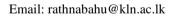
# Preservation and Conservation Initiatives of Libraries in Sri Lanka: A Review of Literature

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#### **Abstract**

Libraries are institutions that provide access to a comprehensive collection of information and resources for educational, research, and recreational purposes. They serve as repositories of knowledge and offer numerous services to their communities. In this process, libraries play a paramount role in preserving and conserving library materials for future generations. The objectives of this paper were to investigate the significant Preservation and Conservation (PAC) initiatives of library materials from the ancient periods (3<sup>rd</sup> Century BC to 5<sup>th</sup> Century AD), the colonial period (1505 to 1948), and the post-independence period (1948 to date), to identify the gaps related to the current practices of PAC in Sri Lanka and to identify the issues related to PAC in Sri Lanka. This study focused on a qualitative research method. Relevant literature was found through secondary sources such as books, journal articles, conference papers, organizational reports and websites based

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on subject-related keywords. The Department of National Museums (DNM), Department of National Archives (DNA) and National Library and Documentation Services Board (NLDSB) and Sri Lankan University Libraries (ULs), were purposively selected. The published year was not considered during the process, and priority was given to Sri Lankan and foreign-authored publications on PAC of library materials in Sri Lanka. Literature was analyzed based on above mentioned three time frames selected for the study.

The study identified growing trends in PAC practices from ancient to post-independence periods. Even though some evidence goes back to King Vijaya's period (483 BC), official writing was started in 103–77 BC. Some writing materials, such as inscriptions, palm leaves, and golden plates, were used during this period. Later, in the colonial period, the Portuguese, Dutch and British developed writing materials and established positions such as Record keepers and Archivists. Then, in the post-independence period, the DNM, DNA, NLDSB and ULs were identified as pioneering organizations that led the task of preserving. It was identified gaps between the literatures and existing literature only identified palm leaves as a main library material to be conserved and preserved. The main issues derived from the analysis were a lack of financial allocations, policies, laws and regulations, training, and research related to the field. The study pointed out the need for a separate PAC unit to handle the preservation activities of library materials in the country.

*Keywords*: Library materials, Preservation and conservation initiatives, Libraries, Sri Lanka

#### Introduction

Libraries play a significant societal role through its various functions and by serving diverse communities. The library has also been considered an ideal place for studying, research, or reference work. The term "Library" today represents books and has expanded to include computer disks, movies, documents, works of art, artefacts, and more (Balloffet & Hille, 2005). As a result, the librarians' duties have been expanded, and they need to consider preservation practices and related concepts in libraries. Therefore, librarians are responsible for managing the preservation and conservation activities of library collections.

'Preservation and Conservation (PAC)' is used as a single term in the library literature. The term "Preservation" encompasses all organizational and financial factors, storage facilities, staffing standards, policies, preservation methods and techniques related to the preservation of library resources and their content" (Dureau & Clements, 1986). On the other hand, "Conservation" refers to the specific measures and policies used to protect library materials from decay and damage. It also includes the technical remedies and techniques used for conservation by technical staff" (Dureau & Clements, 1986).

Therefore, *preservation is* essential to manage the library's routine activities, and *conservation* is vital to restoring and reformatting library materials. However, *preservation* is an enormously labour-intensive and costly task; libraries cannot afford it; therefore, providing security for the library collection, controlling the environment in the library, managing storage, care and handling library materials (Adcock, 1999) and day-to-day

library housekeeping operations are vital rather than going for expensive conservation.

History of preserving records and objects goes back to thousands of years (Cloona, 2011). According to historical evidence, *Mesopotamian librarians* stored their clay tablets for later reference. It was not possible to destroy these clay tablets. However, their chief preservation hazard was conquest or plundering (Balloffet & Hille, 2005). Later, writing media was changed from papyrus, vellum, and parchment to paper. As Balloffet and Hille (2005) further mentioned, since paper books were rare in the Middle Ages, they were kept locked with chains and fixed metal boxes to safeguard leather covers from abrasion.

Mahavamsa's (seventh chapter) proved that the recording and writing was started during King Vijaya's reign (483 B.C.) in ancient Sri Lanka (Mahawamsa, 1950). Later, in the first century B.C., During the period of King Valagamba or Watta Gamini Abhaya (103–77 B.C.) the Load Buddha's teaching called *Tripitaka* was written down in Matale, "AluVihare". Therefore, it was observed that the first library system and PAC activities were maintained with an association of Buddhist Monasteries in ancient Sri Lanka. For instance, most historical sacred books, Dipavansaya and Mahawamsaya written on Palm-leaf, are remaining as it is because of excellent PAC practices in Sri Lanka. Priority has been given to the PAC of palm leaf manuscripts while using different oils, such as "Madhuka longifolia seed oil (Ericales: Sapotacea), mee oil, and Vateriacopallifera (Malvales: Dipterocarpaceae) resin oil or Dummal oil" (Cabral & Rathnabahu, 2019). These palm leaf manuscripts are found in Buddhist temples, libraries, museums, and in personal collections. Papers later became the most popular writing medium, along with the world's technical

revolutions. Due to Gutenberg's invention of the printing machine in 1440, papers replaced traditional palm leaf library materials (Terwiel, 2003).

