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Hybridization of Indigenous Knowledge and Documentation of Intangible Cultural Heritage of Batticaloa District of Sri Lanka: significance of academic librarians' role in digital era

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Abstract

Modern technology is believed to be the panacea for all issues; nevertheless, it has both merits and demerits. Many aspects of technology of today have not been time-tested nor known for their adverse effects on the natural environment. On contrary, local knowledge had been time-tested and eco-friendly, though it is slow to exert in terms of mass industrial outcome. With the growing concern for environmental protection, there needs to be hybridization of traditional knowledge with modern technologies to sustain natural resources. Having a long historical track, the eastern coastal area of Sri Lanka has unique array of cultural heritage in all its aspects, such as literature, religion, art, farming and irrigation, and food. Eastern Province showcase is enriched with many of such unique cultural heritage apart from the rest of the Island. However, these pockets of indigenous knowledge and cultural heritage were subject to threats and loss, due to man-made reasons and adverse environmental conditions. Therefore, it has been a need to discover the materials that possess cultural heritage of Batticaloa, and to document in appropriate media to take them to the posterity. The importance of gathering and documenting the body of local knowledge is not only to preserve uniqueness of society but to revive those economically and culturally valuable assets to support modern science and technology. The objectives of the survey include discovery of resources possessing heritage values, increasing the awareness of preserving indigenous knowledge and cultural entities in the district, and developing a digital repository to preserve indigenous knowledge and cultural values of local communities. Moreover, elements of cultural tourism, which is an indivisible component of eco-tourism, will be enhanced and made visible through exhibiting heritage items on digital repository. This paper elaborates on works carried out to survey the evidence for local cultural heritage, in the light of developing an electronic repository at Eastern University, Sri Lanka, to document and preserve district's distinctive identity in terms of cultural heritage.

Keywords: Cultural Heritage, Indigenous Knowledge, Black Magic, Sorcery, Tangible and Intangible Cultural Heritage, Digital Repository, Wiki Tool, Batticaloa, Sri Lanka

1. INTRODUCTION

Traditional knowledge and ancient technologies cannot be undervalued as they had been time-tested and successful to the local communities in every country. Having a long period of history in human civilization, in Sri Lanka, life style and practice in language, religious festivals, livelihood activities, food habits, clothing, handicrafts, law and public administration, farming, construction, irrigation systems, and other customs of aesthetic values have unique identity.

Significant events and people with respect to eastern parts of the island were mentioned in Sri Lanka's renowned historical scriptures like *Mahavamsa* and *Culavamsa* (Thankeswary, 1995). Eastern part of the island, mainly Batticaloa and Ampara Districts have enriched indigenous knowledge and several cultural heritage entities, most of which were not appropriately documented since the country had 30 years of civil unrest till 2009.

A preliminary survey on recorded knowledge and heritage has produced the data seen in the Figure 1. As seen in Figure 1, contents of palm-leaf manuscripts vary from indigenous medicine to devotional stanza to astrology. Much of historical knowledge of Batticaloa was drawn from the information interpreted from palm-leaf manuscripts. Texts of stone and copper plate inscriptions were found to have been transferred onto palm-leaves.

