



# THE SOUTH AFRICAN HERITAGE RESOURCES INFORMATION SYSTEM (SAHRIS): DEVELOPMENT AND CHALLENGES THROUGH MANAGEMENT OF CULTURAL HERITAGE RESOURCES THROUGH AN INTEGRATED WEB-BASED PLATFORM

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## Abstract:

The South African Heritage Resources Agency (SAHRA) is a statutory body created to implement the National Heritage Resources Act No.25 of 1999 and is responsible for the identification and management of the national estate of South Africa. In 2013, the South African Heritage Resources Information System (SAHRIS) was developed to create an inventory of the national estate and facilitate the management of heritage resources.

The SAHRIS platform is an interactive system that provides a collaborate space through which government officials, heritage practitioners, developers and researchers can engage with the management of the national estate of South Africa. Core functions include an online application system, in which public users and government officials collaborate and communicate; an archive of heritage sites and resources; protect heritage sites and resources that are threatened by development or mining activities; a collections management system for the effective management of heritage objects.

Despite its progressive efficiency, users of SAHRIS encounter challenges such as difficult navigatibility due to it serving a variety of users and applications. Furthermore, although it is a public domain and should therefore allow free access to all records, privacy of certain documents and records is important in order to protect researchers' interests and heritage resources from loitering and destruction. The advantage of a digital system is that it is work in progress and open to continuous improvement.

**Key words:** drupal, cultural heritage, documentation, heritage resource management, collaborative spaces

## 1. Introduction

The South African Heritage Resources Agency (SAHRA) is a statutory body created in terms of the National Heritage Resources Act (NHRA), No. 25 of 1999 (South Africa, Department of Arts and Culture 1999). This legislation replaced the previous National Monuments Act, No. 28 of 1969, and engaged with the need to incorporate heritage resources management with the constitutional recognition of the cultural rights of South Africans as expressed in the post apartheid period (Ndlovu 2011).

SAHRA is mandated in terms of this act to identify and manage South African heritage resources, which are part of the national estate of South Africa. The national estate is a composition of declared heritage objects (e.g., artworks, military objects), archaeological and palaeontological resources, meteorites, historical structures (e.g., buildings, monuments), maritime and underwater cultural heritage (e.g., shipwrecks) as well as burial grounds and graveyards.

The NHRA specifically states within its opening statement that SAHRA is "to introduce an integrated and interactive system for the management of the national heritage resources" (South Africa, Department of Arts and Culture, 1999). This specific mandate was achieved through the creation of the South African Heritage Resources Information System (SAHRIS). SAHRIS has provided an integrated web-based platform that not only achieves the goals of Section 39 of the NHRA to develop and maintain an inventory of the national estate but to also engage in more complex matters pertaining to the general management of heritage resources such as the permitting of research involving activities on heritage sites and export and destructive analysis of heritage resources; the commenting on development applications; and the logging of heritage crimes (Smuts 2015).

## 2. What is SAHRIS?

SAHRIS was created in order to address the opening statement of the NHRA. It provides a platform through

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which heritage resources can be identified, recorded, managed and protected.

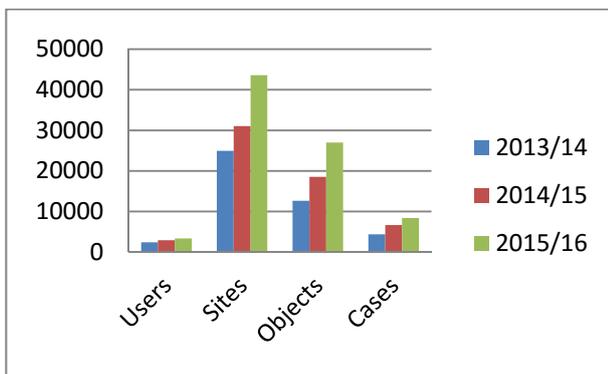
SAHRIS covers three main functions, namely, i) to serve as a repository of information on identified heritage sites; ii) to serve as a collections management platform for heritage objects; iii) as an integrated platform for complete heritage management (Smuts *et al.* 2016).

These integrated functions allow for the protection of heritage resources that are threatened by development or mining activities.

### 3. Development

The initial conceptualisation of SAHRIS began in the mid 2000's and was finalised in 2011 when it was recommended that SAHRA investigate the use of Free Open Source Software (FOSS) (Hill 2011). Owing to its large user base, integration of GIS functions, and existing catalogue of modules, Drupal was selected as the content management system (CMS) of SAHRIS. It was launched internally in 2012 and the final developed version released to the public in 2013.

The system made it possible to integrate the legislated mandate for heritage management with a full data collection system that could act as an inventory of the national estate of South Africa. This synergy has gone a long way in populating the database of the national estate. Since its public implementation, the number of users and sites, heritage objects and cases created on SAHRIS, has increased considerably, reflecting the public's increased engagement with heritage resources (Fig. 1). The aim is to have every existing heritage object and site occurring in South Africa recorded on SAHRIS with the help of its users, e.g. when researchers discover and excavate new archaeological or palaeontological resources or sites.



**Figure 1:** The use of SAHRIS has increased steadily per year since its launch indicated by the increased number of users and created cases, sites and objects on SAHRIS.

