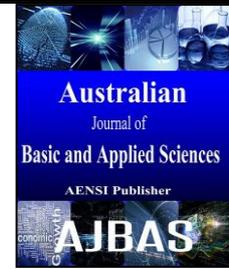




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### Documentation and Mapping of Local Knowledge in Malaysia

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#### ABSTRACT

A group of Malaysian academics recently embarked upon a transdisciplinary research programme investigating aspects of local knowledge in Malaysia. The researchers consisted of experts from sociology, anthropology, geography, history, language studies, literature, the sciences, pharmacology, performing arts, spatial technologies (GIS, GPS, remote sensing) and ICT. As part of the projected outcomes of this research programme, one of its ongoing projects aims to develop a Local Knowledge Repository Support System (LKRSS), with three main functions: (1) as a digital database to increase data accessibility efficiency; (2) to serve as a documentation center (analog and digital data) as reference resource and (3) as a living laboratory, a one-stop center for research and the actual experience of local knowledge. This paper presents a brief overview of local knowledge, describes the LKRSS system and challenges it faces besides emphasizing on the importance of developing the LKRSS for the conservation of data on local knowledge.

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#### INTRODUCTION

In recent times, many communities and organizations have acknowledged the value of local knowledge and the importance of preserving forms of traditional wisdom for future generations. These academicians and scientific researchers have discovered that knowledge which indigenous and local people hold about the earth, its ecosystems, wildlife, fisheries, forest and other integrated living system is extensive and extremely accurate (Wavey, R., 1993). Since the 1970's, there has been a growing body of literature emphasizing the importance of incorporating local knowledge and practices especially into development and conservation projects (Mercer, J., 2010). This awareness has caused many countries to develop and build their own Indigenous Knowledge Centres (IKC) in the effort to revive this knowledge, which would otherwise become extinct due to its method of oral transmission from one generation to the next. In line with UNESCO's desire to acknowledge the importance of local and indigenous knowledge in RIO + 20, one of the ongoing projects under this research is to develop a Local Knowledge Repository Support System (LKRSS) using Geographic Information System (GIS) and open sources application as the main approach for its development.

#### Local Knowledge:

Local knowledge or indigenous knowledge can be defined as the cumulative and complex bodies of knowledge (such as, language, attachment to place, spirituality and worldview), know-how, practices and representations that are maintained and developed by peoples with extended histories of interactions with the natural environment (UNESCO, 2006). It is an invaluable, diversified and comprehensive system that consists of adaptive skills of local people usually derived from many years of experience that have often been communicated through the oral medium and passed down from family members through the generations (Thrupp, L., 1989). Local knowledge is holistic, since there are no separate categories for science, art, religion, philosophy, nature, and culture (Battiste, M., J.S.Y. Henderson, 2000). In Malaysia, local knowledge is part of the national heritage which can be divided into tangible and intangible heritage Fig. 1). Local knowledge practices in Malaysia are in danger of becoming extinct due to the decreasing number of practitioners and also the process of urbanization. To prevent the loss of our national heritage, this research integrates the use of geographical information system (GIS) to develop a system where all the data collected on local knowledge can be stored and managed efficiently. In order to develop the LKRSS, data collection will be carried out in each state in Malaysia to record the

particulars of practitioners and operators involved in local knowledge in either tangible or intangible heritage. The information such as location and

documentation in the form of pictures are also recorded (Fig.2). Fig. 3 shows the conceptual framework of LKRSS.