The study objectives of this paper were to investigate the significant Preservation and Conservation (PAC) initiatives in ancient periods (3rd Century BC to 5<sup>th</sup> 3rd Century AD), the colonial period (1505 to 1948) and the post-independence Period (1948 to date), to identify the gaps associated with the current practices of PAC in Sri Lanka and to identify the issues associated with PAC in Sri Lanka.

## Types of Library Materials and Factors Affecting Deterioration

Historians claim that libraries started in prehistoric times to store valuable information for future usage. Ancient civilizations, including the Mesopotamians and Egyptians, developed early writing Accordingly, diverse writing materials have been used throughout history. For instance, clay tablets were among the earliest writing materials in ancient civilizations, such as the Sumerians, Babylonians, and Assyrians. Next, papyrus scrolls were widely used in ancient Egypt and other Mediterranean cultures as writing materials. In ancient China, they wrote on bamboo strips or silk fabric. These materials were lightweight and durable, making them suitable for long-term preservation. Some Asian countries created texts, and historical records were often inscribed onto stone monuments or stelae. These are just a few examples of the diverse materials found in ancient libraries. Each civilization and period had its unique methods of recording and preserving knowledge, and the surviving library materials offer us a glimpse into the intellectual achievements of our ancestors. In the modern day, the following library materials, such as printed and non-printed types of library materials, are used. Those are shown in the following Table 1.

**Table 1**Types of Library Materials

## **Types of Library Materials**

#### PRINT MATERIAL

- •Books Periodicals Newspapers Reference books
  - Dissertations and theses Standards Patents
    - Maps Reports etc.

#### **NON-PRINT MATERIAL**

#### Audio Visual Materials

- Audiocassettes Videotapes Motion picture
  - e films •Slides •CD-ROMs• DVDs etc.

#### **Electronic Materials**

•E-Books • E-Journals •E-Databases

#### Other Materials

- •Pamphlets Patents •Standards •Reports •Posters
- ●Thesis and Dissertations Charts, Maps, and Globes

Modern library materials encompass many resources to meet with library users' diverse needs and interests. Among these, traditional printed books continue to be a staple in libraries. Libraries acquire fiction and non-fiction books, including novels, biographies, reference books, cookbooks, and more. On the other hand, with the rise of digital reading devices and platforms, libraries now offer e-books that can be borrowed and read on e-readers, tablets, smartphones, or computers. These digital books provide convenience and accessibility to library users. Further, libraries often provide access to digital magazines and newspapers through online platforms.

Patrons can browse and read various publications in their computers or mobile devices. Further, other materials, such as pamphlets, posters and maps, are also available as library materials. Therefore, it's important to note that the availability of these materials may vary from library to library, and some libraries may prioritize access to specific types of materials based on their community's needs and interests.

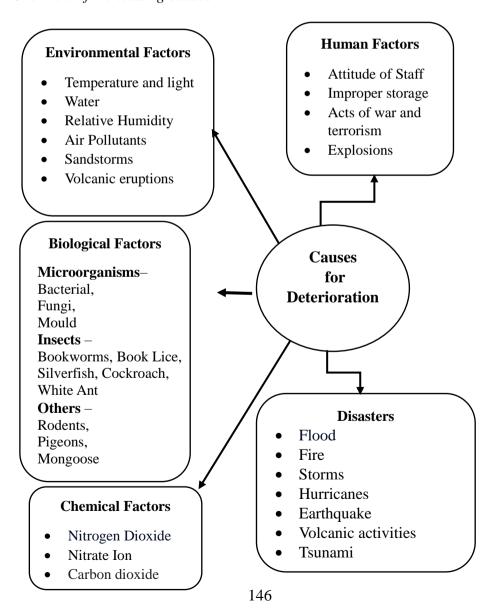
Due to constant use, library items might degrade over time (Kennedy, 2006). "The control of the library environment is the responsibility of the library administration, and it is the most important aspect of materials preservation" (Cluff, 1983). Therefore, librarians should take preventive measures when preserving library materials, especially those made of paper, parchment, palm leaves, birch bark, and leather. i.e., current papers are highly acidic and brittle, and the binding media is adhesive (Adcock, 1999). On the other hand, modern media, including microforms, optical and magnetic disks, digital formats, photographs, and audio and visual media, must be stored, and used carefully to prevent early deterioration. All these have inherent preservation problems (Adcock, 1999). The actions must be taken much before deteriorating existing resources (Mahmood & Mari, 2013). The risks of affecting library materials are numerous.

The principal hazards to library resources include their nature, natural and man-made calamities, the environment in which they are stored, and how the material is handled by the library (Adcock, 1999). Next section will discuss the factors pertaining to deterioration of library materials concisely. Here are some common factors that contribute to the deterioration of library materials.

Deterioration of library materials caused due to different factors were identified. Figure 1 provides an overview of the leading causes such as environmental, biological, chemical, human and disaster damage to library materials (Adcock, 1999; Alahakoon & Wimalaratne, 2007; Balloffet & Hille, 2005; Cabral & Rathnabahu, 2019; Sahoo, 2004; Wimalaratne, 1989).

Figure 1

Overview of the leading causes



Overall, factors mentioned in above Figure 1, have affected the library materials and have caused deterioration. There are few research studies done on PAC of library materials in Sri Lanka, and none of them studied on PAC initiatives, highlighting the need for more research studies looking at PAC in Sri Lankan libraries. Therefore, the current study was conducted to discover the preservation and conservation efforts carried out in Sri Lankan libraries and associated institutions. The findings of the study would benefit the administration of the libraries in taking decisions on the PAC initiatives and their development in Sri Lankan libraries.

