwig and Stead (2001:96) identified the advantages of observations.

3.7.1 Advantages of observational studies

The advantages of observations identified by the above authors are captured in the quotation below:

> To behold is to look beyond the fact; to observe, to go beyond the observation. Look at the world of people, and you will be overwhelmed by what you see. But select from the mass of humanity a well-chosen few, and observe them with insight, and they will tell you more than all the multitudes together (Leedy and Ormrod 2005:179).

Leedy and Ormrod (2005:179) articulated the strengths of the observation method over other data collection methods. It should be added that the social setting or scene of observation studies is natural. Events happen spontaneously, leaving no room for subjectivity. Nonetheless, Payne and Payne (2004:159) stated that "it is not sufficient to observe the actions, one needs to explain it and understand its subjective meaning..." This implies that the observation method has limitations, some of which are discussed below.

3.7.2 Disadvantages of observational studies

Cooper and Schindler (2001:386), Payne and Payne (2004:159), Sekaran (2003:254) and Struwig and Stead (2001:96) identified weaknesses of observations, as follows:

i) Observations are slow, time-consuming and expensive;

ii) Prolonged periods could lead to bias of the recorded data caused by observer fatigue;

iii) Observations cannot capture individuals' cognitive thoughts (Sekaran 2003:254);

iv) Note-taking during observations could cause ethical dilemmas;

v) It is difficult to observe personal and intimate activities. Hence, the reliability of inference from surface indicators could be questionable;

vi) Problems may result from quantifying large records;

vii) Observation is a costly process;

viii) Observer bias may arise as the researcher mingles with the group under observation. Data from observation may thus be laden with error;

ix) Inability to access the organizations, and

x) Those under observation could behave differently during the study period, resulting in validity issues.

Judging from the list of disadvantages, it is apparent that observation requires training (a requirement which may not be fulfilled by all researchers). Training includes recording techniques, skills to make decisions about the relevance of events to the research topic,

ability to accurately record what is heard and seen and ability to synthesize ideas that arise from the observation. The present researcher minimised the above disadvantages by combining observation with interviews and questionnaires. The researcher was therefore able to cross-check the findings from the observations with some of the information gathered in interviews and questionnaires.

3.8 Validation of data-collection instruments

Ngulube (2005a:128) emphasised the need to validate instrumentation used in data collection, as it improves reliability of research results. Validity is defined as "the plausibility of relationship between data and concepts; it implies the collective agreement of intended audiences that interpretations of data are not only compelling but convincing" (Rose 2006).

Payne and Payne (2004:156) believed that "the essence of good research is not that it should be neutral or distanced from its subjects, but it should be reliable and valid". Fowler (1998:344) cited Cronbach and Meehl (1955), who explained that validity refers to the extent to which answers correspond to a hypothetical "true value" of what a researcher attempts to describe or measure. In this regard, validation of the research instrument is an important aspect of scientific research. The questionnaire should measure what it was developed to measure (Babbie and Mouton 2001:122; Gay 1981:161; Pelosi, Sandifer and Sekaran 2001:129; Powell 1993:38). De Vaus (2002:53) cautioned that "the validity of a measure …depends on how well we have defined the concept it is designed to measure". In other words, the researcher should report on the following categories of validity.

3.8.1 Content validity/empirical validity

This is "the relevance of an instrument to the characteristics of the variable it is meant to measure…" (Babbie and Mouton 2001:123; Nachmias and Nachmias 1996:170). It is ascertained by asking if items measure the content they were intended to measure, that is, does the measure include "an adequate and representative set of items that tap the concept" (Pelosi, Sandifer and Sekaran 2001:129). De Vaus (2002:54) warned of disagreements "about the content of many social science concepts". He suggested a nominal definition of the concept, which is used to measure content validity. Nachmias and Nachmias (1996:165) stated that content validity is two-fold, namely face validity and sampling validity.

3.8.2 Face validity

Face validity is a determination of whether items appear to make what the instrument purports to make. In other words, do the constructs that measure the concepts appear to do that on the face of it? "Do experts validate that the instrument measures what its name suggests it measures?" (Sekaran 2003:208; Nachmias and Nachmias 1996:165). Nachmias and Nachmias (1996:165) concluded, "face validity rests on the investigator's subjective evaluation of the validity of the measuring instrument". Nachmias and Nachmias (1996:165) noted, however, that face validity did not have precise replicable procedures that could be used to evaluate the instrument. Despite this criticism, the present researcher ascertained face validity by pre-testing the questionnaires and the interview schedule.

3.8.3 Sampling validity

Sampling validity ascertains if the measuring instrument adequately represents a given population, that is, "do the statements, questions or indicators–the content of the instrument–adequately represent the property being measured?" (Nachmias and Nachmias 1996:166). The authors stated that sampling validity assumes that each variable has a population that consists of a large number of items, "which can be expressed as statements, questions or indicators and that a highly valid instrument constitutes a representative sample of these items"(Nachmias and Nachmias 1996:166).

Nachmias and Nachmias (1996:166) observed that, in some instances, there are problems of defining 'content' population, as it is more of a theoretical issue than an empirical issue. Such problems invariably "impair the effectiveness of sampling validity as a test of an instrument's overall validity" (Nachmias and Nachmias 1996:166). Nevertheless, the above authors acknowledged the value of sampling validity particularly, in exploratory studies where instruments are constructed and employed for the first time.

The present researcher based the test for sampling validity on the 'content population,' which was easily delineated by the research problem. All national archives in the region were included in the study. Since all national archives in the region have a mandate to preserve all archival records, including AV materials, it implies that the statements and the questions in the research instrument covered the entire population. It can therefore be assumed that the selected sample of the four countries from the four groups of archival institutions (see Appendix I) was representative of the population. This therefore suggests that the instrument was valid.

3.8.4 Construct validity

Construct validity "is based on the logical relationships among variables" (Babbie and Mouton 2001:123), that is, "the extent to which the constructs in the conceptual framework are successfully operationalised in the research study (Bickman, Rog and Hedrick 1998:11). It ascertains if the results of the measure fit the theory (theories) around which the test was designed (De Vaus 2002:54; Pelosi, Sandifer and Sekaran 2001:130). This requires an evaluation of "how well the measure conforms with the theoretical expectations" (De Vaus 2002:54). In other words, is it possible to ascertain what accounts for the variance in the measure? In instances where one wishes to measure or infer abstract characteristics, do the operational definitions of the theory correspond to an empirically grounded theory? (Cooper and Schindler 2001:214; De Vaus 2002:54; Nachmias and Nachmias 1996:168 and Sekaran 2003:20).

3.8.5 Statistical conclusion validity

According to Bickman, Rog and Hedrick (1998:11), statistical conclusion validity determines the extent to which a study applies appropriate design and statistical methods to permit a detection of any apparent effects. It also enables other researchers to replicate and to test the methods used in the study (Ngulube 2005a:128). Invariably, statistical validation has a direct bearing on the validity of the research results. Reichardt and Mark (1998:198) pointed out that "threats to statistical conclusion validity concern the mislabelling of the degree of uncertainty in an estimate of a treatment effect". These authors noted the difficulties involved in devising a precise treatment effect and hence neutralising the threat to statistical conclusion validity alluded to above. Statistical conclusion validity did not apply to the current study, because it was not experimental.

3.8.6 Comments on all types of validity

Bickman, Rog and Hedrick (1998:11) believed that all types of validity are important, but the degree of importance varies depending on the nature of the study. For instance, descriptive studies put more emphasis on construct validity and they are less concerned about cause-effect attributions (Bickman, Rog and Hedrick 1998:11). Mouton (1996:128) believed that construct validity was "probably the most difficult problem in social research". This is because it is difficult for a researcher to ascertain if the items included in the scale or questionnaire "actually measure the construct that they are supposed to represent" (Mouton 1996:128). DeVaus (2002:54) concluded that there was no ideal way

to determine the validity of a measure. The method chosen depended on the situation, the definition of the concept and the availability of well-established theories which use the concept. DeVaus (2002:54) suggested that if the above fail to validate the concept, researchers should resort to face validity of the concept.

The present study applied construct validity to capture a clear picture of the phenomenon under investigation. Face validity was established through pre-testing the research instruments on experts. The interpretation of the findings, which culminated in conclusions and recommendations, could be tested through statistical conclusion validity.

Creswell (1994:121) realised the need to re-establish validity when a research instrument is modified, or in cases where triangulation is used. The validity of the questionnaire was established by framing the questions and answers to close-ended questions. This was done with reference to Fowler's (1998:344) guidelines:

i.   Questions should be consistently understood;

ii.   Questions should be consistently administered or communicated to respondents;

iii. What constitutes an adequate answer should be consistently communicated (the interviews were very effective in fulfilling this requirement);

iv.   All respondents should have access to the information needed to answer the question accurately (unless measuring knowledge is the goal of the question); and

v.   Respondents must be willing to provide the answers called for in the question.

3.9 Establishing stability of individuals

Establishing stability of individuals requires the researcher to establish whether or not individual responses vary the second time the instrument is administered (Sekaran 2003:203). The present researcher could not establish this fact because the study was cross-sectional. Nevertheless, the researcher took cognisance of other tests that were recommended by Maxwell (1998:93). These include the '*modus operandi* approach', which is used in qualitative studies.

The *modus operandi* approach deals with events as they occur "by searching for clues as to whether they took place and were involved in the outcome in question" (Maxwell 1998:93). Through observations, the researcher was able to verify the information that was provided by some of the respondents. Maxwell (1998:93) suggested other ways of testing validity, which include soliciting feedback from other people who are familiar with the phenomenon under study, and member checks, that is soliciting the views of participants

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in the study about the researcher's data and conclusions. Maxwell (1998:94) stated that "this is the single most important way of ruling out the possibility of misinterpreting the meaning of what the participants say and the perspective they have on what is going on". Maxwell (1998:94) cited Bloor (1983), who cautioned that participants' comments should not be taken at face value, rather they should be taken as evidence of the validity of the researcher's account. The present study applied the above validity test through E-mail and telephone contacts with some of the respondents.

3.10 Establishing reliability

Reliability - refers to item consistency, that is:

- Does the instrument ensure stability and consistency in the various items all the time?
- Are there any errors that inconsistently appear from observation to observation or vary each time the same instrument is used to measure a given unit? (Nachmias and Nachmias 1996:170).

These authors observed that most measuring instruments were not completely valid and there was thus a need to establish reliability.

Fowler (1998:350) declared "a good question is one that produces answers that are reliable and valid measures of something we want to describe". Reliability of a research instrument is its ability to be repeatedly replicated and generalizable beyond one study (Babbie and Mouton 2001:119; De Vaus 2002:52; Saunders, Lewis and Thornhill 2003:101). Reliability of an instrument should accurately and consistently measure whatever it measures (Babbie and Mouton 2001:121; Cooper and Schindler 2001:215; Powell 1993:41).

Cooper and Schindler (2001:215) believed that reliability was "concerned with estimates of the degree to which a measurement is free of random or unstable error" (Cooper and Schindler 2001:215). De Vaus (2002:52) pointed out that "a question may be unreliable due to bad wording". This leads to different interpretations of the same question by different respondents, resulting in different interviewers eliciting different answers from a respondent. De Vaus (2002:52) referred to other sources of error, which included gender, ethnic background and dress of interviewer, which influence responses. De Vaus (2002:52) pointed out that even well-developed questions were subject to unreliability

problems. The author cited Schreiber (1976), who stated that "studies of the same respondents over time show that they give different answers to questions on different occasions, even though there should have been no change" (De Vaus 2002:52). This therefore calls for reliability tests. The use of reliable instruments assures a researcher that "transient and situational factors are not interfering" (Cooper and Schindler 2001:215).

Babbie and Mouton (2001:121), Powell (1993:41) and Saunders, Lewis and Thornhill (2003:310) identified various ways of testing and measuring reliability. These include:

i.   Test-retest correlation method - requires the same data collection instrument to be administered at least twice on the same respondents;

ii. Split-half method – this method requires a researcher to randomly split the instrument into two sets of questions after it has been administered and obtain similar results;

iii. Average item-total correlation – in this method, each item score is correlated with the total score. It culminates in taking an average of the sum of the coefficients;

iv. Average inter-item correlation – this requires a correlation of each item with every other item. It gives an average, which is an indication of how well all the items measure the same construct;

v.   Internal consistency – this method requires a correlation of responses to each question in the questionnaire with other questions in the questionnaire to measure consistency of responses from the questionnaire;

vi. VI Alternative form – this method ensures reliability by comparing responses to alternative forms of the same question or groups of questions in the questionnaire. The outcome of this method is questionable as the researcher may fail to validate the equivalence of the questions (Saunders, Lewis and Thornhill (2003:310).

The present study tested reliability by applying item (v) from the guidelines of Babbie and Mouton (2001:121), Powell (1993:41) and Saunders, Lewis and Thornhill (2003:310). Examples of internal consistency are reflected in Appendix VI. Questions B1a, B1c, D1, D2, D4, F1, G1, G2, I2, I3, J1, and J2 were used to gauge the consistency of responses that the respondents provided. The researcher also ascertained internal consistency of the above questions during interviews (Appendix VII, VIII) and observations (Appendix IX).

Cooper and Schindler (2001:218) advised researchers to improve reliability by selecting from the following options.

i. Minimise external sources of variation;

ii. Improve investigator consistency by using only well-trained, supervised and motivated persons to conduct the research;

iii. Broaden the sample of measurement questions used by adding similar questions to the data collection instrument, or adding more observers or occasions to an observational study; and

iv. Improve internal consistency of an instrument by excluding data from analysis drawn from measurement questions eliciting extreme responses.

The current study applied Cooper and Schindler's (2001:218) second option above and, to some extent, the third one. The researcher personally conducted the observations and replicated some of the questions in the interviews that had been asked in the questionnaires. This was done to cross-check the reliability and validity of the responses given in the questionnaires. Saunders, Lewis and Thornhill (2003:253) cited Marshall and Rossman (1999), who questioned the application of validity tests on qualitative studies. The authors felt that it was unrealistic to expect qualitative research to be replicated "since they reflect reality at the time they were collected, in a situation which may be subject to change" (Saunders, Lewis and Thornhill 2003:253). The current study found this to be true in the case of the Radio Botswana Music Library, where a recent study was conducted on preservation of sound recordings (Setshwane 2005). Since the department which housed the Music Library had moved to a new building, some of Setshwane's (2005) findings were no longer applicable to the phenomenon under study. From the foregoing discussion, it can be seen that validity and reliability are prerequisites to successful questionnaire design. It can be concluded that, to some extent, the research instruments for the current study were reliable.

3.11 Data analysis

Data analysis is a stage at which raw data are converted into meaningful information. Churchill (1995:83) warned that data are useless unless "the findings are analysed and the results interpreted in light of the problem at hand". Data analysis begins with editing. This stage is a thorough check of the forms to ensure the completeness and consistency of the information (Churchill 1995:83). At the editing stage, missing data or miscoded data is detected (Cooper and Schindler 2001:440). The other stages are data display and

verification (Leedy and Ormrod 2005:246). These authors explained that data display reduces data into meaningful information, which enables a researcher to draw conclusions or think about its meaning. Verification enables a researcher to make interpretations and to draw meanings from the displayed data (Leedy and Ormrod 2005:246).

Data analysis also involves a description of the characteristics of the units of analysis in order to make predictions about the relationships and to test them (Cooper and Schindler 2001:82; Shajahan 2004:247). Through data analysis, researchers are able to interpret findings in the light of the research question (s) and research objective(s). It is also possible to determine if the results are consistent with the research hypotheses and theories (Cooper and Schindler 2001:82; Shajahan 2004:247). This is why Shajahan (2004:247) argued that data analysis aims at building a model "where relationships are carefully brought out so that some meaningful inferences can be drawn (Shajahan 2004:247). This means that researchers are able to draw recommendations on the basis of "their interpretation of data" (Cooper and Schindler 2001:82). Quantitative and qualitative methods of analysis are used, depending on the type of research design employed. In this study, a combination of quantitative and quantitative methods of data analysis was used.

3.11.1 Analysing quantitative data

According to Gall, Gall and Borg (2005:157), Powell (1993:64) and Shajahan (2004:247), quantitative data analysis includes statistical distributions, construction of diagrams and calculation of simple dispersion, percentages and correlation coefficients and creation of simple tables or diagrams that show the frequency of occurrences. Put simply, statistical analysis aims at summarising observations or data to "provide answers to the hypothesis or research questions" (Powell 1993:180). Powell (1993) stated that statistical data enable a researcher to draw general conclusions from the study. Shajahan (2004:248) advised researchers undertaking quantitative analysis to observe the following requirements before obtaining data:

i) The type of data;

ii) The format in which the data will be input to the software;

iii) The impact of data coding on subsequent analyses;

iv) The need to weight the cases; and

v) The methods that will be used to check data for errors

3.11.2 Analysing qualitative data

Leedy and Ormrod (2005:150) pointed out that "there is usually no single right way to analyse qualitative data". Because of the large volume of data, the researcher usually uses induction reasoning to reduce the data "to a small set of abstract, underlying themes" (Leedy and Ormrod 2005:150). Dooley (2003:271) earlier justified the use of qualitative data analysis when he realised its ability to organise hundreds of pages of raw data into a meaningful pattern. This culminates in a final report, where "the analyst may report the approximate frequency and distribution of the different categories of observation" (Dooley 2003:271). Creswell (1994), Leedy and Ormrod (2005:150), Warwick (1983:359) pointed to the problems involved in analysing qualitative data. Warwick (1983:359) and Leedy and Ormrod (2005:150) believed that qualitative data analysis and interpretation could be characterised by the researcher's bias. Dooley (2003:271) cautioned that analysis of qualitative data was characterised by validity threats. He showed that the analyst switches between a key informant's roles, as he or she becomes immersed in the setting, and an outsider's scepticism. Leedy and Ormrod (2005:150) declared that there is no right or wrong approach to data analysis in qualitative research and cited Schram (2003), who stated that qualitative research in basically interpretive.

> As a qualitative fieldworker, you cannot view your task simply as a matter of gathering facts about what happened. Rather, you engage in an active process of interpretation: noting some things as significant, noting but ignoring others as not significant, and missing other potentially significant things altogether… (Leedy and Ormrod 2005:150).

Leedy and Ormrod (2005:151) believed that data analysis for qualitative research is complex and multifaceted. The authors advised qualitative researchers to minimise bias by using the following guidelines:

- Collect two or more different kinds of data related to a particular phenomenon (such as interviewing and observations);
- Get multiple and varying perspectives on any single issue or event;
- Make an effort to obtain evidence that contracts your hypothesis; and
- Acknowledge any biases in the final report.

The present study was mindful of the above guidelines. The researcher employed both interviews and observations at the institutions that were visited. The data gathered was used to verify the data in the questionnaires. In addition to that, the study employed

inductive reasoning/analytic induction, that is, the researcher did not have preconceived hypotheses at the beginning of the study. Rather, general statements, in the form of assumptions, guided the researcher. Ultimately, the researcher was, to some extent, able to analyse and interpret the qualitative data by means of inductive abstraction and generalisations.

Additionally, the present researcher took note of Ian's (1993) guidelines on how to analyse qualitative data:

i) The researcher should avoid preconceived ideas - that is, the researcher should not impose his or her own ideas upon the data;

ii) The researcher ought to know what he or she is going to analyse;

iii) Justify why the data was selected for analysis - that is, why are certain sites, individuals, events or objects included in the observation?

iv) Reasons why the data is selected for analysis can give clues on the direction the analysis should take; and

v) Anticipate what the audience would value as worthwhile analysis.

The present researcher took cognisance of the objectives and the research questions stipulated in Table 1 in Chapter One, as well as the professional ethics discussed in section 1.7 of Chapter One, in an attempt to improve the reliability and validity of the analysed data.

Leedy and Ormrod (2001:162) warned that qualitative approaches are a disadvantage "for novices who may not have sufficient background or training to make wise decisions about how to proceed". Similarly, Moore (2000:144) pointed out that analysis of qualitative data is "a sophisticated and taxing process that calls for hard, concentrated effort, a clear mind and an intuitive approach to the data". For instance, open-ended questions have to be coded into broad categories. This requires the creation of a coding frame (Moore 2000:144). The present study minimised the validity problems associated with the observation technique by using the triangulation method. Moreover, the researcher was the only observer and the units of analysis were objects (AV materials).

3.11.3 Computer programs used to analyse data

Notwithstanding the problems that may be experienced in analysing data, the information technology era has simplified data processing and analysis. It is now possible to use

qualitative analysis programs to interpret data "that consists of narrative text (Tesch 1990:147). Tesch (1990:148) stated that "all of the qualitative analysis programs that run on IBM's and IBM-compatibles use regular full-screen menus". As indicated earlier, the present study used content analysis. There was no need for the researcher to use a specific computer program to analyse qualitative data. The structured data was analysed using SPSS, while responses to open-ended questions were synthesized using content analysis. They were "analysed by counting the frequency with which certain words or themes are mentioned" (Gall, Gall and Borg 2005:150). The frequency counts were then analysed quantitatively, using SPSS.

The nature of the questions in the research instruments warranted the use of SPSS to produce the required descriptive statistics. The SPSS program simplified data coding. The SPSS codebook produced detailed frequency tables with appropriate labels, values and frequencies, percentages and missing cases. From the frequency outputs, the researcher was able to come up with various charts such as pie charts and bar charts, as well as tables. Data cleaning and correct data entries were the researcher's responsibility.

3.11.4 Data Coding

Marshall and Rossman (1999:155) defined coding as "the formal representation of analytic thinking". The process involves "assigning numbers or other symbols so the responses can be grouped into limited number of classes or categories (Cooper and Schindler 2001:424). Marshall and Rossman (1999:155) pointed out that the coding process requires a researcher to identify salient themes in the data. This is done to summarise information and to facilitate data analysis (with the aid of computers) (Bowling 1997:296; Churchill 1995:84). Cooper and Schindler (2001:424) felt that classifying data into limited categories could sacrifice some data details, but it is vital for efficient analysis. Hence, "coding helps the researcher to reduce several thousand replies to a few categories containing the critical information needed for analysis" (Cooper and Schindler 2001:424).

De Vaus (2002:148) recommended that questions should be post-coded by "developing a coding scheme based on the responses provided by the respondents" (De Vaus 2002:148). Bowling (1997:296) supported post-coding because it is flexible and it gives the researcher a chance to "develop new categories that might not otherwise have been thought of" (Bowling 1997:296). Bowling (1997) pointed out that post-coding

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questionnaires is time-consuming. In the current study, questions were post-coded after the research instruments were administered. This approach enabled the researcher to incorporate other categories after the pre-test exercise.

3.11.5 Tabulation and graphical presentations

Churchill (1997:84) stated that tabulation is the final stage in analysing data. It "refers to the orderly arrangement of data in a table or other summary format achieved by counting the frequency of responses in each question" (Churchill 1995:84). Churchill (1995) explained that data could also be correlated against other variables. Nevertheless, Sekaran (2003:260) stressed the need to observe ethical issues when collecting and reporting data. The author suggested that the respondents should accept and respect the confidentiality of the data obtained by the researcher. The present study upheld professional ethics in the presentation of the findings. Individual respondents and their institutions were not directly linked to the findings of this study.

3.12 Ethical issues

The ethical considerations stipulated in section 1.7 of Chapter One were upheld. However, the present researcher was mindful of Shipman's (1997:81) observation that ethical issues could arise when the observed people object to publishing accounts of their behaviour. In this regard, the present researcher could be faced with a dilemma. As a scientist, the researcher is "committed to report what he finds and not to conceal information or distort it to protect his informants" (Shipman 1997:81). True (1983:406) concluded that such a dilemma affects internal validity and external validity. In the case of the former, the behaviour of the subjects is altered when they are given advance notice. On the other hand, external validity is affected when the subjects refuse to be observed or questioned. In the present study, the respondents complied voluntarily.

Shipman (1997:84) pointed out that replication was not easy in observational studies. Shipman (1997:84) and True (1983:125) attributed this to the fact that the observed group or environment may change over time. This therefore means that participation of different observers may have different effects, making it difficult to illustrate bias in observational studies. In addition to the professional ethics, which are stipulated in Chapter One of this thesis, the researcher took cognizance of True's (1983:137) ethical safeguards:

i. The researcher should not lie or trick the subjects into co-operation;

ii.   Anonymity should be guaranteed or, at least, the researcher should refrain from disclosing confidential information;

iii. The researcher should get the subjects' consent and ensure that they understand the objective (s) of the study;

iv.   Information that reflects badly on individuals or groups should not be published, unless their identity is concealed;

v.   The researcher should protect subjects from any harm that may result from the research, "unless subjects understand that they can be injured and agree to the risk in advance" (True 1983:137);

vi.   The researcher should refrain from anything that could have social or political effects on any individual or group

3.13 Evaluation of the research methodology

Evaluation aims at determining the effectiveness of the methodology in meeting the purpose of a study (Cohen, Manion and Morrison 2002:38). It provides information to justify the method (s) used to enable future researchers to adapt and improve the methods and techniques used in a particular study (Clark 1999:113). Ngulube (2003a:235) stated that the degree to which the research methods employed "are to serve the desired research purpose largely depends on the researcher's understanding of their strengths and limitations". The present researcher employed both quantitative and qualitative paradigms, as indicated in section 3.1.1.3. Each of these strategies has strengths and weaknesses. For instance, while qualitative research is said to be value laden, quantitative research is objective (Creswell 1994:4). By combining the two research paradigms, their weaknesses were minimised and their strengths were maximised through triangulation (discussed in section 3.6.1 of this chapter). The triangulation technique was also used in data analysis. While most of the variables in questionnaires, interviews and observations were post-coded and analysed quantitatively, the open-ended questions were first analysed using content analysis and were later quantified and analysed using Excel.

The evaluation of the methodologies used in this study was based on the premise that the study was scientific. It applied the rules of scientific research. In that regard, the study applied Sekaran's (2003:22) distinguishing characteristics of scientific research, namely purposiveness, rigour, testability, replicability, precision and confidence, objectivity, generalisability and parsimony. The following sections expand on these attributes of research.

3.13.1 Purposiveness

The need to have a focused research was emphasized by several authors, including Creswell (1994:50), Mouton (2001:122), Sekaran (2003:22) and Saunders, Lewis and Thornhill (2003:13). Mouton (2001:122) spelled out the need to identify and articulate the research problem, research question(s) or hypotheses. These translate into overall research aims, goals or objectives of the study. The present study met these requirements, as indicated in the statement of the problem in section 1.2.1 of Chapter One. The research questions and research objectives are clearly stated in sections 1.2.3 and 1.2.4. The study did not test hypotheses; instead, the assumptions in section 1.6.3 were used to further clarify the purpose of the study.

3.13.2 Rigour

Sekaran (2003:23) stated that "rigorous research involves a good theoretical and a carefully thought-out methodology". Scientific investigations therefore enable researchers "to collect the right information from an appropriate sample with the minimum degree of bias, and facilitate suitable analysis of the data gathered" (Sekaran 2003:23). Similar views were portrayed in a publication on 'Revisiting Feminist Research Methodologies' (Rose 2006). The document cited Kvale (1996), who advised that research procedures should be vigorous by ensuring "quality control throughout the stages of knowledge production". Section 1.6.1 of Chapter One of this thesis clearly spells out the scope of the study. The inclusion of all national archival institutions, as well as national media organisations, made it possible for the researcher to collect the right information. In an attempt to increase reliability, a pre-test of the instruments was carried out, as reflected in section 3.5.1.6. The suggestions from the pre-tests yielded more accurate questions and comprehensive research instruments. It was at the pre-test stage that the researcher decided to include national media organisations (which greatly improved the validity of the study).

The present researcher was aware of the length of the questionnaire (as noted at the pre-test stage). However, the comprehensive nature of the study required a questionnaire of this nature. Although the length of the questionnaire may have contributed to a lengthened response time, ultimately the response rate of nine out fourteen (64.28%) was good. Arksey and Knight (1999:53) stated, "in survey research, reliability is mainly about trying to reduce interviewer bias so that the findings can be trusted". In the present study, reliability of the interview instrument was measured by asking all respondents the same

questions and, where possible, giving the same clarification (with the exception of questions that did not apply to some respondents, as in the case of the NFVSA of South Africa and the Botswana Broadcasting Corporation, that had different sections specialising in different functions). In that case, different sections addressed different aspects of the interview. In the end, the results were aggregated to represent one institute or organisation.

After making corrections from the pre-tests, final copies of the interviews and questionnaires were professionally administered to yield the results given in Chapter Four of this thesis. The researcher can confidently conclude that the results of the study 'to some extent' reflect a true picture of the phenomenon under investigation. The pilot testing and the use of triangulation methodology improved reliability and validity of the findings. For instance, some of the responses in the questionnaire were crosschecked, confirmed or negated during interviews and observations. Examples of such questions will be given in Chapter Four. The reliability of the instruments was improved by adopting some questions from related studies/research instruments such as Archives and Manuscript Repositories (ARL) Preservation Activities Survey (1998), Derges (1992), Ngulube (2003a) and TAPE (2005).

Sampling was not used in this study. Questionnaires were sent out to all archival institutions in the region. Sampling was only carried out at the interview and observations stage (see Appendix I and II).

3.13.3 Testability

Although Sekaran (2003:23) advocated testing hypotheses as one of the requirements of scientific research, the descriptive nature of this study did not lend itself to hypothesis testing. Instead, the researcher applied the test-retest correlation method (Mouton 2001:121; Saunders, Lewis and Thornhill 2003:309) to test reliability of the interview and questionnaire instruments. This was done at the pre-test stage and at the data collection stage. Some of the people who were used to pre-test the research instruments were also the respondents at the final stage. In some instances, the respondents returned the old pre-test drafts at the final stage. In the former, the researcher requested the respondents concerned to complete the correct draft.

Internal consistency of the questions in the questionnaire was carried out, as indicated in the example given in section 3.10 (item iv). Since most of the questions in the interview

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schedule were similar to the ones in the questionnaire, the present researcher did not conduct separate reliability tests for the two instruments. Nevertheless, the researcher upheld professional ethics by obtaining the respondents' consent prior to the observation. The respondents were not coerced into permitting the researcher into their repositories. Before conducting observations, the researcher took time to explain the purpose of the visit.

3.13.4 Replicability

Sekaran (2003:24) stressed the need for replication in scientific research. This implies that, in order for research findings to be credible, they must be replicated at least twice by other researchers. Sekaran (2003:24) emphasised that "the results of the tests of hypothesis should be supported again and again when the same type of research is repeated in other similar circumstances". Since this study was descriptive, it cannot be replicated through hypothesis testing (Shipman 1997:125). However, the results obtained from this study could be integrated with other methods, which could enable some aspects of the study to be replicated. The findings of the study should be taken in the light of the prevailing conditions at the time of the investigation, since it was a cross-section study. This means that replication could only be done under similar conditions.

3.13.5 Precision and confidence

Sekaran (2003:24) defined precision as "the closeness of the findings to reality based on a sample". Precision reflects "the degree of accuracy or exactitude of the results on the basis of the sample to what really exists in the universe" (Sekaran 2003:24). Cohen, Manion and Morrison (2002:38) recommended criteria for judging the adequacy of research. These include internal and external validity, utility and credibility. The visits to various archival institutions and repositories in the region to conduct observations increased the internal validity of the findings of this study. Hence, to some extent, the findings of this study are valid, in-as-far as they describe the phenomenon which was investigated.

The present study covered all the national archival institutions in the region. Sampling was only done at the second stage of data collection. The region was divided into four groups, according to the level of development in the area of AV archives. One country was randomly selected from each group, as reflected in Appendix I. At this stage, the researcher was not very precise in grouping the national archival institutions, as up-to-date

information could not be gleaned either from the ESARBICA website or ESARBICA journals. National media organisations in each selected country were included (Appendix 1I). This further increased the validity of the results.

Confidence is said to refer to "the probability that our estimations are correct" (Sekaran 2003:24). Sekaran (2003) believed that researchers should go beyond ascertaining that the results are precise. This means that one should have a confidence level of 95%, that is, confidently claim that 95% of the time the results are true. This translates into a 5% chance of being wrong. Sekaran (2003:24) declared that "the greater the precision and confidence we aim at in our research, the more scientific is the investigation and the more useful are the results." Since the present study did not carry out inferential statistics, the probability error of the results could not be established. Rather, the assumptions were examined in the interpretation of results (using descriptive statistics).

3.13.6 Objectivity

According to Sekaran (2003:25):

> The conclusions drawn through the interpretation of the results of data analysis should be objective, that is, they should be based on the facts of the findings derived from actual data, and not on our subjective or emotional values.

In line with the above requirement, the present study employed the research questions and the research objectives in Table 1, in the presentation and interpretation of results. It can be argued that the present study was relatively objective.

3.13.7 Generalizability

"Generalizability refers to the scope of applicability of the research findings in one organizational setting to other settings" (Sekaran 2003:25). Gall, Gall and Borg (2005:254) referred to generalisability as 'population validity', that is, the extent or degree to which a study can be generalised from a specific sample to the population from which the sample was drawn (Gall, Gall and Borg 2005:254).