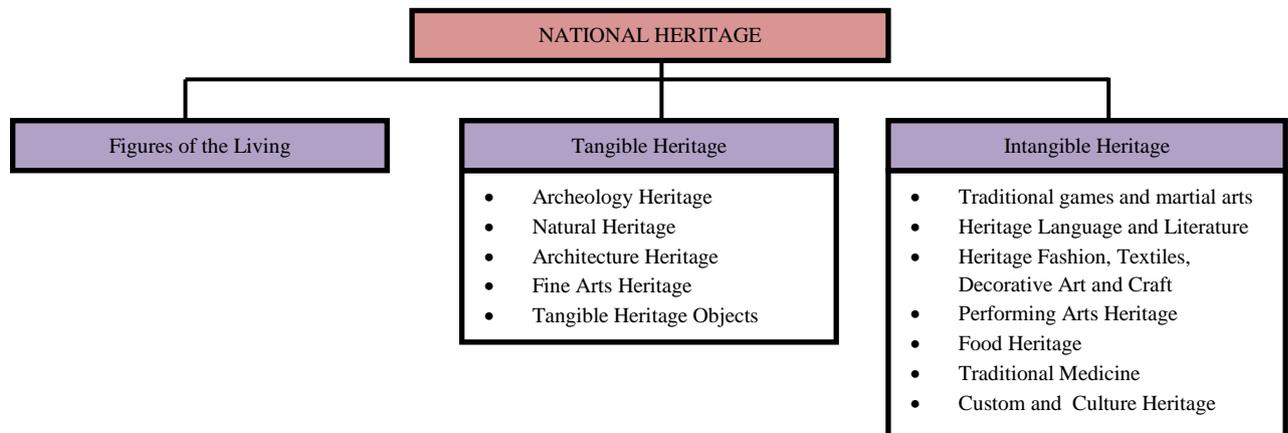


Fig. 1: List of national heritage category in Malaysia.

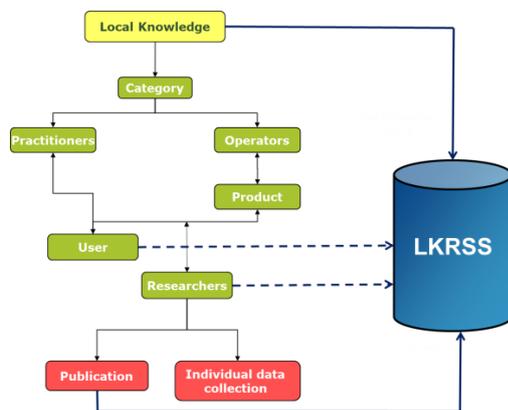


Fig. 2: Methodology for LKRSS data collection.

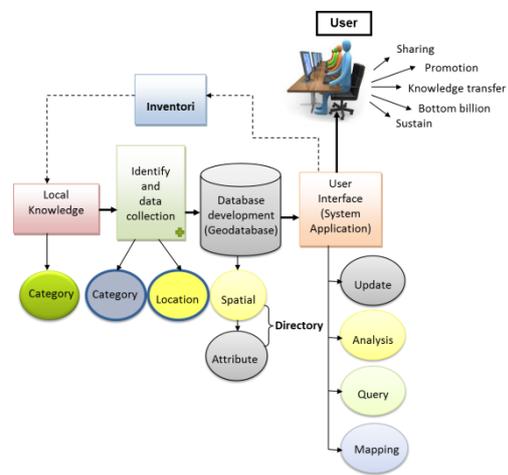


Fig. 3: Conceptual Framework for LKRSS.

Other than database development, this research will also develop a GIS online system known as WebGIS which integrates the internet (WWW) and GIS. This system will provide a user interface where the data and information can be updated, analyzed, queried and mapped by users. This online system will assist in sharing and transferring the knowledge; introduce and promote local knowledge in Malaysia and also sustain the information and knowledge for future generations.

**Documentation and Mapping:**

Documentation and mapping of local knowledge in Malaysia needs to be carried out in order to ensure the transmission of the knowledge to future generations. In the current situation where elders in a community pass away and younger generations lack the interest in learning and transmitting local knowledge, databases are viewed as a tool that could perpetuate our ancestors' knowledge. Documentation and mapping of local knowledge will assist in dissemination of information and knowledge and

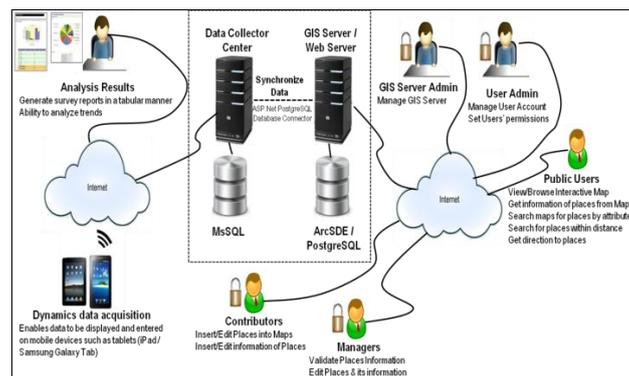
also for publication of studies either in electronic or printed formats. The WebGIS will also provide a global network service to enhance local knowledge sharing (Fig.4). With WebGIS the data and information in the system can be frequently updated by local knowledge experts, user/contributors and also practitioners (Fig.5). This system can store various forms of information on the local knowledge in Malaysia for each category mentioned in Fig.1, and also display information such as location, pictures, videos and etc.