## Methodology

This literature review examines the previous and existing preservation and conservation initiatives undertaken in relevant organisations and libraries in Sri Lanka. Sri Lankan libraries were chosen as the study sample of the study. The study used Secondary sources such as books, journal articles, conference papers, websites, and organizational reports to find relevant literature. Further, the study examined relevant information found through Sri Lankan government Departments/ Institutions, namely the Department of National Museums (DNM), Department of National Archives (DNA), National Library and Documentation Services Board (NLBSB), University Libraries (ULs).

Since the literature was extensive, offline and online secondary resources were purposively selected. The published year of secondary sources were not considered when identifying the literature, and priority was given to Sri Lankan and foreign-authored publications on PAC of library materials in Sri Lanka. This study should have focused on PAC of Digital materials.

During the literature search subject-specific and general keywords were used to find relevant information, such as preservation and conservation, library materials, library preservation programs, and preservation and conservation initiatives. Combining these keywords in a literature search, the researcher explored through Journal articles, conference papers, books, reports, and websites related to preservation and conservation efforts in libraries, as shown in Table 2, specifically in Sri Lanka and explored the PAC concepts in general. A total of 59 works of literature were found.

**Table 2** *Number of Selected Literature* 

Type of Resources	Numbers selected
Journal articles	17
Conference papers	02
Books	14
Reports	01
Websites/Webpage	25

The study used a qualitative research approach. Literature was analyzed based on three time frames, ancient periods (3rd Century BC to 5<sup>th</sup> Century AD), the colonial period (1505 to 1948), and the post-independence period (1948 to date). Further, the research identified gaps related to the current practices of PAC, and issues associated with PAC of library materials in Sri Lanka were identified.

### **Findings**

## **Ancient initiatives (3<sup>rd</sup> Century B.C to 5<sup>th</sup> Century AD)**

There was proof to believe that King Vijaya's (483 B.C.) reign was the beginning of Ceylon's literary history. According to Mahavamsa (seventh chapter), documentation and writing have been started during King Vijaya's reign. For example, a letter has been sent to King Pandi (Mahawamsa, 1950). This incident unquestionably proved that written communication and documentation methods in ancient Ceylon had been established (Ranaweera & Ranasinghe, 2013, p. 67). However, books or records from this period have yet to be discovered (De Silva 1938, p. xiii).

The history of libraries in Sri Lanka (Ceylon) goes back to the Pre-Christian era. Accordingly, early narratives state that knowledge and writing practice dated back to the sixth century (Ranasinghe, 2008, p. 307). However, Mahinda Thera and his missionaries introduced Buddhism to Sri Lanka in the third century BC during the Devanampiya Tissa (250-210 BC) period. They brought Tripitaka, Buddha's teachings – (*Vinaya Pitaka, Sutra Pitaka, and Abhidamma Pitaka*) to Ceylon (Ranasinghe, 2008).

The Buddhist monks known as *Sanga* kept the teachings of Lord Buddha, that was brought to Ceylon by Arahant Mahinda, alive through oral tradition for extended periods (Adikaram, 1953). This is considered the first initiative to preserve information from generation to generation. And it can be assumed that it was the first human library in Sri Lanka. According to the Sumangala Thera (1914), all fully ordained monks could memorize the entire Dhammapada, which consists of 26 chapters and 423 stanzas. However, the 1st century BC oral tradition was uncertain with adverse situations such as the Baminitiya famine, political insecurity and South Indian invention. To

preserve the Buddhist scriptures, Tripitaka (the Load Buddha's teaching) was written down on golden plates at the "AluVihare" in Matale during the reign of King Valagamba or Vattagamini Abhaya (103–77 B.C.). It was deposited in the "AluVihare". It proves the of ancient initiatives for preservation of materials by Sri Lankans. This is the beginning of the spectacular development of Sri Lanka's literary culture and libraries. This remarkable beginning of literary and library tradition in Sri Lanka is considered the first venture of systematic documentation in the history (Mahawamsa, 1950). With this undertaking, the preservation and conservation concept was also may have been established. This Tripitaka was copied on palm leaves and deposited in the five main temples of Mahavihara, namely Thuparamaya, Mirisawetiya, Issarasamanaramaya, Vessagiriya, and Chetiyagiri (Wimalakirthi, 1954).

Thereafter, the copying system was evolved, and libraries were developed attached to the temples called "*Potgul*". As the leading education centres, Mahavihara, Abhayagiri and Jetavana (Ranasinghe, 2008, p. 309) may have had libraries enriched with library materials made of gold plates, bronze plates and Palm leaves. Therefore, those libraries may have initiated PAC of library materials as well.

Later, many kings supported preserving writing doctrines in the "Pirivens" throughout the country. King Kassape I (473-491 A.D.), King Moggollane II (531-551 A.D.), and King SenaII (853-887 A.D.) are a few examples (Culavamsa, 1953). Further, King Kassape V (914-923 A.D.) wrote down the "Abhidhamma-pitaka" on gold tablets and appointed his son as "Sakkasenapati" to protect the book. Later many books were written on different subjects, and they have been preserved in monastry libraries and royal libraries (Culavamsa, 1953).