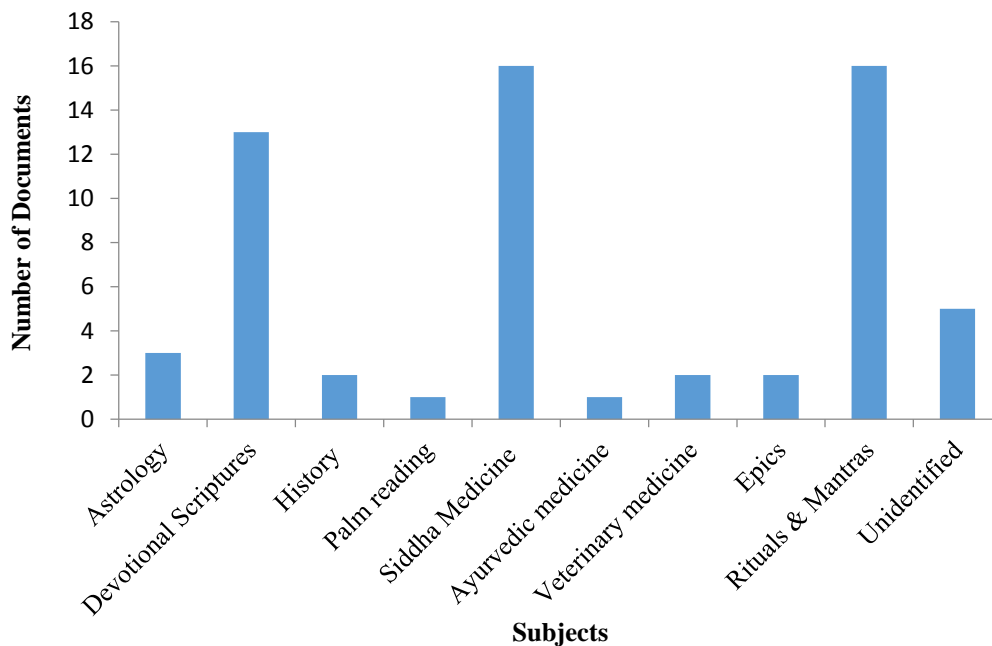


Figure 1: Subject Coverage of Palm-leaf Manuscripts

With the abrupt introduction of technology, dwellers have abandoned many practices inherited through traditional knowledge. This has not only paved ways to losing societal identity and cohesion, but lead to degradation of natural environment. Natural resources have been under threat from population growth, urbanization, and social mobilization.

Moreover, personal causes such as poverty, ignorance and unwillingness of the community, and natural disasters like flood, cyclone and Tsunami had ruined most of these evidence. Yet, there are numbers of materials and practices to be documented to safeguard region's indigenous knowledge and intangible cultural heritage, before they become extinct. Although, few non-governmental organizations have taken measures to revive and improve practices of indigenous knowledge to enhance the economy of the society, there are seldom attempts made to preserve and document these valuable resources.

Therefore, university librarians of the district are taking initiatives to incorporate novel technology into preserving and hybridizing of existing indigenous. Meanwhile, a digital repository is developed to document intangible cultural heritage. In this regard, the beneficial of these documentation activities are expected to positively contribute to socio-economic growth and protection of ecology of Batticaloa District.

2. INDIGENOUS KNOWLEDGE

Importance of indigenous knowledge in economic and socio-cultural development has been highlighted in research literature. Especially, when the conservation of natural environment and activities to sustain natural resources are concerned, practices of indigenous knowledge must be recorded and preserved to be further developed and applied along with modern science and technology.

2.1 Definition and Importance

Indigenous knowledge, often called as traditional or local knowledge, is unique to a particular society (Warren, Slikkerveer & Brockensha, 1995), developed around certain condition of inhabitants, indigenous to a given geographic zone (Grenier, 1998), and is developed over time, do continue to develop, time-tested, and dynamic (IIRR, 1996).

Indigenous knowledge is found to support economy in developing countries by means of sustaining scarce natural resources (Ngulube, 2002). Senanayake (2006) says that social capital of poor is indigenous knowledge of that particular community. Indigenous knowledge, as an asset of locals, is social investment to control their lives in the struggle to find food, shelter and other social needs.

Therefore, indigenous knowledge elements should be gathered, organized and disseminated systematically as of process of communicating western knowledge (Warren et al., 1993; Agrawal, 1995; & Gonzalez, 1995).

2.2 Indigenous Knowledge Pockets of Batticaloa

Indigenous knowledge in Batticaloa is spanning across farmers' communities, fishermen society, Ayurveda and Siddha medical doctors, folklore singers, Veddas' (aboriginals) communities, cane workers, handloom and mat-makers, laureates, and sculptors. There are villages that have an established Goldsmith society that has its own way of cultural values and local knowledge of making gold and silver jewelries. Based on a preliminary survey carried out in the area and from secondary information sources, the indigenous knowledge of Batticaloa is categorized in to following zones:

2.2.1 Livelihood activities

There has been a wide spectrum of traditional knowledge exhibited in fisheries in Batticaloa district, which is enriched with coastal and inland water resources. Unique techniques and using fishing gears are transferred across generations. Most importantly, these techniques never disrupt fish population as they leave out juveniles (Thillainathan, 2013). Nevertheless, traditional knowledge associated with fisheries is fading away as fibre boats and nylon nets have become popular but unaffordable to poor fishermen.

Likewise, tillage system was most engaging buffalos and oxen that will drag pointed wooden plough through the fields where seed paddy would be sowed by labour. Pre-technological farming involved manual operations from sowing to harvesting. People tuned their cultivation practices along with weather changes.