In order to determine population validity, Gall, Gall and Borg (2005:254) and Sekaran (2003:25) suggested that researchers should gauge the degree of similarity between the research sample and the larger population to which the results were generalised. Maxwell

(1998:95) observed that it was not easy to generalise qualitative research. The author emphasised:

> Indeed the value of a qualitative study may depend on its lack of
> generalizability in the sense of being representative of a larger population;
> it may provide an account of a setting or population that is illuminating as
> an extreme case or ideal type (Maxwell 1998:95).

In view of the above observations, the findings from the interviews and observations of this study cannot be generalised to the ESARBICA region. Rather, they were used to support or negate some of the comments from the questionnaires, which were administered in the same settings. The present study employed stratified random sampling. This method was used because the researcher wanted to reflect certain characteristics in the units of analysis. Hence, The NFVSA of South Africa was selected because it was the only national film and video archive in the region.

Questionnaires were sent to all the ESARBICA member states (that is all the national archival institutions). The sample for interviews and observations was representative of the larger population, as indicated in Appendices VII, VIII and IX. In can therefore be concluded that the results of this study can be generalised to the whole region, that is, ESARBICA.

3.13.8 Parsimony

The principle of parsimony requires researchers to explain the phenomena or problems in simple terms and similarly, to generate simple solutions to what may have seemed a complex problem (Sekaran 2003:26). Sekaran (2003) realised a need for researchers to achieve "a meaningful and parsimonious, rather than an elaborate and cumbersome, model for problem solution…" (Sekaran 2003:26). After coming up with a theoretical framework to the study, which revealed various models (see section 2.1.1 of Chapter Two), the present researcher realised that the problem was failure to apply the records cycle to the management of AV materials.

If the present researcher had a chance to conduct the same study again, she would apply more in-depth observations over a longer period of time (about a year). The researcher would enlist the help of professional interviewers and observers in various countries in ESARBICA. Unlike questionnaires, where one is not sure whether the intended persons

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answered the questions, interviewers would reach the units of analysis. The use of local interviewers would improve the results by using the local language to interpret some complex questions. Spontaneous, unstructured observations, over a longer period of time, would enable the researcher to capture events as they occur and thus reflect a more valid picture of the situation. Participant observation would have been more effective over a longer period of time. The present researcher also believes that a comparative study using the case study method would have yielded better results. To some extent, some biases/shortcomings inherent in the data collection methods used (discussed in sections 3.5.1.5, 3.6.2, and 3.7.2) might have affected the outcome of the results. For instance, there was no way of ascertaining that the intended respondents completed the questionnaires. Since the researcher was not able to visit all the countries in the region, the results from interviews and observations could not be generalised to the entire region. Moreover, the observations could not address social forces that may have influenced or constrained the respondents' views or behaviour (Saunders, Lewis and Thornhill 2003:85). In that regard, more accurate results could have been obtained by applying a realism approach, which ascertains the less observable forces behind a phenomenon (Payne and Payne 2004:172; Saunders, Lewis and Thornhill 2003:85). Conducting interviews and observations in the entire ESARBICA region (fourteen countries) would have yielded better results.

3.14 Summary

Chapter Three discussed the different research paradigms that are applied to a research design. Data collection procedures were discussed, in an attempt to determine their applicability to a given research problem. It was pointed out that all research methods are prone to error and hence the need to use triangulation to minimize the errors. The issue of ensuring reliability and validity of a research instrument was explored. The data analysis process was examined and reasons were given why and how the SPSS and, to some extent, Excel programs were used. The chapter also discussed the ethical issues that the researcher took into consideration. The chapter ended with an evaluation of the methodology of the study, which highlighted the inherent strengths and weaknesses in the research design that the researcher used.

CHAPTER FOUR: DATA ANALYSIS

4.0: Introduction

> "Bringing in the sheaves...gathering up the harvest of data and making it available to its ultimate consumer" (True 1983:289).

Chapter Three set the scene for this chapter by breaking down the research design, the research instruments and the units of analysis. This was done to ascertain the validity of the research instrument (s) and the reliability of the findings (Creswell 1994:121). The purpose of this chapter is succinctly captured in the above quotation. The chapter discusses the general data processing procedures and analyses the data that were gathered from the field. The study aimed at identifying strategies for managing AV materials and suggesting ways of preserving AV materials in the archival institutions of ESARBICA. This chapter centres on the objectives below.

i. To identify policies which archival institutions in ESARBICA used to manage AV materials;

ii. To investigate the extent to which the life-cycle model was applied to the management of AV materials in the archival institutions in ESARBICA;

iii. To ascertain the current levels of knowledge and skills of archivists in ESARBICA, in relation to managing AV materials;

iv. To establish locally or regionally available opportunities for staff who manage AV materials in ESARBICA; and

v. To establish strategies for managing AV materials in ESARBICA.

4.1 Presentation and data analysis

Data is presented according to the research objectives stated above. Data was gathered from the national archives in the region, as well as from media organizations, which are named in Appendix II. Fourteen self-administered questionnaires were posted to officers who were responsible for AV materials in national archival institutions. These were completed and returned with a response rate of nine out of fourteen (64.2%). Interview schedules and observation checklists were used to gather data from a sample of four archival institutions and four media organizations (given in Appendix VII, VIII and IX). In most cases, one person from each national archive or media organisation was targeted for the interview. In some cases (particularly in media organisations), where there were several sections responsible for AV materials, interviews were held with several people

responsible for AV materials. However, in the end, the data was correlated to represent the situation at the institution.

Quantitative and structured qualitative data from questionnaires and interviews were coded and analysed statistically, while open-ended qualitative data was analysed using content analysis (Creswell 1994:177; Tashakkori and Teddlie 1998:126). Descriptive statistics were used to analyse the data, which was predominantly nominal. SPSS and EXCEL computer programs were used. The latter was used to display the data graphically.

Individual and institutional results were kept confidential, in line with the research ethics stipulated in section 3.12 of Chapter Three. Hence the report of the findings is general in nature. Nevertheless, the researcher realised that most of the respondents from media organizations were not familiar with some aspects of AV preservation. This explains the high item non-response rate to some of the questions (see questions C1-C5, D2, E1-E2, F1-F3, H17, H20, and I1-I4 of Appendix VIII). With the national archival institutions, the questions pertaining to climatic conditions had a high non-response rate (see question G3 and G4 of Appendix VI). The triangulation method improved reliability of the findings, as the researcher was able to cross-check the facts provided in the questionnaire during interviews and observations.

Descriptive statistics were carried out to examine univariate variables. The study identified different independent variables that affect the dependent variables. A bivariate analysis was conducted to determine the relationship between some variables. However, since it was not a hypothesis testing study, inferential statistics were not used. Assumptions were drawn, which were either confirmed or negated by the results, as will be explained in the next chapter. The sections that follow present the results from the findings.

4.2 Background and context

Each questionnaire and interview session opened with background information of the responding institution. The background information ascertained whether the person who was answering the questions was competent to do so. It established the characteristics of the responding institution. This information was very helpful in establishing follow-ups, to clarify some issues from the questionnaire responses. Other questions were asked to enable the researcher to determine the background to preservation of AV materials in national archives and media organisations. Hence the questions covered the types of AV

materials and the general conditions of AV materials in the various organisations. These are discussed below.

4.2.1 Types of AV materials in national archives

The study sought to establish the different types AV materials that national archives keep.

Figure 3: Materials kept in archival institutions (n=9)
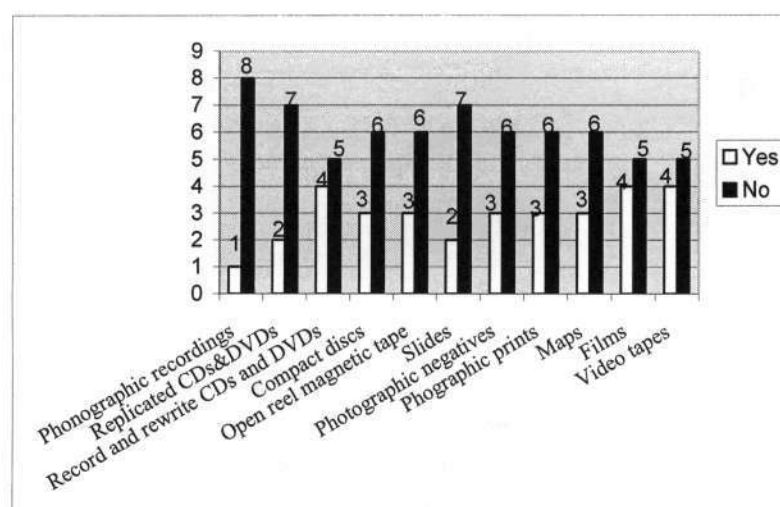
A question on what types of AV materials were kept gave the responses shown in Figure 3. Answers to the questionnaires from the national archival institutions revealed that four out of five institutions kept videotapes, films and recordable and rewritable CDs and DVDs. One archival institution indicated that they stored 5 000 film titles. The rest of the eight institutions did not specify the size of their AV collections. The least kept AV materials were phonographic recordings, as only one archival institution responded that they stored them.

4.2.2 Types of AV materials kept in media organisations

The present researcher was not able to establish the quantities of AV materials in the media organisations due to lack of up-to-date inventories. Interviews and observations revealed other AV materials kept by archival and media organisations. These included mini disks, CDs, DATs, DV CAMs, Beta cam, DVC-pro, and all formats of videos, audiotapes and LPs. Specific contents of films, such as TV news and TV programmes, were mentioned (in the case of media organis ations).

4.2.3 General conditions of AV materials

Matangira (2003b:46) stated that "it is very important to maintain proper storage conditions in order to ensure long-term preservation of audiovisual archives". This is because the condition of AV materials reflects on the preservation strategies in place. In an attempt to determine the general conditions of the AV collections, respondents from archival institutions were asked to describe the general condition of their AV materials. Table 5 shows their responses.

Table 5: General condition of the AV collections in national archival institutions (n=9)

Types of audiovisual materials	Very good	Good	Acceptable overall, some problems	Deteriorating	Non response
Phonographic	1	2	0	0	6
Replicated CDS and DVDs	2	2	1	0	5
Recordable and rewritable CDs and DVDs	1	4	1	0	3
Microgroove discs	0	3	1	0	5
Cylinders	0	2	1	0	6
Compact discs	1	4	0	0	4
Open reel and magnetic tape	0	3	2	1	3
Realia	0	1	0	0	8
Slides	1	2	2	2	2
Photo negatives	0	2	3	0	4
Photo prints	2	3	1	0	3
Maps	1	5	2	0	1
Drawings	1	0	1	0	7
Artworks	1	1	0	0	7
Films	0	1	2	1	3
Video tapes	1	3	3	2	2

Table 5 shows that most of the AV materials were said to be in good condition, although some of them, such as open reel magnetic tape, slides and films, were deteriorating.

The scales were rated on a Likert scale of 4 (ranging from 1 – Deteriorating to 4 – Very good).

Asked if they had any specific problems in their video collections, four of the archival institutions mentioned mechanical damage, seven institutions mentioned lack of playback equipment, five institutions had storage problems, six institutions experienced cataloguing problems, three institutions experienced vinegar syndrome and six institutions said their film collections were fading. Observations revealed that the vinegar syndrome was a problem in two of the media organisations.

One of the archival institutions mentioned problems of mould and fingerprints. Asked if people who handled AV materials sometimes wore gloves, two of the respondents from these archival institutions said they did, while one respondent said they did not wear them. The researcher was not able to confirm the use of gloves during observations, but she was presented with a pair of lint gloves at one of the archival institutions. None of the media organisations indicated that they used gloves to handle AV materials.

Open-ended questions to librarians from media organisations revealed the following specific problems: rapid change of formats, lack of detailed information to facilitate cataloguing and lack of copies, which led to loss and damage of master copies. One of the respondents from the media organisations explained that they did not experience problems preserving AV materials because they did not store them for more than a year. Despite these specific problems, all the media institutions that were visited indicated that their collections were in good condition. However, observations revealed other problems experienced by media organisations. In one of the organisations, there were signs of spilled drink and in another organisation there were signs of cigarette smoke. In view of the above problems, the researcher sought to establish policies that governed the management of archival and media organisations.

4.3 Policies that govern the management of AV materials

It was stated that archival legislation legitimises the operations of national archives (Kenosi 1999:120; Mnjama 2005:457). The present researcher wanted to establish if all the national archival institutions and media organisations in the ESARBICA region had specific policies that governed AV materials. The policies concerned appraisal, acquisition, retention, disposal, legal deposit, digitization, preservation and access. Respondents from national archives were asked if they had specific legal responsibilities for collecting all formats of AV materials. Five of the respondents agreed, while four of the respondents disagreed. The respondents from national archives were further required

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to indicate specific policies that governed the management of AV materials in their institutions. Their responses are illustrated in Figure 4.

Figure 4: Policies that govern the management of AV materials in national archives (n=9)
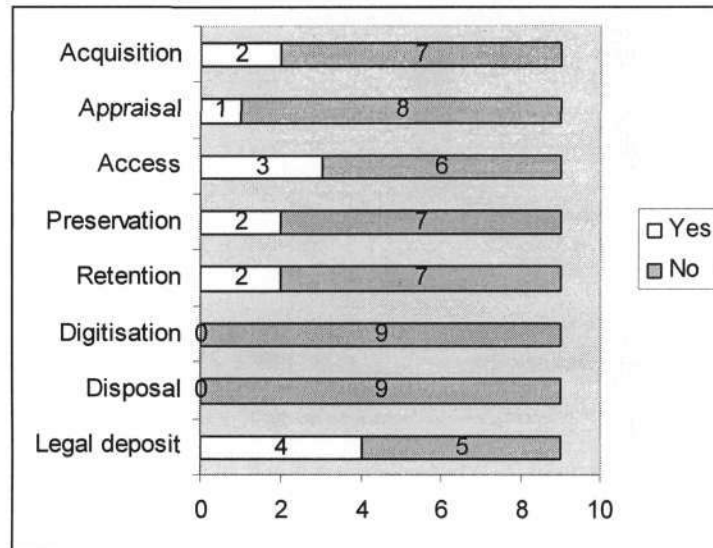
A question on acquisition policy for AV materials revealed that two of the national archives had a written acquisition policy for AV materials, while one of the media organisations indicated that they had an acquisition policy. However, none of the respondents produced a written acquisition policy. Asked about the criteria they used to acquire different formats of AV materials, one of the national archives said that acquisition depended on creators' format, one said it depended on users' format, two said it depended on the format that suits a particular media and one said there were no specific criteria used to acquire AV materials. The national archivists were asked if the appraisal policy covered AV materials. One agreed, while the remaining two disagreed. Those who disagreed said that they did not appraise AV materials. The media organisations did not have appraisal and acquisition policies. These results confirm Matangira's (2003b:48) statement, that archival institutions in the region did not have collection development policies. The current study further discovered that media organisations did not have appraisal and acquisition policies.

When asked to indicate the method that applied to the legal deposit policy of AV materials, three out of the nine respondents from archival institutions indicted 'selective', while one respondent said 'exhaustive'. Archival institutions were required to reveal if

copyright restrictions were clearly specified on deposited AV materials in all formats. Four of the respondents agreed, four disagreed, while one did not know.

4.4 The extent to which the life-cycle model is applied to the management of AV materials

The application of the records cycle is crucial to the effective application of the policies stipulated in Figure 5. This is because all of the archival functions are managed in an integrated manner. The present study therefore sought to ascertain if the life cycle model was applied to AV materials. According to Leary (1988:110), the fragile nature of AV materials necessitates the application of the records life-cycle. Since the management of records is a "key issue in civil service reform" (Roper and Millar 1999b:11), this study sought to establish if AV materials in the region were managed through the life-cycle. The researcher asked questions pertaining to the records life-cycle. These questions are covered under the sub headings in section D of Appendix VI, section E of Appendix VII and section C of Appendix VIII. This was in line with Roper and Millar's (1999b:17) observation that, without effective application of the record life-cycle, "vast quantities of inactive records clog up expensive office space, and it is virtually impossible to retrieve important administrative, financial and legal information".

Figure 5 shows the responses from the national archivists on how they managed AV materials through the records life-cycle. When asked at what stage (s) of the records cycle AV materials were managed, none of the respondents from archival institutions indicated the creation stage, five of the respondents indicated maintenance and use, three of the respondents said disposal stage, while there was no response from one respondent.

Interviews were conducted in three national archival institutions instead of four, as indicated from the four groupings of archival institutions in the region (see Appendix I). This is because the National Archives of Swaziland did not keep AV materials. Responses from the three national archival institutions revealed that only one institution managed AV materials from creation to disposal. Asked if they visited private and parastatal organizations to examine how AV materials were managed, two of the national archives that were visited disagreed, while one archival institution did not know. An open-ended question to national archivists revealed that the largest creators of AV materials were television and broadcasting corporations. The respondents from the three national archives interviewed indicated that contact persons at the broadcasting corporations were librarians.

Figure 5: Application of the records life cycle to AV materials in national archives (n=9)
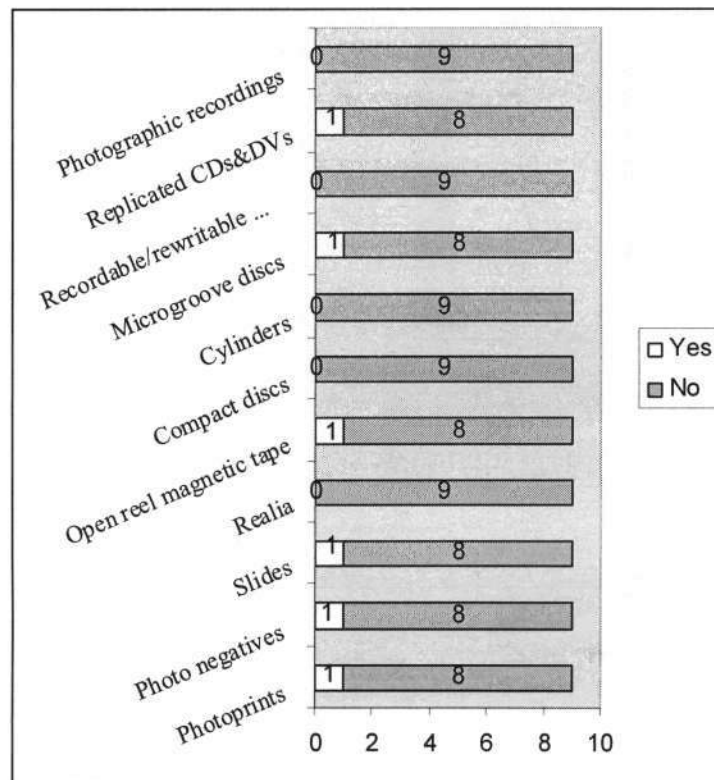
Four of the media organisations indicated programme managers as their contact persons (in cases where AV materials had to be obtained outside the media organisations). When the respondents from archival institutions were asked if there was a body that oversaw the management of AV materials through the records life-cycle, only two institutions agreed, while seven disagreed. None of the media organisations answered any of the questions on the records life-cycle. Effective management of AV materials requires that strategies be in place. The section that follows discusses the strategies that national archives put in place to manage AV materials.

4.5 Strategies applied to the management of AV materials

The level of preservation is upheld by the strategies that archival and media organisations put in place. The various strategies that can be instituted to facilitate the management of AV materials include budget and funding, the type of building, conditions of the storage areas, structural placement of archival institutions, appraisal, acquisition, surveys, environmental factors, storage equipment for AV materials, access, arrangement and description, reformatting and security and disaster management.

4.5.1 Budget and funding for preservation of AV materials in national archives

The value attached to a nation's heritage is reflected in the budget allocated to national archives. Limited resources hamper effective development of archival services (Child 2000:63; Mnjama 2005:457). Since funding contributes to the smooth running of organizations, the current researcher asked the respondents from archival institutions if their institutions had a specific budget for the preservation of AV materials. Only one agreed, four disagreed and four did not know. Asked to estimate the budget for AV materials, the respondent who answered in the affirmative indicated that the budget was very small, but could not give a specific figure. The respondents from national archives were required to indicate sources of finance for preservation of AV materials. Figure 6 shows their responses.

Figure 6: Sources of finance for audiovisual materials in national archives (n=9)
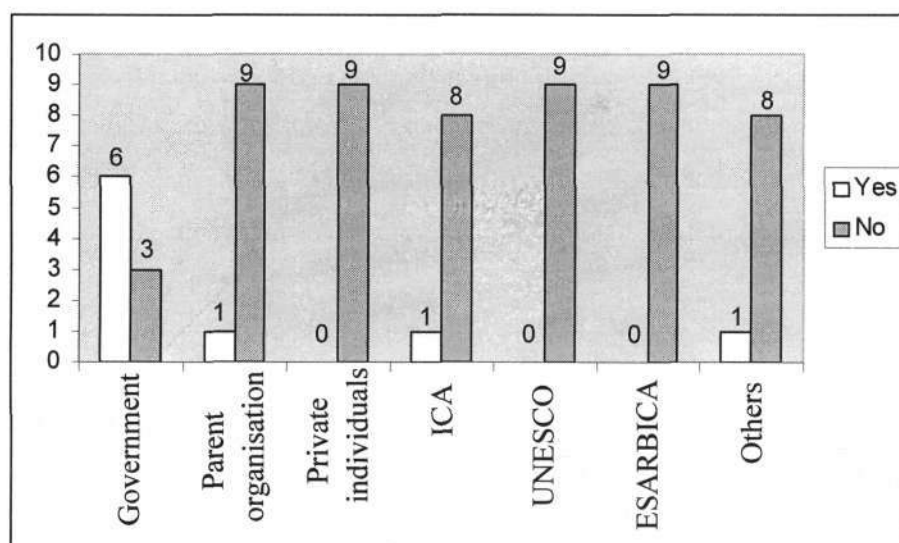
The respondent who ticked the option 'others' mentioned the World Bank as the sponsor. When asked about the level of financial support for AV materials, two of the respondents said it was fairly adequate, five said it was inadequate, while two of the respondents did not answer the question. The levels of financial support were rated at a Likert scale of three (1= inadequate, 2= fairly adequate and 3=adequate).

When asked if they were members of international organisations for AV materials, seven national archives answered that they were members of IASA, one indicated FIAF and two indicated FIAT.

The value attached to a nation's heritage is partly reflected in the types of buildings that are used to preserve the archival collections. The section that follows sought to establish the different types of buildings that house AV materials in the region

4.5.2 Types of archival and media organization buildings

Buchmann (1999:5) suggested that preservation should be central to all aspects of archival activities, starting with the plan of an archival building. As Ngulube (2003a:249) stated, "storage conditions offer many opportunities to prolong the life span of documents because they contribute to their physical well being". This implies that if the storehouse of archival materials is not sound, all efforts to preserve the archival materials are in vain. It is against this backdrop that the present researcher asked the respondents from national archives and media organizations to describe the types of buildings that housed their AV collections. Figure 7 shows the types of archival buildings in the region.

Figure 7: Types of archival buildings (n=9)
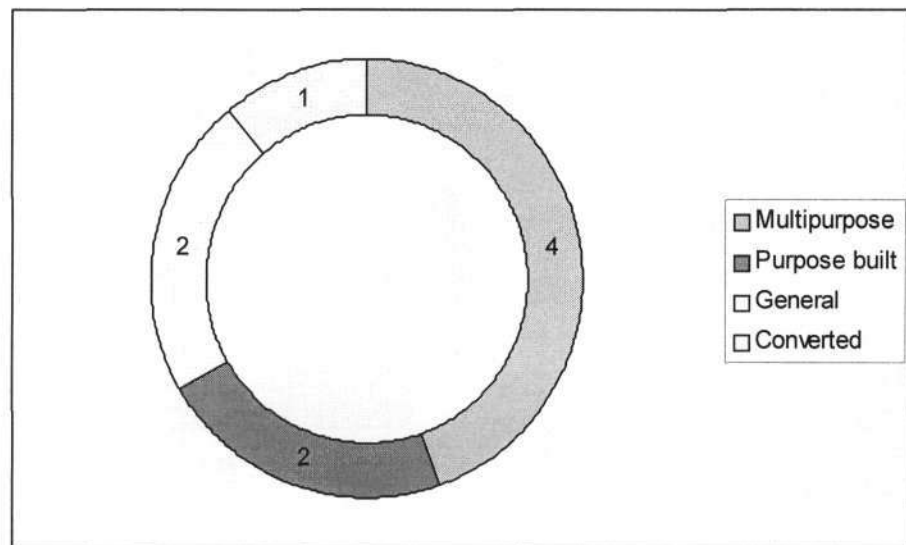
As can be seen from Figure 7, most of the archival buildings were multipurpose, that is buildings that were used for different functions in addition to storing different formats of archival materials. Observations revealed that one of the archival institutions had two storage buildings for AV materials. The 'holdings' building was well-maintained and secure, whereas the office side (where copies of AV materials were kept) did not have proper facilities to maintain AV materials. Master copies were stored in the 'holdings' buildings and copies (for use) were stored in an office building. Further observation revealed that some of the originals were stored in an office building due to shortage of

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space in the 'holdings' building. In another archival institution, AV materials were stored in a multipurpose building in the same room as text materials.

All the media buildings that were visited were multipurpose. One media organization had a state-of-the-art building. It was very spacious and it had appropriate facilities to accommodate AV materials. In one of the media organizations, the AV materials were stored in a caravan, where temperatures and humidity were not controlled. In another media organization, AV materials were not well-maintained. The researcher examined the condition of the roofs, walls, ceilings, general level of cleanliness, facilities in storage areas for AV materials and general security of the premises. The findings are discussed in the next section.

4.5.3 Conditions in storage areas

The condition of buildings and equipment affects the condition of AV materials (Harvey 1993:83-84; Fortson 1992:28). During observations, the present researcher examined the buildings to ascertain the general cleanliness and the conditions of roofs, walls and ceilings, as reflected in Table 6.

Table 6: Provision of storage facilitates and general condition of AV materials in national archives (n=3)

Condition of storage areas and facilities in national archives	National Archives			
	Yes	%	No	%
Shelves provide ample circulation of air around AV materials	2	66.7	1	33.3
All work and handling surfaces are elevated off the floor	3	100	0	0
A sticky floor mat at the doorway of the entrance	1	33.3	2	66.7
Wooden boxes	0	100	3	100
Cardboard boxes	3	100	0	100
Signs of spilled food	0	0	3	100
Debris generating objects	1	33.3	2	66.7
Signs of smoke	0	0	3	100
Storage and use areas above ground level	1	33.3	2	66.7
Signs of food	0	0	3	100
Signs of dust	2	66.7	1	33.3
Curtains in use	0	0	3	100
Fibrous wall coverings and furnishings	0	0	3	100
Roof made of dust-free, easy-to-clean materials	2	66.7	1	33.3
Roof in good condition	2	66.7	1	33.3
Roof in bad condition	1	33.3	2	66.7

Condition of storage areas and facilities in national archives	National Archives			
	Yes	%	No	%
Roof in very bad condition	1	33.3	2	66.7
Floor made of dust-free easy to clean materials	2	66.7	1	33.3
Floor covered with carpet	0	100	3	100
Floor in good condition	2	66.7	1	33.3
Floor in bad condition	1	33.3	2	66.7
Floor in very bad condition	3	100	0	0
Ceiling made of dust-free, easy-to-clean materials	2	66.7	1	33.3
Ceiling in good condition	2	66.7	1	33.3
Ceiling in bad condition	1	33.3	2	66.7
Ceiling in very bad condition	0	0	3	100

An examination of the general facilities in media organisations revealed the findings given in Table 7.

Table 7: Condition of storage areas and facilities in national media organisations (n=4)

Condition of storage areas and facilities	Media Organisations			
	Yes	%	No	%
Shelves provide ample circulation of air around AV materials	4	100	0	0
All work and handling surfaces are elevated off the floor	4	100	0	0
A sticky floor mat at he doorway of the entrance	2	50	2	50
Wooden boxes	0	0	4	100
Cardboard boxes	1	25	3	75
Signs of spilled food	1	25	3	75
Debris generating objects	1	25	3	75
Signs of smoke	1	25	3	75
Floor covered with carpet	2	50	2	50
Storage and use areas above ground level	4	100	0	0
Signs of food	0	0	4	100
Signs of dust	0	0	4	100
Curtains in use	0	0	4	100
Fibrous wall coverings and furnishings	0	0	4	100
Roof made of dust-free, easy-to-clean materials	2	50	2	50
Roof in good condition	2	50	2	50
Roof in bad condition	0	0	4	100
Roof in very bad condition	0	0	4	100
Floor made of dust-free, easy-to-clean materials	2	50	2	50
Floor covered with carpet	2	50	2	50
Floor in good condition	2	50	2	50
Floor in bad condition	1	25	3	75
Floor in very bad condition	0	0	4	100
Ceiling made of dust-free, easy-to-clean materials	2	50	2	50
Ceiling in good condition	3	75	1	25
Ceiling in bad condition	1	25	3	75
Ceiling in very bad condition	0	0	4	100

A close examination of equipment used to maintain AV collections is presented in the section that follows.

4.5.4 Equipment used to monitor environmental conditions in storage areas

The selection of good-quality equipment in repositories results in good service to the users of archival materials and it minimises damage to the AV equipment (Roper and Millar 1999b: 38). The researcher wanted to establish if the national archives used any equipment to monitor environmental conditions in the storage areas. Figure 8 shows the responses from national archives.

Figure 8: Equipment for monitoring environmental conditions in national archives (n=9)
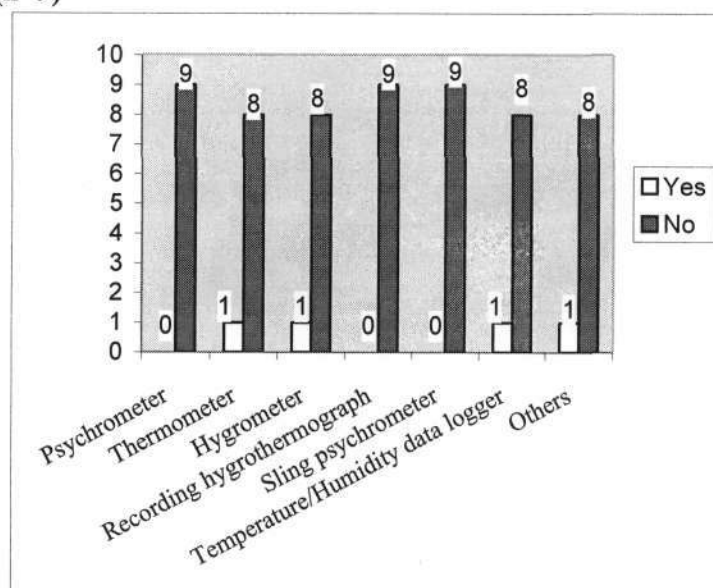
Observations in three national archives revealed that none of the archives had equipment to monitor environmental conditions in storage areas. Observations in four media organizations showed that the only environmental monitoring equipment they had were air conditioners.

The question that followed required national archivists to indicate how often the equipment indicted in Figure 10 was calibrated. One respondent said that the equipment was calibrated twice a year, another respondent said the equipment was not calibrated, while another said the equipment was not well-maintained. There was no response from six national archives. Responses from the interviews showed that one of the national

archives used a hygrometer and one used a thermometer. Two of the national archives did not have functional air conditioners.

Observations at three national archives revealed that only one national archive had a functional air conditioner. The researcher discovered that the air conditioner at one of the archival institutions had been malfunctioning for three years. In another archival institution, the researcher noted that there was no cold room for storing films, because the air conditioner had broken down. Observations at four media organizations revealed that all of them had functional air conditioners and one of the media archives had a temperature and humidity data logger. However, none of the archival institutions had one. The researcher established that none of the archival institutions and media organizations that were visited used a humidifier, de-humidifier or a HEPA filter to protect AV materials from environmental pollutants. When asked how often the equipment was maintained, one archival institution said they maintained the hygrometer once a year. There was no response from the media organizations.

4.5.5 Viewing equipment

The researcher also wanted to find out the types of equipment national archives used to view AV materials. Interviews with three national archives staff revealed the equipment in Figure 9.