On the other hand, in the fifth century BC, Anuradhapura became a centre of excellence in Buddhist education with the support of Kings and Buddhist monks. With this, existance of a great library system also can be observed. That's why famous foreign Buddhist scholars, namely, Buddhadatta, Dhammapala and Buddhaghosa (Indian) and Fa-Hien (China) were attracted to Ceylon (Ranasinghe, 2008, p.311). It reflects a clear picture about a successful library system with a sustainable, conserved, and preserved environment.

Further, during Anuradhapura, great 'Potguls', namely Mahavihara, Abhayagiri, and Jetavana (Ranasinghe, 2006), were the pioneers. In addition, there was a special place to store sacred books, and kings had separate libraies in their palaces. During this period, inscriptions; gold, copper, and bronze plates; and palm leaves were used as library materials examples of Inscriptions and Palm leaf manuscripts are as follows.

## Writing Materials - Inscriptions

Inscriptions play a vital role when moving with ancient historic writing materials. "Inscriptions" means letters written on stone surfaces by ancient Sri Lankans. Inscriptions refer to any old documents engraved on a stone surface. As Amarawansha (1969) and Dias (1996) mentioned, Sri Lankan inscriptions are broadly divided into four classes: cave, rock, slab and pillar inscriptions. These inscriptions were used as information sources about social, cultural and economic matters related to a particular period; up to now, about 3500 stone inscriptions have been discovered from various parts of the country. Such valuable inscriptions remain even to the present date due to proper preservation and conservation practices.

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Many ancient locations have priceless works of art and inscriptions in good condition. The early caretakers of these places took steps to safeguard the writings and artwork from weather conditions, including rain, moisture, and degradation. As a result, most paintings and inscriptions have been preserved until today (UNESCO, 2020).

Figure 2 below displays a picture of an inscription written on gold plate. The question is how these inscriptions are existing up to now? It assumed that Sri Lankans have the best preservation and conservation practices initiated in ancient libraries in Sri Lanka.

Figure 2

Vallipuram Gold Plate



(Source: Epigraphia Zeylanica Vol. IV, 1943)

## Writing Materials – Palm Leaf Manuscripts

In addition to the above inscriptions, Palm Leaf Manuscripts, known as "*Ola leaves*", formalized the PAC initiatives in Ancient Sri Lanka. Since the Ola leaf-creating process was exclusively scientific, there was less possibility of material deterioration. For example, Padmakumar et al., (2003) state that Ola leaves are fire-resistant and waterproof. Cabral & Rathnabahu (2021) proved that Palm leaf manuscripts in Sri Lanka are prepared

scientifically from refined *Corypha umbraculifera* leaves. Therefore, palm leaves were resistant and stable in the Sri Lankan tropical climate. Further, Kim et al., (2020) mentioned that over the past century, ola leaf manuscripts of Sri Lanka were well preserved due to proper conservation methods.

Natural herbs were used to preserve ola leaf manuscripts in ancient Sri Lanka. For example, camphor oil and citronella oil (Suryanwanshi et al., 1992) were used to keep the insects away from Ola leaf. Further, faded letters were restored by using herbal oil and charcoal. These facts were endorsed by Cabral & Rathnabahu (2021), citing Gunawardana's (1997) article which mentions: Madhuka longifolia seed oil/ Mee oil and resin oil / Dummal oil. Especially when writing on the Ola leaf with *Panhinda*, they used herbal ink made of charcoal powder, *kakuna* oil, and *dummala* or resinous oil. The oil was used from ancient times to preserve palm-leaf manuscripts. According to historical evidence, the Ola leaf manuscripts were sometimes worshipped and decorated with valuable ornaments (silver plate and ivory or gold inlaid with silver). Monks and royal families managed these collections of sacred books under safe environmental conditions. This also helped preserve Ola leaf for centuries.

The life span of the Ola leaf is approximately 300-350 years, according to the literature. The manuscripts were copied from generation to generation by hand, therefore. These Ola leaf manuscripts were copied to another when they started deteriorating for preservation purposes (Kim et al., 2020, p. 122). The owners of these ancient Ola leaf manuscripts maintained cleanliness of the materials. Figure 3 displays a picture of such an ola leaf manuscript in Sri Lanka (Kim et al., 2020, p. 122).

Figure 3
Ola Leaf Manuscript



Therefore, the above concise analysis revealed that formal and informal initiatives had been taken to preserve and conserve library materials in ancient Sri Lanka especially the Ola leaf manuscripts.

## **Colonial Period Initiatives** (1505 to 1948)

The colonial period of Sri Lanka existed from 1505 to 1948. This section will analyze key initiatives through the periods ruled by Portuguese (1505-1658), Dutch (1658-1796), and British (1796-1948). During these periods, official record management was established. It was the cause for some remarkable initiatives that led to founding of standard libraries in Sri Lanka and preserving national knowledge for future generations. Such valuable initiatives are analyzed as follows.

Portuguese was the first Europeans to rule Sri Lanka (Ceylon) from 1505 to 1640, and they ruled the Sri Lankan maritime areas of the western and South-western coastline. According to the historical background of the Department of National Archives (2016), only a few records (Documents) can be found related to this period. It is assumed that the Portuguese may

have destroyed the records before leaving Sri Lanka or the next ruling party, *Dutch*, may have destroyed it.

However, the small remaining Map collection of the Portuguese era is still conserved in the Depository Documents of the National Archives (Department of National Archives, 2018).