In old days farmers had knowledge to use varieties that were closely related to wild rice to breed. These were highly resistant and vigorous to stand adverse weather conditions, pest and disease attacks. The knowledge for selecting, breeding, and storing germ plasm of rice paddy has been evaded with old generations of farmers.

Old systems of ridges around paddy plots were slightly elevated from ground. Paddy plots were comparatively small in size, which made more number of ridges found in an acre. In addition, barren land was prepared in such manner to harvest rain water during rainy seasons. This type of pattern reduce run off and erosion.

For irrigating the field, wooden scoops hung on a tripod (*Eathu*) were widely used in paddy fields (Canagaratnam, 1921). In areas where farmers suffer to get electricity and fuel to

operate water pumps, these traditional methods could be employed, which will not change natural drainage pattern that is often ruined by new methods of tillage machineries.

2.2.2 Food habits and preparation

Batticaloa people have tradition of preparing special menu for festivals and religious events. During that time, neighbours and relatives would gather to take part in different activities like cleaning and pounding the grains, adding ingredients as per varying dishes, and frying or cooking them. This ensured solidarity and co-habitation of communities.

Menus and dishes were made according to seasonal variation and health condition, and certain techniques were applied to preserve food items. For instance, pregnant women and lactating mothers were given special food with natural medicine to support their womb restoration. Fish and meat were smoked, soaked with honey, sun-dried, or applied with brindle berry (*Garcinia gummi-gutta*) to prolong the shelf-life.

Batticaloa was popular for dairy products and their indigenous preservation techniques. During pilgrimage, devotees carried curd-coconuts which lasted for about 40 days. Similar to cottage cheese called as paneer was widely made across villages in Batticaloa, however, these practices are extinct in modern days.

Given these methods and practices are fading away, the jobs and small-scale industries associated with those activities are too being vanished. Most importantly, those activities are always nature-friendly. Therefore, it is at least essential to document components and activities bearing indigenous knowledge of the district.

2.2.3 Small and medium business

Considerable number of handloom weavers were scattered across Batticaloa region, whose produces, manufactured clothes were exported not only to other parts of the island but also to the Imperial Institute of London during 1907. Many parts of the district were producing or manufacturing brass utensils, pottery, grass mats (Canagaratnam, 1921). In addition, products from Palmyra tree were also largely produced in the district.

Experts in jewelries and brass works and sculptors were producing jewels, Hindu deities, and furniture in gold, bronze, brass, silver and wooden (Thillainathan, 2013). Knowledge behind these activities is too eroded in time, which means the necessity to document and preserve.

2.2.4 Indigenous medicine and health-care

Under this category falls the evidence found in the form of palm-leaf manuscripts that cover Siddha, Ayurveda medicine, and veterinary science. Medical science for people is

ramifying into general medicine, obstetrics, pediatrics, orthopedics, and medicine for snake bites.

Palm-leave scripts found in Batticaloa present a considerable account on veterinary medicine and practices, such as cattle disease and cure, insemination and breeding, and care taken at calving. Interestingly, different skin-branding was applied on cattle when have different diseases (Thillainathan, 2013).

Special account on snake bite treatment was recorded, such as identifying the snake that bit the patient, biology and behavioural patterns of different snake species, and herbs antidotes. Indigenous medical doctors could identify species of snakes based variations in tastes exhibited in snake-bitten patient by giving particular herbal mixtures to victim (Kanthaiya, 1964). Behavioural pattern and biology of snakes also help identify the snake bite even without clearly knowing the creature.

On contrary, in western medicine snake species should be physically identified to select anti-venom, which could take time and be impossible in certain cases. In such case, techniques to identify snake species in indigenous medicine could be incorporated into western medicine for efficient treatment.

2.2.5 Traditional law

Batticaloa region had its traditional law, called *Mukkuwa* Law, very few of which later incorporated into Dutch Law (Pathmanathan, 2002). This law had verses on succession of rights to property, ancestral property and acquired property (Brito, 1876). This law was unique to the Batticaloans of ancient time; nevertheless, it was vanished in time as the area faced series of invasions. However, survey results reveal that few clauses related labour distribution and wage decisions are applied even today in rural areas, fisheries and paddy fields.