**Issues and Problem:**

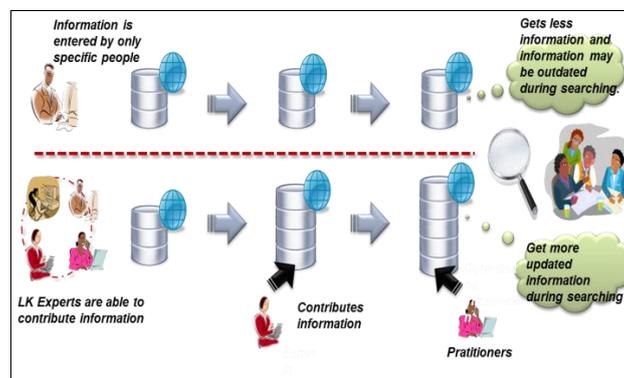
The issue of the extinction of some forms of local knowledge should be addressed properly because this knowledge also forms part of global knowledge which has its own value and relevance. However, local knowledge and access to knowledge is not spread evenly through a community or between communities because people have different objectives, interests, perceptions, beliefs and access to the information and resources (FAO, 2004).

Indigenous and local knowledge is actively sought after, updated and exchanged on a day-to-day basis and it may be physically recorded in various ways by knowledge holders, but it is often rooted in collective memory and transmitted orally between and within generations (United Nations, 2013). As such, sharing local and indigenous knowledge requires new approaches and understanding that extends beyond the experiences of local communities and mainstream scientific methods. To be effective and appropriate local communities and culture must search out new approaches in the exchange of information (Pulsifer, P., C. McNeave, 2014).

However, in the effort to document and map local knowledge as an approach to prevent its extinction, there are several issues and challenges that arise. First, regarding the definition of local knowledge itself; how to identify the origins of knowledge and its political boundaries because some forms of local knowledge appear in different countries. When researchers attempt to document local knowledge, the categories and types of information to be collected must be identified first; so issues of how, what, which, where, who, and why will emerge and these need to be clarified.



**Fig. 4:** Conceptual Framework for WebGIS application.



**Fig. 5:** Flow of information in Web GIS application.

Besides this, the structure of local and indigenous knowledge also presents challenges in the manner of developing the LKRSS since it consists of structured and unstructured data and as such, a system that is friendly to both kinds of data should be considered when creating the LKRSS. In Malaysia there is no systematic database developed yet to capture and document data on local and indigenous knowledge. Most data exists in the form of attribute or tabular data which is published or stored separately by individuals or organizations. Thus, an integrated and systematic system is required to improve data accessibility of local and indigenous knowledge in Malaysia. The researchers need to identify comprehensive and effective software and tools to ensure they are compatible to others in

LKRSS development. In addition, there are several other important issues that have to be addressed, especially those pertaining to confidentiality and legislation on knowledge sharing. The resource providers (local or indigenous communities) should be well informed of their rights, and made aware of the potential effects from their knowledge sharing when the data becoming public via the internet. Before making it public, some care should be taken in addressing issues of data security and levels of data achiever within the LKRSS to prevent its contents from being exploited. Finally, the documentation and mapping of local and indigenous knowledge in the LKRSS can be a costly exercise as it requires researchers to travel extensively for field work to collect the required information; in addition,

the setup and running of the system also requires a high level of technology performance. In short, the setting up and maintaining of the LKRSS requires careful planning and budgeting to ensure its sustainability.

#### **Summary:**

There is increasing recognition of the value and significance of local knowledge value and also the need to preserve it by communities and organization around the world. The documentation of local knowledge in Malaysia is important to ensure its continuous preservation. From the documentation process, the information will subsequently be stored into the GIS database system, LKRSS. The development and application of an online repository of local knowledge is a continuous and long-term project which involves cooperation and expertise at various levels. The LKRSS is being developed with the objective to contribute to the preservation of local knowledge in Malaysia. The system can then be accessed by different types of users (such as, practitioners, operators, researchers, local people, tourists and etc.) and will contribute towards sharing and promoting the knowledge to communities within and outside Malaysia and also for future generations. In addition, this system can also be used to market Malaysia as a cultural heritage destination for international tourists.

#### **ACKNOWLEDGEMENT**

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