

# Chapter 10

## Environmental Consideration in the Preservation of Paper Materials in Heritage Institutions in the East and Southern African Region

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### ABSTRACT

*Heritage institutions, especially in developing countries throughout the world, have difficulties in achieving ideal environmental conditions in the preservation of paper materials. Concerns exist about improving environmental conditions in heritage institutions considering the limited storage facilities and resources in most developing countries in Africa. This chapter redefines suitable strategies for various environmental factors impacting preservation in heritage institutions in the East and Southern African Region. The chapter discusses effective activities, environmental factors, and explores knowledge and skills required for achieving ideal storage conditions. Furthermore, it discusses the key challenges of maintaining ideal and constant environmental conditions for paper-based materials particularly in developing countries where resources are limited. The chapter concludes by providing a recommendation of an environmental conditions management framework that can be used to effectively manage environmental conditions in heritage institutions.*

### INTRODUCTION

Document heritage institutions such as libraries, archives and museums have the jurisdiction to make provision for the safety, well-being and dissemination of information resources to the public throughout the world. For these information resources to remain accessible in present and future years, heritage institutions have the responsibility of preserving them in perpetuity. However, due to the compounding

DOI: 10.4018/978-1-5225-3137-1.ch010

complexity of the custodial functions of heritage institutions, from analogue to digital, preservation work becomes harder and harder more especially in developing countries. The situation is compounded by the fact that only a few heritage institutions in most of the developing countries have appropriate policies, standards, procedures and guideline strategies for averting deterioration factors. The situation is further exacerbated by the fact that most small developing heritage institutions have limited air conditioning systems in place. Ideally, every heritage institution should aim at achieving and maintaining best preservation practices more especially in providing ideal storage conditions. But this may not be practical in every location. Therefore, the first step in preservation is to examine the environment in storage areas, examine conditions of collections themselves, and then make recommendations for improvement. In fact, preservation programmes are founded on providing an ideal and constant environment in storage, exhibition and reading areas. As such, heritage institutions throughout the world, only use preservation standards to help set their priorities for improvement and to identify areas where improvement can most readily be made.

A significant number of researchers in African region have conducted various studies related to preservation. For example, Mazikana (1992;1995), Ojo-Igbinoba (1993), Chida (1994), Khayundi (1995), Matwale (1995), Kemoni (1996), Kufa (1998), Alegbeleye (1999), Akussah (2002), Murray (2002), Matangira (2003), Ngulube (2002; 2005), Segaletsho and Mnjama (2012), Segaletsho (2014) and Thabakgolo and Jorosi (2014) conducted different studies in various African countries addressing preservation issues and giving various recommendations for improvement. Although these rigorous researches have been conducted on preservation, little has been emphasized on how to manage the activities deemed necessary for achieving an ideal and constant environment for paper based materials in small and developing heritage institutions. Writers tend to only present information on environmental factors and how they affect collections, but often neglect presenting information on how to manage activities centered on providing ideal environmental conditions. The necessity for individual institutions or countries to assess their situations and make improvements based on their capabilities and environment has been already emphasized by Peters (1996) who posited that; “recommendations of fixed values of temperature and humidity for the preservation of collections are not universally applicable” (p. 06). In fact, heritage institutions should adopt or devise environmental conditions management strategies that are aligned to their level of individual needs.

Deterioration due to environmental conditions is irreversible, although it can be minimized. It is, therefore, vital that basic procedures of monitoring and controlling environmental conditions be conducted. Heritage institutions thus must develop innovative strategies to suit the varied institutional setups, challenges and individual needs. In fact, information on preservation is diverse, often complex due to various jargons that might be only known by preservation experts, and often confusing to new professionals. The vast information on preservation often fails to provide abecedarian guidelines and knowledge for non-expert personnel who are concerned with preservation, particularly on storage conditions. It is, therefore, hard to find simple information explicitly explaining how to manage environmental conditions specific to paper based materials. Given these situations, the key question which this chapter addresses is; how can we effectively manage and achieve ideal and constant environmental conditions in heritage institutions, more especially in small and developing institutions with limited resources? To address this question, this chapter discusses the following: the chapter starts by providing a brief history of paper; an overview of effective activities and methods of achieving ideal environmental conditions in document heritage institutions; environmental factors affecting paper based materials, knowledge and skills required for monitoring and control of environmental conditions; Key challenges of maintaining ideal

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