3. INTANGIBLE CULTURAL HERITAGE

There has been substantial degree of tacit knowledge embedded in many intangible cultural heritage elements and practices. Thus, these irreplaceable and unique know-hows are permeated through family setups, cultural sports, language, and livelihood activities.

3.1 Family Setups

Ancient Batticaloa inhabitants had tribal ancestry or lineages (known as "*Kulam*" and "*Kudi*") among them, which was not as strict and same as the caste systems elsewhere in

the world. Marriages and taking sides in temple rituals and cultural events are based on this system. Each community in Batticaloa has separate lineages and divisions based on livelihood activities and ancestral reasons. These systems are fading away with the displacement and dispersal of inhabitants of rural and traditional areas.

3.2 Sorcery and Mysticism

Batticaloa is famously known for its sorcery (commonly known as Black Magic) and traditional medicine (Ethirmannasingham, 1980: 97, in as cited Nadaraja, 1980), which have been fading away in time due to misconceptions in the community. Special rituals and sorcery are believed to be brought in from Kerala, South India. Sorcery has two broader categories, one is intended for defense and the other is to cure diseases (Thillainathan, 2013). Even to date, people in rural temples engage more of spell binding for rituals.

3.3 Language and Dialect

The area has its unique way of speaking Tamil words, which had connection with ancient linguistic scriptures found in South India (Periyathambipillai, 1980: 157, as cited in Nadaraja, 1980). With the introduction of English medium education, literary application of Tamil language is shrinking and slowly vanishing, which cannot be retrieved without proper documentation.

3.4 Worships and Rituals

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Sivagnanam Jeyshankar (personal communication, November 28, 2014) points out that stanza and songs sung in temple festivals contain ample amount of historical evidence. Indigenous rituals and festivals have hidden lines of performance and process. These are not disclosed to people who do not deserve or eligible by criteria drawn by specialists and forefathers of that knowledge.

Religious festivals are often associated with *kaavadi* (devotees pierce skins with spikes), fire-walking, and folkdances – *Koothu*. Religious epics and public awareness are staged in

those folkdances. *Kombu Murippu* is another type of unique cultural event, which is more like a strategic game. In this peculiar game, inhabitants divide themselves into northern and southern sides, where victory solely dependent on inherited strategy and diplomacy carried out in the beginning of the play (Thillainathan, 2013).

4. CHALLENGES AND PROBLEMS

Gaps created by digital age have caused the loss and deformation of local knowledge and cultural heritage in the district. Young generation has changed its interests to jobs in affluent areas, thus detached from generation-old customs and practices. Influence of western culture has also led to attitudinal change in all levels of the society. At present, participation of youngsters in cultural and religious ceremonies have become seldom to witness.

4.1 Political turbulence

Since the island was under the rule of different reigns and dynasties, it is likely to have changes in local knowledge and cultural heritage. One cannot deny the fact that new reign had ruined or deformed the resources of previous rulers. In that sense, eastern region of Sri Lanka was subject to continuous changes in its culture, religion, language, and livelihood activities. Whatsoever, the study has identified the following threats to the cultural heritage of the district.

Sri Lanka suffered a thirty-year long war that ended in 2009, where numbers of people lost their lives, properties, and good health. War and displacement had led to a great deal of loss and deformation of much valuable evidence for cultural heritage of the zone. Heritage value is always inherited from older members of the community to the younger ones. Unfortunately, war and displacement broke this transmission, and many elderly people were killed during the conflict without being able to transfer the knowledge to their descendants.

4.2 Detrimental Weather Conditions

Adverse weather conditions exert negative impact on heritage places in number of ways. Rock and stone inscriptions, if not protect, are exposed to exfoliation, which leads to the loss of information that is engraved onto stones and rocks. Likewise, moisture and heat exercise their adverse effects on palm-leaf manuscripts, clothes, wooden arts and print materials. For Batticaloa is located in low plane, it is often subject to flood, which has direct and indirect effects on the preservation of heritage resources. Flood, cyclones and bad weather are likely to cause changes of dwelling places and practices of the locals.

4.3 Human Factors

Batticaloa is announced to be one of the poorest districts in Sri Lanka (Department of Census & Statistics, 2011). Poor financial background is significantly affect the sustainability of culture as for both destitute members of society are always alienated, and being deprived of money makes one to leave behind his/ her customs. According to Sivagnanam Jeyshankar (personal communication, November 28, 2014), number of Koyil (Hindu temples) statues of deities had been robbed and sold outside of the region.