Document control during the *Dutch* period goes back to 156 years from 1640 to 1796. About 8000 records are preserved and deposited in the DNA related to social, economic and political documents (Department of National Archives, 2018). Examples include Dutch Memories of the Governors, *Thombu* (*Land and family*), and *school Thombu*. DNA plays a significant role in preserving these documents (Department of National Archives, 2016). Dutch have maintained the indigenous record-keeping system during that time. The first Sinhalese book of Ceylon was published in 1737 (deposited at National Archives, Sri Lanka). Further, they introduced a "*Record Room*" concept, established an "Archives" at Gall in 1640, and transferred it to Colombo in 1656.

Later, the British controlled Sri Lanka from 1796 to 1948 and improved the records and archives management system in Sri Lanka. The "Colonial Secretary" was the responsible officer of the official records in the early British period. However, in 1803, a post called "Keeper of Dutch Records" was created to look after the official records. This indicates caring for the records with greater responsibility (Department of National Archives, 2016). In 1901, the Archivist post was created and was attached to the Chief Secretary's Office in Colombo. Later in 1947, the Department of the Government Archivist was established as a separate department. On the other hand, The Archives was temporarily shifted to Nuwara Eliya from Colombo

in 1942 for safety reasons. This is considered one of the best preservation initiatives in history (Department of National Archives, 2016).

Therefore, based on the above information in the period of colonization, Dutch started to conserve and preserve their official records more than the Portuguese. Even though the Portuguese had sound records management in the coastal area before the Dutch, they seem to have destroyed it by themselves. However, in Dutch period they introduced the record room concept and established a record keeper as a post to protect official records. Later in the British colonial period (1976-1948) Colonial Secretary and Archivist post was introduced. On the other hand, the Archive was temporarily transferred to the Nuwara Eliya in 1942 to protect the materials from the world war. The Department of National Archives preserved many records related to the colonial period. i.e., 8000 Dutch records. This evidence proved that materials were preserved and conserved in the colonial period.

#### Post-independence period Initiatives (1948 to date)

This section will analyze the pivotal Preservation and Conservation initiatives took place in Sri Lanka after the colonization period. This is mainly based on the key institutions, namely the Department of National Museums (DNM), Department of National Archives (DNA), National Library and Documentation Services (NLDS), and University Libraries (UL) in Sri Lanka.

## a). Initiatives of the Department of National Museums (DNM)

Museum is a public, non-profit, permanent organization that collects, preserves, investigates, shares, and displays humanity's tangible and intangible legacy for learning, research, and enjoyment (UNESCO, 2023).

This is defined as a museum. Therefore, museums conserve tangible and intangible cultural heritage in any nation.

Most people would agree that the Government Oriental Library, founded in 1870 (and later included in the Colombo National Museum Library in 1877), was the country's first library (Department of National Museums, n.d.). The museum library was considered the first Legal Deposit library in Sri Lanka and had been operating as an unofficial national library. As a result, a priceless collection on Sri Lanka and related items grew over time and was preserved (Department of National Museums, n.d.).

DNM, Sri Lanka, established the Conservation Section in 1966 and currently has a staff of 13, including 4 Conservation Officers (Department of National Museums, 2023). The section provides advice on conservation and curative conservation. In addition, library conservation includes repairing damaged books, paintings of Ola leaf manuscripts, magazines and maps, conducting fumigation by the section, and pest & insect control work (Department of National Museums, 2023). Therefore, with the above initiatives, DNM is acting as one of the focal points in the conservation of valuable national artefacts as well as library collections for future generations. Further, workshops, training programmes & lectures on conservation are also conducted. DNM and its library (Department of National Museums, 2023) one of the pioneering departments in Sri Lanka, plays a crucial role in the PAC of artefacts and library materials.

## b). Initiatives of the Department of National Archives (DNA)

The word 'archive' means a group of records produced or gathered by a particular person or group and chosen for longstanding preservation as evidence of their activity (King's College, Cambridge, 2023). There is a difference between libraries and archives in different ways. One of the primary differences is that libraries have secondary sources while archives have primary sources. National Archives is also considered an esteemed department in preservation and conservation activities of Sri Lanka.

"The Department of National Archives", previously known as "The Department of the Government Archivist", was established on 1st October 1966. The "Government Archivist" post was renamed the "Director of National Archives" along with this change (The Department of National Archives, 2016). The Department of National Archives (DNA) serves as a repository for preserving the nation's memory and as a centre for disseminating knowledge to students, researchers, and the public. Especially, DNA gives technical and scientific advice to preserve and conserve records in the public and private sectors. Record management, preservation and conservation divisions play an essential role.

There is an official clause to acquire government organizations' records for permanent preservation if any department is terminated under the National Archives Law No.48 of 1973 Section 9(2) (b)&(d) (Department of National, Archives, 2004).

There are six repositories in the DNA, including primary and secondary documents of Dutch and British documents, newspapers, and post-independence era records (Department of National Archives, 2014a). This is an effective initiation of the preservation of information. Further, audio-visual materials are preserved in DNA. i.e., Sinhala newspapers from 1662 onwards and English newspapers from 1832 onwards. The division maintains appropriate environmental conditions for audio-visual materials.