Figure 9: Viewing equipment for AV materials in national archives (N=3)

Legend:
- ☐ 16 mm Projector
- ▨ Slide Projector
- ☐ Film Strip Projector
- ☐ Video Cassette Projector
- ■ Television Monitor Receiver
- ▨ Overhead Projector
- ▨ Record Player
- ☐ Tape Player
- ■ Audio Cassette Player
- ▨ Video Camera
- ☐ Computer Terminals
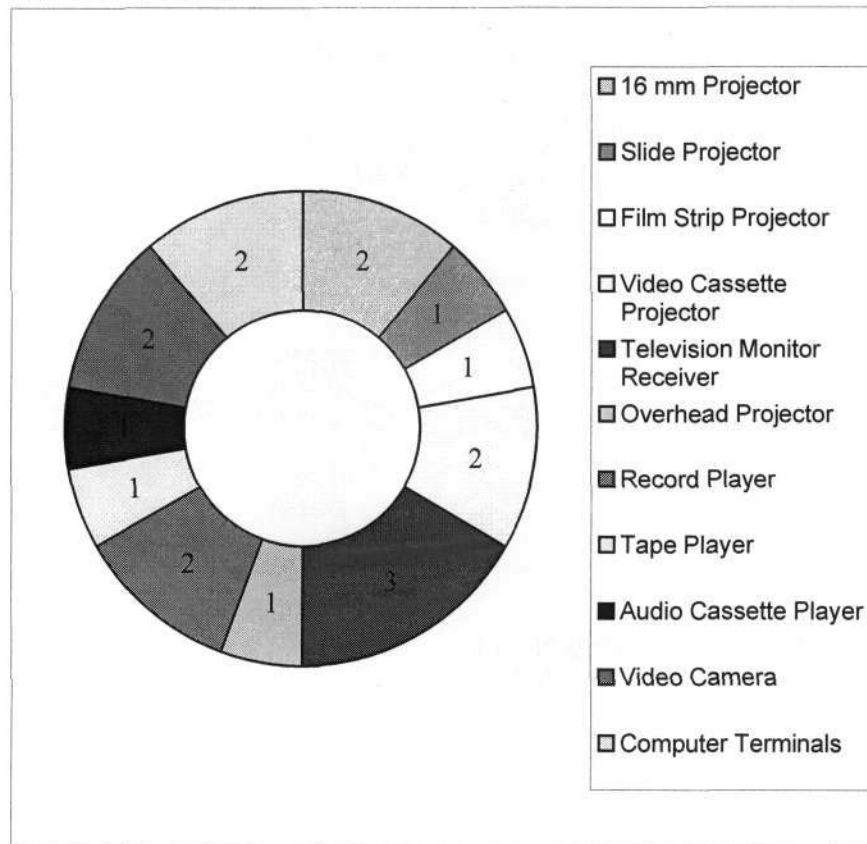
4.5.6 Video machine format

The type or format of video machine determines accessibility to the information contents. The researcher sought to determine the formats of video machines kept by the national archives. All three national archives' staff interviewed indicated that they had VHS analog video machines, one had Beta Cam-SP equipment, one had Digital Tape Recorders (with compression), one had a Digital Video Camera and two had Digital Tape Recorders (without compression). The results from the present study show that VHS formats were still in use despite the fact that some archival institutions were using the latest formats.

4.5.7 Storage equipment for AV materials

AV materials should be stored in appropriate equipment to prolong their lifespan. The researcher wanted to establish the types of storage equipment used by national archives. Interviews and observations revealed that one of the national archives used shelving, three national archives used cabinets and one of the archives indicated 'others'. The respondent who indicated the option 'others' said that (s)he used vaults to store AV materials. The above information was obtained through interviews and observations because the researcher wanted to physically establish the facts.

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4.5.8 Structural placement of archival buildings

The literature revealed that the administrative structure of national archives depends on the emphasis the government places on the national archives (Chavula 1988:27). Section 2.3.3 of the literature review gives detailed information about the structural placement of the national archives in the region. Interviews with the three national archives confirmed that the Botswana National Archives and Records Services reported to the Ministry of Home Affairs, The National Film and Video and Sound Archives of South Africa reported to the Department of Arts, Sports and Culture and the National Archives of Namibia reported to the Ministry of Education.

Since appraisal involves a determination of what to keep and what to reject (Forde 1990:145; Leary 1988:106), it is deemed to be one of the most important duties of an archivist (Harris 1996:8). The next section shows the criteria national archives and media organizations used to appraise AV materials.

4.5.9 Appraisal of AV materials

Appraisal decisions impact on the type, quality and quantity of AV materials stored by archival and media organisations. The researcher thus found it necessary to examine the way national archives and media organisations appraised their AV collections.

None of the archival institutions answered the detailed questions on appraisal practices (see section H, Appendix VI). One respondent from one of the archival institutions explained that they lacked expertise to appraise AV materials. Question H1 of the questionnaire sought to establish the standards that guided archivists in appraising AV materials. None of the respondents ticked any of the standards that were tabulated in question H1 of the questionnaire. The option for 'others' was not ticked, either. Further questions regarding instruments used to appraise AV materials, that is survey forms, retention schedule, and disposal schedules, were not answered. The researcher also wanted to ascertain the criteria national archives used to appraise AV materials. Two of the national archives reiterated that they did not appraise AV materials, while one said they appraised AV materials by uniqueness and cost. The question regarding problems that national archivists experienced with appraising AV materials was not answered. Since acquisition is closely linked to appraisal, the researcher wanted to determine the methods which archivists used to acquire AV materials. The section that follows reveals their responses.

4.5.10 Acquisition of AV materials

Schwirtlich and Reed (1993:137) perceived acquisition as a "process by which archives add to their holdings by accepting material as a donation, transfer, purchase or loan". Acquisition requires institutions to define their collecting policy, based on a clear analysis of their interests, resources, and users' interests. In this regard, the present researcher wanted to establish the acquisition method that national archives used to acquire AV materials. Responses revealed that eight of the national archives used passive collection, while one used active acquisition.

The question on how often they added AV materials to their collections was not answered by any of the archival institutions. Interviews revealed that one of the national archives conducted surveys for AV materials in all creating organizations, while one of the media organizations said records survey had been an off-time activity. The next section examined the methods and tools that archivists and media officers used to arrange and describe the AV materials in their collections.

4.5.11 Arrangement and description

Arrangement and description of archival resources is a key to future retrieval. Proper arrangement and description are prerequisites to access and use of AV resources (Kepley 1998:157). In this regard, the present study established archival principles that governed the arrangement of AV materials, tools used to document AV materials, information reflected in the series description, finding aids in use and bibliographic cataloguing standards used. When they were asked to indicate the archival principle(s) that governed the arrangement of AV materials, five of the respondents from national archives indicated provenance and four said original order. The information contained in various accession tools used to arrange and describe AV materials was examined.

4.5.11.1 Accession Registers

The researcher asked national archivists to indicate what information was reflected in the accession registers. Figure 10 shows their responses.

Figure 10: Information contained in accession registers of audiovisual materials (n=9)
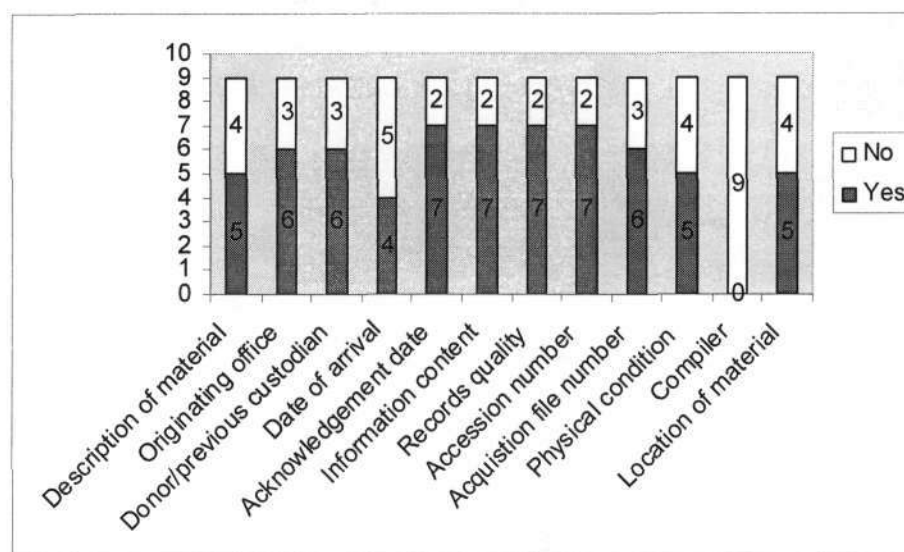
4.5.11.2 Series description

Since series document a function(s) or a process(s) in government, the creator agency or the activities of a person, they are supposed to be kept together in their original order or system (Roper and Millar 1999f:69). In this regard, the respondents from the national archives were asked if they described AV materials at series level. Four of the respondents agreed. The respondents were then asked to indicate what information was reflected in the series description. Table 8 shows their responses.

Table 8: Information in series description of AV materials at national archives (n=9)

Series description content	Yes	%	No	%
Dates	8	88.9	1	11.1
Size	4	44.4	5	55.6
Type of material arrangement	5	55.6	4	44.4
Subject	8	88.8	1	11.1

Realising that information contained in series description cannot be retrieved without finding aids, the section that follows examines the finding aids used by national archives and media organizations.

4.5.11.3 Finding aids

Finding aids are source documents that lead researchers or information users to the required information (Edgecombe 1993: 248). They establish intellectual control over the

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resources, while at the same time permitting users to access the resources (Harrison 2004b). This is why the present study deemed it important to identify the finding aids used for AV materials. When asked to indicate the finding aids used to identify AV materials, the respondents from archival institutions came up with the suggestions shown in Figure 11.

Figure 11: Finding aids used to describe audiovisual materials in national archives (n=9)
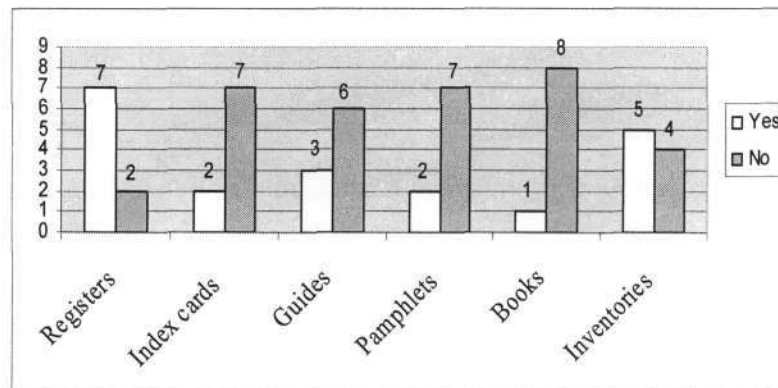
Asked how often the above findings aids were updated, one of the respondents from national archives indicated monthly, three said once a year and one indicated 'others'. The respondent who indicated the option 'others' said that they used a computerised retrieval system which was last updated in 1996. While finding aids are the key to archival resources, data fields are the key elements that form the basis and structure of a cataloguing system (Malden 2004a). The section that follows discusses data fields for AV materials.

4.5.11.4 Definition of data fields

Malden (2005) stressed the need for archivists to identify data fields for AV materials, hence the need for international standards such as IASA, Dublin Core and MARC. During observations, the researcher examined how data fields were defined on the AV materials. The findings are reflected in Table 9.

Table 9: Definition of data fields for AV materials

National archives (n=3)   Media organizations (n=4)

Definition of data fields for AV materials	Date of production		Unique identifying number		Producer's rights		Monochrome		Colour		Duration	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
National Archives	1	2	0	3	0	3	0	3	0	3	1	2
Media Organizations	2	2	2	2	1	3	1	3	1	3	1	3

Respondents from national archives and media organizations did not respond to the items relating to pre-defined rights, copyright, number of showings, photo rights, territory rights, re-use rights and footage rights. As indicated earlier, data fields are governed by international standards. The next section examines bibliographic or intellectual control standards that apply to AV materials.

4.5.12 Bibliographic/intellectual control standards

Cataloguing was deemed to be the gateway to archival resources (Olson 1992:2). The physical content of the archives (including digital resources) needs to be clearly described to ease access. This emphasised the need to identify the key data elements in AV collections. In an attempt to identify the bibliographic standards in use, the researcher asked questions that pertain to the above. The respondents from the national archives indicated that they used the following standards to catalogue AV materials: two of the respondents indicated that they used IASA cataloguing rules, one respondent used AACR2, five used Manual Archival Descriptions (MAD) and one did not respond. None of the respondents from national archives admitted to using MARC-AMC, AACR2, MAD2, Library of Congress and Dublin Core. Two media organisations indicated that they used MARC, two used MAD2, one used CDISIS, one used WINISIS and another media organisation said they catalogued AV materials chronologically by year. Since some of the AV materials are in digital format, the present study examined metadata that was used to organise digital resources in national archives.

4.5.12.1 Bibliographic/intellectual control of digitized materials

Various authors (Jones and Beagrie 2003:115; Miliano 2004; Wright 2005) emphasised the need for metadata in the preservation of digital materials. Since digital information is hardware and software dependent, it is important to adhere to technical requirements to "provide continuity for all those who will be involved with decision-making and for the purpose of accountability" (Muir 2004:77). The respondents from national archives were asked to indicate the type of descriptive data on digitized materials. Figure 12 reflects their responses.

Figure 12: Descriptive data on digitized materials in national archives (n=9)
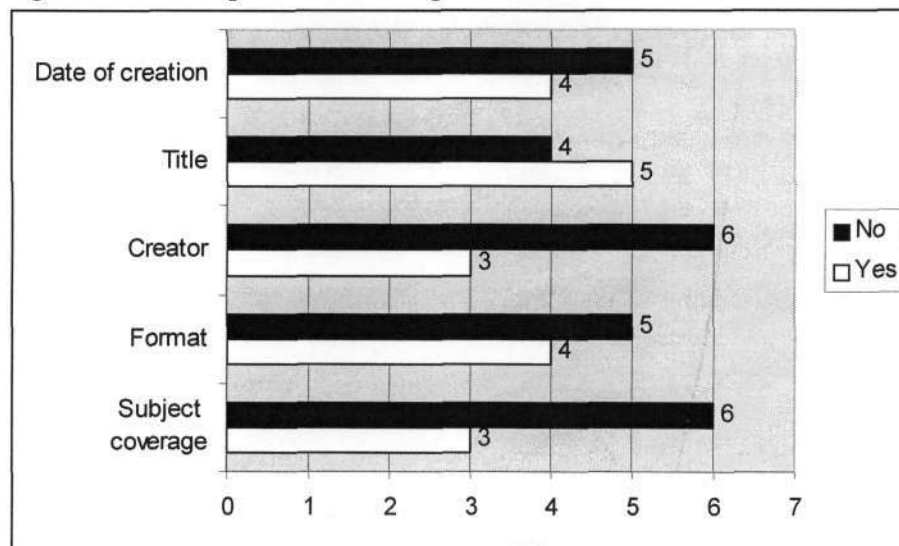
4.5.13 Problems of cataloguing AV materials

Question L3 of the questionnaire aimed at determining if national archives experienced any problems cataloguing AV materials. Three of the national archives admitted to having some problems. When asked to specify the nature of the problems, one of the respondents from the national archives indicated television series, two mentioned popular music recordings, two said films and one mentioned videos. An open-ended question revealed the following specific reasons to the problems mentioned above.

- Films - this is because they are broken or have no clear sound or picture;
- AV materials do not have sufficient information on arrival;
- No time to catalogue AV materials; and
- No expertise to catalogue AV materials

4.5.14 Reformatting strategies

Ngulube (2002a:120) stated that "the need to preserve records and archives arises from the format, the environment in which they are stored, and frequent handling and use".

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Although the most common preservation strategies are photocopying, microfilming and digitization (Ngulube 2002a:121), the present study focused on digitisation as a reformatting strategy, since it is the one that mostly applies to AV materials. The respondents from national archives were asked to indicate the measures they took when original AV materials deteriorated. Table 10 shows their responses.

Table 10: Reformatting strategies for deteriorating AV materials in national archives (n=9)

Type of audiovisual materials	A systematic reformatting programme		Reformatted on users' request		Sometimes reformatted for special projects		Very seldom reformatted or not at all	
	Yes	No	Yes	No	Yes	No	Yes	No
Film	1	8	0	9	3	6	0	9
Audio	0	9	0	9	2	7	1	8
Video	1	8	0	9	2	7	1	8

When asked if they outsourced the digitising function to commercial vendors, all respondents from the national archives said they did not. They were then asked if they kept analogue originals after digitising AV materials. Their responses are captured in Figure13.

Figure 13: Formats for analog originals after digitizing AV materials in national archives (n=9)
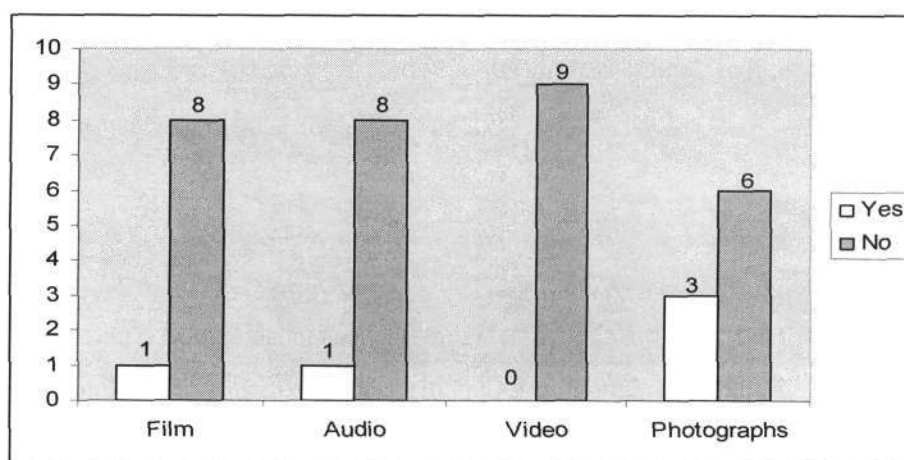
Since reformatting strategies are put in place to facilitate access to records and archives (Ngulube 2002a:117), the section that follows discusses attempts national archives put in place to promote access to AV materials.

4.5.15 Access

According to Feather and Eden (1997:72), "preservation supports access. Documents must be preserved so that current and future users can have access to them". Ngulube (2002a:117) stressed that preservation and access to archival resources is the core business of an archival institution. Archivists in archival institutions were asked if legal rights issues complicated access to AV materials. One respondent answered that access to AV materials was in some cases complicated by legal rights issues, while eight disagreed. The respondents from the archival institutions were required to indicate whether access was limited to certain areas within their institutions. Eight of the respondents said there was limited access to stack areas, while one disagreed. Four of the respondents from the national archives indicated that access to public areas was limited and five disagreed. Commenting on access to offices and workshops, seven of the respondents from national archives said access to offices and workshop areas was limited, while two said it was not. A question on principles that governed access to AV materials produced the responses in Table 11.

Table 11: Principles that govern access to AV materials in national archives

Principles that govern access to AV materials in national archives	Yes	No
Relevant legislation	6	3
Sensitivity/confidentiality	5	4
Protection of individual privacy	6	3
Inspection of particular collections or categories within a series		7
Copying of materials for private study		7
Further reproduction of publication of documents	2	7
Degree of control over holdings – policy states what is to be provided by archivists upon request and what is not provided	3	6
Physical condition - access may depend on physical condition	6	3
Security against loss	7	2
Ensuring confidentiality of records from tampering and unauthorised access	5	4
Restrictions by depositors	5	4
Clientele specified restrictions	1	8
Equality of access to AV materials	4	5

A question on the main users of archival materials elicited the responses in Table 12.

Table 12: Users of AV materials

Users of AV materials	Never	Very low	Low	High	Very High	Non Response
General public	0	2	0	5	0	2
Academic researchers	0	1	1	3	2	2
Students	0	1	3	2	0	3
Publishing/media	0	1	0	4	1	3
Others	0	1	1	1	0	6

The use of AV materials was rated on a Likert scale of 1 to 5 (1= Never, 5= Very high). The open-ended questions from questionnaires to respondents from national archives revealed other users to be filmmakers, teachers, young students and foreigners. Asked if they gave instructions to users, four respondents from national archives answered that instructions were briefly given during use, while five respondents said users were given brief instructions before use. The respondents were required to indicate if they charged users' fees. Six respondents from the national archives answered in the affirmitive, while three said they did not. Asked if they ensured that users completed an access application form, five respondents from the national archives agreed, while four disagreed.

Interviews with media librarians revealed that users of AV materials were in-house. They included newsreaders, news editors and Disc Jockeys ('DJs'). If users are to benefit from prolonged use of AV materials, appropriate environmental conditions should be in place. Environmental factors are discussed in the next section.

4.5.16 Environmental factors

Various environmental factors contribute to the deterioration of AV materials. These include temperature, relative humidity, lack of equipment to maintain temperature and humidity, light, fire, water and biological agents.

4.5.16.1 Temperature and relative humidity

It is crucial to maintain suitable temperature and RH levels, because excessive heat and humidity accelerate the deterioration of AV materials (Feather and Eden 1997:68). Climatic conditions are therefore an integral part of a preservation programme. Climatic conditions were examined to establish the extent to which AV storage conditions were maintained.

The observations revealed that none of the media organizations had a climatically controlled room where AV materials were received. The archival institutions were also required to indicate if temperature and humidity were maintained at constant level 24 hours a day. Most of the respondents from archival institutions could not clearly specify the exact temperature and RH that applied to various AV materials in their custody. Only national archive provided the exact temperature and humidity for all AV collections in their custody (see Appendix XI). That archival institution had a computerized system for gauging temperature and humidity levels.

The dyes in some formats of AV materials such as colour films make them susceptible to light. It was therefore important to examine if AV materials in national archives and media organizations were exposed to light.

4.5.16.2 Damage caused by light

Applebaum (1991:65), Roper and Millar (1999a:20) and Swartzburg (1995:11) cautioned archivists against the dangers of exposing AV materials to light. This is because the ultra-violet rays cause chemical changes that can damage archival records (Swartzburg 1995:11). According to Swartzburg (1995:35), "all levels of light, no matter how low, contribute to cellulose degradation and fading of certain pigments and dyes". The present study sought to establish the type of light that was used in archival storage areas. The questionnaire responses revealed that six of the national archives used fluorescent light, while two used bulbs.

The findings from the observations revealed that all the three national archives and four media organisations used fluorescent lamps. None of the above organizations used incandescent lamps or bulbs. Asked how AV materials were protected from sunlight, one national archive said they used window shutters, while four archival institutions said that they positioned shelves in such a way that the AV materials were protected from light. Observations in three national archives revealed that none of the institutions used light filter film on windows. However, two archival institutions indicated that they kept tapes in their protective cases, while two said they turned lights off when use and handling areas were not occupied.

Observations revealed that one media organisation used window blinds, four positioned shelves away from sunlight, three kept tapes in protective cases and all the four media organisations said they turned off lights when the use and handling areas were not in use

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(this study could not verify the latter). The researcher observed that in two of the media organisations the librarians in charge of AV materials used the storage areas as their offices. Hence, lights were left on during working hours. The researcher also established that most of the storage areas did not have windows. However, at one of the media organisations, where the collections were housed in a caravan, the researcher noticed light coming through an open window. When the librarian responsible for the collections was asked about the open window, she answered that she wanted "to let in some fresh air". Since much damage to archival records results from water damage caused by attempts to extinguish fire flames (Roper and Millar 1999c:7), the next section discusses damage caused by water.

4.5.16.3 Damage caused by water

According to Lewis (2005), reducing the risk of water damage is collateral to physical protection. This is because water contributes to the growth of mould, which, in turn, causes more damage to archival collections (De Pew 1991:72). The respondents from national archives were asked if they controlled water and sewage regularly. Only three of them said they did, while the remaining six disagreed. The respondents were required to indicate if their institutions had fitted ground trays to drain any water leakages from the ceiling. Only one of the respondents replied in the affirmative. Observations revealed signs of roof leakages in one of the media organisations and one of the national archives. The leakages at the said organisations were caused by dysfunctional air conditioners. Biological agents such as mould, mildew and fungus result from water, high temperatures and humidity (Roper and Millar 1999a:25). Biological agents also damage AV materials. It was therefore important to examine any efforts to eradicate biological agents from archival repositories and media organisations.

4.5.16.4 Damage caused by biological agents

Biological agents include mould, insects and rodents, which thrive at high temperatures, high RH, in dark areas and on food particles (Roper and Millar 1999a:25). Good house-keeping is therefore crucial to the maintenance of an environment free of biological agents. The researcher observed signs of spilled drinks at one of the media organisations. At one of the national archives, the researcher observed an infestation of black insects on the floor. During interviews, archivists from national archives were asked to indicate if their AV collections were exposed to foreign matter deposits. Only one respondent indicated fingerprints and another indicated mould. The third respondent did not respond.

4.5.16.5 Damage caused by fire

The archivists were asked to indicate the fire-fighting equipment available in their archives. Figure 14 gives their responses.

Figure 14: Fire-fighting equipment/facilities in national archives (n=9)
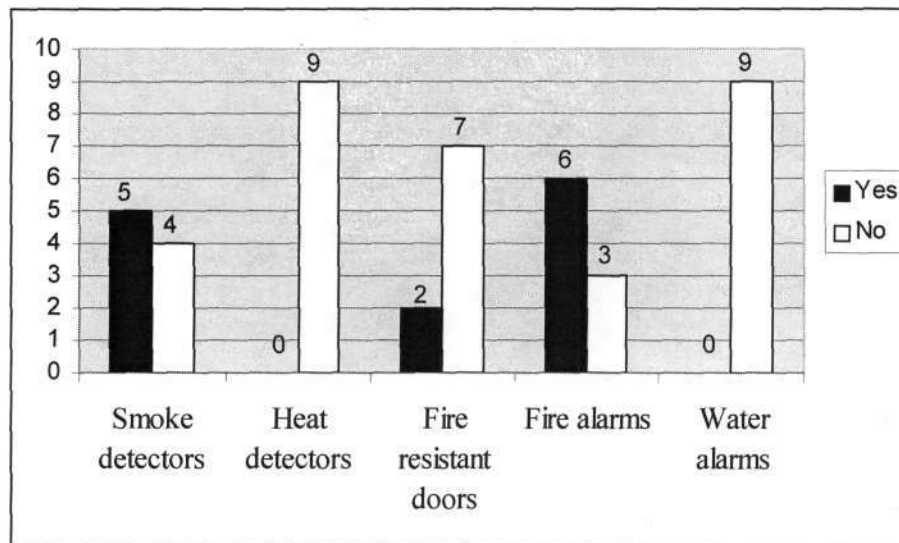
Since equipment and facilities in archival institutions need adequate security, there is a need to take practical measures to prevent or minimize disaster from happening. "If carefully planned and regularly monitored, these will substantially reduce the chances of an emergency and do much to contain the inevitable damage, should something disastrous …occur" (Tregarthen 1987:1). The section that follows is a discussion of security and disaster management in national archives and media organisations.

4.5.17 Security and disaster management

The literature revealed the need for security and disaster management in an effort to preserve archival resources (McCausland 1993:278; Ward 1990:93). Feather and Eden (1997:82) stressed that "a well-maintained archive with visible signs of good security practices and alert security conscious staff will discourage theft and vandalism, and other criminal activity." In order to establish whether security in archival organisations was adequate, the researcher asked questions which included security policy, risk assessment, emergency or disaster planning, emergency equipment, no-smoking signs, water sprinklers, alarm systems, supervision and screening of visitors, use of playback equipment, and general security procedures. Three of the archival respondents who completed the questionnaires indicated that they had a security policy that governed the management and preservation of AV materials. When the respondents from the archival

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institutions were asked if they conducted risk assessments, three said yes and six said no. All those who replied in the affirmative said that risk assessments were conducted once a year. A question on an emergency disaster plan revealed that three archival institutions had one, while six did not. Nevertheless, one of the respondents from the archival institutions revealed that the emergency plan was not implemented. Out of the archival institutions that indicated that they had a disaster plan, one archival institution had key people/offices to be contacted in the event of an emergency/disaster. These included the City Council Fire Brigade, Ministry of Works and designated security officers. When asked if the key people/offices had an emergency plan, one respondent from the archival institutions said they did. Table 13 gives detailed security measures that national archives took to protect AV materials in their custody.

Table 13: Security measures in national archives (n=9)

Security measures in national archives	Yes	%	No	%
Institution has a security policy for AV materials	3	33.3	6	66.7
Institution conducts risk assessments	3	33.3	6	66.7
Institution has an emergency disaster plan	3	33.3	6	66.7
Key people listed in emergency plan	0	100	9	100
Suppliers of emergency equipment listed in disaster plan	0	100	9	100
No-smoking signs displayed	6	66.7	3	33.3
Water sprinklers covered with glass	0	100	9	100
Alarm systems linked to local fire station	1	11.1	8	88.9
Alarm systems linked to automated security system	3	33.3	6	66.7
Alarm systems fixed on study doors	1	11.1	8	88.9
Visitors strictly supervised	8	88.9	1	11.1
Visistors' personal belongings kept in lockers	8	88.9	1	11.1
New employees screened	7	77.8	2	22.2
Security procedures clearly explained to new employees	7	77.8	2	22.2

Interviews in three national archives revealed more specific security measures that are reflected in Table 14. The security measures were rated on a Likert scale of 1 to 3 (1= Never, 2 = Sometimes, 3= Always).

Table 14: Security issues specific to national archives that were observed (N=3)

Security issues	Always/ All	Sometimes/ Some	Never/ None	Do not know
AV materials are returned promptly to storage after use	2	1	0	0
Staff trained to use fire extinguishers	0	0	0	3
Staff trained in security management issues	0	1	2	0
All persons without badges or identity cards are always challenged to ensure their presence on the premises is legitimate	0	1	2	0
Users' belongings are searched when they leave the archive	0	1	2	0

The questionnaire results revealed that only one out of nine national archives' alarm systems were linked to a local fire station and three national archives' alarm systems were linked to an automated security company. Only one national archive indicated that study doors were fixed with alarm systems. Interviews with three national archives supported the above results, as only one national archive indicated that they discussed security interests with police and that doors were wired to a security alarm system. Similar findings were noted in media organizations.

Responses to the questionnaires revealed that seven national archives indicated that new employees were screened and security procedures were clearly explained to the new employees. However, responses from interviews at three national archives showed that only one national archive had a procedure for checking the background of potential employees. Two respondents from two media organizations indicated that they had a system for checking the background of new employes.

When asked what measures national archives took in the event of a breach of security, two out of the nine respondents from the national archives indicated that disciplinary action was taken in accordance with the country's laws (which could include legal action, as indicated by one archival institution). There was no response from seven national archives. Interviews revealed that at one national archive there had been theft of computers and other office materials in the past.

Three out of nine national archives had a disaster plan, but none of them indicated that key people were included in the disaster plan. This information was supported by interview results, which revealed that only one out of three national archives had an emergency plan for reducing the effect of a disaster. Through observations, the researcher noted that none of the national archives or media organizations were marked with a Blue Shield or other security symbol. Figure 14 shows that eight out of nine national archives had emergency equipment. This revelation was supported by observations where, all the three national archives had fire extinguishers in accessible locations. Observations showed that only one national archive and only one media organization had fire extinguishers in accessible locations.

Although the questionnaire did not establish if staff wore identity cards, interviews and observations in four media organisations revealed that officers did not wear identity cards in any of the national archives and media organisations. A question regarding mandatory use of visitors' identification cards or badges revealed that two of the national archives sometimes provided visitors' cards and one of the national archives never provided visitors' identification cards. Three of the media organisations never required visitors to wear any form of identification. For instance, one respondent from a media organisation indicated that they only required identification from visitors if "the staff is not familiar with the user". In this particular instance, staff were the only ones who regularly accessed the materials.

Application of security procedures requires that AV archivists or officers who handle AV materials are skilled. The next section discusses levels of skills and knowledge that AV archivists in the region have.

4.5.18 Current levels of AV management for archivists in the ESARBICA

Good preservation practices have a bearing on the physical condition of archival materials. The present researcher asked archival respondents to comment on the highest level of knowledge in the management of AV materials. Seven of the respondents indicated intermediate level, one indicated none and there was no response from one of the respondents. As regards the highest level of in-house knowledge in the management of AV materials, responses from national archives were as follows: one indicated professional level, six said technical level, one said beginner or trainee and one indicated

none. The researcher established training opportunities for officers to be trained in AV archiving. These are discussed in the section that follows.

4.5.19 Training opportunities for AV staff

The study wanted to establish if there were any training opportunities for AV archivists. Their responses are reflected in Figure 15.

Figure 15: Possibilities to be trained in the management of AV archiving
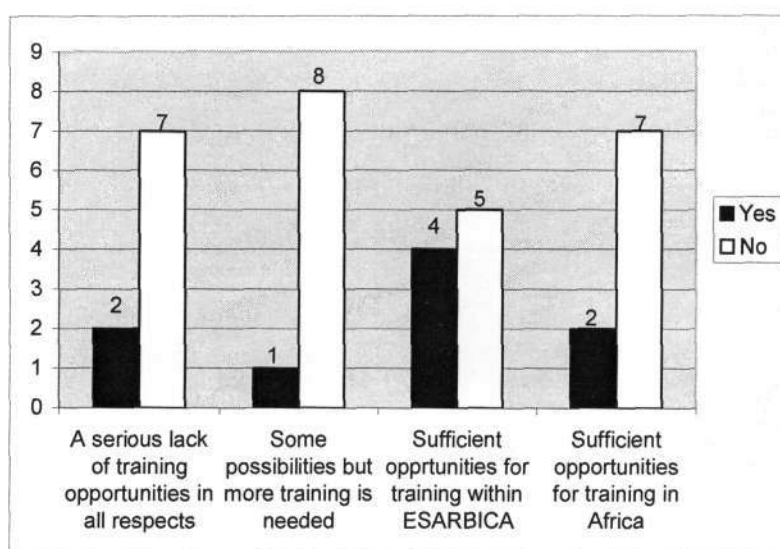
The respondents from archival institutions were asked to indicate institutions where training in AV archiving was obtained. Two respondents said training was obtained locally, two said training was obtained regionally, within ESARBICA, one said training was obtained internationally and four did not know of any training opportunities outside their countries. Asked how often officers who managed AV materials attended workshops and seminars, six of the respondents from national archives indicated once a year, one said once in three years and two did not respond.