Education in the district, at present, does not incorporate modules on the importance of local knowledge and cultural heritage. Moreover, almost all the schools are adopting western education, and parents' interest inclined to English-medium schools, which put the significance of local heritage and indigenous knowledge in question, especially for the next generation. Either negligence or ignorance of people, the articles of indigenous knowledge and cultural practices are fading away in time, if not protected.

Most importantly, under man-made destruction, excavations of igneous rocks for construction purposes have ruined the rocks with incised texts. Such activities are seen around the famous stone inscriptions found in areas west to Batticaloa. And, intentional deformation and destruction of stone inscriptions could also take place.

4.4 Biological Agents

Termites, silverfish, roaches, rats and mice are severe threat to palm-leaves, woodcrafts, clothes, and handicrafts. Since owners did not have secures abodes, much of the palm-leaf collections were decayed due to termite and rodents' attack. Adverse weather conditions, such as high level of humidity and heat will give rise to pest attacks. If not protected, palm-leaf manuscripts and other delicate articles will be lost to pest attack.

5. HYBRIDIZATION AND DOCUMENTATION PROCESS

Provided the above disastrous factors lead to distortion and complete deterioration or extinction of valuable knowledge and heritage elements, there have to be measures to document and revive those social capitals. Hybridization, in this regard, means the use and application of modern knowledge and tools to revive and improve the outcome of traditional knowledge and intangible heritage.

Nourishing the practices that consume large scale of indigenous knowledge must be encouraged to sustain the knowledge diversity, which in return will enrich scholarly

communication among communities. Hence, modern technology and traditional knowledge are to function abreast to ensure the success of practices and sustainability of natural resource.

In this line, librarians pose an inevitable role to record, document and preserve such vital and unique tradition and knowledge particular to the locals. This social responsibility could be of different kinds, where the following strategies are being attempted by Eastern University librarians of Batticaloa District:

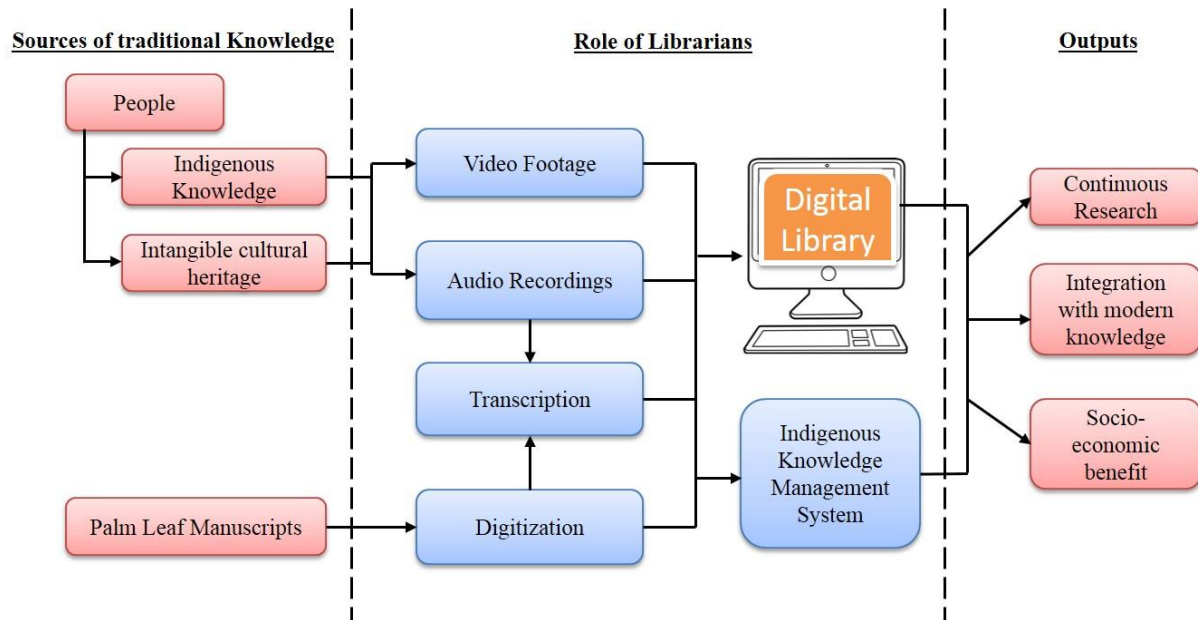


Figure 2: Recording and Documentation of Indigenous Knowledge and Cultural Heritage

In this process, librarians and enumerators will work in the field to collect data and materials. Social events involving intangible cultural heritage and practices engaging indigenous knowledge are attended by librarians, who will record peculiar parts and entities on digital devices. People who are potentially having traditional knowledge and intangible heritage were interviewed, as a result of which bearers of palm-leaf records were also identified. Assistance from Cultural Officers and other government officials were obtained.