The DNA technical division conserves and restores the documents or materials deposited in the Department. For instance, Ola leaf manuscripts, books, newspapers, documents, sculptures, paintings, black and white pictures, maps, slides, audio-visual materials and statues (Department of National Archives, 2014b). This division further provides a laboratory ("pH value measuring, document de – acidification, removing stains in documents, conducting research on paper") and training facilities (bookbinding, document restoration, Ola leaf manuscripts conservation (Department of National Archives, 2014b).

DNA is playing a leading role in training and conducting courses for the general public, especially on methods for administration of government records and archival law (One day Course), courses for records management and preservation (Five days) and records management course for Sri Lankan Army as well as a training course for book bindings (Department of National Archives, 2014c).

# c). Initiatives of the National Library and Documentation Services Board (NLDSB)

A library that is designated as 'national' and is created and funded by the national government to serve fulfilling government's needs. These libraries frequently serve as the official repository for the country's published works and, in some cases, as the central hub for developing the country's libraries and bibliographies (Collins English Dictionary, 2019). This is named the National Library.

The NLDSB, Sri Lanka launched a project in 1992 to develop conservation centers island-wide to conserve library materials in public libraries. At present, 126 conservation centers have been established island wide as a result. Further, NLDSB serves as the International Federation of

Library Associations and Institutions (IFLA) Preservation and Conservation (PAC) Centre (*acronym* PAC). IFLA PAC regional conservation centre provides advisory services and guidelines to preserve and conserve library materials in libraries. Moreover, NLDSB conducts seminars, workshops and training programmes to protect library materials in Sri Lankan libraries (National Library and Documentation Services Board, 2021).

Services of NLDSB is crucial in conservation activities such as bookbinding, fumigation, humidity control, cleaning, using pesticides, and document conservation (Sunil & Amarasiri, 2014). Further, their actions are beneficial to the other libraries in the country. Table 3 explains the PAC initiatives of the NLDSB (National Library and Documentation Services Board, 2021).

**Table 3**Preservation and Conservation Initiatives

	They provide guidance to Public Library Conservation and Preservation Centres.  They promote PAC awareness through posters, flyers, and booklets.
	NLDB offers advisory services to other libraries nationwide to guide the PAC of library materials.
	It is serving as the regional conservation hub for the IFLA PAC.
NLDSB PAC Initiatives	Carrying out workshops, seminars, and other hands-on training programmes on conservation of Ola leaf manuscripts, book binding, record repairs, and preservation of library materials for library staff of all types of libraries, people in charge of conservation centres, record room keepers, and individuals to gain awareness of scientific conservation techniques.  NLDB makes traditional herbal oil to preserve palm-leaf manuscripts. The name of this oil is "PANHINDA". This project's primary goal is to improve the Ola leaf manuscript's state of preservation.

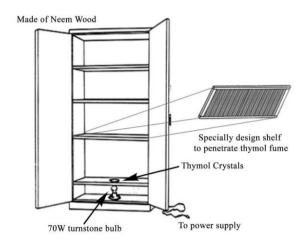
Therefore, as a national library in the country, NLDSB acts vehemently providing practical solutions for the development of preservation and conservation of Sri Lankan libraries. Further they offer training opportunities also to educate others in the conservation and preservation sector. For example, training programme on the conservation of Ola-leaf manuscripts, document conservation, and book binding.

As observed through all the above analyses, Palm Leaf manuscripts are the mainly preserved and conserved materials in the libraies and some key institutes of Sri Lanka. International and national professional organisations have been conducting some programmes to preserve and conserve these manuscripts. They have taken action to digitise Palm-Leaf manuscripts. For example, the International Federation of Library Associations and Institutions (IFLA) conducted a workshop to discuss the problems of palm leaf management in libraies and manuscripts holders at the regional level. This workshop was conducted on 22 August 2017 to discuss metadata and digitisation standards related to palm leaf manuscripts. During this workshop, it was recommended to define metadata standards for palm leaf management. The workshop brought together experts from libraries hosting Palm Leaf Manuscripts (PLMs) collections and some international experts in the region. Although the Sri Lanka national library has undertaken a project on conservation and digitisation of PLMs, they still need to set up a standard method for the PLMs. Therefore, the IFLA workshop recommended defining metadata standards continuing from the initiated metadata framework. Further, IFLA transferred the opportunity to NLDSB to serve as a Preservation and Conservation regional centre (known as IFLA PAC) (National Library and Documentation Services Board, 2021).

Further, during the process of PAC of Palm Leaf manuscripts, a cupboard designed for storing the manuscripts is used which is shown in Figure 4 by the Preservation and Conservation (PAC) Centre, Sri Lanka (Cabral & Rathnabahu, 2019).

Figure 4

Palm-Leaf manuscripts store in the cupboard.



The researchers report that the system was run every month for two hours (with a bulb). Significant control of rotting fungi that disappeared from the palm leaf was observed after two months.

## d). Initiatives of the University Libraries

A University Library is the heart and blood of the institution. It tries to "meet the information needs for research, and curriculum of its students, faculty, and staff" (Reitz, 2004). ULs collect, process, store, and conserve library materials for these purposes.

The Library of the Palm Leaf Manuscript Study and Research (PLMSR) was established as a significant Palm Leaf PAC initiative in the

university system under the Faculty of Social Sciences, University of Kelaniya, on 08<sup>th</sup> December 2010. The purpose of establishing this library is to digitize Palm Leaf manuscripts and preserve them for the future while providing access to scholars to study Palm Leaf Manuscripts. As a result, the library engages in preserving manuscript heritage in the country and provides access to 600000 digital manuscripts and more than 350 physical manuscripts to scholars who would like to research on Palm Leaf Manuscripts. This collection includes Buddhist books such as *thripitaka*, *attakathas*, *teekas*, records of various *medications*, *and astrological* and *black magic manuscripts* (Palm Leaf Manuscript Study and Research Library, University of Kelaniya, 2021).