The respondents from national archives were then asked to indicate the designation of the officer(s) responsible for AV materials. Five of the respondents indicated a designated preservation officer, two indicated the librarian and one did not know. Observations revealed, however, that all officers responsible for managing AV materials in media organizations were librarians.

The respondents made the following general comments at the end of the interviews and questionnaires.

i.   Given the fact that AV materials are gaining recognition, ESARBICA has an opportunity to develop preservation strategies and policies for AV materials;

ii.   Funding and training of AV archivists are major obstacles to AV archiving in the region;

iii.   There is a need for AV equipment;

iv.   AV training with regards to preservation was not readily available.

v.   There is a need for regional integration through workshops, seminars and conferences. This would enable a cross-fertilisation of human and financial resources;

vi.   Emphasis should be on training staff that works in the AV sections to enhance the professional handling of the AV collection;

vii.   There was a need to know about training opportunities in AV archiving; and

viii.   "Your questionnaire has been a wake-up call for our institution"

4.6 Summary

This chapter presented the findings from the investigation and gave a detailed picture of how data was analysed. It discussed the different ways AV materials were stored. The AV materials included compact discs, slides, photo negatives, photo prints, transparencies, maps, drawings, artworks, films, minidisks, DATs, DV CAMs, BETACAM, DVC-pro and LP. Below are the major points in the chapter.

i.   Recordable and Rewritable CDs and DVDs, Films and Video tapes were the most common AV materials in national archives;

ii.   The AV materials in most of the national archives were generally in good condition, with the exception of open reel and magnetic tapes and films which were deteriorating;

iii.   AV collections ranged from 60 films to 5 000 films;

iv.   The vinegar syndrome was a common problem in archival institutions and media organizations;

v.   There were isolated cases of biological agents in some of the archival institutions;

vi.   National archives did not appraise AV materials;

vii.   National archives used a passive collection method to acquire AV materials;

viii. There was negligence in some media organizations, resulting in poor housekeeping practices;

ix. While some national archives and media organizations had appraisal policies, some of them did not;

x. Very few national archives and media organizations had an acquisition policy for AV materials;

xi. On average, national archives had legislation in place to control access to AV materials. For instance, copyright laws were observed;

xii. No national archive or media organization had a digitisation policy for AV materials;

xiii. Some national archives and media organizations experienced problems cataloguing audio cassettes, television series, popular recordings, films, videos and materials in digital format;

xiv. The national archives applied the records cycle to AV materials to a limited extent;

xv. Media organisations were ignorant about the records cycle concept;

xvi. None of the national archives could identify a national body that oversaw the management of AV materials through the records cycle;

xvii. National archives relied heavily on their respective governments for financial support;

xviii. National archives received very little financial support from international organisations and none from ESARBICA;

xix. Most of the archival buildings were multi-purpose;

xx. Some of the national archives and media organizations did not have separate AV units;

xxi. The structural placement of national archives varied from country to country;

xxii. All media buildings were multi-purpose;

xxiii. Storage conditions in national archives were acceptable, with a few exceptions where renovation work was going on;

xxiv. Conditions in media organisations were generally good, with a few exceptions;

xxv. To some extent, national archives applied the archival principles of provenance and original order to AV materials;

xxvi. The main users of AV materials in national archives were the general public and publishing media organisations;

xxvii. The main users of AV materials in media organisations were newsreaders, news editors and DJs;

xxviii.	National archives used accession tools to arrange AV materials. Most of the finding aids were registers and inventories;
xxix.	Some national archives used manual bibliographic cataloguing, while a few used CDISIS and AACR2;
xxx.	Some media organizations used manual bibliographic cataloguing, while others used IASA rules or WINISIS;
xxxi.	National archives defined data fields in the description of AV materials to some extent;
xxxii.	National archives did not have viewing equipment and video machine formats for AV materials, to some extent;
xxxiii.	Dysfunctional air conditioners were common to some national archives, while equipment for maintaining temperatures and humidity were found in very few national archives;
xxxiv.	Media organizations did not experience problems with air conditioners and, to a limited extent, they had some equipment for maintaining temperatures and humidity;
xxxv.	To some extent, fire fighting equipment and facilities were used by national archives and media organizations to reduce the risk of fire;
xxxvi.	Some of the national archives and media organizations used fluorescent lamps;
xxxvii.	To some extent, national archives made an effort to protect AV materials from damage from light;
xxxviii.	There were signs of water leakage at one national archive and one media organization;
xxxix.	Insect infestation was noticed at one national archive, only;
xl.	Wearing of gloves was not enforced by national archives and media organizations; AV materials were stored on shelves and in cabinets in some of the national archives;
xli.	Some of the national archives applied access principles to AV materials;
xlii.	A few national archives kept analog copies of film, audio cassettes and photographs;
xliii.	Very few national archives took steps to reformat AV materials to digital media;
xliv.	Although the archival institutions and media organizations made an effort to reinforce security, there were instances where security was compromised;
xlv.	Some of the national archives had an emergency plan in place, although, in some instances, it was not implemented;

xlvi. None of the media organisations had an emergency plan;

xlvii. Most of the staff in charge of AV materials at national archives were at technical level, with intermediate skills in AV archiving;

xlviii. The staff who managed AV materials at media organisations were librarians with very basic knowledge of AV archiving;

xlix. There was a serious lack of training opportunities in AV archiving but, to some extent, there are some training opportunities in ESARBICA; and

l. Most of the national archives were members of IASA, while very few were members of FIAF and FIAT.

CHAPTER FIVE: INTERPRETATION OF RESULTS

What makes facts practical and valuable is the glue of explanation and
understanding, the framework of theory, and the tie-rod of conjecture. Only
when facts can be fleshed to a skeletal theory do they become meaningful
in the solution of problems (Robert Ferber, Donald Blankertz and Sidney
Hollander 1983) cited in Churchill (1995:164)

5.0 Introduction

Blaxter, Hughes and Tight (1998:196) viewed interpretation as a process by which a
researcher attaches meaning to collected data and findings and compares that meaning to
other authors. In line with Blaxter, Hughes and Tight (1998:196) and Churchill
(1995:164), this chapter adds 'flesh' to the findings that were presented in the previous
chapter. The study aimed to identifying strategies for managing AV materials and
suggesting ways of preserving AV materials in the ESARBICA region. This was achieved
through the research questions posed as research objectives in Table 1.

This study took cognisance of Ward's (2000:47) belief that preservation of information in
its valuable form is an archival institution's mandate. Ward (2000:48) stated that:

> those institutions that maintain records on unstable media (for example,
> colour film, magnetic tape, floppy disks) must have the capacity to monitor
> and evaluate the condition of those records on a periodic basis and provide
> transfer of information before irretrievable loss or obsolescence.

This study considered management of AV materials a vital responsibility of national
archives in ESARBICA. The study used Ward's (2000:48) assertion as a yardstick in the
interpretation of the findings. In so doing, the researcher used the research questions and
research objectives to gauge the national archives' ability to preserve the AV materials in
their custody.

5.2.1 Types of AV materials in national archives

Derges' (1992:96) study revealed that all eight countries of ESARBICA (by then) kept
some form of AV materials. Derges (1992) noted that, although many of the broadcasting
corporations kept 'archives', they merely provided library functions. For instance, the film
or sound recordings were for use rather than permanent preservation (Derges 1992:96).

The present researcher holds similar views in the case of Botswana, Swaziland and Namibia broadcasting corporations that were visited.

Derges (1992:96) observed that only Angola, Tanzania, and Mozambique had proper film institutes. This is because the above countries preserved films at film institutes and not at the national archives (Derges 1992:96). Derges (1992:96) believed that it was better to store films at these institutes because they had more facilities than national archives. The author cited Mozambique, where the Cinema Institute had a laboratory for black and white films, several editing suites, an ultrasonic film cleaning machine and many other facilities. Hamoya (2003) reported, that in Zambia, some of the AV media were kept by public media organizations, that is the Zambia National Broadcasting (ZNBC) and the Zambia Information Service (ZIS). This supported Derges' (1992:96) findings and conclusions. The present study discovered that some AV materials were kept in media organisations (as in the case of Botswana, Namibia, Tanzania, Swaziland and South Africa). This could mean that some national archives in the region are well-equipped to preserve AV materials.

According to Derges (1992:96), the total number of AV materials in national archives varied from five to 20 000 films. Seven out of eight countries kept cinefilms, six out of eight countries kept sound recordings and half of the respondents kept large quantities of videotapes. The largest sound recordings were gramophone records, found at the Zimbabwe National Archives. Other large numbers of sound recordings included cassettes and magnetic tapes. The national archives also kept computer tapes, maps and microforms in smaller numbers (Derges 1992:97). The author discovered that four out of eight countries kept radio and television materials at the national archives (Derges 1992:97). However, a recent study by Ngulube and Tafor (2006:71) depicted a very low percentage of AV materials in the region. This situation could be attributed to the high rate of deterioration of AV materials in countries such as Malawi (Mwangwera 2003).

Matangira's (2003b:45-46) analysis of AV archiving in ESARBICA revealed that the formats of AV materials were varied. They included VHS and Umatic videos, films, slides, reel-to-reel tapes, CD-ROMs, audiotape cassettes and vinyl. Matangira (2003b:47) observed that many archival institutions in the region kept videocassettes in VHS formats (which are not designed for long term preservation) because they could not afford the latest formats such as Beta or digital technology.

The present study discovered some similarities in the types of AV materials held by national archives (see Figure 3). The AV materials held at national archives and media organizations varied in quantity. These included mini disks, DATs, DV CAMs, BETACAM. While some national archives such as the Namibia National Archive and the NFVSA of South Africa had large quantities and a variety of AV collections, others, such as the Swaziland National Archive, had no AV materials. Matangira (2003b:46) recorded that the Tanzania National Archives relegated the management and preservation of AV materials to the Audiovisual Institute of Tanzania (Matangira 2003b:46). The fact that the present study did not receive any response from the Tanzania National Archives could mean that it did not have AV materials in its collections.

Based on the literature and findings from the present study, it appears that, although national archives in the region keep a variety of AV materials, there is a tendency to keep some AV materials at media organizations. It also seems that some national archives do not keep any AV materials, as in the case of the National Archives of Swaziland. However, this practice is not peculiar to ESARBICA. For instance, in the U.K, the BBC was responsible for radio and video archives. In the U.S.A. the responsibility was assigned to the American Center for Film and Video Preservation, the Museum of Modern Art and the Library of Congress. In Italy, the Radio Televisione Italiana managed AV materials (Kula 1983:110). This implies that specialised media institutions manage AV materials better than national archives. While collaborative efforts between national archives and media organizations reflect a willingness to preserve AV materials, it is an indication of the national archives' inability to manage AV materials effectively (Derges 1992:96). This explains why the current study discovered that Swaziland lacked resources to manage AV materials.

The present researcher tends to associate quantity and type of AV materials held in the various archival and media organizations with the level of development in the area of AV archiving (see Appendix 1). The above assertion is based on the literature review and the observations that were conducted in some national archives and media organisations. For instance, the Swaziland and Seychelles National Archives were said to have none or very few AV collections (Matangira 2003b:46). This study sought to establish whether the management of AV materials was efficiently carried out by the national archives and the media organisations in the region. The present researcher took cognisance of Leary's (1988:105) warning that audiovisual media have special characteristics, which would

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require special storage conditions and different handling. The general conditions under which AV materials were stored were therefore examined.

5.2.2 General condition of the storage of AV materials

Weir (1988:105) emphasised that "each audio-visual medium has unique characteristics that archivists must recognise". This implies that different types of AV media should be stored under different storage conditions, as reflected in Table 4. In Botswana, Setshwane (2005:59) wrote that the Music Library was divided into three storage areas: the phonographic section, the magnetic tape section and the compact disc section. Setshwane (2005:59) reported that the temperature in the phonographic section was 17°C and in the magnetic section, 16 °C. Although no levels of humidity were given for the different media due to lack of an instrument for controlling RH, Setshwane (2005:59) stated that the air conditioner in the magnetic section was switched on, twenty-four hours a day (albeit with regular breakdowns).

Matangira (2003b:46) discovered that the majority of audiovisual materials in the archival institutions under review were "kept under inadequate conditions which at most are just air-conditioned rooms". Setshwane (2005:59) confirmed the above observations when she stated that the air conditioner in the phonographic section of the Radio Botswana Music Library was not left on all the time. Setshwane (2005:59) concluded that failure to maintain constant temperature resulted in the formation of fungus and warping on the magnetic tapes and the discs. The present study discovered different storage conditions at one of the national archives. At the holdings building, where master copies of AV materials were kept, the temperature and humidity were controlled twenty-four hours a day, whereas the office building where access AV materials were stored was kept under normal temperature and humidity (see Appendix XI). The present researcher was not able to establish the condition of the AV materials at the holdings' building, since she did not have access to the storage area. However, interviews with some officers responsible for the AV materials revealed that there was a problem of shortage of space in the office building. Since the AV materials were kept under climatically controlled temperature and RH, as opposed to the holdings' building, it can be inferred that the temperature and RH in the office building were not suitable for AV materials.

The present researcher, who visited the same department as Setshwane (2005:59), discovered that the department had installed a standard central system for regulating

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temperature and humidity. However, due to lack of technical know-how on the part of librarians who managed the AV collections, the regulation of the central system for controlling temperature and humidity was left to external technicians. No attempt was made to keep a constant check on temperature and humidity levels for different AV materials in media organisations of some other countries. This means that AV materials in some media organisations in the region were susceptible to damage. In the case of the national archives, the present study discovered that five out of nine archival institutions indicated that they maintained temperatures and RH twenty-four hours a day, but only one national archive provided exact temperature and humidity for AV materials. This could imply that some national archives did not keep constant temperatures and RH, or keep a record twenty-four hours a day, since "daily temperature readings can help the staff monitor the conditions in which archives are kept" (Roper and Millar 1999e: 18). The findings imply that the majority of the national archives were not monitoring temperatures and RH under which AV materials were kept. This, in turn, could lead to further deterioration of AV materials due to fluctuations in temperatures and RH. The literature revealed that "fluctuations in temperature and relative humidity can be highly damaging to records and archives" (Roper and Millar 1999e:16). This explains why some AV materials in the national archives were either in acceptable condition, albeit with some problems, or deteriorating condition (see Table 5). This information should be contrasted with Table 6, which showed that storage facilities and general conditions in national archives were fair. This implies that, in addition to providing adequate storage facilities and other storage conditions, ideal temperatures and RH should be kept and monitored at all times.

Derges (1992:97) discovered that five out eight national archives described the condition of their AV collections as 'fair', although one mentioned that there was a "quality deterioration due to lack of proper storage equipment" (Derges 1992:97). Two of the respondents from national archives described their AV collections as 'good'. Derges (1992:98) recorded that the AV collections at the National Archives of Zimbabwe (NAZ) were deteriorating due to vinegar syndrome, particularly with film and sound recordings. Derges (1992:98) reported that the vinegar syndrome in the case of NAZ was caused by fluctuations in humidity. Another national archive mentioned fluctuations in electricity supply, while two national archives mentioned shortage of storage space (Derges 1992:97). Hamoya (2003) reported that the older storage formats at the National Archives of Zambia were in fairly good condition but, due to financial constraints, "it was not possible to convert all old holdings to modern storage media and keep abreast with

technological changes" (Hamoya 2003). Hamoya (2003) further reported that media organisations that mostly used the latest formats such as Umatic and Betacam tapes were erasing some programmes in order to reuse the videotapes. This implies that some of the older AV materials at the National Archives of Zambia were inaccessible due to technological obsolescence, while some AV materials were lost as a result of deliberate erasure (Hamoya 2003).

In the present study, the vinegar syndrome was a common problem in all the national archives and media organisations that the researcher visited. It leads to deterioration of AV materials (Matangira 2003b:47). The latter asserted that "film reels can deteriorate due to vinegar syndrome, which needs regular testing to detect, and is a major problem in tropical countries" (Matangira 2003b:47). The fact that all the national archives visited by the present researcher had a problem with the vinegar syndrome is indicative of the dangers befalling AV materials in the region.

5.3 Policies that govern the management of AV materials

Policies often refer to terms of deposit, acquisition, accession and withdrawal, access, staff training manuals and security (Feather and Eden 1997:31). In Feather and Eden's (1997:27) study, only 32 (16%) of the archives reported having a written preservation policy. "In some organisations, a written preservation policy was considered unnecessary" (Feather and Eden 1997:28). This was the case, for example, in many smaller organisations such as regimental museums, where a single curator could have been working with no professional support (Feather and Eden 1997:28). Feather and Eden (1997) summed up the reasons given by interviewees for not having a preservation policy as:

- Preservation is so much a part of what archivists do that the need to formalise it is not recognized;
- Resources are so meager that there is not much that can be done; and
- In smaller offices, with a small staff and relatively few users, it is allegedly easy to 'know what is going on' (Feather and Eden 1997:30).

The current study discovered that national archives were guided by acquisition policies, appraisal policies, preservation policies and retention policies, in-as-far as the preservation of AV materials was concerned. What were lacking were policies on disposal and digitisation (see Figure 4). In the present study, five out of nine national archives answered

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'yes' to a question on whether their institutions had specific legal responsibilities to collect all formats of AV materials. The absence of disposal policies could mean that national archives are not able to effectively manage AV materials from creation to disposal (Mnjama 1996a:30). Conversely, the absence of digitisation policies means that national archives in the region do not effectively manage AV materials in electronic format, a fact confirmed by Ngulube and Tafor (2006:61) in the case of the National Archives of Zambia and the National Archives of Malawi.

In Derges' (1992:99) study of the region, Namibia was said to be the only country where legislation fully covered AV materials. It is not surprising that Ngulube and Tafor (2006:61) later reported that legislation in four ESARBICA countries was archaic and outdated. For instance, the legislation of three countries in the region did not define records comprehensively, because the laws only covered record types that existed at the time the legislation was passed (Ngulube and Tafor 2006:61). Ngulube and Tafor (2006:61) pointed out that "the existence of weak legislative and policy frameworks was not confined to the ESARBICA region". The authors cited the ICA's observation that weak and ambiguous archival laws were a common phenomenon, worldwide. It can be concluded that outdated legislation is a common phenomenon of national archives, worldwide, and it impacts negatively on access to archival collections (Ngulube 1999:32; Ngulube and Tafor 2006:61; Sejane 2004:50).

Despite the fact that Ngulube and Tafor (2006:61) criticized the National Archives of Namibia's Act for not giving a comprehensive definition of 'records', the present researcher examined the mandate of the National Archives of Namibia, Act No. 12 of 1992, which was, "to provide for the custody and care of and control over archives in Namibia, and for matters incidental thereto" (Government Gazette of the Republic of Namibia 1992:2). The same Act defines documents as "a combination of any medium …including magnetic tape, compact disc, photographic negatives and copies, cinematographic film, microfilm, microfiche or gramophone, phonographic or other kind of sound recordings" (Government Gazette of the Republic of Namibia 1992:3). This implies that the above institution refers to all formats of records as documents

Other national archives that amended their national archives Acts include the South African National Archives, which incorporated electronic records management systems (Abbott 1999:102), the Kenya National Archives and Documentation Center, which

revised its legislation to cover electronic records (Mnjama 2005:461) and Tanzania National Archives, which passed a new records and archives law, which gave the national archives the power to manage records from creation to their preservation (Mnjama 2005:460). The present researcher noted that, in the case of the Tanzania National Archives, the Act does not mention AV materials.

The literature revealed that some national archives in the region had an arrangement with national media organisations to deposit AV materials with them. For instance, BNARS had an agreement with the Botswana Television Services (BTV) and film producers to deposit AV materials of historical value (Matangira 2003b:46). Similarly, Tanzania National Archives had an arrangement with the Tanzania Television (TVT) (Matangira 2003b:46). Matangira (2003b) pointed out that the National Archives of Zanzibar worked closely with Television and Radio Zanzibar, while the National Archives of Zambia had a close relationship with the Zambia National Broadcasting Corporation and Zambia Information Services (Matangira 2003b:46). The current study discovered that the NFVSA of South Africa worked closely with the South African Broadcasting Corporation (SABC).

It is a common practice that archival policies should be documented. For instance, in a study of national preservation policies and practices in archives and records offices in the U.K., Feather and Eden (1997:30) found that several respondents included written copies of their preservation policies when returning questionnaires. This situation differed from Hanford's (1986:9) study of television archives in the U.K. The latter uncovered a lack of statutory legal deposit of television programme material, despite attempts to introduce such legislation for 20 years. Hanford (1986:9) reported that special agreements were made for individuals and organizations to record directly off-air through the National Archive, the BBC and some educational institutions (Hanford 1986:9).

In Sweden, The National Archive of Recorded Sound and Moving Images (ALB) was mandated to enforce a Statutory Deposit Act for recordings of all radio and television programmes (Allerstrand 1986:21). Allerstrand (1986:21) stated that Sweden regularised copyright laws on how radio and television broadcasts, films, videograms and phonograms were used. The Swedish Television Company (SVT) made continual recordings of their programmes for legal purposes and not for archival purposes. SVT kept the recordings for six months and then delivered them to ALB, according to the Statutory Deposit Act (Allerstrand 1986:23).

In the U.S.A., Ross (1986:33) reported that very few people at CBS gave a serious thought to the preservation of television programmes. What was kept and what was destroyed was decided almost entirely by operational expediency, with the exception of news (Ross 1986:33). In the case of South Africa, Ngulube (2003a:243) discovered that "the majority of the surveyed institutions did not have a document outlining policies in relation to preservation. One (11.11%) out of the nine surveyed institutions had a written preservation policy". Ngulube (2003a:243) pointed out that, despite the fact that "most institutions did not have a written preservation policy, five (55.56%) reported that they had a preservation strategy" (Ngulube 2003a:243). This means that, although most national archives did not have a written preservation policy, some national archives were in the process of instituting a preservation policy.

The present researcher received a documented copy of the Archives Act (which consists of all the policies) only from the national archives of Namibia. The remaining eight national archives did not respond to this request. Media organisations were not guided by any policy in the management of their AV collections. One of the respondents from the national archives indicated that "implementation was a problem". This implies that, although some countries in the region had policies in place, they are not effectively implemented. Ngulube and Tafor (2006:62) advised that "where policies and standards exist it is important that they are complied with". Failure to implement policies, as indicated above, is tantamount to having no policies.

5.4 The extent to which the life-cycle model is applied to the management of AV materials

Despite the emphasis placed on the need to manage archival materials throughout the life-cycle (Abbott 1999:6; Cox 1992:51; Guercio 2001:254; Harvey 1993:84; Ngulube and Tafor 2006:57; Paul 1988:38). cautioned that the legislation in the ESARBICA national archives was not comprehensive enough "to manage records through their life-cycle". The present researcher believes that failure to manage AV materials through their life-cycle affects their longevity and value to the users.

According to Leary (1988:110), "the best archival objective of records management is to identify and schedule the transfer of historically valuable records as soon as possible in their life-cycle". Despite the above requirement, Leary (1988:110) complained that boxes

of AV materials that were sent to archives showed few signs of informed records management. Rather, such materials were "disorganised, incomplete, dirty, inadequately identified and, in some cases, clearly damaged" (Leary 1988:110). In the case of ESARBICA, Mnjama (2005:460) and Chebani (2003:28) reported that Botswana was among the first countries in the region to embrace the idea of managing archives through the entire records cycle. Mnjama (2005:461) pointed out that, in Botswana, competent records managers were seconded to all key managers as part of an integrated records management programme. Mnjama (2005:460) added that the recent transfer of Tanzania National Archives to the office of the president made it possible for Tanzania to follow the same approach as Botswana. He revealed that the Kenya National Archives and Documentation Center was not responsible for the management of registries. However, non-graduate Senior Executive Officers were recently re-designated as records managers in their respective ministries (Mnjama 2005:461). This means that the integrated records management model (which is recommended by the present study) is already in place in some countries in the region.

Figure 5 shows that the records life-cycle that is the 'glue' that spins the above model is not affectively applied to AV materials. Ngulube and Tafor (2006:62) concluded that national archives in ESARBICA did not effectively inspect, monitor or provide regular guidance to government agencies and hence failed to manage all formats of records created by governments.

Even though Sejane (2004:26) advised archivists to be involved in all actions pertaining to records during the entire records life-cycle, Figure 6 shows that national archival institutions in ESARBICA did not consider the records cycle to be an important aspect of managing AV materials. The fact that the largest creators of AV materials were television and broadcasting organisations means that the life-cycle concept should be applied from the creators' end. This was not the case in the present study. The findings revealed that the librarians at media organisations did not know anything about the records life-cycle and did not apply it to the AV materials in their custody. This situation is tantamount to ignoring an important records management tenet.

Paul (1988:40) stressed that "archivists should be familiar with ...various program requirements, because successful and timely application has a major impact on the quality and completeness of material received by the archives". National archives and media

organizations did not apply the records life-cycle to AV materials. This means that AV materials were not adequately cared for at the creation point. Worse still, the records life-cycle was not applied to AV materials upon receipt at the national archives (see Figure 5).

5.5 Strategies used by archival institutions to manage AV materials

The strategies put in place to manage AV materials in the region included budgets and funding, types of archival buildings and their structural placement, conditions in storage areas, equipment, appraisal and selection, acquisition, arrangement and description, finding aids, bibliographic/intellectual control standards, access, environmental factors, security and disaster management and the training of AV archivists. These are examined in the sections that follow.

5.5.1 Budget and funding for preservation of AV materials in the national archives

Harrison (1997/98:184) stated that AV materials require a high level of financial investment. Harrison (1997/98:147) pointed that that "the budget allocations for national archives do not compare favourably with other government ministries and departments". For instance, the budget for the National Archives of Malawi was only US$ 4 000 per annum compared to over US$ 3 million for South Africa. Ngulube's (2003a:244) study revealed, that even among archives, "resources allocated for archival programmes showed a great disparity and varied from province to province" (Ngulube 2003a:244). He noted that a small fraction (one-third) "of the surveyed archival institutions had a specific vote for preservation activities and preservation expenditure as a percentage of the repository's total budget was reported to be between one and four percent". In Ngulube and Tafor's (2006:63) study, ten out of twelve respondents said that their funding came from their respective governments, while the remaining two respondents indicated that 75% of the funding came from their governments.

Although Ngulube (2003a) did not specifically focus on AV materials, these revelations show that the preservation of archival materials is not a priority when it comes to budget allocation. Ngulube (2002a:125) concluded that lack of care due to inadequate financial resources was one of the causes of deteriorating archival materials in most archival institutions in Africa. A corollary to this is that "records surveys could not be effectively conducted due to lack of resources" (Ngulube and Tafor 2006:63). It can therefore be said that inadequate financial resources contribute to the deterioration of AV materials in the region.

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Harrison (1997/98:184) believed that governments and funding bodies were responsible for protecting and maintaining the national heritage. This is why Musembi (2003:141) declared that "a national archive should have adequate financial resources for its recurrent and development budgets". Failure to do this hampers the performance of developing countries' national archives (Musembi 2003:141). Given the wide disparity of budget allocation in different countries, which was alluded to by Harrison (1997/98:147), it is clear that national archives with meager funding are unable to preserve AV materials as effectively as those with reasonable funding. For instance, Ngulube and Tafor (2006:63) stated that the National Archives of Swaziland was not adequately catered for during the annual budget allocation. This situation led to shortages and affected its progress. Similarly, Mwangwera's (2003) report of depreciating AV materials at the National Archives of Malawi reinforces the above conclusion. The author added that AV materials should not be allowed to deteriorate due to lack of funding.

Various authors, such as Child (2000:63), Feather and Eden (1997:12), Harrison (1997/98:184), Hanford (1986:10) and Mnjama (2005:457), stressed the role that funding and budgeting play in the preservation of AV materials. According to Hanford (1986:10), the National Film Archive in the U.K. was funded by Government grants, as well as by contributions from the British Film Institute's subscription income. Labrada (1986:13) recorded that the Spanish Film Archives was funded from the General State Budgets and "by receipts from its activities, the use of its goods and services and the credit operations it administers". Labrada (1986) stated that the Spanish Film Archives employed "its own economic resources to pursue a policy for the acquisition of films from private owners and accepts voluntary deposits for limited or indefinite periods of time" (Labrada 1986:13).

In Britain, Feather and Eden (1997:11) revealed that there was not enough money to meet all the demands placed upon archivists. This resulted in a shortage of staff and resources such as inadequate storage conditions and facilities and lack of conservation facilities. Feather and Eden (1997:12) found budgeting to be the most challenging aspect of preservation management in archives in the U. K. Respondents had different concerns:

i.   " Knowing how best to allocate resources";

ii.   "Trying to balance all the different demands on resources and deciding where best to target them";

iii.   "…Balancing budgets and trying to meet conflicting demands"; and

iv.   " Difficulties related to not having the resources with which to satisfy all the conflicting demands made upon the service" (Feather and Eden 1997:12).

These authors pointed out that the respondents complained about significant cutbacks in resources at a time when demands for services had risen. This led the respondents to lament that "the present situation was unlikely to improve within the foreseeable future (especially if archives...are subsumed in large 'leisure' or 'heritage' departments as a result of local government reorganisation" (Feather and Eden 1997:12). The authors cited a Senior Preservation Manager who complained that "we know what we should be doing", but "do not have the money to do it" (Feather and Eden 1997:13). This situation applies to the region in varying degrees, as testified by Chida (1994:27) in the case of Zimbabwe, Hamoya (2003) in the case of Zambia, Mwangwera (2003) in the case of Malawi, Ngulube (2002a:125) in the case of sub-Saharan Africa and Ngulube and Tafor (2006:63) in the case of Swaziland.

Ngulube and Tafor (2006:63) stated that budgetary allocations determine the way archival institutions manage their collections. The authors observed that a majority of national archives in the region did not receive adequate financial support from their governments. Ngulube and Tafor (2006:63) concluded that "the existence of progressive and comprehensive legislation is not likely to bring about any positive changes in the management of public records unless resources to implement the laws are made available to archival institutions" (Ngulube and Tafor 2006:63). Hamoya (2003) earlier reported that "financial constraints make it extremely difficult to convert all old holdings to modern storage media and to keep abreast with technological changes" (Hamoya 2003).

Hamoya (2003) further reported that the National Archives of Zambia had to pay media organisations to make reference copies only when funds permitted. Ngulube (2002a:125) believed that inadequate financial resources contributed to the deterioration of AV materials in some national archives in sub-Saharan Africa. This means some national archives in the region were financially constrained. This, in turn, affected their operation, since ten out of twelve institutions could not raise money for projects and equipment (Ngulube and Tafor 2006:63). These authors particularly singled out the National Archives of Swaziland, which deferred projects for the financial year 2001-2, due to limited budgetary allocations.

In the present study, a question on funding for AV materials revealed that most national archives received funding from their respective governments, with very little support from international organisations. Five out of nine national archives indicated that that government funding was inadequate as shown in Figure 6. Harrison (1997/98:184) recommended that a larger part of funding for AV materials must come from governments but also encouraged funding from donor organisations. The fact that five out of nine national archives indicated that the funding was inadequate implies that inadequate funding may be contributing to the deteriorating state of AV materials in the region. It also points to the need for international/donor organizations to assist with funding (particularly for the preservation of AV materials).

5.5.2   Types of archival buildings and structural placement of archival institutions

Archival buildings are varied. They are purpose-built, multi-purpose or converted. These are examined below.

5.5.2.1 Types of archival buildings

The literature revealed that archival buildings protected archival collections from danger (Buchmann 1999:5; McCausland 1993:278; Mackenzie 2000:9; Schwirtlich 1993:46). They should be well-structured and should be in a stable environment (Fortson 1992:28; Harvey 1993:84). Preservation is considered to be "a basic and general guideline for architects and archivists in charge of planning an archive building" (Buchmann 1999:5).

Figure 7 reveals the types of buildings at national archives. The largest number of buildings was multipurpose. Results from the questionnaires showed that seven out of nine national archives had AV units. This means that multipurpose buildings make provision for special storage for AV materials. Failure to produce the exact climatic conditions for storing AV materials (except for one national archive) could mean that AV materials in most of the national archives were not kept under ideal recommended conditions. This explains why Mazikana (1997/98:145) stated that many archival buildings in Africa were inadequate. Ngulube (2003a:102) cited (Kufa 1997), who reported that Botswana's major preservation problem stemmed from lack of suitable buildings to house information resources (Ngulube 2003a:102).