5.1 Incorporating Technology - Digitization

Intangible heritage and indigenous knowledge were transferred via word-of-mouth and few were inscribed on palm-leaf manuscripts. As shown in the above Figure 2, indigenous knowledge and heritage entities are gathered and recorded using appropriate means.

The tools used in the digitization process are scanner, digital photographic camera, digital video camera, and voice recorder. Palm-leaf manuscripts are digitized and converted to .jpg format by using flatbed scanner and computer applications. Digital photographic camera is used for capturing the cultural heritage entities and artifacts.

Palm-leaf manuscripts are not only digitized but also transcribed for its content to be understood by general public. Experts in local community who can interpret letters and language of palm-leaf manuscripts were used to transcribe. Transcription is carried out for audio and video records.

Digital library developed on Greenstone Digital Library software is consisting of audio-video recordings and their transcripts, images of palm-leaf manuscripts and their interpretation, and photographs. These files are complying with metadata standards such as Dublin Core. Besides, the web portal is expected to gather huge amount of data input which could probably be media files along with regular digital documents.

5.2 Developing Indigenous Knowledge System (IKMS)

Indigenous knowledge management systems could be developed using computer programmes and databases. Librarians in South East Asia have attempted developing an Indigenous Knowledge Governance System (IKGS) after conducting knowledge audit (Zaman, Yeo & Kulathuramaiyer, n.d.). These systems will empower indigenous communities and aboriginals.

In this regard, data collected will be used to develop an indigenous knowledge management system in the district. These systems help restore forgotten culture and knowledge through formal and scientific expression of implicit knowledge that is deep seated in remote and marginal platforms of society. However, tacit knowledge of indigenous practices is hard to formalize as it is profoundly embedded in livelihood, action, family routines, societal commitments, ideals, values and emotions. Therefore, academic entities, government bodies, and social institutions should ensure the continuity of practices and existence of indigenous knowledge.

5.3 Research, Social and Economic Outputs

Western education system seldom gives room to integrating and developing traditional knowledge and indigenous cultural values, which were not scientifically recorded. This obstacle is removed by establishing digital library and systems of indigenous knowledge and intangible heritage values. Thus, encouraging university students and researchers to study and improve the indigenous knowledge and intangible heritage will guarantee the

existence of such valuable and unique facets of local communities. Research and publication will help integrating traditional and modern knowledge, which will lead to sustainability of natural resources and socio-economic benefits.

6. CONCLUSIONS

Since Batticaloa has a long historical background, which dates back to Iron Age, the area contains vast range of unexploited indigenous knowledge and cultural heritage. Entities of cultural heritage of the district enclose indigenous knowledge in varying fields, which bear archeological and economical values.

Intrinsic and instrumental values of indigenous knowledge has strong role to sustain the uniqueness of Batticaloa society in multicultural and multinational environment, whereas knowledge associated with farming, brass works, wood crafts, jewelry, mat weaving, and indigenous medicine has instrumental values as they make the economy of the district.

However, these articles and practices of tradition knowledge are subject to natural and man-made threats, which ruined them in the past, especially by cyclones, flood, war, and Tsunami. As bearers of indigenous knowledge and entities of cultural heritage are prone to demise and deterioration, there has been vital need for the local community to preserve its social identity in this rapidly evolving world.

Hence, before these valuable articles go into extinction, active efforts should be executed to take the traditional knowledge to the new generation by means of online media and digital repositories and knowledge management systems. Using digital repositories and web portals give way to dynamic process of documentation, which will later lead to research in local knowledge sphere. In this regard, traditional knowledge mingled with modern technology will guarantee the persistence of indigenous knowledge pockets in the area. Creating digital library and indigenous knowledge systems on open-source platforms will increase the visibility and access to endangered elements of cultural heritage.

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