Such significant initiatives can be found in the University of Peradeniya library; compared to other university libraries in Sri Lanka, the library has a collection of over 5000 Palm Leaf Manuscripts (Library, University of Peradeniya, 2021b). It is the home to the second-largest collection in Sri Lanka. Further, the oldest *Mahawansa* was also discovered through this library, by the committee looking for the oldest *Mahawansa*.

This is considered a significant finding about the history (Senaratne, 2021). It is observed that these collections are well-conserved in the library. Further, the University of Peradeniya Library effectively executed digital archiving and preservation practices and processes (Maheswaran, 2017). Moreover, a separate section for PAC has been established in the University of Peradeniya (Maheswaran, 2017).

The Eastern University of Sri Lanka also has a separate section for PAC of library materials (Navirathan & Jeyakananthan, 2018).

Further, the University of Sri Jayewardenepura library started project to collect palm-leaf manuscripts scattered nationwide. Along with the project, the library established the PAC unit for the library's rare materials and palm-leaf manuscripts (Nishanthi & Wijayasundara, 2022).

Further, 16 Sri Lankan ULs have initiated Digital Libraries (digital repository, scholar bank, Institutional Repository) as a digital PAC initiative (Nishanthi & Wijayasundara, 2022).

According to the literature, university libraries especially focus on conserving and preserving palm leaf manuscripts. Five such studies on palm leaf preservation and conservation could be found. Palm leaf manuscripts contain essential indigenous knowledge of Sri Lanka (Nishanthi & Wijayasundara, 2022) therefore are of historic value. University libraies have separate book binding sections, and numerous people are working in the area (Gamage, 2014). According to Gamage (2014), 12 Senior Assistant Librarians/Assistant Registrars, 51 binders, 14 apprentice binders, ten library assistants, and 12 labours were at the university libraies in 2014. However, recent studies on this were not able to find.

## Gaps Related to current practices in Conservation and Preservation of Library Materials in Sri Lanka

Preservation and conservation initiatives for library materials are crucial for safeguarding the nation's cultural heritage and ensuring long-term access to valuable information. Based on the information available until the post-independence era, some potential gaps were identified related to the preservation and conservation practices in Sri Lanka.

According to the literature survey, there was a massive gap in the literature. Only limited studies have been conducted discussing on materials

such as palm leaves. Literature depended on a few researchers. Therefore, the area should be vastly open for researchers.

Next, the lack of opportunities to gain practical knowledge can be mentioned as a gap in the area of PAC of library materials in Sri Lanka. Department of National Archives, National Library of Sri Lanka (National Library of Sri Lanka, 2022) and university departments (i.e. Department of Library and Information Science, University of Kelaniya) conduct relevant courses on this even though library staff needs awareness of practical aspects.

Further, Resources and Funding are a gap among the libraies in Sri Lanka. There need to be more financial allocations on preservation and conservation activities to ensure the effective implementation of conservation measures. Inadequate funding may result in a lack of investment in infrastructure, equipment, training, and research necessary for preservation efforts. University and government libraries have this gap until today.

Finally, weak legislative framework and its enforcement is also a gap that can be identified through the study.

In conclusion, If Sri Lankan libraies can overcome the above gaps, they can enforce sustainable PAC initiatives in libraries in Sri Lanka.

#### **Preservation and Conservation Issues**

This section analyzed the issues related to PAC by examining the literature. When considering the ancient and colonial period PAC, it was observed that human interventions destroyed vital records or materials i.e., wars and humans. For example, most Portuguese documents were destroyed

by the Portuguese themselves when the Dutch took over their dominion in the maritime provinces in 1640 A.D (Department of National Archives. 2016).

In the post-independence period, several issues have been identified. A separate department for PAC is essential (Morrow, 1997) to closely monitor the relevant matters. But it isn't easy to find such initiatives in the literature except for a few university libraries. NLDSB mentioned that 126 conservation centres were established in public libraries in Sri Lanka. However, no study was conducted to determine the current status of above centers. Book binding sections are there in some university libraries; there were no conservation sections and no training sessions that is required for library staff to preserve and conserve books and documents with historical value.

If libraries had a policy for PAC, it would be easier to carry out the relevant activities in the library (Alahakoon, 2005). Alahakoon (2008), in her study based on the Peradeniya University library, found that libraries still need to write policies for palm leaf PAC. Therefore, this was considered the library's main drawback. Dayananda (2018) also proved this factor in his study.

Furthermore, Alahakoon (2008) noted in her article that degrading elements and unsuitable locations in the library create PAC problems. Library staff, management, and users need more awareness and understanding of the importance of preservation and its impact on the longevity of library materials. Lower priority given to preservation activities and inadequate measures for ensuring the preservation of collections are some other issues. Lack of knowledge in recognition of need for PAC of

library materials items' PAC has a negative impact. However, a lack of proactive conservation thinking and staffing scarcity has a negative effect (Alahakoon, 2008).