Mnjama (2005:465) reported that the Zambia National Archives had extended its building, while the BNARS and Namibia National Archive were extending and renovating their buildings, a fact confirmed by the present researcher. Mwangwera (2003) reported that the

National Archives of Malawi had not had its own purpose-built building since its inception in 1947. The author reported that the National Archives of Malawi was occupying a building that was once used as a government office and later as an old Post Office. Consequently, the National Archives of Malawi experienced harsh conditions in the preservation of AV materials, due to a lack of suitable accommodation.

In Ngulube's (2003a:248) study, four out of seven buildings were purpose-built, while three repositories were adapted/converted. In the present study, questionnaires revealed that only one national archival building was converted. Observations in three national archives showed that two of the buildings were converted. These results cast doubt on some parts of the results of the questionnaire. The implication is that some of the respondents who completed the questionnaire did not understand the question on types of archival buildings. Nevertheless, a close examination of literature on converted buildings is worthwhile. Ngulube (2003a:248) discovered that four South African archives had custom-designed (purpose-built) buildings, while three archival institutions had converted buildings. Kemoni (1996:47) made similar observations, when he wrote that a number of archival institutions in the ESARBICA operated in converted buildings.

Considering the findings of these observations, as well as the findings from the previous studies, it is apparent that some of the national archival buildings in the region are converted, as in the case of NFVSA in South Africa. It can be mooted that converted buildings are appropriate for storing AV materials, provided there is an AV unit which has proper climatic conditions for storing AV materials.

The present researcher believes that unless purpose-built archives are constructed, extensions of old buildings provide additional space but may not provide the required facilities that are required for storing AV materials. For instance, at the NFVSA of South Africa, the holdings building provided suitable conditions for the storage of AV materials (albeit with exceptions where the vinegar syndrome was detected). The office side of the same organisation, however, did not provide proper storage conditions for AV materials. In the case of Botswana, the extended/renovated archival building provides functional air conditioners that were lacking in the old building. Failure by national archives to erect purpose-built buildings and to provide facilities for maintaining temperature and RH makes it difficult for them to meet the recommended storage conditions for different types of AV materials. Such a situation leads to deterioration of AV materials.

Considering that the placement of archival buildings has a bearing on their performance, an examination of structural placement of archival buildings is described below.

5.5.2.2 Structural placement of archival buildings

"The placing of the national archives within the government bureaucracy has been a critical question to archivists and records managers because it correlates to their power and influence" (Kenosi 1999:121). Kenosi (1999) wrote that "in Canada, the Archives almost stands as an independent department within the government bureaucracy" (Kenosi 1999:121). Labrada (1986:13) revealed that, in Spain, the AV materials were the responsibility of film archives and organisations, which were responsible for producing radio and television programmes (Labrada 1986:13). The Spanish Film Archives fell under the Film Department of the Ministry of Culture (Labrada 1986:13). Later on, the Spanish Film Archives was legally recognised as an autonomous corporation (Labrada 1986:13).

Mnjama (2005:459) reported that "experience gained in other Commonwealth countries such as Ghana and Gambia indicates that where the national archives are placed in a ministry without wide ministerial powers their operations are bound to suffer". Mnjama (2005:459) revealed great variations between the placements of national archives within government ministries in ESARBICA, as indicated in section 2.3.3 of Chapter Two. This explains why the placement of BNARS under the Ministry of Labour and Home Affairs (regarded as a Cultural Ministry in Botswana), gave BNARS "the much needed power and influence" (Kenosi (1999:121). Hence, BNARS received a healthier budget from the concerned department and enhanced its profile (Kenosi 1999:121).

The same benefits accrued to the NFVSA of South Africa. The National Archives of Swaziland, however, which was first placed under the Ministry of Natural Resources and Energy and then under the Ministry of Tourism, Communication and Environment, experienced problems that included funding (Dlamini 1999:27; Ngulube and Tafor 2006: 63). Ngulube (1999:31) made similar observations in the case of the Zimbabwe National Archives. Through interviews, the present study discovered that the National Archive of Namibia, that was structurally placed under the Ministry of Education, also had inadequate funding for the management of AV materials.

Similarly to the findings of Dlamini (1999:27) and Ngulube and Tafor (2006:63), the current study discovered that the National Archives of Swaziland, that fall under the Ministry of Tourism, Communication and Environment, did not have facilities to keep AV materials. The Swaziland Television Services kept AV materials. Matangira (2003:46) discovered that the National Archives of Tanzania did not keep any AV materials, because the responsibility of collecting and preserving AV materials was relegated to the Institute of Tanzania, known as Tanzania Television (TVS). Although Kenosi (1999:121) asserted that National Archives, which fall under a government ministry such as the Ministry of Labour and Home Affairs/Culture, have access to a healthy budget, the present study did not find a similar situation with BNARS, in-as-far as AV materials were concerned. The researcher found no special section for keeping AV materials at BNARS. The AV materials were kept in a room with text materials. NFVSA of South Africa, which falls under the Ministry of Arts and Culture, had the best-established AV archive in the region (Matangira 2003:45). Indeed, the NFVSA was the only national archive that presented the present researcher with detailed information on temperatures and humidity levels for AV materials (see Appendix XI).

Since a larger number of national archives in the region fell under the ministries of Home Affairs and Culture, Education/Sport/Art and Culture, as evidenced by Mazikana (1997/98:144) and Mnjama (2005:459), one would tend to agree with Kenosi (1999:121) that national archives have better access to government funds when they are well-placed (that is, under the ministries of Home Affairs and Culture/Arts and Culture). Nonetheless, not all national archives that are well-placed enjoy financial benefits, as in the case of the Zimbabwe National Archives (Matangira 2003b:45) and the National Archives of Malawi (Mnjama 2005:459). This situation could be explained by the fact that "the budget allocations for national archives do not compare favourably with other government ministries and departments" (Mazikana 1997/98:147). In the case of Zimbabwe, one would believe that the current political and economic situation has aggravated the financial situation, which, in turn, makes it difficult to channel adequate funds to the NAZ. Conversely, there are instances, such as in South Africa, where a substantial amount of money was allocated to the national archives (Mazikana 1997/98:147).

Although the current study did not contrast the budget allocated to national archives with other ministries, in the respective member countries (which could be a topic for a future study), the general picture from the literature review and responses from the

questionnaires and interviews is that the placement of the national archives, to some extent, had a direct bearing on the financial support of the national archives. Since the question on the percentage of budget allocation to the preservation of AV materials was not addressed by any of the national archives, the present researcher could not establish the ratio of funds allocated to the management of AV materials vis-à-vis, text materials.

5.5.3 Conditions in storage areas

Matangira (2003b:46) wrote that the majority of the AV materials found in archival institutions in the region were kept under very inadequate conditions, "which at most were air-conditioned rooms". The problem of shortage of storage space for archival materials was expressed by various authors such as Mwangwera (2003) in the case of the National Archives of Malawi, Ngulube (2003a:298) in the case of South African archival repositories, Matangira (2003b:45) in the case of NAZ and Setshwane (2005:78) in the case of the Radio Botswana Music Library. Harrison (1997/98:147) discovered adverse conditions in storage rooms at many national archives in Africa. Harrison (1997/98:147) observed storerooms and sheds with leaking roofs, broken doors and windows. He particularly singled out Tanzania as one of the countries where an international mission was launched to rescue the situation (Harrison 1997/98:147). Mnjama (2005:465) opined that "a lack of adequate storage facilities is one of the major hindrances to the growth of archival services in the region". This is because archival materials have peculiar "physical characteristics that require the provision of special conditions within that storage and handling space" (Roper and Millar 1999g:81). Fortson (1992:28) cautioned against flat roofs, which trapped water and dust, leading to the deterioration of archival materials.

Chida (1994:26) regarded roof leakages and burst water pipes as major threats to archival collections at NAZ, while Setshwane's (2005:61) study revealed that the Music Library building had a flat roof that trapped dust and rain. The Compact Disc Library had a leaking roof and fungus was forming (Setshwane 2005:61). Setshwane (2005) reported factors that affected the deterioration of phonographic recordings, magnetic tapes and compact discs. These are reflected in Table 15.

Table 15: Causes of deterioration of magnetic tapes at the Radio Botswana Music Library

Type of AV material	Nature of problem	%
Compact Discs	Scratched cover	21
	Marking on the CD	15.1
	Scratch marks on the CD	23.4
	Fingerprints	21.4
	Cracked cover	5.7
	Dust	2.6
Magnetic tape	Popped strands	17.1
	Clinching	14.6
	Stains on the cover of the box	13.2
	Dust	12.8
Phonographic recordings	Dust	12
	Repaired Casing	10.1
	Stained Casing	7.6
	Torn casing	19.3
	Scratch mark	21
	Fingerprints	21

Source: Setshwane (2005:63-66).

According to Setshwane (2005:63), the dust on the phonographic recordings was from the cardboard used for casing the recordings. "It sheds off some dust when the researchers handle them" (Setshwane 2005:63). The dust was also caused by the fact that the storage area was not cleaned frequently (Setshwane 2005:64). The author observed that dust trapped moisture and mould formed on the surface of the phonographic discs. Dust also caused scratch marks on the phonographic recordings and fingerprints left marks on the recordings (Setshwane 2005:64). The author also recorded that CDs were marked with permanent markers. The current study revealed that the storage conditions in some national archives and some media organisations were inadequate (see Table 6 and Table 7). This means that the long-term preservation of the AV collections in some repositories is not assured.

Unlike Setshwane's (2005) study, the present study was conducted in a new building[4], which had better facilities. However, the present researcher noticed that a change of premises did not automatically change old problems. Some of the damage which was noted by Setshwane (2005:68), such as the destruction of the protective lacquer of CDs, popped strands, cinching, scratch marks and fingerprints leaving indelible marks on the AV materials, still prevail. It can be therefore be stated that some of the AV materials which were transferred from the old Botswana Music Library to the New Multimedia Complex building were not in good condition and could be damaged.

5.5.4 Equipment for AV materials

Higginbotham (1995:29) stressed the need for AV equipment to access information on AV medium. Harvey (1993:83) added that the AV equipment must be of the highest standard.

5.5.4.1 Maintenance of equipment

Swartzburg (1995:18) realized a need for air conditioning equipment, humidifiers and filtering systems, to inhibit atmospheric damage. Previous studies in ESARBICA, such as that of Mnjama (2005:457), discovered that "over half the archives are under-equipped". Matangira (2003b:44) agreed with Mnjama (2005:457), when she emphasised that archival institutions in the region required more AV equipment. Hamoya (2003) earlier reported that the National Archives of Zambia did not have equipment to enable users to access AV materials. Hamoya (2003) cited Thurston and Smith (1986), who discovered that Lesotho, Tanzania and Zanzibar did not have working microfilm equipment.

5.5.4.2 Viewing equipment

Matangira (2003b:47) observed that access to AV collections was hampered by the fact that the materials were neither catalogued nor described "due to lack of viewing or listening equipment". Garretson (1991:109) and Harrison (1997/98:182) stressed that films and sound recordings require specialised professional equipment to facilitate viewing. Harrison (1997/98:182) felt that professionals should maintain playback equipment. The current study discovered that, to a limited extent, some of the national archives had VHS analog video equipment, Beta CAM-SP equipment and digital tape recorders (see section 4.5.5 and section 4.5.6). Hamoya (2003) reported that the National Archives of Zambia did not have adequate equipment. This situation limited accessibility

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[4] The Department of Information and Broadcasting which houses the Radio Botswana Music Library is currently operating in a new Mas Complex building under better climatic conditions.

to AV materials (Hamoya 2003). A similar experience was reported in the case of the National Archive of Malawi, where Mwangwera (2003) said that the "technical documentation section is not fully operational due to lack of equipment, which is very old". The author reported that most of the equipment was broken due to lack of spare parts on the market, because of changes in technology (Mwangwera 2003). Mwangwera (2003) noticed that the film projector (Bell and Howell 16mm sound Model No. 168065) was malfunctioning. "In most cases it burns films, resulting in damage to unique archival films" (Mwangwera 2003). Nevertheless, there was a Sanyo tape cassette recorder that was in good condition and two models of Uher reel-to-reel tape players, an Ulher 4,000 Report Monitor (half track Mono, four speed, three head and portable reel-to-reel tapes (Mwangwera 2003).

Mwangwera (2003) depicted the worst case scenario of lack of equipment for AV materials. The author lamented that the National Archive of Malawi could not fully exploit and fully preserve archival materials "to the required standard due to lack of appropriate equipment such as IT equipment, micrographic equipment, audiovisual equipment..." (Mwangwera 2003). Consequently, researchers could not consult the AV collection due to the fact that the playback equipment was not available to accommodate a wide variety of formats. This means that lack of appropriate AV equipment is a serious problem in the region.

5.5 Appraisal and selection of AV materials

Danniels (1988:54) recommended that appraisal should be undertaken at the early stages of the records life-cycle, to ensure that "valuable records are carefully identified and protected until they are accessioned to an archival institution". Although appraisal precedes selection, the current study considered them as one process. This is because, in most cases, national archives merely receive AV records. This is the situation in all the countries that the current researcher visited. Mnjama (2005:465) reported that "of all the archival materials available in the region, perhaps the most neglected archival resource is audio-visual collections..." Mnjama (2005) observed that, in the past, archival institutions in ESARBICA accepted unappraised collections (Mnjama 2005:465). Mnjama (2005:461) conceded that BNARS was still lagging behind in the appraisal of non-current records. Mwango (1996:26) observed a similar situation in the case of the National Archives of Tanzania. In the case of the National Archives of Zambia, Hamoya (2003) reported that assessing the information value of films and sound recordings was a challenge, because of

the complexity of the information content. Hamoya (2003) stated that it was not clear what criteria were used to select films for preservation, in the period before 1990s. However, later on, programmes were selected on the basis of:

> their information value related to significant political, cultural, education, sporting and economic events...greater emphasis is placed on the value of the production for research purposes, as opposed to its value as a future program production (Hamoya 2003).

The fact that questions on appraisal of AV materials were not adequately addressed in the present study underscores Kula's (2003:59) concern that moving image archivists need direction "on appraisal and selection, or the collection will simply grow by chance, opportunity, or accident, without any real reference to the universe of images available". Lack of a preservation policy in almost all the national archives (see Figure 4) implies that archivist in ESARBICA lack direction on matters of appraising AV materials. It also implies that national archivists in the region did not appraise AV materials properly. In this regard it can be inferred that inability to appraise AV materials contributed to improper storage conditions, which, in turn, led to deterioration of the materials. This is because each AV format is unique and, as such, requires specific storage conditions and specific playback equipment (Bereijo 2004a:325; DePew 1991:195; Paton 1999:196). According to Danniels (1988:56), a "clear definition of institutional acquisitions are ...essential for effective appraisal". Considering that appraisal preceded acquisition, the next stage that was examined was acquisition.

5.6. Acquisition of AV materials

Danniels (1988:56) believed that "an acquisition policy defines the types of records that the repository seeks to add to its holdings". Matangira (2003b:45) wrote that the focus of many national archives in the region was on paper documentation. In the present study, Figure 5 shows that only two national archives applied an acquisition policy to their AV collections. These findings confirm Matangira's (2003b:45) study which revealed that archival institutions in the region had no deliberate acquisition policy for AV materials. The author noted that "in most cases, these audiovisual materials found their way to the Archives through donation or someone deciding to dump them at the Archives after facing space problems" (Matangira 2003b:45). Matangira (2003b:45) reported that NAZ operated for a long time without an AV unit (that is from 1935 to 1988). This situation resulted in the dumping of AV materials in the library section of the national archive. Matangira

(2003b:45) revealed that there was no legislation for AV materials, although NAZ was working out an agreement with the Zimbabwe Broadcasting Corporation regarding television and radio programmes (Matangira 2003b:45).

In the case of South Africa, Matangira (2003b:45) reported that NFVSA obtained AV materials from offices that fall under the National Archive Act. NFVSA also accepts donations from private organisations. Matangira (2003b:45) further noted that the legal deposit policy did not apply in the case of NFVSA, but the latter arranged contracts with producers. The situation at the BNARS was different. The present researcher discovered that the national archive had an agreement with the Broadcasting and Information Department to deposit copies of AV materials, but the latter retained copyright. Hamoya (2003) wrote that, after the 1980s, the National Archives of Zambia discontinued the acquisition of magnetic sound recording tapes (except for audio cassettes), due to lack of equipment. It can be seen that the absence of acquisition policies impacts negatively on AV collections in the region.

Good preservation practices demand that archival materials are properly arranged and described, for ease of retrieval. The next section discusses the arrangement and description of AV materials.

5.7 Arrangement and description

Davidson and Lukow (1997:128) stressed that "the manner in which the archivist organises and describes the collection has a direct bearing upon the ease of collection management, knowledge of content and retrieval of desired footage". In the case of the National Archives of Zambia, Hamoya (2003) reported that films and video productions were listed individually, according to their original order. Provenance was easier to determine, as the National Archives of Zambia dealt with only three media organisations. Hamoya (2003) conceded that "the arrangement of sound recordings has its own complexities. The reel-to-reel tapes carry so many different programmes that describing them has to be done meticulously". The current study established that national archives in the region used both provenance and original order to arrange AV materials. Roper and Millar (1999c:75) suggested that "records may be arranged intellectually and stored in a different order to protect fragile or non-standard materials".

In Setshwane's (2005:69) study, phonographic recordings were assigned numerical numbers, sequentially. The researcher complained about the way phonographic recordings were tightly shelved, such that the paper box casing made a grinding noise when the researcher retrieved them for observation (Setshwane 2005:69). She reported that some of the phonographic recordings were shelved vertically, while others were shelved horizontally, on top of each other (a practice which she deplored) (Setshwane 2005:69). She also observed that, unlike phonographic recordings, magnetic recordings were appropriately stored, vertically, on shelves. They were labeled by year on the outer cover of the box. The label showed the title of the recording and the name of the recorder, as well. In some instances the tapes were misfiled, as the arrangement in the library was not systematic and hence difficult to understand. Setshwane (2005:70) revealed that the reel-to-reel tapes were arranged on shelves, chronologically, by year, place of production and geographic location. Compact discs were assigned numbers before they were placed on wooden shelves. Setshwane (2005:71) wrote that the library staff used author and title to retrieve compact discs. The system was effective, as it was automated (Setshwane 2005:71).

The current researcher observed that the phonographic recordings were kept horizontally on the floor of the Music Section, in the New Multimedia Complex building. This means that the phonographic recordings in the above organization could be wearing out, due to pressure caused by the discs on the top. Derges (1992:96) discovered that the AV materials at the film institutes in Angola, Tanzania and Mozambique were largely unidentified, due to improper cataloguing. This could mean that some film archives in the region do not use standard cataloguing systems. The corollary to this is that improper cataloguing affects accessibility.

The present researcher observed that the numerical system by year/title prevailed in the national archives and the media organisations that were visited. The interviewees from the three national archives and the four media organisations (visited) reported no problems with retrieval. This means that some national archives and media organisations apply appropriate archival principles in the arrangement and description of the AV collections. Finding aids facilitated this.

5.8. Finding aids

According to Feather and Eden (1997:17):

> Good calendars, lists and other finding aids...are ever more essential as a means of helping to reduce the need for users to handle several documents unnecessarily, before finding one which contains the information they require.

5.8.1 Finding aids in use

The study of Feather and Eden (1997:17) cited (Pachent n.d.), who noted that interviewees preferred access developments in IT such as CALM (Computerisation for Archives, Libraries and Museums) 2000, " a software designed specifically for the cataloguing and indexing of archives and inclusion of images within text". Feather and Eden (1997:17) wrote that digital scanning was being used to convert lists and catalogues. An attempt was made to "re-catalogue entries to current standards".

It was cautioned that "the creation of finding aids, both catalog records and inventories/registers, is a complex process which requires the archivist to have a working knowledge of the standards and tools and to acquire cataloging skills" (Introduction to archival organization and description: access to cultural heritage 2007).

The present study shows finding aids that national archives in the region used (See Figure 11). It can be seen that the most popular finding aids were registers and, to a lesser extent, inventories. Only one national archive said that they used a computerized index. The fact that the computerized catalogue had not been updated for ten years at one of the national archives shows that some national archives lack skilled staff to operate a computerized database. The majority of national archives did not use computerized databases. Failure to use computererised databases means that retrieval of AV materials is slow. This requires an examination of bibliographic/intellectual control standards.

5.8.2 Bibliographic/intellectual control standards

Several standards govern the content of catalog descriptions. These include ISAD (G), IASA, AACCR2, MARC-AMC, MAD, CDISIS, and MARC (Maillet 1990:27; Miliano 2004; Saffaddy 1998:53). Roper and Millar (1999f:76) advised archivists to apply the ISAD(G) general rules of archival description, which are "applicable to descriptions of archival materials regardless of medium and format..." The current researcher sought to

ascertain to what extent the above rules and, in particular, the archival principles of provenance and original order applied to the arrangement of AV materials. In the present study, the largest number of national archives used MAD, one national archive used IASA rules and one used CDISIS. However, one media organisation used WINISIS (UNESCO program). This shows that most of the national archives are not applying the recommended IASA cataloguing standards (which incorporate ISAD (G) general rules) to their AV collections. Failure to do this means that national archives cannot share information about their collections with other institutions, locally and internationally. This restricts potential users from accessing the resources.

5.9 Access (and use)

Feather and Eden (1997:16) believed that archivists were in a constant dilemma "involving the need to strike the right balance between maximizing access to collections and preserving the materials themselves". Matangira's (2003b) study, which covered eight ESARBICA countries (Botswana, Kenya, Namibia, South Africa, Swaziland, Zambia, Zanzibar and Zimbabwe), discovered that access varied from institution to institution:

> In some cases access is not given to the collection because the institutions do not have playback equipment. In other cases, access is given to preservation or original or master copies because that is the only copy available and, in most cases, institutions cannot afford multiple copies of the same material (Matangira 2003b:46).

Matangira (2003b:47) gave other reasons for denial of access, including the fact that the AV materials were not catalogued, lack of viewing or listening equipment, obsolescence of formats and lack of resources to change to new formats. Hamoya (2003) reported that, at the National Archive of Zambia, "16mm and 35mm films are only accessible to users if there is a reference copy…" (Hamoya 2003). The author further reported that access was hampered by the fact that "play back and copying can only be done at one of the media organizations when necessary". Based on comments of an interviewee, users of archives "are much more likely to look after archive materials if they appreciate their importance and are told why they are being asked to handle items in a certain way (Feather and Eden 1997:21).

In Setshwane's (2005:75) study, AV materials were not lent to external users, except university students or researchers, who were required to obtain permission from the Director of Broadcasting Services. In such cases, AV materials were accessed within the

premises of Radio Botswana. Radio Botswana staff were allowed to borrow AV materials and return them to the library after use. Setshwane (2005:76) stated that copies were not made for borrowers, but they were allowed to listen to the recordings at the Radio Botswana studios. The current researcher noticed that the librarian at the Radio Botswana library did not inspect AV materials when the users returned them. Such a practice could lead to loss of valuable materials. It also makes it difficult to detect any damage to AV materials on their being returned.

The situation that prevailed at the South African Broadcasting Service (SABC) and the National Broadcasting Corporation (NBC) of Namibia was similar to that of the Radio Botswana Music Library. However, the present researcher was not able to capture the process of returning borrowed materials at the SABC and NBC. It should be noted that the AV resources at the media organisations were meant for internal use. In most cases, researchers were referred to the national archives, where media organisations deposit master copies of all the AV materials produced.

5.10 Environmental factors

The maintenance of proper temperature and RH in archives and records storage areas is a critical factor in the preservation of documentary materials (Ngulube 2003a:250).

5.10.1 Temperature and relative humidity

According to Harrison (1997/98:147), archival records in most national archives in Africa were stored in appalling conditions. Ngulube (2005b:15) cited the National Archives of Netherlands *et al.* (2001), who believed that poor archival management in tropical areas was caused by the climate. Ngulube (2005b:155) thought that "housing the collections in environmentally secure facilities may partly contribute to the survival of documentary materials, and guarantee current and future access to ...documentary materials in ...archives".

The results from observations from the current study (see Figures 8, Table 7 and Table 15), and studies such as Ngulube (2005b:155), Moyo (2002:110), Setshwane (2005:68) testify to the fact that AV materials in some national archives and some media organisations were deteriorating due to poor infrastructure and poor climatic conditions. This is particularly evident in cases where air conditioners were dysfunctional (Ngulube 2005b:161). Ngulube (2005b:162) opined that "the energy and resources to keep an air-

conditioning system running are prohibitive for most countries in sub-Saharan Africa". Chida (1994:27) earlier raised similar views when he stated that tropical countries are faced with a heavy financial burden. They consequently fail to acquire air conditioning equipment, let alone maintain them. Ngulube and Tafor (2006:71), in a study of public records and archives in the member countries of ESARBICA, discovered that:

> Although four of the surveyed institutions stored their materials in environmentally controlled conditions, only two of them had special equipment that continuously monitored the temperature and RH in the areas where audiovisual materials were stored (Ngulube and Tafor 2006:71).

These findings explain why countries in tropical countries find it difficult to maintain ideal storage conditions. Bearing in mind Peters' (1998:122) declaration that monitoring of temperature and RH in archival repositories was crucial in the identification of specific environmental conditions or possible risks, lack of such equipment is a major cause of deteriorating AV materials in the region. Peters (1998:10) monitored climatic conditions of a sub-tropical coastal region, southeast of Natal. The author cited Blaton (1983), who recorded extreme levels of RH in summer, with a mean of 65% (from September to April), the highest mean RH being 92% in March, with a sharp drop to 41% in winter (during the months of May to August). Such fluctuating levels of RH are very damaging to AV materials. Peters (1998:11) pointed out, however, that the above climatic conditions were not peculiar to the southeast coastal region of South Africa. The author stated that such humid sub-tropical conditions were found in the entire south and southeastern parts of the U.S.A. This implies that AV materials in tropical countries, and particularly coastal regions are bound to deteriorate due to climatic changes. This is the more reason why equipment to regulate temperature and RH are so important in such countries as ESARBICA.

There are some exceptions such as Lesotho, where "there are no high temperatures which play a major role in accelerating the damage of library and archival materials...The average temperature in Maseru is 8°C in the coldest months of June and July and highest, at 24°C, in January" (Qobo 2004:101). In contrast to the above, Setshwane's (2005:72) study of the Music Library in Botswana recorded a frequent breakdown of the air conditioner in the phonographic section of the library. It should that noted that Botswana experiences fluctuations in temperatures and humidity, as described by Peters (1998:122).

The current study revealed that national archives were not well-equipped with the required equipment to maintain constant temperature and humidity where AV materials were stored. Figure 10 shows that national archives did not have adequate equipment to monitor environmental conditions. For instance, out of the three national archives that were observed, only one had a thermometer, one had a hygrometer and one had a temperature/humidity data logger. None of the national archives had a psychrometer, recording hygrothermograph or a sling psychrometer. None of the four media organisations that were observed had any of the above equipment. Air conditioners at two of the archival institutions had broken down.

Harrison (1997/98:147) earlier reported broken down equipment in most archival repositories in Africa. The equipment remained unrepaired due to shortage of spare parts, "as well as problems of antiquated nature of some of the equipment which was purchased in the 1960s and 1970s" (Harrison 1997/98:147). The scenario depicted above should be seen against the study of Ngulube (2003a:87), who cited Duchein's (1977) recommendation that "frequent checking of temperature and RH is very important in equatorial, sub-equatorial, tropical and monsoon climates because the warm and damp conditions present special problems for the preservation of documents". Lack of appropriate equipment to maintain temperature and RH therefore means that AV materials in the region are poorly maintained.

Harrison (1997/98:147) found "numerous reports in which records were exposed to excessive heat, humidity, mould, light, air pollution, insects and rodents". Feather (1996:40) warned that failure to maintain temperature and relative humidity led to irreversible damage to non-textual materials. Ngulube (2005b:161) cautioned that poorly designed structures in ESARBICA archives contributed to the disintegration of archival materials. Since only two out of nine national archives were purpose-built (see Figure 7), it can be concluded that archival buildings in the region may contribute to the poor state of AV materials.

The fact that none of the media organisations had a room for maintaining appropriate climatic conditions, while only one of the national archives indicated that they had such a room, poses a great danger to the collections. This is because "inappropriate temperature and RH contribute significantly to the deterioration of materials" (Ngulube 2003a:250).

Keeping AV materials in a room with favourable storage conditions enables them to adapt to the new climatic conditions. Failure to keep AV materials in appropriate climatic conditions on arrival exposes them to rapid changes in temperature and humidity. The fluctuations eventually damage the collections.

Ngulube (2003a:250) discovered that five out of seven archival institutions had a heating, ventilation and air conditioning (HVAC) system. He reported that "two (28.57%) of the surveyed archival institutions used environmental monitoring devices in their repositories" (Ngulube 2003a:250). He further reported that only one institution used a hygrothermograph for measuring RH, while another used a hygrometer. These results are similar to the findings in the current study, reflected in Figure 8. It can therefore be seen that the national archives in the region were not well-equipped to monitor temperature and RH in the storage areas. This situation inevitably contributes to the deterioration of the AV materials (Ngulube 2003a:250).

The present study revealed that four of the national archives did not maintain temperatures twenty-four hours a day. Worse still, only one national archival institution provided the specific RH for the different AV materials in their custody. In contrast, Ngulube's (2003a) study revealed that "the HVAC system was reported to be on at all times at four out of the five archival institutions that claimed to have one" (Ngulube 2003a:249). In the U.K., Feather and Eden (1997:34) wrote that a group of 183 (92%) archives reported monitoring temperature levels in their strongrooms, another group of 126 archives (63%) reported that they maintained temperatures in the strongrooms, 78 (39%) reported monitoring temperature levels in their search rooms and 176 archives (88%) reported monitoring RH levels in their strongrooms.

Feather and Eden (1997) reported noted that in archival institutions in the U.K., temperature and humidity levels were monitored daily/continuously, using reading thermographs, graphs and digital devices. Wall thermometers were used extensively, while hygrometers were used for periodic checking, such as taking weekly or monthly readings. Climate control was usually achieved using air conditioning systems. In some buildings, computerized building management systems were used (Feather and Eden 1997:37). However, the authors reported that maintenance of temperature and RH was not always possible. It was slightly high in summer and slightly low in winter. Other problems

had to do with unsuitable equipment and air conditioning, in the words of one respondent below:

- "We are constantly fighting old air-conditioning equipment and adapted buildings to achieve the standard";
- "Despite repair attempts, the humidifier isn't working properly"; and
- "The plant is being replaced (again!)" (Feather and Eden 1997:37).

These findings show that the problems associated with maintaining temperature and humidity were not peculiar to the ESARBICA region. Nevertheless, the archival institutions in the region seem to be lagging behind their international archival counterparts.

5.10.2 Damage caused by light

Ngulube (2005b:162) noted that "light accelerates the deterioration of …archival materials, by acting as a catalyst in their oxidation". He discovered that the major sources of light in archival repositories in Sub-Saharan Africa (SSA) were fluorescent lamps, which "emit UV light that causes deterioration of materials" (Ngulube 2005b:162). The author reported that only five (45.5%) archives controlled light from the windows in the storage areas. The present author recorded that five out of nine national archives protected AV materials from light, while one out of four media organizations did not make any attempt to protect AV materials from light. Feather and Eden (1997:35) noted that a group of 72 archives (36%) controlled light from windows in storage areas, another group of 102 reported having no windows in storage areas, while another group of 88 (44%) reported controlling artificial light in storage areas.

Feather and Eden (1997:38) wrote that 20 archives in the U.K. reported controlling light from the windows in storage areas using glass with ultra-violet (UV) filtering, or with UV filter film or lacquer, 25 used black-out blinds or curtains. Nine used shutters or boards and one had frosted/opaque windows. The author reported that 46 archives controlled artificial lighting, seven used low lighting levels, four had automatic switches and 30 indicated that lights were only switched on when items were being fetched or returned (Feather and Eden 1997:38). Chida (1994:28) stated that the NAZ used adjustable light breakers, deeply recessed windows (where necessary) and dark curtains to protect sensitive materials from strong sunlight. Chida (1994:28) said that the normal practice at NAZ was "to box all standardized records to protect them against light effects". In the

current study, one out of nine national archives used window shutters and four national archives positioned shelves away from light. None of the national archives used light filter films on windows. Since most of the national archives did not have windows in the storage areas, light did not pose any danger to AV materials.

5.10.3 Damage caused by water

Damage from water is said to pose a great threat to records centres and archives (Roper and Millar 1999c:7; Tregarthen 1986:1). This is why Bereijo (2004b:374) discouraged the use of water sprinklers for stopping fires, as they cause more damage to the collections.

In Setshwane's (2005:61) study, water leakage posed a danger to the AV materials. Ngulube (2003a:255) discovered that "the likelihood of a disaster caused by water was high in four repositories in South Africa, where water-bearing pipes were between two and four metres from the storage areas." The present author noticed signs of a leaking roof at one national archives, only. According to the officer in charge of the AV materials, some of the materials had been damaged by water. At the same national archive, water damage was caused by a dysfunctional air conditioner. The study further revealed that national archives took some precautions against water damage, albeit inadequate (see section 4.5.16.3).

5.10.4 Damage caused by fire

High temperatures resulting from fire may cause irreversible damage to AV materials (Ward 1990:104). Kathpalia (1985:485) and Tregarthen (1986:4) advised archivists to use fire-fighting devices such as smoke detectors, water pipes, water hoses and automatic dampers in the ducts of air conditioners. In addition to the above, procedures should be in place for staff awareness and training in the use of different types of fire-fighting equipment (Tregarthen 1986:4).

Tregarthen (1987:4) discovered that 37.5% of the institutions trained their staff in the use of fire fighting equipment. The study also revealed that 10.6% of the surveyed institutions did not inform the local Fire Brigade about the archival buildings and their holdings (Tregarthen 1987:4). In addition, Tregarthen (1987:4) discovered that 38% of the institutions did not have any contact with the Chief Fire Officer, while 15.6% of the institutions did not practise fire drills. The present study found that, in some instances, the

national archives were not well-equipped for a fire disaster. For instance, none of the national archives had heat detectors or water alarms and only two out of nine national archives had fire-resistant doors (see Figure 14). The current study showed that only one out of nine national archives' alarm systems were linked to a local fire station, while three national archives' alarm systems were linked to an automated security company. The present researcher sought to establish the extent to which AV materials in ESARBICA region were protected from fire.

5.10.5 Damage caused by biological agents

According to Ngulube (2005b:162), "the control of environmental factors has a positive impact on controlling biological factors". The biological agents referred to in the present study were mould, mildew, fungus, insects and rodents (see section 2.21). The present study took cognisance of the National Film Preservation Foundation's (2004:47) caution that "films stored under humid conditions become easy targets to mould, mildew and fungus". Damage from insects, such as carpet beetles, clothes moths, silverfish, and cockroaches (Appelebaum 1991:121) was also considered dangerous to AV materials. Ngulube (2003a:294) further reported that most archival repositories in South Africa "checked all incoming archival materials and sprayed or fumigated their archival repositories from time to time", to prevent pests. Moyo (2000:27) reported that 83% of the national archival institutions did not check or disinfect their accessions before they entered the archives. Biological agents did not pose a serious problem in the three national archives that the researcher visited (with the exception of one national archive where black insects were seen on the floor of the foyer). In another incident, one archivist indicated a problem of fingerprints and another complained about mould.

Qobo (2004:101) complained that the biggest enemy to the Thomas Mofolo Library, in Lesotho (where archival materials were stored), were the users, students and staff. The author reported that users and staff caused the institution numerous preservation and conservation problems, by eating and drinking in the library. This practice negates Child's (1999:145) caution that food and drinks should not be taken to storage areas. Since food attracts insects and rats, the practice at Thomas Mofolo Library is disastrous to archival collections, including AV materials. According to Ngulube (2003a:296), "users and staff need to be trained and given guidelines on the handling of archival materials". He reported that archival repositories in South Africa trained users and staff in the handling of records in four (57.14%) repositories (Ngulube 2003a:296). Ngulube (2003a:296) cited Mavodza

(2003), who reported that staff and users at the NAZ were not trained in the proper handling of records.

Setshwane (2005:60) discovered that the carpeted floor of the Music Library was stained and dusty, probably because eating and drinking took place in the library. Kitchen utensils were found in the library (Setshwane 2005:60). Cobwebs and insects were noticed on the wall of the tape collection section of the same institution (Setshwane (2005:61). Setshwane (2005:63) noticed other dangers to AV materials that included dust, stained casings, scratch marks and fingerprints. All these point to the fact that AV materials in the above institution were in danger of deterioration. However, as pointed out, the situation at this particular media organization changed with the transfer to the new building. It can be seen that biological agents do pose a great danger to archival institutions in the region.

5.11 Security and disaster management

According to Roper and Millar (1999e:137), provision of adequate security is an important aspect in the protection of records and archives. Ngulube (2003a:253) warned that "efforts in relation to acquisition, arrangement, description, and preserving archival materials may come to naught if the archives are lost as a result of a disaster or breach in security". In view of the above, Cannon (2003:46) stressed that cultural heritages should have preservation management or conservation programmes which identify potential risks from various agents of deterioration "such as light, pests or adverse storage conditions" (Cannon 2003:46). This means that archivists should not overlook emergency preparedness and disaster management. The attitude of staff to security issues is critical (Strassberg 2000:169).

Ngulube's (2003a:255) study revealed that most of the contingency disaster plans were for staff and users of archival materials. Chida (1994:29) reported that NAZ had a contract with security firms to patrol the archival premises after hours and during weekends. There was also an intruder alarm system and "the area around the archives was well lit overnight to help guards detect intruders" (Chida 1994:29). Despite these precautions, Chida (1994:30) pointed out that the problem of theft in archives persisted worldwide. He t urged archivists to reinforce security to avoid losing invaluable, unique stocks. Chida (1994:31) complained that NAZ opted for disaster prevention and protection rather than for costly recovery, because of financial constraints. Attempts made by NAZ are commendable, given the fact that disaster mitigation plays "a key role in an institution's emergency preparedness and planning efforts" (Chachage and Ngulube 2006). In the case of Lesotho,

Qobo (2004:104) reported that library staff who were responsible for archival materials were trained in fire-fighting techniques and that the library carried out periodic drills.

In Feather and Eden's (1997) study, 52 archives (29%) reported employing security personnel; 145 (73%) reported having electronic systems; 156 (78%) reported having an intruder alarm system linked to the police or third party such as a security firm; 75 (38%) reported having installed closed-circuit television camera (CCTV). The authors noted that 44 archives (22%) considered their security programmes to have been very effective, while 117 (59%) considered their security programmes to have been effective over the last 10 years (Feather and Eden 1997:43). In the same study, 28 respondents reported being housed in premises with 24-hour building security, 12 had building entrance security staff, 68 reported having intruder alarm systems connected to a security firm, and 24 had theirs linked to the police. Sixteen respondents reported using electronic tagging for some open access materials (Feather and Eden 1997:46) and 108 archives (54%) reported having a disaster control plan (Feather and Eden 1997:46). Training in disaster management included familiarization with the lay-out of the buildings, salvage priorities and techniques, handling wet documents, fire safety (including use of extinguishers), health and safety, use of freezers and emergency equipment, alarm response and location of keys (Feather and Eden 1997:47).

In the present study, only three out of nine archives indicated that their institutions had a security policy. Three national archivists admitted to conducting a risk assessment to their premises, while three respondents said that they had an emergency plan, although one of them said the emergency plan was not implemented. Table 13 summarises the security measures that national archives in the region took to protect archival materials. The present findings show that national archives in the region did not give security and disaster management as much importance as they ought to. Table 14 shows other issues pertaining to the attitude of staff towards security. It is apparent from Table 14 that staff were not trained in security management issues. It is also clear that persons without badges or identity cards were not challenged and users' belongings were not searched at many archival institutions under study. The scarcity of information on security and disaster management in the region points to the need for further research on this topic.

5.12 Current levels of knowledge and skills for archivists in the ESARBICA

Matangira (2003b:46) stressed that most archival institution in the region lacked "the resources and skills required for managing audiovisual materials". Ngulube (2003a:163) argued that preservation knowledge was fundamental to controlling and monitoring the environment where archival materials were stored. He reported that only three people out of 28 archives and libraries surveyed had knowledge and skills in preservation. Furthermore, Ngulube (2005b:163) discovered that 44.4% of the respondents had no expertise in climate monitoring. He concluded that "there is a critical shortage of staff with expertise to control the climate in libraries and archival institutions in eastern and southern Africa." Setshwane (2005:73) made similar observations in the case of the Music Library in Botswana. Setshwane (2005) stated that Botswana had "no specialized training for librarians involved in the management of sound recordings. Available training programmes in the country focused on general librarianship and on the management of paper based materials" (Setshwane 2005:73). This means that the librarians who are responsible for managing AV materials in Botswana, and elsewhere in the region, are not well-equipped to manage AV materials. Kigongo-Bukenya (1992:134) cited Orlovich (1976), who emphasised that "some aspects of librarianship are essential to archivists". The present researcher believes that some aspects of archiving, including the preservation of AV materials, are also essential to librarians. This is because librarians were responsible for managing AV materials in some national archives and in all the media organizations in which the present study was conducted.

Ngulube (2003a:267) stated that 88.89% respondents indicated that they needed additional training archiving in handling audio materials. He discovered that, out of eight respondents, four had no training in dealing with AV materials. Of the remaining four, one had basic knowledge in AV archiving, two received in-house training and one had in-depth training through workshops. In the current study, seven out of eight respondents indicated that they had intermediate knowledge of AV archiving, one admitted to having no knowledge, while one did not respond. In the case of media organizations, ignorance of environmental monitoring was revealed by one respondent, who said that she did not know how to regulate or check humidity and temperature levels. In that particular case, it was the responsibility of an external engineer to monitor temperatures and RH. This implies that the AV materials in the national archives and media organizations in the region have the potential of being damaged due to inadequate knowledge and skills of the officers who manage them.

Feather and Eden (1997:41) suggested that training should be part of an on-going process in heritage institutions:

> Training for non-professional staff included verbal advice on careful handling, preventive measures such as taping fragile volumes, use of protective containers when transporting material within the building and supervision of readers for staff involved in that activity (Feather and Eden 1997:41).

Feather and Eden (1997:19) cautioned that "raising the awareness of staff with no professional archival training...was described as possibly the most difficult aspect of preservation policy to achieve". Feather and Eden (1997:40) reported that 149 (75%) of the respondents trained their non-professional staff in the handling of archival materials. Derges (1992:99) discovered that all the eight national archives surveyed said that their staff required training in the area of AV archives. Derges (1992:99) noted that staff who managed AV materials learned on the job. They acquired professional knowledge over a long period. Their only formal training was through seminars and workshops. Derges (1992:99) suggested that all AV staff in ESARBICA should undergo basic in-service training.

Mutiti (1999:15) and Mnjama (2005:458) believed that the region was still faced with an inadequate number of professional archivists. Ngulube (2003a:267) stressed that knowledge of AV materials in the region was basic. Ngulube (2003a:268) found that 88.8% of the respondents identified knowledge of audiovisual materials as the most critical training need. Derges (1992:99) discovered that all the respondents in the study felt that archival staff required training in AV archiving. Only one of the respondents from Derges' (1992:99) study felt that the training should be on the technical side. This shows that archivists in the region lack professional training in AV archiving. This assertion was later reiterated by Ngulube (2003a:265), who discovered that out of 21 staff members who were involved in preservation and conservation activities, only 1 (0.5%) had a doctoral qualification in an archival related discipline, six (3.02%) had Masters degrees in an archival-related discipline, seven (3.52%) had a diploma in archives or records and 42 (21.11%) had a certificate in archives or records. The literature did not indicate any archivist with professional training in AV archiving. This could be attributed to the fact that there is still "a serious gap ...between the growing importance of audiovisual archives and the provision of professional education, a gap no less wide in developed than in developing countries" (Harrison 1997/98:187).

5.13 Training opportunities for AV staff

Ngulube (2005b:163) asserted that "the level of knowledge in a country is one of the four major factors that determine the ability of any country to develop a satisfactory preservation programme". In Feather and Eden's (1997:20) study, "several interviewees stressed that awareness-raising and training must be part of an on-going process, with the awareness maintained through initiatives such as refresher courses, memoranda and verbal reminders following initial training in induction courses". Feather and Eden (1997:42) emphasized that training should be provided externally by organizations such as professional bodies. Ngulube (2003a:264) reported that 88.89% of respondents felt that on-the job training through workshops, was the best way to provide additional training. Other methods included one to two day workshops on archival techniques (77.78%), graduate courses (66.7%) and institutes on archival techniques for a period of one to two days (66%) (Ngulube 2003a:264).

Mnjama (2005:459) noticed a shortage of archival training schools in the region. This observation explains why Kigongo-Bukenya (1992:149) earlier foresaw a need for education and training at all levels, that is para-professional, basic professional and post-professional levels. With such a versatile background, archivists/librarians are equipped with the necessary skills to manage AV materials.

Mnjama (2005:459) reported that Kenya was among the first countries to provide formal training for archivists at different levels. Zulu (1992:162) wrote that the University of Zambia offered a course in archives and records management and so did two other institutions, namely the department of Technical Education and Vocational Training and Evelyn Horne College of Applied Arts. The programme at the Evelyn Horne College of Applied Arts led to a certificate in library studies. The National Archives of Zambia provided an in-house staff training course for newly recruited staff (Zulu 1992:162). "Each module begins with a theoretical introduction then trainees undergo practical training" (Zulu 1992: 162). Mwinyimvua and Makando (1992:138) held similar views in the case of the School of Library, Archives and Documentation Studies in Tanzania.

Unlike Mnjama (2005:459), Zulu (1992:162) enthused that "the prospects on the horizon for archival training in the sub-region look very promising". Zulu (1992:168) based this conclusion on the following:

i. The democratization of South Africa;

ii.   The (then) proposed archival programme at the University of Botswana;

iii.   The University of Zambia Masters programme elective course in records and archives; and

iv.   The records management programme at the Eastern and Southern Africa Management Institute (ESAMI).

The current study revealed that there are some opportunities for training in ESARBICA (44.4%) and, to a limited extent (22.2%), there are some training opportunities in Africa (see Figure 18). These results explain why Matangira (2003b:47) saw a need for "more exposure to audiovisual archiving through both formal and informal training". The fact that six out of nine respondents from the current study, indicated that the highest level of knowledge in AV archiving was intermediate could be attributed to the curriculum offered by the training institutions. This situation still prevails inspite of Kigongo-Bekenya's (1992:150) recommendation for:

> A local curriculum that must be received by everyone, no matter what specialization he aims for or what level he is taught, and contains those features of the educational programme that have common application to all, where ever they may be working (Kigongo-Bukenya 1992:150).

The level of knowledge and skills in AV archiving could also be attributed to the fact that for, a long time, national archives in ESARBICA disregarded AV materials (Matangira 2003b:43). Feather and Eden (1997:42) felt that situations where archives and library staff share responsibilities could be very difficult. "The main problem is that the service is operated in a library, and archives are processed and issued to users by library staff (who have differing priorities)." It was further proposed that library staff did not have the same perception of the need to preserve and to protect archival materials (Feather and Eden 1997:42). This problem was apparent in the Thomas Mofolo library, which was earlier pointed out. It can be argued that AV archivists take better care of AV materials, as librarians, may not appreciate the value contained in the archival materials.

5.14 Summary

This chapter interpreted the findings of the study. The major themes centred on the types of AV materials in national archives, the general condition of AV materials in archival repositories, policies that govern the management of AV materials, the application of the records life-cycle model to the management of AV materials, budget and funding for AV

materials, types of archival buildings, structural placement of archival buildings, equipment for AV materials, appraisal and selection of AV materials, acquisition of AV materials, arrangement and description of bibliographic/intellectual standards that apply to AV materials, access and use, environmental factors, security and disaster management, current levels of knowledge and skills for archivists in the region, as well as training opportunities for AV staff. These factors are summarised below.

i. The study realized that the reason why some national archives kept more AV materials than others was that they had the infrastructure in place. Other countries depended on national media organisations to keep their AV materials. The types of AV materials were mostly old formats, because most of the national archives lacked the resources to digitize AV materials;

ii. The vinegar syndrome was a common problem in national archives. Failure to maintain the recommended climatic conditions for AV materials posed a danger to AV materials kept in national archives;

iii. Failure to maintain ideal climatic conditions for AV materials was due to lack of appropriate equipment in national archives. In addition, shortage of viewing equipment for AV materials limits access to the materials;

iv. The researcher realised that the reason why most national archives did not include AV materials in their policies was that their archival legislation was outdated. The absence of written preservations policies in national archives (except for one) is indicative of an absence of policies that apply to AV materials;

v. National archives did not consider the records cycle an important aspect of AV management. To a limited extent, some national archives had a collaborative arrangement with national media organisations, but they did not apply the records life-cycle concept at the creators' level. National archives merely received AV materials from media organisations or donors;

vi. Most of the national archives were financially constrained to preserve AV materials because the funding from their governments was inadequate and they did not receive any funding from international organisations;

vii. The fact that most national archival buildings were multipurpose means that some AV materials were not kept in the recommended storage conditions and AV materials were susceptible to damage;

viii. Although a larger number of national archives fall under the ministries of Home Affairs and/Culture, Education/Sport/Culture, they were financially constrained to manage AV materials effectively.

ix. Although, to a large extent, national archives had acquisition policies, they did not apply them to AV materials. This is because national archives acquired AV materials passively;

x. The study revealed that the national archives applied the archival principle of provenance to AV materials;

xi. AV materials were classified numerically by subject title or by name of creator or recorder;

xii. National archives used standard cataloguing systems to arrange and describe AV materials. However, manual catalogues were used in most cases;

xiii. Most of the AV materials in media organisations were closed to the general public. This implies that large quantities of AV materials in the media organisations are not accessed by researchers and external users;

xiv. Security and disaster management were inadequate in most of the national archives;

xv. The fact that a majority of archivists responsible for managing AV materials only had intermediate knowledge of AV archiving means that AV archivists in the region were not adequately equipped with the knowledge and skills to preserve AV materials in their custody;

xvi. There were insufficient training opportunities in ESARBICA and in Africa at large.

CHAPTER SIX: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

"While mankind cannot stop the natural aspect of deterioration, man can certainly slow down or control the speed at which deterioration occurs" (Tamuhla 2001: 3)

6.0 Introduction

The previous two chapters presented and interpreted the main findings in the context of previous studies. This chapter restates the purpose of the study, which was to identify strategies for managing AV materials and to suggest ways of preserving contemporary AV materials in the archival institutions of ESARBICA. In order to attain the above purpose a number of research questions were asked, based on the research objectives, which are stipulated in Table 1. Answers to the research questions provided a picture of the extent to which national archives managed, or failed to manage, AV materials in their repositories.

The chapter includes a summary of the main findings, an interpretation of the results in terms of the literature review, gaps and anomalies/deviations in the data (as per findings), the significance of the current study, policy implications of the findings, a recommended model and areas of further research. The summary of the findings is presented according to the research objectives.

6.1 Summary of the main findings and conclusions

The data, which was gathered with the help of questionnaires, interviews and observations revealed the following:

6.1.1 Policies archival institutions in the ESARBICA used to manage AV materials

In most cases, the policies that governed the management of archival materials were not applied to AV materials. For instance, none of the national archives applied a disposal or digitization policy to AV materials. Seven out of nine national archives did not apply any acquisition policy, eight did not apply appraisal policies, six did not apply any access policy, seven did not apply preservation policies, seven did not apply retention policies and five did not apply a legal deposit policy.

Even in the few cases where the national archives applied policies to AV materials, there was no documentation to that effect. This means that national archives did not effectively

apply policies in managing AV materials. It could also imply that the application of policies to AV materials was not clearly stated in the national archives Acts. In this regard, it can be concluded that the national archival Acts were outdated.

6.1.2 Investigate the extent to which the life-cycle model was applied to the management of AV materials in the ESARBICA

The results show that the national archives did not effectively apply the records life-cycle to AV materials (see Figure 5). Failure to apply the records life-cycle could mean that the core principle that governs records and archives management was ignored (in-as-far as AV materials were concerned). It could also mean that not all formats of records fit into the records life-cycle model (for instance electronic records). Failure to apply the records life-cycle could be due to external factors such as inability to control the creation of AV materials from the creators' organization/location. Another factor that should be borne in mind is that the question concerning the application of the life-cycle was poorly answered. This could imply that the respondents did not fully understand the concept of the records life-cycle. One can therefore conclude that the national archives did not effectively apply the records life-cycle to AV materials out of ignorance.

6.1.3 Identify strategies archival institutions in the ESARBICA apply to the management of AV materials

The study revealed that most of the national archives were experiencing problems in managing AV materials effectively. For instance, most of the national archives did not have a specific budget for AV materials, despite the fact that 66.6%of the national archives indicated that their governments funded them. This could partly be explained by the fact that the funding was inadequate, as expressed by 55.5% of the national archives, a fact that was earlier identified by Tafor (2001:78). Tafor (2001:78) suggested that governments should increase the amount of funding to the national archives. Another factor related to funding was that the international organisations, such as FIAT, IASA, FIAF and UNESCO (the driving forces behind the preservation of the AV heritage), did not fund the national archives in the region. Similarly, ESARBICA did not fund the national archives in relation to preserving AV materials.

The results showed that the national archives were placed under different government ministries. While some of them were placed under influential ministries (in-as-far as

promoting the archival heritage is concerned), others were placed under non-influential ministries such as the Ministry of Tourism, Communication and Environment, the Ministry of Basic Education and Culture, or the Ministry of Natural Resources and Energy. This partly explains why some of the national archives such as NFVSA of South Africa (which fall under the Ministry of Arts and Culture), had a financial advantage over others. Conversely, the National Archives of Swaziland, which was placed under the Ministry of Tourism, Communication and Environment, might have had a shortage of funds, personnel and equipment because the aims of the ministry differed from those of the national archives (Dlamini 1999:27). Although there could be other problems that hampered the operation of the national archives, it can be deduced from the above findings that the structural placement of the national archives affected the way they managed AV materials.

The findings of the present work show that the majority (44.4%) of the national archival buildings were multipurpose, as opposed to only 22.2% purpose-built buildings. As far as equipment for monitoring environmental conditions was concerned, the results show that very few national archives had equipment to monitor environmental conditions. In some cases the equipment had broken down. The fact that ESARBICA countries are in a tropical region means that equipment for monitoring climatic conditions is not an option. Nevertheless, it appears that most of the national archives failed to maintain the required standard environmental conditions due to shortage of funds to purchase or maintain equipment. This could mean that lack of funding is a vital factor in the management of AV materials.

The results show that the national archives did not effectively apply the archival principles of appraisal, acquisition, arrangement and description, to AV materials. For instance, none of the national archives appraised AV materials, eight of the nine national archives acquired AV materials passively, the national archives had a problem describing metadata for the AV materials and some of the archivists experienced problems cataloguing AV materials, coupled with lack of knowledge and skills to handle AV materials. Failure to apply archival principles to AV materials could be due to the complex nature of the materials.

The study revealed that the national archives did not put adequate security measures in place. For instance, the Blue Shield security symbol, heat detectors and water alarms were lacking. Other security precautions were exercised moderately. Failure to put

appropriate security measures in place could mean that the AV heritage was at risk in the event of a disaster.

6.1.4 Current levels of AV management knowledge and skills of archivists in the ESARBICA

The study revealed that a majority (66.1%) of the national archivists had intermediate in-house knowledge of AV archiving, while only one archivist had a professional qualification in AV archiving. The low level/lack of formal training could be attributed to a lack of training opportunities in the region and very few training opportunities in Africa and outside the continent.

6.1.5 Locally or regionally available training opportunities for staff who manage AV materials in the ESARBICA

The scarcity of skills in AV archiving could be partly due to a lack of training opportunities in the region and outside the continent. This is based on the findings that 77.7% of the national archives indicated a serious lack of training opportunities in the region (despite the fact that 44.4% said that there was some form of training in ESARBICA), 22.2% said there were some training opportunities in Africa and 22.2% said there were some training opportunities outside Africa. It can be concluded that, although there was some training in the region, it was not sufficient.

6.2 Recommendations

Based on the above conclusions, the researcher made some recommendations. These were drawn by restating Tamuhla's (2001:3) statement that, "while mankind cannot stop the natural aspect of deterioration, man can certainly slow down or control the speed at which deterioration occurs". The present researcher challenges national archives and their respective governments to address the problems of managing AV materials before their AV heritage is lost without a trace. It is recommended that the national archives take the following steps:

i)   National archives should update their Acts to reflect the management of AV materials. The policy statements should reflect aspects of archival practices that are applicable to AV formats and, where necessary, new policies should be designed to meet the specific needs of AV materials.

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ii)   The national archives should adapt the guidelines for selection and appraisal of machine-readable and related records for permanent preservation shown in Appendix I. Based on the literature and the findings from the study, the researcher recommends the model in Figure 16.

Figure 16: Proposed placement of national archives in the ESARBICA
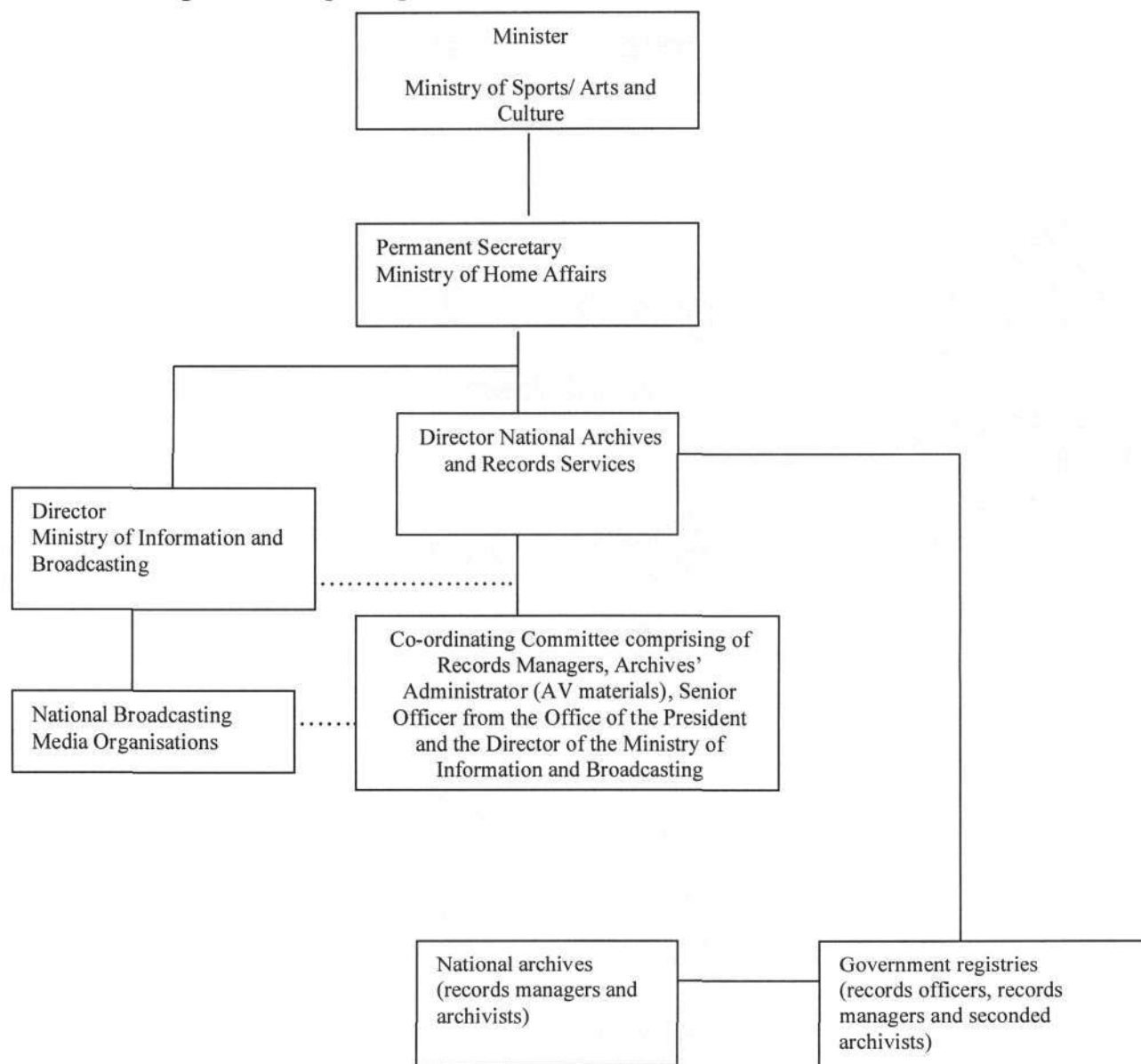
The reason for uplifting the national archives and the Ministry of Information and Broadcasting closer to the power base is that power lies "in the archives and public records in which official information is contained, and in those who control access" (Kirkwood 2002:4). The present researcher strongly believes that the best way to improve the management of archival records (and, in particular, AV materials) is to ensure that the

national archives are placed in a key ministry, which supports the national heritage. The minister responsible for the national archives may vary from country to country, depending on the legislation of a country. The recommended structure is meant to serve as a guideline.

Application of the recommended structure is bound to free more money for funding the national archives. The appointment of an Archives Administrator to the co-ordinating committee is to ensure that archival policies cover AV materials. Such an officer should liaise with media organizations on matters pertaining to the management of AV materials. The Archives Administrator should also liaise with international organizations on matters concerning funding. Application of the above structure should be combined with the IRM model in Table 16.

Table 16: A continuum between records and archives management

Process	Records management actions	Archives management actions
1.Identification and acquisition	Creation and receipt	Selection or acquisition
2. Intellectual control	Classification within a logical system	Arrangement and description
3. Access	Maintenance and use	Reference and use
4. Physical control	Disposal by destruction or transfer as archives	Preservation

Source: Roper and Millar (1999a:20).

The present researcher's decision to adapt the above model was based on the fact that AV materials are unique and may require different ways of handling. Unlike textual materials, which can easily be managed under the traditional 'civil service' umbrella of managing paper records, the management of AV materials involves other creators such as private individuals and media organisations. This explains why national broadcasting media organizations are reflected in Figure 16. Since media organisations are the major creators of AV materials, they should work closely with national archives. The latter should be playing a more active role in ensuring that the former uphold archival standards in managing the AV materials.

It can be seen from Table 16 that there is no fixed barrier between the functions of AV archivists and records managers. Thus the records management processes and the archives management processes can be carried out at the creator's organization or at the archives. This means that archivists should be actively involved in the management of AV materials in the four processes which are indicated in Table 16. The archivists are therefore required to play an advisory role throughout all the processes of managing AV materials.

iii) The study recommends major changes in the systems and practices that currently prevail in the national archives of ESARBICA, that is, a paradigm shift in policy making as well as a change in the traditional mindset that requires archivists to be passive receivers of archival records at the disposal stage (an idea disputed by the proponents of the records continuum);

iv) The study recommends that archivists are proactive players on the records and archives management spectrum. The adapted IRM model in Table 16 enables archivists to address all aspects of the records care throughout their life-cycle;

v) It is recommended that the placement of the national archives and the ministries of Information and Broadcasting match the arrangement in Figure 4. This is because AV materials are created by media organizations and the public sector;

vi) It is recommended that the Director of the Ministry of Information and Broadcasting is charged with the responsibilities of ensuring that media organizations adhere to appropriate strategies that apply to the management of AV materials. This will require a close liaison with the Director of the National Archives;

vii) It is recommended that the national archives should purchase/install equipment for monitoring environmental conditions, as a matter of urgency. Climatic conditions should be monitored 24 hours a day. ESARBICA should enforce this requirement by making regular visits to all national archives. In view of the fact that national archives have a mandate to identify and collect public and non-public records of national significance (Abbott 1999:66), it is recommended that the ESARBICA national archives should apply the IASA guidelines. The guidelines stipulate specific standards to appraisal, selection, acquisition, arrangement and description of AV materials. The archives' administrator should ensure that all media organizations apply the IASA guidelines to their AV collections;

viii) The study recommends that all national archives should install functional air-conditioners and ensure that other equipment for controlling climatic conditions are in place;

ix) It is recommended that all the national archives reinforce security of the AV collections. This will require adherence to security standards such as subscribing to the International Committee of the Blue Shield, ensuring that alarm systems are connected to the local police stations, ensuring that smoke detectors, heat detectors, fire-resistant doors and water alarms are installed. It will also require that staff and visitors wear identity cards or badges at all times. Ultimately, all the national archives should have a disaster plan;

x) Where necessary, national archives should fumigate their repositories using non-chemical methods;

xi) The study recommends that ESARBICA takes drastic measures to train AV archivists at all levels. This should be done through an integrated or harmonised curriculum. The curriculum should infuse AV components into the training of librarians, archivists, information scientists and media technicians to expose them to the knowledge and skills required to manage AV materials;

xii) The researcher recommends that all tertiary schools and universities should include AV archiving as a course;

xiii) The study recommends there is more regional co-operation through seminars, workshops and short-term attachments of AV archivists to more developed archives, such as the NFVSA;

xiv) The study recommends the establishment of a regional centre, specifically for training AV archivists. It is recommended that the ESARBICA should come up with a research fund for AV archiving. ESARBICA can solicit funding from international organizations. Chida (1994:24), Matangira (2003b:47) and Njovana (1989:23) made this suggestion during ESATBICA conferences;

xv) It is recommended that the ESARBICA member states should recognize archivists the same way they recognize other professionals in the civil service. Their remuneration should be based on qualifications and experience;

xvi) It is recommended that the ESARBICA should establish a research fund for AV archiving. ESARBICA can solicit funding from international organizations;

xvii) The study strongly recommends that the ESARBICA implements researchers' suggestions, as well as resolutions, from regional meetings and conferences. Failure to do this is a waste of resources.