Specialized training in preservation techniques and best practices among library staff can help practical preservation efforts. Without proper training, staff may not be equipped to handle and care for library materials appropriately, increasing the risk of damage and deterioration. However, library staff in Sri Lanka needs such training facilities (Alahakoon, 2008). To overcome these issues, it is recommended conducting user awareness programmes and training programs (Alahakoon & Wimalaratne, 2007).

More funding is needed to ensure the implementation of preservation strategies, acquisition of preservation equipment and supplies, and staff training in preservation techniques. Lack of funds and smooth financial conditions are identified as a need for PAC of library materials in Sri Lanka. Alahakoon (2008) and Danangaya (2018) pointed out that this is an issue that Sri Lankan libraries face in relation to PAC.

Sri Lanka is prone to natural disasters such as floods, earth slips, and tsunamis. These consequences can significantly threaten library collections, leading to damages, mould growth, and physical destruction. Following Figure: 5 shows extensive damages caused by Tsunami in Sri Lankan Libraries.

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Figure 5

Tsunami-affected libraries

**School Libraries** - approximately 1.2 million (books and other materials destroyed).

Public Libraies - out of the 950, 62 libraies were affected. 28 were completely destroyed.

University Libraries - in four universites damaged

Community Libraries -Forty libraries damaged

**Temple Libraies** - Valuable library collection and Ola Leaf manuscripts were destroyed.

Other Libraries - Few research libraries related to national aquatics, habour and Sri Lanka navi were destroyed.

Source: (Amarasiri, 2005)

There needs to be adequate disaster preparedness and mitigation plans to minimize the impact of such events. There need to be dedicated conservation facilities within libraries to ensure the timely and proper conservation treatment of damaged materials.

One study uses microscopic techniques to examine the current state of preservation and the factors causing the deterioration of Palm leaves. This study identified that black dots caused by microorganisms started occurring on their surface (Kim et al., 2020). This study suggested that the temperature and humidity of the archive space should be better controlled to ensure the long-term preservation of the Ola leaf manuscripts (Kim et al., 2020).

Addressing these issues requires concerted efforts from library management, government agencies, funding bodies, and other stakeholders. Strategies such as advocating for increased funding for preservation, raising awareness among library staff and users, investing in preservation infrastructure, providing training on preservation techniques, implementing

disaster preparedness plans, and incorporating digital preservation practices can contribute to the practical preservation of library materials in Sri Lanka.

#### Discussion

Preservation and Conservation of Library materials are vital for safeguarding the existing knowledge and practices for future generations. This study focused on discovering such precise initiatives from ancient to post-independence periods. Further, gaps related to current practices and issues regarding the PAC in library materials were also concentrated.

According to the findings, Sri Lanka (Ceylon) first safeguarded the knowledge via oral tradition, and the Buddhist monks were the pioneers. Later, Buddhism arrived in Sri Lanka during the ruling period of King Devanampiya Tissa (250-210 BC) and oral tradition was enriched with Buddhism. However, due to environmental and political unrest, oral tradition was replaced by the writing tradition in the reign of King Valagamba or Vattagamini Abhaya (103–77 B.C.). Inscriptions, Golden plates and Palm leaves were the significant modes of writing. Royal support was granted to conserve and preserve the excellent monastery library materials in this period. Especially books were considered a great wealth of the nation in the ancient period.

Portuguese, Dutch, and English ruled the country in the colonial period (1505-1658). These parties cared about protecting their official records, and they introduced printing books. Various actions were taken to preserve their records by establishing the "Record Room" concept, and later established an "Archives".

Later in the post-independence era, different government departments and universities focused on PAC of library materials in Sri Lanka. For

instance, National Library established separate PAC units in Public Libraries in Sri Lanka. Further, IFLA Preservation and Conservation (PAC) Centers were also established in Sri Lanka, attached to the National Library of Sri Lanka.

In the Universities, Separate sections have been initiated to preserve and conserve the Ola-leaf materials. Each Sri Lankan library also established a binding section as a primary initiative of PAC of Library materials. Few ULs have separate PAC departments.

This study identified gaps related to PAC initiatives in Sri Lanka, such as literature, resources & funding, and legislation. Lack of financial allocations and staff training, lack of infrastructure facilities, relevant rules and regulations, and lack of awareness could be identified as issues related to the conservation and preservation of library materials in Sri Lanka.

Based on the discussion, it is evident that Sri Lanka has made significant efforts to preserve and conserve library materials.

#### Recommendations

Based on the above discussion, the study makes the following recommendations. These recommendations aim to address the identified gaps and enhance the overall effectiveness of preservation and conservation practices in libraries in Sri Lanka.

**To increase Funding** for maintaining a sustainable conservation and preservation department.

**Strengthening a common legislative framework** or institute-wise legislative is recommended.

To establish infrastructure and facilities to preserve and conserve library materials by establishing proper storage facilities, implementing climate control measures, providing conservation laboratories, and adopting modern documentation systems.

To develop a comprehensive awareness programme to educate and engage the staff and others in the preservation and conservation activities.

**To promote national and international Training** for staff of preservation and conservation units.

**To strengthen coordination** and collaboration among the Sri Lankan Libraries.

**To promote research and innovation** in the field of preservation and conservation to overcome the gap.

To establish a separate department and appoint a subject-qualified or trained librarian for the conservation and preservation department.

The above recommendations are vital to conducting conservation and preservation practices to preserve library materials for future generations.

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