6.3 Areas for further study

Despite the fact that this was a comprehensive study, there are areas that the researcher could not exhaust/explore, due to time and financial constraints. The researcher therefore suggests that the following future studies should be conducted:

i. A repeat of the same study, using interviews and observations in all ESARBICA countries;

ii. An intensive study of the preservation of AV materials in national archives vis-à-vis media organizations. The study should employ interviews and observations;

iii. A study on standards and legislation that pertains to AV materials in different countries of ESARBICA;

iv. A longitudinal case study on the impact of digitising archival AV materials. The case study should be carried out on the National Archive of Seychelles, which has digitised its AV collections;

v. A study on ideal climatic conditions for AV materials in tropical countries;

vi. A study should be conducted on controlling and monitoring the environmental conditions in repositories where AV materials are kept;

vii. A study should be conducted on the relationship between the structural placement of national archives vis-à-vis their ability to preserve AV materials; and

viii. Further research should be conducted on security and disaster management for AV materials in all institutions where they are kept.

6.5 Summary

This section summarises the major conclusions based on the findings, as well as the major recommendations from the chapter. The findings revealed that national archives in the region were not managing AV materials effectively, due to failure to apply appropriate policies to the AV materials, lack of an appropriate model, inability to put in place strategies to manage the AV materials, lack of qualified staff and insufficient training opportunities for AV archivists. It was therefore recommended that the organizational structures of the national archives should be transformed to reflect the role that national archives play in managing the nations' heritages. This can only be attained if an influential ministry heads the national archives. Such a position draws the national archives closer to the power base, which is bound to place them in a better financial position. The chapter also recommended a model, which integrates records managers' responsibilities with those

of archivists. This arrangement requires AV archivists to play a proactive role, thus enabling them to manage AV materials more effectively.

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APPENDICES

Appendix I: ESARBICA archives according to quantity of AV resources and their level of development in AV archiving

GROUP A
South Africa

Zimbabwe

GROUP B
Kenya

Malawi

Namibia

Zambia

GROUP C
Botswana

Mozambique

Seychelles

Zanzibar

GROUP D
Angola

Lesotho

Swaziland

Tanzania

Appendix II: Selected media organisations in the ESARBICA

1   South Africa

      a) National Film, Video and Sound Archives

- Sound Section
- Special projects, Client Services and Outreach
- Legal deposit and cataloguing

      b) South African Broadcasting Services

- Sound Archives
- Video and Film

2.   Botswana

      Department of Information Services

- Music/Sound library
- Botswana Television – Video library

3.   Namibia

- National Broadcasting Corporation of Namibia
- The Ministry of Information and Broadcasting, Directorate Audiovisual Media.

4.   Swaziland

- Swaziland Broadcasting Information Services
- Swaziland Television

Appendix III: Guidelines for the selection of machine-readable and related records for permanent preservation

These guidelines should be used in deciding detailed appraisal standards. These criteria take into account, not only the value of records for the long-term purposes of government or of the department but also their value for much wider research needs. Below are general descriptions of the main kinds of records, which should be kept permanently. However, there are instances where machine-readable records may not be kept.

- Files of information and text retrieval systems relating to reports, etc., where no acceptable printout versions exist.

- Files of data which have been processed to produce reports which have had a bearing on departmental or government policy, e.g. for submissions to a minister or a senior official or to the cabinet or a cabinet committee.

- Files of data produced for the benefit of royal commissions and departmental and interdepartmental committees and working parties.

- Files of data recording rights or obligations of or against the Crown.

- Files of data relating to issues which were the subjects of interest or controversy in the national or international arena.

- Files which, taken individually or in conjunction with other sources, record trends or developments in social, economic or other fields, particularly if they contain unpublished statistical or financial data covering a long range period or wide area.

- Files of historic or practical importance relating to aspects of scientific, technical or medical research and development.

- Files containing data of significant regional or local interest on matters for which it is unreasonable to expect that evidence will be available locally, or comprising synopses of such information covering the whole country or a wide area.

- Staff personal files held in a machine-readable form constitute a special case. Source: Cook (1980:133).

Appendix IV: The IASA cataloguing rules for audiovisual media

A. Title- covering:

- Title proper (descriptive title);
- Uniform title;
- Conventional title such as form headings;
- Cover titles such as sleeve from label title, title frames in a video record;
- Series titles;
- Parallel titles;
- Work title such as interim titles used by broadcasters (Miliano 2004); and
- Program Title;

B. Names relating to functions. For instance, for a composer, interviewer or sound engineer. The following details would be given: Author, Artist, Orchestra, Librettist, Medium of performance such as violin; name of broadcasting service/station and name of broadcaster (McMullen (2004). The author cited the IASA cataloguing project report for audiovisual media that recommended that the following information relating to names should be included when cataloguing sound recordings.

- Voice (e.g. Soprano);
- Character/Role;
- Contents listing (for instance list of track on an LP);
- Summary (e.g. Synopsis of text/interview);
- Language;
- Accompanying materials;
- Published/unpublished sound recordings;
- Other audiovisual materials other than sound recordings;
- Label;
- Catalogue Number;
- Matrix Number;
- Shelf Location;
- Location of other copies;
- Physical description such as format (e.g. tape, disc), speed, size, mono/stereo. Analogue (recording), digital (recording), analogue (mix), digital (mix), analogue (replay), digital (replay)
- Duration;
- Technical quality such as sound quality, physical condition;

- Place and date of recording, issuing, manufacturing or broadcasting;
- How and why the recording was made;
- Copyright holder;
- Embargo;
- Copyright;
- Royalties;
- Obligations accruing from acquiring the recording;
- Date of entry;
- Name of person who entered the entry into the system.

Source: Miliano (2004).

Appendix V: Minimum data list

Identification Area

- Title

Denomination given to a production by its producer;

Given title;

Denomination given by the archivists when the proper title is missing;

- Subtitle

Secondary title, in the case of unique production;

Title of each part of a series production;

Title of each item within a production consisting of several subjects;

- Other titles

Any other title identifying a production, including its original titles if not given above;

- Date of transmission

Date of first public transmission by air or by cable;

- Date of shooting

Could include several dates covering shooting over a period of time.

- Producer

Person who organizes and directs the operations necessary to make a programme.

Production number

- Unique number given to a programme for administrative purposes.

- Archive number

Unique identification number given by the archive.

- Content

Summarizing of the subject described in a production.

- Keywords

Word or group of words, possibly in a lexicographically standardized form, taken out of a title or the text of a document characterizing its content and enabling its retrieval.

- Place of shooting

Place(s) of shooting of the programme

- Running Time

Duration of the transmission period used for a production, under normal conditions for the medium used.

- Language

Language used in a production. Also for information on different versions of a multi-track videotape.

- Medium

Nature of the carrier on which the production is made (film, videotape, disc etc.). Also comments on quality.

- Format and standard

Gauge of film, tape width and line standard, analogue or digital standard.

- Sound recorded

Nature of the procedure of sound registration including mute of international soundtracks and specify whether it is analogue or digital sound.

- Color and/or black and white

System of color for film (Technicolor, Kodachrome, Agfacolor, etc.) and for videotape (PAL, SECAM, NTSC, etc.) and for discs.

- Origin

Indicate how the material is acquired and where it comes from.

- Contract

Agreement concerning copyrights and other conditions for a programme. May give a summary of the conditions formulated in the contract such as :

i. Period covered by the contract

ii. Names of the participants

iii. Financial arrangements concerning payments to participants

iv. Conditions for distribution and screening.

- Copyright

i. Designation of the person(s) or organization(s) holding the rights to make use of a production (specification of copyright holder(s)).

ii. It may be specifically stated whether all rights rest with the archive or not (with or without reference to a contract) or there may be reference to the contract only.

- Producer

An individual or legal entity under whose initiative and responsibility the work is first made.

- Other Names

All other names of significance contributing to the realization of a production and bearing specific rights.

Source: (FIAT/IFTA Documentation Commission 9th General Assembly and Congress, Geneva, 20th-25th September 1992).

Appendix VI: Questionnaire for collecting data on the management of audiovisual materials in the ESARBICA region

INSTRUCTIONS

Please tick against the appropriate box (es) that represent your choice (s) for each question and/or complete the entry spaces (where applicable)

BACKGROUND INFORMATION

Name of Institution

....

Country...

Postal Address...

Website Address ....

Email Address...

Tel: ....

Position held

....

Years of service in that position ....

A   ARCHIVAL BUILDING

A1   What kind of building is your archive?

General   ☐   Purpose built   ☐

Multi-purpose ☐   Converted   ☐

B   MANAGEMENT OF AUDIOVISUAL MATERIALS

B1 (a) Do you have an audiovisual section in your archival institution?

Yes   ☐   No   ☐

B1 (b) If Yes, what type of audiovisual materials do you keep in your archive? (Check all that apply)

Type of audiovisual material	Yes	No	Please specify quantity
Phonographic recordings (acetate, shellac and vinyl discs)			
Replicated CDs, DVDs			

Recordable and rewritable CDs and DVDs			
Microgroove discs (LPs)			
Cylinders			
Compact discs			
Open reel magnetic tape			
Realia			
Slides			
Photographic negatives			
Photographic prints			
Transparencies			
Maps			
Drawings			
Art Works			
Films			
Video tapes			

B1 (c) If you do not have an audiovisual unit, who manages audiovisual materials in your country on your behalf? (Please tick against the appropriate option in the table).

Storage of audiovisual materials	Yes	No
Radio Broadcasting Station		
National Television Station		
Do not know		
Others		

If Others, please specify ……………………………………………………………………………

B2   Which department/organisation manages the following archival materials?

Type of audiovisual material	Department/organisation
Television	
Radio	
Music	
Photographs	

B3   Who are the main users of your audiovisual collections

Please mark their use on a scale from 1 to 5 (1= Never, 5= Very high)

Users of audiovisual collections	1 Never	2 Very low	3 Low	4 High	5 Very High
General public					
Academic researchers					
Students					
Publishing/media					
Others					

If Others, please specify ....

B4   Is your institution a member of any international audiovisual organisations?

Yes ☐   No   ☐

If Yes, please indicate if your institution is a member of the following professional audiovisual organisations

International audiovisual organisations	Yes	No
International Association of Sound and Audiovisual Archives (IASA)		
International Federation of Film Archives (FIAF)		
International Federation of Films and Archives (FIAT)		
Others		

If Others, please specify

....

B5 Where audiovisual materials are stored separately in different departments/organisations, is that department/organisation a member of an international or national audiovisual organisation?

Yes   ☐   No   ☐   Do not know   ☐

If Yes, please, indicate the audiovisual organisation (if known)

....

C AUDIOVISUAL COLLECTIONS - GENERAL

C1 Do you have cellulose nitrate films?

Yes ☐   No ☐   Do not know ☐

C2 If Yes, where do you keep them?

Storage place	Yes	No	Storage place	Yes	No
Nitrate film vault			Search room		
Library			Others		

If Others, please specify ....

C3 How far are cellulose nitrate films kept from the nearest work areas?

Distance from nearest work areas	Yes	No	Distance from nearest work areas	Yes	No
About 200 meters			Less than 100 meters		
About 100 meters			Do not know		
Others					

If Others, please specify ....

C4 Are cellulose films sealed in plastic bags?

Yes ☐   No ☐

C5 How would you describe the general condition of the audio collections?

General condition of audiovisual collections	Very good	Good	Acceptable overall, some problems	Deteriorating
Phonographic recordings (acetate, shellac and vinyl discs)				
Replicated CDs, DVDs				
Recordable and rewritable CDs and DVDs				
Microgroove discs (LPs)				
Cylinders				
Compact discs				
Open reel magnetic tape				
Realia				
Slides				
Photographic negatives				
Photographic prints				

Transparencies				
Maps				
Drawings				
Art Works				
Films				
Video tapes				

C6 Please indicate the specific problems in your video collections

Specific problems for video materials	Yes	No
Mechanical damage		
Lack of playback equipment		
Storage		
Cataloguing		
Others		

If Others, please specify

....

C7   Please indicate the specific problems in your film collections

Specific problems for film materials	Yes	No
Nitrate		
Mechanical damage		
Vinegar syndrome		
Fading		
Storage		
Cataloguing		
Others		

If Others, please specify

....

D   APPLICATION OF THE RECORDS LIFE-CYCLE APPROACH

D1   Does your organisation manage audiovisual materials from creation to disposal (throughout their life-cycle)?

Management of audiovisual materials through the life-cycle	Yes	No
Phonographic recordings (acetate, shellac and vinyl discs)		
Replicated CDs, DVDs		
Recordable and rewritable CDs and DVDs		
Cylinders		
Compact discs		
Open reel magnetic tape		
Realia		
Slides		
Photographic negatives		
Photographic prints		
Transparencies		
Maps		
Drawings		
Art Works		
Films		
Video tapes		

D2   At what stage of the cycle does your archival institution get involved in the management of audiovisual materials?

Creation stage   ☐   Maintenance and use   ☐   Disposal   ☐

D3   Is there a body that oversees the life-cycle management of audiovisual materials in your country?

Yes   ☐   No   ☐

If No, please specify

....

D4   At what stage of the records cycle is appraisal conducted?

Appraisal of audiovisual materials through the life cycle	Yes	No
Current state of records		
Semi-current state		
Inactive state (at the archives)		
Do not appraise		

E ARCHIVAL POLICIES

E1 Does your national archive have audiovisual policies covering the following areas?

Acquisition policy ☐ Appraisal policy ☐ Access policy ☐

Preservation policy ☐ Retention policy Disposal policy ☐

Others ☐

If Others, please specify...

E2 Is there a policy that covers digital audiovisual materials?

Yes ☐ No ☐

If Yes, does the digital audiovisual materials policy provide the following guidelines?
(check all that apply)

Acquiring materials in digital form   ☐

Converting materials from print to digital form ☐

Storage ☐ Refreshing ☐ Migration ☐

F LEGISLATION

F1 Does your institution have specific legal responsibilities for collecting all formats of audiovisual materials?

Yes ☐

No ☐ (please indicate the audiovisual formats which are not covered)

....

If Yes, does your archive apply the legal deposit to audiovisual materials?

Yes ☐ No ☐

If your archival institution applies legal deposit policy for audiovisual materials, which method do you use? (Check all that apply)

Legal deposit methods	Yes	No
Selective		
Exhaustive		
Do not know		
Others		

If Others, please specify ....

F2   Are copyright restrictions clearly specified on deposited audiovisual materials in all formats?

Yes ☐   No ☐   Do not know ☐

G   ACQUISITION PRACTICES

G1 Does your institution have a standard form to document audiovisual materials upon receipt?

Yes ☐   No ☐   Do not know ☐

G2   How often do you add audiovisual materials to your collections?

Weekly ☐   Monthly ☐   Annually ☐

Others ☐

If Others,please specify...

G3   Which method of acquisition does your archival institution use?

Methods of acquisition	Yes	No
Passive collection where the institution accepts materials from whoever desires to donate		
Active acquisition where archivists are actively involved in appraising and selection of materials for preservation		
Others		

If Others, please specify ....

H APPRAISAL PRACTICES

H1   Are you guided by the following standards in the appraisal of AV materials? (Check all that apply)

Appraisal standards	Yes	No
a. Obligations – legal obligations that may influence the decision to accept the material into the repository		
b. Appropriateness and relevance – find out if the material is worth keeping and whether it will increase the usefulness of other recordings		
c. Relative importance – find out if the individual or organisation or activity that produced the recordings has any significance to the repository		
d. Cost consideration - does the information contained in the recordings justify the cost of keeping them?		
e. Uniqueness and rarity – are there similar recordings elsewhere?		

f. Status – are the recordings original or are copies of recordings held elsewhere?		
g. Condition – justify the conservation of materials that are in poor condition		
h. Integrity – ability to ascertain whether the recordings provide a true reflection of events that took place		
i. Availability of documentation – undocumented materials should only be kept because of their early date		
j. Functional aptitude – only a small sample of recordings should be retained if they contain information which is available in written form		
k. Access and rights limitation – materials that have restrictive copyright ownership, or where the owner does not allow materials to be copied, may not be acquired		
l. Internal; hierarchy and documentation – the ability to ascertain useful copies of original recordings		
m. Intrinsic character – some recordings such as artefacts are worth keeping despite their having no value		
n. Capacity of repository – acquisition of AV materials should not be limited by shortage of space		

H2   What criteria do you use to appraise audiovisual materials?

Archivists' knowledge and experience (intuition) ☐   Legal value   ☐

Continuing administrative value   ☐   Monetary value ☐

Information data value ☐

Others   ☐

If Others, please specify ....

H3   What instrument (s) do you use to survey audiovisual materials?

Inventory checklists   ☐   Disposal schedules ☐

Others ☐   (please specify) ....

H4   Is a standard survey form used to survey audiovisual materials?

No   ☐   Yes ☐   (please provide a copy if available)

H5   Do record surveys involve the entire organisation (that is, the creating organisation)?

Yes   ☐   Only a unit   ☐

If only one unit, please explain

....

H6   Do you have records retention schedules for audiovisual materials in the creating departments?

Yes   ☐   No   ☐

H7   Do records retention schedules cover audiovisual materials in all media (that is, all carriers of audiovisual materials)?

Yes   ☐   No   ☐

H8   Does the disposal schedule identify all the audiovisual materials of creating agencies irrespective of medium or format?

Yes   ☐   No   ☐   Do not know   ☐

If No, please explain

....

....

I   PRESERVATION AND MAINTENANCE OF AUDIOVISUAL MATERIALS

I1 Do you have a preservation programme for audiovisual collections?

Yes   ☐   ☐ No   (skip to question I6)

I2 Are temperatures and relative humidity maintained at constant levels 24 hours per day, everyday of the year?

Maintenance of climatic conditions	Yes	No
Temperature		
Relative humidity		

If No, skip to I4

I3 If Yes, please indicate if the following temperatures and humidity levels are maintained:

Type of audiovisual material	Temperature	Yes	No	Humidity	Yes	No
Video discs	10° C			20-30%		
Magnetic media such as tapes, computer diskettes, CD-ROMs	10° C			20-30%		
Photographs	10° C			20-30%		
Black and white film	10° C			30-40%		
Colour film	0° C or less			20-30%		

If the above temperatures/relative humidity levels don't apply to your audiovisual materials, please indicate what applies to the above formats.

....

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I4 Do you use the following equipment to monitor environmental conditions in the storage areas of your archives?

Equipment for monitoring environmental conditions	Yes	No	Do not know
Psychrometer			
Thermometer			
Hygrometer			
Recording hygrothermograph / thermohygrograph			
Sling psychrometer / wet-dry thermometer			
Temperature/humidity data logger			
Others			

If Others, please specify

…………………………………………………………………………………………..

I5 How often is the equipment calibrated to ensure that it functions efficiently?

Equipment maintenance	Once a year	Twice a year	Three times a year	Do not know
Psychrometer				
Thermometer				
Hygrometer				
Recording hygrothermograph/ thermohygrograph				
Sling psychrometer / wet-dry thermometer				
Temperature / humidity data logger				
Others				

If Others, please specify ………………………………………………………………………………..

I6 What type of artificial lighting is used in the storage area for audiovisual materials?

Type of artificial lighting	Yes	No
Fluorescent lamps		
Incandescent lamps		
Bulbs		
Others		

If Others, please specify

....

I7   How are audiovisual materials protected from sunlight?

Strategies to protect audiovisual materials from sunlight	Yes	No
Light filter film on windows		
Use of timer switch in storage areas		
Window shutters		
Window blinds		
Positioning of shelves away from sunlight		
Others		

If Others, please specify

....

I8 How do you protect audiovisual materials from water?

Strategies to protect audiovisual materials from water	Yes	No
Installation of a drain in the floor connected to an alarm		
Regular drain maintenance		
Fitted ground trays to drain any water leakages from the ceiling		
Others		

If Others, please specify

....

I9 Does the building have smoke detectors to signal any imminent fire?

Yes ☐   No ☐   Do not know ☐

If No can you indicate any other detector (s)? ....

I10 How do you control the spread of a fire (in the event of a fire disaster)? (Check all that apply)

Strategies to control the spread of fire	Yes	No
Use of carbon dioxide fire extinguishers/halon		
Use of electric fire extinguisher		
Use of automatic water sprinklers		
Isolation of flammable chemicals		
Insulated electric wires		
Others		

If Others, please specify ……………………………………………………………..

I11 Do you make separate access copies for the following formats?

Copies of materials	Always	Sometimes, in special projects	Always on request of users	Very seldom or not at all
Film				
Audio				
Video				

I12   When the following original formats deteriorate, do you transfer materials to new carriers?

Type of materials	We have a systematic programme for this	Only if users want to consult them	Sometimes as a special project	Very seldom or not at all
Film				
Audio				
Video				

I13   Do you digitise audiovisual materials?

Type of materials	Yes	No
Film		
Audio		
Video		
Photographs		
Others		

If Others, please specify

....

If Yes, do you outsource digitisation work to commercial vendors?

No   ☐   Yes   ☐   (Please specify)

....

(If you haven't yet digitised your AV collections, please proceed to section J)

If Others, please specify

....

I14   Do you keep all the analogue originals after digitisation?

Type of material	Yes	No
Film		
Audio		
Video		
Photographs		

I15 What is the main obstacle (s) to digitising your AV materials?

....

J   SECURITY AND DISASTER MANAGEMENT

Please answer the following questions that pertain to the security of audiovisual materials in your holdings.

J1 Does your institution have a security policy that governs the management of audiovisual materials?

Yes   ☐   (Please attach copy of policy)

No   ☐

J2 Does your institution conduct risk assessments?

Yes   ☐   No   ☐

If Yes, how often is a risk assessment conducted? (That is, identifying possible risks and emergencies that might occur)

Once a year ☐   Twice a year ☐   Quarterly ☐

Every 2 years ☐   Every 3 years ☐   Other ☐

If Others, please specify ....

J3 Does your institution have an emergency/disaster plan?

Yes ☐   (please attach copy)

No ☐

If you did not answer Yes, please proceed to J8

J4 Who are the key people who are contacted in the event of an emergency/disaster?

....

J5 Do the key people listed above, have a copy of the emergency plan?

Yes ☐   No ☐   Some ☐

J6   Is a list of the key people included in the emergency plan?

Yes ☐   No ☐

J7 Is emergency equipment and possible external suppliers listed in the disaster plan?

Equipment/suppliers	Yes	No
Emergency equipment listed		
External suppliers of emergency equipment listed		

J8 Are no smoking signs displayed in areas where materials are kept or handled?

Yes ☐   No ☐

If Yes, please specify the areas where smoking is prohibited

....

J9 Is the following equipment available in the stack areas?

Equipment	Yes	No
Smoke detectors		
Heat detectors		
Fire-resistant doors		
Fire alarms		
Water alarms		

In which other area is the equipment indicated in J9, provided?

………………………………………………………………………………………………..

J10 Are water sprinkler heads covered with a glass element?

Yes ☐ No ☐

If No, please explain the system you use

………………………………………………………………………………………………….

J11 Are the alarm systems linked to the local fire station/automated security company?

Security	Yes	No
Local fire station		
Automated security company		

J12 Is access to the following areas limited?

Access to functional areas	Yes	No
Stack areas		
Public areas (include reading rooms, exhibition area, lecture rooms and meeting rooms)		
Offices and workshop areas		

J13 Are visitors strictly supervised to ensure that they do not tamper with AV recordings?

Yes ☐ No ☐

J14 Do visitors leave their personal belongings in lockers on entry to the study area?

Yes ☐ No ☐

J15 Are alarm systems fixed on study doors?

Yes ☐ No ☐ Do not know ☐

J16 How are audiovisual materials protected from shock and vibration?

…………………………………………………………………………………………………..

J17 Are visitors allowed to use play back equipment?

Yes ☐ No ☐ Done under supervision by staff ☐

J18 Are new employees carefully screened to ascertain their loyalty to the organisation?

Yes ☐ No ☐

J19 Are security procedures clearly explained to new employees?

Yes ☐ No ☐

J20 What measures does your institution apply in breach of security?

…………………………………………………………………………………………………

J21 Where are the following audiovisual materials kept?

Vital sound recording ....

Original copies..

Duplicate copies ....

K   ARRANGEMENT AND DESCRIPTION

K1 State which archival principles govern the arrangement of your audiovisual materials?
(Check all that apply)

Archival principle	Yes	No	Do not know
Provenance			
Original order			
Both of the above			
Others			

If Others, please specify...

K2 What tools do you use to document audiovisual materials?

Documentation tools	Yes	No
Accession register		
Series description		
Others		

If Others, please specify

....

K3 If you use an accession register, please state the information that is reflected in the accession register (Check all that apply)

Information content	Yes	No	Information content	Yes	No
Description (type of material)			Accession number		
Originating office			Acquisition file number		
Donor/previous custodian (where applicable)			Physical condition		
Date of arrival			Compiler (Name of the archivist who accessioned the material)		
Acknowledgement date			Location of the material		
Information content			Access conditions		
Records quantity					

K4 What information is reflected in the series description? (Check all that apply)

Series description content	Yes	No
Document title		
Dates		
Size		
Type of material arrangement		
Subject		
Others		

If Others, please specify ……………………………………………………………………..

K5 What finding aids result from describing your audiovisual collections? (Check all that apply)

Finding aid	Yes	No
Registers		
Index cards		
Guides		
Pamphlets		
Books		
Inventories		
Others		

If Others, please specify………………………………………………………………….

K6 How often do you update the finding aid (s)? (Check all that apply)

Frequency of update	Yes	No	Frequency of update	Yes	No
Monthly			Twice a year		
Quarterly			Once a year		
Do not know			Others		

L   BIBLIOGRAPHIC CATALOGUING STANDARDS AND METADATA

L1   Which of the following standards do you use to catalogue audiovisual materials? (Check all that apply)

ISAD (G) ☐   FIAF cataloguing rules ☐   ISBD (NBM) ☐

IASA cataloguing rules ☐   MARC 21 ☐   AACR2 ☐

Manual Archival Description (MAD) ☐   MARC-AMC ☐

Library of Congress ☐   Others ☐

If Others, please specify ....

L2 Do digitised materials contain the following descriptive data? (Check all that apply)

Title ☐   Creator ☐   Format ☐

Date of creation ☐   Subject coverage ☐

L3 Do you experience any problem (s) cataloguing AV materials?

No ☐   Yes ☐   (please specify)

....

....

....

L4 Please indicate the type of audiovisual material (s) that are difficult to catalogue (Check all that apply)

Type of audiovisual material giving problems	Yes	No	Type of audiovisual material giving problems	Yes	No
Conference proceedings of sound cassettes			Pictures		
Television series			Films		
Popular music recordings			Videos		
Others					

If Others, please specify ....

M   ACCESS AND USE

M1 How are instructions on handling materials given to users of your audiovisual archives?

Method of giving instructions	Yes	No
Briefly during use		
Briefly before use		
Do not know		
Others		

If Others, please specify ....

M2 How can your audiovisual catalogue be consulted?

....

M3 Please indicate with a tick which of the following principles govern access to your audiovisual materials: (Check all that apply)

Access principles	Yes	No
Relevant legislation		
Sensitivity / or confidentiality		
Protection of individual privacy		
Restrictions placed upon records by depositors		
Clientele (specified)		
Equality of access to records		
Levels of access, that is, the reading or search room finding aids		
Inspection of particular collections or categories of archives		
Examination of individual series or documents within a series		
Copying of materials for private study		
Further reproduction or publication of documents		
Degree of control over holdings-policy states what will be provided by archivists upon request and what will not be provided		
Physical condition of the records- access may depend on physical condition		
Security of records against loss, damage, and misfile		
Ensuring confidentiality of records from tampering and unauthorised users		

M4 Do you charge any fee for use of audiovisual materials?

Yes ☐   No ☐

M5 Do you ensure that users complete an access application form, which stipulates conditions of access to audiovisual materials, each time they request to access your collections?

Yes ☐ (Please provide a copy of the form)   No ☐

M6 Is access to your audiovisual collections complicated by legal rights issues?

Not really ☐   In some cases ☐   A lot ☐

N   CURRENT LEVELS OF KNOWLEDGE AND SKILLS OF ARCHIVISTS IN
RELATION TO MANAGING AUDIOVISUAL MATERIALS

N1 What is the highest level of audiovisual knowledge available in your institution?

Expert   ☐   Intermediate   ☐

Novice   ☐   None   ☐

Others   ☐

If Others, please specify ....

N2 What is the highest level of knowledge available in-house for audiovisual preservation
activities?

Expert ☐   Intermediate ☐   Novice ☐   None ☐

N3   Please indicate which of the following persons are principally responsible for
maintaining and preserving audiovisual materials:

Responsibility for audiovisual materials	Yes	No
Designated preservation officer		
Audiovisual specialist		
Librarian		
Do not know		
Others		

If Others, please specify

....

N4 What possibilities exist to be trained for working with audiovisual collections in your
country?

There are sufficient opportunities for training at different levels   ☐

There is a serious lack of training opportunities in all respects   ☐

There are some possibilities but more training is needed (please specify)   ☐

....

N5 What are the possibilities to be trained for working with audiovisual collections
outside your country?

There are sufficient opportunities for training within ESARBICA region   ☐

(Please specify)

....

There are sufficient opportunities for training in Africa

(Please specify) ☐

....

There are sufficient opportunities for training outside Africa ☐

(Please specify)

....

There is a serious lack of training opportunities in all respects ☐

....

N6 Has the person (s) responsible for overseeing audiovisual materials received any specialised preservation training?

Yes ☐   No ☐   Do not know ☐

If Yes, please specify the name of the institution where the training was obtained

Location	Yes	No	Name(s) of institution(s)
Local			
Regional within ESARBICA			
In Africa			
International (outside Africa)			
Do not know			

N7 Does your institution currently utilize outside sources of expertise for preservation of digital materials (For example consultants, contracts)?

Yes ☐   No ☐

N8 How often do audiovisual officers/others dealing with audiovisual materials attend workshops/seminars?

Attendance of workshops/seminars	Yes	No		Yes	No
Once a year			Once in three years		
Twice a year			Never		
Once in two years			Others		

If others, please specify ....

N8 Which methods does your institution plan to use over the next 5 years to increase the level of staff expertise with audiovisual (including electronic) preservation? (Check all that apply)

Method	Yes	No
Local courses in computer or digital technology		
Local courses in audiovisual preservation		
Training provided by professional organisations		
Independent study/assessment		
Hire staff with digital knowledge or experience		
Hire consultants		
Method	Yes	No
In-house workshops		
Formal training at universities, polytechnics or vocational institutes		
Others		

If Others, please specify ....

N9 Are staff trained on security and emergency procedures?

Training	Yes	No
Security procedures		
Emergency procedures		

O FUNDING

O1 Does your archive have a specific budget for the purpose of preservation of archival materials?

Yes ☐   No ☐   Do not know ☐

If Yes, give a rough estimate of the budget covering preservation of audiovisual materials.

.... %   Do not know   ☐

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O2 What are the sources of finance for preservation of audiovisual materials? (Check all that apply)

Sources of finance	Yes	No
Government		
Private individuals		
Parent organisation		
Donation / sponsorship from ICA		
Donation / sponsorship from UNESCO		
Donation / sponsorship from ESARBICA		
Do not know		
Others		

If Others, please specify ....

O3 Is the financial support/resources for audiovisual records adequate?

Level of financial support	Yes	No	Level of financial support	Yes	No
Adequate			Inadequate		
Fairly adequate			Do not know		

General comments on the management of audiovisual materials in ESARBICA

....

....

Thank you for your time and contribution.

Please send the completed questionnaire by e-mail or post before 31st August 2005. (If you send the questionnaire by post, please use the enclosed self-addressed prepaid envelope).

Mrs Ruth Abankwah

Botswana Institute of Administration and Commerce, Box 10026, Gaborone, Botswana.

Email: rabankwah@gov.bw

Appendix VII: Interview guide for national archives in the ESARBICA region

A   BACKGROUND INFORMATION

Name of Institution ………………………………………………………………………..

Country …………………………………………………………………………………….

Designation of officer responsible for audiovisual materials

……………………………………………………………………….

Email Address……………………………….. Tel:………………………………………...

Position held …………………………………………………………………………………..

Number of years of service in that position ……………………….

A   PLACEMENT OF ARCHIVAL INSTITUTION

A1 Where is your archival institution/unit placed within the administration of your

government or organisation?

Ministry of Home Affairs   ☐   Local Government   ☐

President's Office   ☐   Information Systems unit   ☐

Administration unit   ☐   National Archives   ☐

Others   ☐

If Others, please specify

A2 Do you have an organizational structure that portrays the relationship in A1 above?

No   ☐   Yes   ☐   (please provide a copy)

B   ARCHIVAL BUILDING

B1 In what type of building are your collections?

Purpose-built   ☐   Multi-purpose building ☐

Converted   ☐   General   ☐

B2 What is the general condition of the archival building?

Secure   Yes   ☐   No   ☐

Well-maintained Yes   ☐   No   ☐

Unsuitable   Yes   ☐   No   ☐

B3 Is the archival building conservationally sound?

Yes   ☐   No   ☐

If No, please explain

……………………………………………………………………………………………….

C   AUDIOVISUAL COLLECTIONS-GENERAL

C1 Please list the types of audiovisual materials in your collection

………………………………………………………………………………………………..

………………………………………………………………………………………………..

C2 What is the general condition of audiovisual materials in your archive?

Very good ☐   Good ☐   Poor ☐   Very Poor ☐

C3 Mention the specific problems (if any) with the audiovisual materials in your custody

………………………………………………………………………………………………….

………………………………………………………………………………………………….

………………………………………………………………………………………………….

D   LEGISLATION GOVERNING THE MANAGEMENT AND USE OF AUDIOVISUAL MATERIALS

D1 Does your institution have a National Archives Act that governs the management of audiovisual materials?

Yes ☐   No ☐

If Yes, does the Archives Act cover the following?

Legislation governing the care of audiovisual materials	Yes	No	Do not know
Does the Act define audiovisual materials?			
Is the care of private archival materials addressed in the Act?			
Is the care of parastatal archival materials addressed in the Act?			
Are your collections managed from creation to disposal?			
Are national constitutional rights addressed in the Act?			
Is a legal deposit law enforced by your organization?			
Is copyright law enforced?			
Is Freedom of Information Act enforced by your country?			
Is there a financial component included in the National Archives Act to ensure adequate financing for the care of audiovisual materials?			

D2 Under the Archives Act, what agency/body is responsible for records care?

………………………………………………………………………………………………….

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D3 Is the body/agency mentioned in D2, given full responsibility to manage audiovisual materials throughout their life-cycle?

☐ Yes ☐ No (please explain)

....

....

D4 If the deposit of audiovisual materials is addressed, what places of deposit are identified in the National Archives Act/legal deposit law?

....

E   APPLICATION OF THE RECORDS-CYCLE APPROACH

E1 Who are the largest creators of the audiovisual collections in your archival collections?

....

E2 Do you go to ministries and departments to examine how audiovisual materials are managed?

Yes ☐   No ☐

E3 Do you go to private organizations to examine how audiovisual materials are managed?

Yes ☐   No ☐

E4 Do you go to parastatal organizations to examine how audiovisual materials are managed?

Yes ☐   No ☐

E5 At what stage of the records-cycle of audiovisual materials does your institution get involved?

Creation stage ☐   Maintenance and use ☐   Disposal ☐

All stages ☐

E6 At what stage of the records-cycle of audiovisual materials are creators of audiovisual materials involved?

Creation stage ☐   Maintenance and use ☐   Disposal ☐

All stages ☐

E7 Who are your contact persons at the creating agencies of audiovisual materials?

Program managers ☐   Records managers ☐

Others ☐

If Others, please specify...

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E8 Do you receive advice and guidance from the national archivist of your country, on the creation of audiovisual materials?

Yes ☐   No ☐

If Yes, please indicate how often you receive such advice

Very Often ☐   Often ☐   Rarely ☐

F   PRESERVATION POLICY

F1 Does your institution currently have a written policy for preserving audiovisual materials?

No ☐   Yes ☐   (please provide copy)

If Yes, does the policy include managing archival materials in all formats?

Yes ☐   No ☐

F2   How well does the policy meet the institution's current needs?

Very well ☐   Adequately ☐   Poorly ☐

Any additional comments

....

....

G   ACQUISITION PRACTICES

G1 Does your organization conduct records surveys for audiovisual materials in all creating organizations?

Yes ☐   No ☐

G2 Does your institution have a written policy to document audiovisual materials upon receipt?

No ☐   Yes ☐ (Please provide a copy)

G3 Do you have an accession register to document different formats of audiovisual materials?

No ☐   Yes ☐ (If Yes, please provide a copy)

G4 What criteria do you follow to acquire different formats of audiovisual materials?

Criteria	Yes	No
Depends on creator's format		
Depends on users format		
The format that suits a particular media		
Others		

If Others, please specify

....

H   APPRAISAL PRACTICES

H1 Do you have a written appraisal policy for audiovisual materials?

No ☐   Yes   ☐   (Please provide a copy)

H2   Does the appraisal policy cover audiovisual materials?

Yes   ☐   No   ☐   (Please explain)

....

H3 What criteria do you use to appraise audiovisual materials?

Criteria	Yes	No
Uniqueness		
Cost		
Important event		
Others		

If Others, please specify

....

H4 Do you experience any problems appraising audiovisual materials?

☐   No   ☐   Yes   (please specify)

....

I   STORAGE AND MAINTENANCE CONDITIONS FOR AUDIOVISUAL

MATERIALS

I1 Where do you keep audiovisual materials?

General observations

....

....

....

....

I2 Under what climatic conditions are audiovisual materials kept?

Audiovisual material	Temperature	Humidity
Films (colour)		
Films (black and white)		
LP records (Phonographic records)		
Video tapes		

Audiovisual material	Temperature	Humidity
Audio tapes		
Computer disks		
Audio cassettes		
DVDs		
CDs		
Digital audio tapes		
Shellac discs		
Vinyl discs		
Maps		
Drawings		
Photographs		
Microforms		
Realia (reel objects)		
Paintings		
Others		

If there are other formats, please list them and indicate the temperatures and humidity under which they are kept

....

....

I3 Are different types of audiovisual materials kept separately from each other?

Yes ☐   No ☐

I4 Are different types of films kept separately from each other?

Yes ☐   No ☐

I5   Do you have nitrate films?

Yes ☐   No ☐

If Yes, where are cellulose nitrate films (if any) kept?

....

I6 Are the audiovisual materials kept free of the following foreign matter deposits?

Foreign matter deposits	Yes	No
Dust		
Grease		
Fingerprints		

Foreign matter deposits	Yes	No
Mould		
Insect infestation		
Smoke		
Textile fibres		

I7 Do you or other officers always wear gloves when handling audiovisual materials?

Always ☐   Sometimes ☐   Never ☐

I8 How are audiovisual materials stored?

Side by side ☐ On top of each other ☐   Others ☐

If Others, please specify

....

I9 Which of the following supplies do you use to store audiovisual materials?

Original encasings ☐   Specified boxes ☐ Film Vaults ☐

File folders ☐ Jewel boxes ☐   Others ☐

If Others, please specify

....

I10 Which of the following equipment do you use to store audiovisual materials?

☐ Shelving   ☐ Cabinets   ☐ Others (please specify)

....

I11 Which of the following equipment do you use to view and maintain audiovisual equipment?

Equipment	Yes	No	Number	Equipment	Yes	No	Number
16mm projector				Overhead projector			
Slide projector				Opaque projector			
Sound slide projector				Record Player			
Film strip projector				Tape player			

Equipment	Yes	No	Number	Equipment	Yes	No	Number
Sound film strip projector				Audio cassette player			
Video cassette player				Video cameras			
Television monitor/receiver				Computer terminals			
Micro computer							

I12 What type/format of video machines do you use?

Type/format	Yes	No		Yes	No
VHS analog			Digital tape recorders (with compression)		
Video processor/Time Base Corrector (TBC)			Digital tape recorder without compression)		
Betacam-Sp			Others		

If Others, please specify

....

I13 How often is playback equipment maintained?

Very regular ☐   Regular ☐   Not Regular ☐

J   IDENTIFYING RISKS TO FACILITIES AND BUILDINGS

Please answer the following questions that pertain to the security of audiovisual materials in your holdings:

J1 Is your institution marked with a Blue Shield/any other security symbol?

Yes ☐   No ☐   Do not know ☐

If Yes, please specify the type of security symbol

....

J2 In the past, have there been any breaches of security such as:

Breaches of security	Yes	No	Breaches of security	Yes	No
Theft of audiovisual collections			Theft of audiovisual equipment		
Loss of audiovisual collections			Vandalism of audiovisual equipment		
Vandalism of audiovisual collections			Misuse of audiovisual equipment		
Others					

If Others, please specify

………………………………………………………………………………………………..…

J3 Do you have an insurance policy to cover audiovisual materials in your archive?

Yes ☐   No ☐

J4   Does the insurance policy cover the loss of audiovisual archival items?

Yes ☐   No ☐   Do not know ☐

J5   Is access to storage areas controlled by lock and key?

Yes ☐   No ☐

If Yes, who controls the keys? …………………………………………………………

J6 Are there procedures in place for leaving keys in a central area so that people can gain access to rooms in the event of an emergency?

Yes ☐   No ☐   Do not know ☐

If Yes, who has access to the central room?

………………………………………………………………………………………………

J7 Does your institution have an established procedure for opening and closing the building?

Yes ☐   No ☐

If Yes, are all steps followed routinely leaving a limited chance for someone to forget to open or lock a door?

Yes ☐   No ☐   Do not know ☐

J8   Has your institution discussed its security interests with the police?

Yes ☐   No ☐   Do not know ☐

J9 Do accession records provide sufficient information about materials that they can be identified if lost or stolen?

Yes ☐   No ☐

J10   Are audiovisual items of high intrinsic, legal or cultural value stored separately?

Yes ☐   No ☐

If Yes, how are the above items stored?

Cabinets ☐   Shelves ☐

Boxes   Others

If Others, please ☐   ☐

specify)...

J11 Are audiovisual materials returned to storage promptly after use?

Always ☐   Sometimes ☐   Never ☐

J12 When materials are returned to storage, are boxes and folders checked to ensure that all materials are intact?

Yes ☐   No ☐   Do not know ☐

J13 Is there a way of ascertaining that audiovisual materials have not been tampered with before they are put away?

Yes ☐   No ☐   Do not know ☐

If Yes, please explain

....

J14 Are document exhibit cases protected from theft and damage?

Yes ☐   No ☐

If Yes, are they wired to an alarm system?   Yes ☐   No ☐

J15 Does the repository have a secure door to close off entry?

Yes ☐   No ☐

J16 Do exterior doors have adequate locks and secure hinges?

Security	Yes	No
Locks		
Hinges		

If Yes, could some of the doors be blocked off?

Yes ☐   No ☐

J17 Are there grills or screens around ground floor windows?

Protection around windows	Yes	No
Grills		
Screens		

J18   Are doors and windows wired to a security alarm system?

Wired to alarm system	Yes	No
Doors		
Windows		

J19 Is there an extra, secure storage area or vault within the repository?

Yes ☐   No ☐

J20 Is a security guard on patrol 24 hours a day?

Yes ☐   No ☐

If No, indicate the times when a security guard (s) is on duty

....

J21 Is there security light outside your premises?

Yes ☐   No ☐

If Yes, is the light adequate?

Adequate ☐   Not so adequate ☐   Inadequate ☐

J22 Does the institution have a fire alarm and smoke detectors?

System in place	Yes	No
Fire alarm		
Smoke detector		

J23 Does the institution have fire extinguishers in accessible locations?

Yes ☐   No ☐

If Yes, are staff trained to use fire extinguishers in the event of a fire?

All staff ☐   Some of the staff ☐

None ☐   Do not know ☐

J24 Are audiovisual materials stored away from areas that might be susceptible to fire damage, flood damage, theft or other alarm?

Nature of damage	Yes	No
Fire damage		
Flood damage		
Theft		

J25   Does the institution have an emergency plan for reducing the effect of disaster?

Yes ☐   No ☐   Do not know ☐

If Yes, please provide a copy of the plan

K   THE SECURITY OF STAFF AND USERS

K1 Is there a procedure for checking the background of potential employees to your institution?

Yes ☐   No ☐

K2 How many staff members have access to audiovisual storage areas? ....

K3 Do all the people indicated in K2 (above) really need access?

Yes ☐   No ☐   Do not know ☐

Any other comments

....

....

K4 How long has it been since combinations or keys have been changed?

....

K5 Is there a staff member in the reference area at all times?

Yes ☐   No ☐

K6 Have staff been trained in security management issues?

All staff ☐   Some of the staff ☐   None ☐

K7 Have staff been advised what actions to take in the event of thefts or damage?

Action stipulated	Yes	No
Theft		
Damage		

K8 Are staff required to wear badges or identity cards?

Yes ☐   No ☐

K9 Are all persons without badges or identity cards always challenged in order to ensure their presence on the site is legitimate

Always ☐   Sometimes ☐   Never ☐

K10   What type of identification is required of users?

....

K11 Are all users (public or internal) interviewed before they gain access to audiovisual materials?

Yes ☐   No ☐

K12 Are users advised of security concerns and reference rules?

Yes ☐   No ☐

K13 Are users allowed to bring into the references areas of the archival facility?

Yes ☐   No ☐

K14 Are the users' personal belongings securely stored if they are not allowed in the reading room?

Yes ☐   No ☐

Their belongings are allowed in the reading room ☐

K15 How many items (audiovisual) are users allowed to have at any one time?

1 ☐   1-2 ☐   2-3 ☐   3 and above ☐

K16   Where are audiovisual materials kept when not in use?

In public areas ☐   Behind the reference desk ☐

In offices ☐   In a general storage area ☐

In an audiovisual unit ☐

K17 Has the reading room of your institution been arranged so that users can be watched at all times?

Yes ☐   No ☐

K18 Are users allowed to operate equipment in order to access electronic materials?

Yes ☐   No ☐

If No, do staff assist users to access electronic materials?

Yes ☐   No ☐   Do not know ☐

K19 Are users' belongings searched when they leave the archival institution?

Yes ☐   Sometimes ☐   Never ☐

L   STAFF COMPONENTS AND LEVELS OF KNOWLEDGE AND SKILLS OF ARCHIVISTS IN RELATION TO MANAGING AUDIOVISUAL MATERIALS

L1 How many archivists are responsible for managing audiovisual materials in your organisation?

....

L2 Do all archivists responsible for managing audiovisual materials have specialized knowledge and skills of managing audiovisual materials?

All ☐   Some ☐   (Please specify number) ....

None ☐

L3 What is the highest level of audiovisual knowledge available in your institution?

Expert ☐   Intermediate ☐   Basic ☐   None ☐

Thank you for your time

Appendix VIII: Interview guide for national media organizations in the ESARBICA region

A   BACKGROUND INFORMATION

Name of Institution ....

Country ....

Designation of officer responsible for audiovisual materials ....

Email Address...Tel:

....

Position held

....

Years of service in that position ....

ARCHIVAL BUILDING

A1 What kind of building is your archive?

General   ☐   Purpose-built   ☐

Multi-purpose   ☐

Converted   ☐

A2 What is the general condition of the archival building?

Attractive	☐	Yes ☐	No ☐
Comfortable	☐	Yes ☐	No ☐
Secure	☐	Yes ☐	No ☐
Well maintained	☐	Yes ☐	No ☐

A3 Is the archival building conservationally sound (does the building have air conditioning facilities)?

Yes   ☐   No   ☐

If not, is a dehumidifier used during summer?

Yes ☐   No ☐

General comments

....
....
....
....

B   AUDIOVISUAL COLLECTIONS-GENERAL

B1 Please list the types of audiovisual materials in your collection

……………………………………………………………………………………………

B2 What is the general condition of audiovisual materials in your archive? (To be completed upon observation of the audiovisual materials)

Very   good   ☐   Good   ☐

Acceptable overall, some problems   ☐

B3   Indicate the specific problems (if any with the audiovisual materials

……………………………………………………………………………………………

……………………………………………………………………………………………

…………………………………………………………………………………………..

C   APPLICATION OF THE RECORDS-CYCLE APPROACH

C1 Do you go to other organisations to examine how audiovisual materials are managed?

Yes ☐   No   ☐

C2 Is your institution given full responsibility to manage audiovisual materials throughout their life-cycle? (That is, from their creation to their disposal).

Yes   ☐   No   ☐

If No, please specify

……………………………………………………………………………………………

C3 At what stage of the records cycle of audiovisual materials do you get involved?

Creation stage ☐   Maintenance and use   ☐   Disposal ☐

All stages   ☐

C4 At what stage of the records-cycle of audiovisual materials are creators of audiovisual materials involved?

Creation stage ☐   Maintenance and use ☐   Disposal ☐

All stages   ☐

C5 Who are your contact persons at the creating agencies of audiovisual materials?

Programme managers   ☐   Records managers   ☐

Others   ☐

If Others, please specify……………………………………………………………..

D   STORAGE AND MAINTENANCE CONDITIONS FOR AUDIOVISUAL MATERIALS

D1 Where do you keep audiovisual materials?

....

D2 Under what climatic conditions are audiovisual materials kept?

Audiovisual material	Temperature	Humidity
Films (colour)		
Films (black and white)		
Cellulite nitrate films		
LP records (Phonographic records)		
Video tapes		
Audio tapes		
Computer disks		
Audio cassettes		
DVDs		
CDs		
Digital audio tapes		
Shellac discs		
Vinyl discs		
Others		

If Others, please indicate the temperatures and humidity under which they are kept

....

....

D3 Are different types of audiovisual materials kept separately from each other?

Yes   ☐   No   ☐

Observations

....

....

D4 Are different types of films kept separately?

Yes   ☐   No   ☐

D5 Where are cellulose nitrate films (if any) kept?

....

D6 Are the audiovisual materials kept free of any foreign matter deposits ?

Yes   ☐   No   ☐ (please specify) ....

D7 Are audiovisual materials kept free of any pressure that might cause deformation?

Yes   ☐   No   ☐ (please specify) ....

D8   Are they stored in a stable controlled environment?

Yes   ☐   No   ☐ (please specify) ....

D9 What do you consider to be the major issues facing your institution with regards to the preservation of audiovisual materials?

....

....

....

....

E   PRESERVATION POLICY

E1 Does your institution currently have a written policy for preserving audiovisual materials?

Yes   ☐   No   ☐

If yes, does the policy include managing archival materials in all formats?

Yes   ☐   No   ☐

E2 How well does the policy meet the institution's current needs?

Well   ☐   Adequately   ☐   Poorly   ☐

Any additional comments

....

....

....

E3 Who are the largest creators of the audiovisual collections in your archival collections?

....

E4 Are the largest creators of the audiovisual collections in your archival collections included in your preservation policy?

Yes   ☐   No   ☐

F   ACQUISITION PRACTICES

F1 Does your institution conduct audiovisual record surveys in all creating organizations ?

Yes   ☐   No   ☐   (please explain).......................................

F2 Does your institution have a written policy to document audiovisual materials upon receipt?

No ☐   Yes ☐   (please provide a copy)

F3 Do you have accession registers for documenting different formats of audiovisual materials?

No ☐   Yes ☐ (please provide copies)

G   APPRAISAL PRACTICES

G1 Do you have a written appraisal policy for audiovisual materials?

No ☐   Yes ☐   (please provide a copy)

G2   Does the appraisal policy cover audiovisual materials?

Yes ☐   No ☐   (please explain)

....

....

G3 What criteria do you use in the appraisal of audiovisual materials?

....

G4 Do you experience any problems appraising audiovisual materials?

No ☐   Yes ☐   (please specify)

....

H   IDENTIFYING RISKS TO FACILITIES AND BUILDINGS

Please answer the following questions that pertain to the security of audiovisual materials in your holdings:

H1 What security measures are already in place in your institution?

....

H2 Is your institution marked with a Blue Shield or any other security symbol?

Yes ☐   No ☐   Do not know ☐

If yes, please specify type of security symbol

....

H3 Have there been any breaches of security, thefts, losses, vandalism etc?

Breaches of security	Yes	No
Theft		
Loss		
Losses		
Vandalism		
Others		

If Others, please specify

....

H4 If there are has been any breach of security please state the circumstances

....

H5 Do you have an insurance policy to cover audiovisual materials in your institution?

....

Yes ☐   No ☐

H6   If yes, does the insurance policy cover loss of audiovisual items?

Yes ☐   No ☐   Do not know ☐

H7 Are storage areas locked?

Yes ☐   No ☐

If Yes, who controls the keys? ....

H8 Are there procedures in place for leaving keys in a central area so that people can gain access to rooms in the event of an emergency?

Yes ☐   No ☐   Do not know ☐

If Yes, who has access to the central room?

....

H9 Does your institution have an established procedure for opening and closing the building?

Yes ☐   No ☐

If Yes, are all steps followed routinely leaving little/no chance for someone to forget to open or lock a door?

Yes ☐   No ☐   Do not know ☐

H10 Has your institution discussed its security interests with the police?

Yes ☐   No ☐   Do not know ☐

H11 Do accession records provide sufficient information about materials so that they can be identified if lost or stolen?

Yes ☐   No ☐

H12 Are audiovisual items of high intrinsic, legal or cultural value stored separately?

Value	Yes	No
Intrinsic		
Cultural		
Legal		

If Yes, how are they stored?

Cabinets ☐ Shelves ☐

Boxes ☐ Others ☐

If Others, please specify

....

H13 Are audiovisual materials returned to storage promptly after use?

Always ☐ Sometimes ☐ Never ☐

H14 What is the procedure for returning materials to storage after they have been used?

....

....

....

H15 When materials are returned to storage, are boxes and folders checked to ensure that all materials are intact?

Yes ☐ No ☐ Do not know ☐

H16 Is there a way of ascertaining that electronic materials have not been tampered with before they are put away?

Yes ☐ No ☐ Do not know ☐

If Yes, please explain

....

H17 Are document exhibit cases protected from theft and damage?

Yes ☐ No ☐

If Yes, are they wired to an alarm system? Yes ☐ No ☐

H18   Does the repository have a secure door to close off entry?

Yes ☐ No ☐

H19 Do exterior doors have adequate locks and secure hinges?

Security	Yes	No
Locks		
Hinges		

If Yes, could some of the doors be blocked off?

Yes ☐ No ☐

H20 Are there grills or screens around ground floor windows?

Protection around windows	Yes	No
Grills		
Screens		

H21 Are doors and windows wired to a security alarm system?

Wired to alarm system	Yes	No
Doors		
Windows		

H22 Is there an extra secure storage area or vault within the repository?

Yes ☐   No ☐

H23 Is a security guard (s) on patrol 24 hours a day?

Yes ☐   No ☐

If No, indicate the times when a security guard (s) is on duty

....

H24 Is outside lighting in place?

Yes ☐   No ☐

H25   Does the institution have a fire alarm and smoke detectors?

System in place	Yes	No
Fire alarm		
Smoke detector		

H26 Does the institution have fire extinguishers in accessible locations?

Yes ☐   No ☐

If Yes, are staff trained to use fire extinguishers in the event of a fire?

All staff ☐   Some of the staff ☐

None ☐   Do not know ☐

H27 Are audiovisual materials stored away from areas that might be susceptible to fire damage, flood damage, theft or other alarm?

Nature of damage	Yes	No
Fire damage		
Flood damage		
Theft		
Others		

If Others, please specify

....

H28 Does the institution have an emergency plan for reducing the effect of disaster?

Yes ☐ No ☐ Do not know ☐

If Yes, please provide a copy of the plan

I THE SECURITY OF STAFF AND USERS

I1 Is there a procedure for checking the background of potential employees to your institution?

Yes ☐ No ☐

I2 How many staff members have easy access to audiovisual storage areas?

....

I3 Do all people indicated in I2 (above) really need access?

Yes ☐ No ☐ Do not know ☐

Any other comments

....

....

I4 How long has it been since combinations or keys have been changed?

....

I5 Is there a staff member in the reference area at all times

Yes ☐ No ☐

I6 Have staff been trained in security management issues?

All staff ☐ Some of the staff ☐ None ☐

G7 Have you trained in security management issues?

Yes ☐ No ☐

I8 Have staff been advised what actions to take in the event of thefts or damage?

Action stipulated	Yes	No
Theft		
Damage		

I9 Are staff required to wear badges or identity cards?

Yes ☐ No ☐

I10 Are all persons without badges or identity cards always challenged in order to ensure their presence on the site is legitimate

Always ☐ Sometimes ☐ Never ☐

I11 What type of identification is required of users?

....

I12 Are all users (public or internal) interviewed before they gain access to audiovisual materials?

Yes ☐ No ☐

I13 Are users advised of security concerns and reference rules?

Yes ☐ No ☐

I14 What are users allowed to bring into the references areas of the archival facility?

Yes ☐ No ☐

I15 Are the users' personal belongings securely stored if they are not allowed in the reading room?

Yes ☐

No ☐

I16 How many items (audiovisual) are users allowed to have at any one time?

1 ☐ 1-2 ☐ 3 and above ☐

I17 Where are audiovisual materials kept when not in use?

In public areas ☐ Behind the reference desk ☐

In offices ☐ In general storage area ☐

In an audiovisual unit ☐

I18 Has the reading room of your institution been arranged so that users can be watched at all times?

Yes ☐ No ☐

I19 Are users allowed to operate equipment in order to access electronic materials?

Yes ☐ No ☐

If No, do staff assist users to access electronic materials?

Yes ☐ No ☐ Do not know ☐

I20 Are users' belongings searched when they leave the archival institution?

Yes ☐ Sometimes ☐ Never ☐

Thank you for your time

Appendix IX: Observation checklist for audiovisual repositories in the ESARBICA region

A. ARCHIVAL BUILDING

A1 Design of building

General ☐   Purpose-built ☐

Multi-purpose ☐   Converted ☐

A2 General levels of cleanliness in the building

Very good ☐   Good ☐

Very bad ☐   Bad ☐

A3   Storage area

Facilities	Yes	No	Facilities	Yes	No
Windows					
Shelves provide for ample circulation of air around AV materials			Floor covered with carpet		
All work and handling surfaces are elevated off the floor			Storage and use areas are above ground level		
A sticky floor mat at the doorway of entrance					
Wooden boxes			Wooden shelving		
Cardboard boxes			Signs of food		
Signs of spilled drinks			Signs of dust		
Debris-generating objects			Curtains		
Signs of smoke			Fibrous wall coverings and furnishings		

General observations

....

....

....

....

A4   Condition of the roof, walls and ceiling of the building

Roof	Yes	No	Floor	Yes	No	Ceiling	Yes	No
Made of a dust-free, easy-to-clean material.			Made of a dust-free, easy to clean material.			Made of a dust-free, easy to clean material		
Good condition			Good condition					
Bad condition			Bad condition					
Very Bad condition			Very Bad condition					

A5   Condition of the store room and basement (if any)

Basement	Yes	No	Store room	Yes	No
Very good condition			Very good condition		
Good condition			Good condition		
Bad condition			Bad condition		
Very Bad condition			Very Bad condition		

B CONTROL OF HUMIDITY AND TEMPERATURES

B1 Is there a room where AV materials are acclimatized?

Yes ☐   No ☐

If yes, where is the room located?

………………………………………………………………………………………………………

Temperature and humidity of the room where AV materials are acclimitised?

Temperature   ……….Humidity ……………

B2 Equipment to control temperatures and humidity in the storage areas

Equipment	Yes	No	Equipment	Yes	No
Air conditioners			Sling psychrometer / wet-dry thermometer		
Hygrometer			Psychrometer		
Recording hygrothermograph / thermohygrograph			Temperature/humidity data logger		
Thermometer					

C   PROTECTION FROM ENVIRONMENTAL POLLUTANTS

Equipment	Yes	No
HEPA filter		
Humidifier		
De-humidifier		
Air conditioners		

D   BIOLOGICAL AGENTS or CHEMICAL REACTIONS

Biological agent	Yes	No
Signs of vinegar syndrome (presence of a powder or a gummy residue on the surface of the tape.		
Signs of vinegar syndrome (smell of vinegar in the storage room)		
Signs of fungus (inspect tapes randomly, for "waxy," "dirty socks," "astringent" or "pungent," odour		
Are contaminated tapes isolated?		
Signs of surface contamination on open reel tapes (dust, dirt, or other foreign deposits on the tape indicate surface contamination).		
Do personnel wear protective gloves and masks (in order to handle tapes with fungus)?		

E   LIGHT

E1 Lighting used in the storage area

Type of artificial lighting	Yes	No
Fluorescent lamps		
Incandescent lamps		
Bulbs		
Others		

General observations

....

....

E2 Measures to protect AV materials from sunlight

Strategies to protect audiovisual materials from sunlight	Yes	No
Light filter film on windows		
Use of timer switch in storage area		
Window shutters		
Window blinds		
Positioning of shelves away from sunlight		
Tapes are kept in their protective cases		
Lights are turned off in use and handling areas when the areas are not occupied.		

F   CATALOGUING

F1 Standards in use

Cataloguing standards	Yes	No
Dublin Core		
MARC		
MARC-AMC		
AACR2		
MAD2		
Others		

General comments

....

....

F2   Definition of data fields

Definition of data	Yes	No	Definition of data	Yes	No
Pre-defined pick lists			Monochrome		
Date			Colour		
Unique identifying number			Duration (time or footage)		
Copyright					
Producer's rights			Territory rights		
Number of showings			Reuse rights		
Photo rights			Footage rights		

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Definition of data	Yes	No	Definition of data	Yes	No
Brief description of title (working title, main title, series title, sub title, version title, item title)					

General observations

....

....

G GENERAL SECURITY

G1 Is there a security guard at the entrance?

Yes ☐   No ☐

G2 Are visitors screened?

Yes ☐   No ☐

G3 Are staff wearing badges or identity cards?

Yes ☐   No ☐

G4 Any water leakages?

Problems	Yes	No
Broken pipes		
Signs of roof leaks		
Sewage problems		

G5 Smoke

Are non-smoking signs displayed in the institution?

Yes ☐   No ☐

G6 Fire protection equipment

Strategies to control the spread of fire	Yes	No
Fire extinguishers		
Smoke detectors		
Water sprinklers		

General observations

....

....

G7 Is the institution marked with a Blue Shield or any other security symbol?

Yes ☐   No ☐

Appendix X: Cover letter for collecting data on the management of audovisual materials in the ESARBICA region

Dear Respondent,

My name is Ruth Abankwah. I am conducting a survey on the management of audiovisual materials in the ESARBICA region. The study is conducted in partial fulfilment of the requirements of a PhD degree in Information Studies at the University of KwaZulu-Natal in South Africa. It covers all member countries in the ESARBICA region. You were selected because you are responsible for managing audiovisual materials in your country. It is therefore important to know your opinions, as your archival institution is part of ESARBICA.

The questionnaire has been designed in such a way that you can quickly and easily complete it. Please take some time to address all the issues that are crucial to the management and preservation of a fragile cultural heritage (audiovisual materials) as highlighted in the questionnaire. A post-paid envelope has been included for your convenience, but you are free to send the questionnaire back as an e-mail attachment. I wish to assure you that all the information provided will be treated in the strictest confidence, and it will only be used for academic purposes. Your honest opinions and those of others will be key to suggesting how the management of AV materials in the region may be improved. The aggregated data may also be used to enhance the current methods and procedures of managing audiovisual materials in your institution and the ESARBICA region at large. By completing the questionnaire, you will be making a positive contribution to saving your national heritage, and that of the region from extinction. Please complete the questionnaire or pass it on the person responsible for the management of audiovisual materials in your organisation. It should be returned using the pre-paid self addressed envelope by the 28 October 2005 to the address below. Thank you so much for your contribution.

Yours faithfully

Ruth Abankwah (Mrs)

Box 10026, Gaborone, Botswana

Appendix XI: National Film, Video and Sound Archives of South Africa temperature and humidity levels

The National Film, Video and Sound Archives

North Side	°C	H%	South Side	°C	H%
VAULT 1	17.6	24.5	VAULT 7	16.3	44.0
VAULT 2	16.3	23.5	VAULT 8	16.6	42.0
VAULT 3	16.6	26.0	VAULT 9	15.9	40.5
VAULT 4	16.5	25.0	VAULT 10	13.0	38.0
VAULT 5	16.6	31.5	VAULT 11	13.6	42.0
VAULT 6	17.0	35.5	VAULT 12	14.3	46.0
VAULT 15	16.8	33.5	VAULT 13	13.0	41.5
VAULT 16	17.0	31.5	VAULT 14	14.6	47.5
VAULT 17	16.6	31.0	VAULT 14	15.0	44.5
VAULT 18	17.3	32.5	VAULT 20	16.0	41.5
VAULT 19	18.0	31.0	VAULT 21	15.9	43.5
			VAULT 22	15.4	38.5
			VAULT 23	15.5	29.5

Plant 2
Return Air T° 15.5
Return Air Hum 30.0

Plant 1
Return Air T° 12.0
Return Air Hum 41.7

Appendix XII : Letter of permission to conduct research at the Botswana National Archives and Record Services

TELEPHONE: 3611100
TELEGRAMS: HOMES
FAX: 3913584

REPUBLIC OF BOTSWANA

MINISTRY OF LABOUR AND HOME AFFAIRS
PRIVATE BAG 002
GABORONE

CONFIDENTIAL

Ref. CHA 1/17/2 I (50) DDMM   24 June 2004

Ruth Abankwah
Botswana Institute of Administration and Commerce
Box 10026
GABORONE

Dear Madam,

RE: PERMISSION TO CONDUCT RESEARCH AT THE BOTSWANA NATIONAL ARCHIVES AND RECORDS SERVICES

Enclosed please find a Research Application Form for you to complete and return to this office.

Thank you.

Yours faithfully

A.M. Pone
For/ **PERMANENT SECRETARY**

Encl
ycb/ dTTP