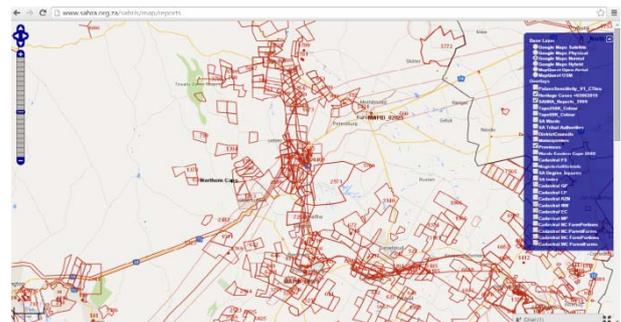
### 4. SAHRIS as an inventory of the national estate

The NHRA mandates SAHRA under section 39 to create a database that records all heritage resources that are deemed to be conservation worthy or that are afforded general protection under the NHRA (South Africa, Department of Arts and Culture, 1999)

### 5. Protecting heritage resources that are threatened by development or mining activities

Development is a necessity that benefits both the economy (e.g., by mining resources) and the general public (e.g. job creation, by building infrastructure for electricity creation and distribution, houses, hospitals, roads etc.). However, within any development footprint area, archaeological and palaeontological heritage resources may occur. The aim is to create a complete platform that includes all heritage sites and resources that developers can use to be alerted to the occurrence of heritage resources during the early stages of planning. The developer and SAHRA then use SAHRIS to interact and resolve conflicts by e.g. recording and mitigation of a heritage site or resources by a qualified archaeologist or palaeontologist. This ensures that mitigated heritage resources are accessioned in museums and still available to the public and researchers.

Furthermore, logging development applications on SAHRIS allows officials to examine the cumulative impact of development on heritage resources in South Africa, thereby allowing for more informed decisions (Fig. 2).



**Figure 2:** Cululative impact of development applications in Kathu, Northern Cape Province.

### 6. Collaborative spaces

SAHRIS also creates a collaborative space through which associated governmental departments can engage on matters that pertain to the management of heritage resources as is called for by both the National Environmental Management Act.

The logging of heritage cases on SAHRIS allows for the immediate and convenient access to a record of decisions taken as well as the transparency provided by the display of case particulars.

Taking the idea of collaborative spaces further, SAHRIS provides a platform for researchers to share information whilst still maintaining a level of privacy that can protect both the integrity of the resource they are studying as well as their own research topic.

### 7. SAHRIS and Heritage Management in South Africa

The promulgation NHRA instituted a three tier system of heritage management in South Africa. This means that the responsibility of managing heritage resources is split between National, Provincial and Local (Municipal)

levels. SAHRA as the national body is responsible for the assessment of Provincial Heritage Resources Authorities (PHRA) and the devolution of powers to the PHRAs in terms of the NHRA (Hine and Khumalo 2015).

The adoption of SAHRIS amongst the PHRAs allows for this devolution to take place whilst also allowing for effective and immediate monitoring. To date three of the PHRAs have been deemed fully competent to handle all aspects of the NHRA including archaeological resources. SAHRA is managing permitting and development applications on behalf of the remaining PHRAs.

## 8. Shortcomings of HRM in SA

The main shortcoming is the communication and engagement of researchers and SAHRA, and the lack of willingness to apply for permits. SAHRA does not have the financial and staff capabilities to follow up on transgressions of the NHRA. Streamlining processes via new, updated and relaxed policies may make the researchers' job easier and thereby motivate them to apply for permits. SAHRA recognises that only with the important help of researchers does it gain information on the existence and locations of heritage resources and sites to fill SAHRIS' database. Even more challenging is for SAHRA to follow up on developers to ensure they apply and comply with comments issued by SAHRA, such as employing a professional archaeologist/palaeontologist to monitor excavation works prior to construction or mining operations and report back on the finds.

## 9. Challenges facing SAHRIS

### 9.1. Complexity

A large criticism levied against the system has been the complexity of use. The system answers to a variety of uses and users, i.e., developers, researchers, heritage officers and other government officials use it for their applications, helping to create an inventory repository of the national estate by creating object and site records, and using the interactive map to record positions of sites and resources. This diversity of usage compromises the ability of the general public and officials to navigate and make effective use of the system. Indeed research conducted amongst the officials who make the most use of the system has shown that 35% of users are dissatisfied with the navigability of the platform (Jackson 2016).

### 9.2. Intellectual property and Licensing

The public nature of information loaded onto SAHRIS is guided by the Promotion of Access to Information Act (Act 2000) (PAIA) and Section 31 of the National Environmental Management Act (NEMA, Act of 1999), which invokes the right of the public to access records (Wiltshire 2013).

However, this legislated mandate does not apply to research data that have been donated for use on SAHRIS. In order to protect the intellectual property of the authors and still maintain the public nature of the system it was decided to license all content on SAHRIS

under the Creative Commons Attribution-ShareAlike License (CCBYSA). This allows users to explore and make use of the data on SAHRIS as long as the original author is cited and the data are not sold (Wiltshire 2013).

Whilst the general disclaimer for use of the website states that any information placed online will be a matter of public record, should the data be readily accessible to the public, especially where it includes research proposals and methodologies that are required by officials to process permit applications? Provision have been made for the secure upload of this information on SAHRIS, however this was done out of a reaction to concern raised by members of the academic community. SAHRA's own policy remains silent regarding to access to this information in relation to the provisions made in PAIA.

### 9.3. Conservation and information in the public domain

One of the core tenets of SAHRIS is the publically accessible nature of the site information available on the system. Section 39(6) of the NHRA expresses the public nature of the inventory, ensuring that it is available to any member of the public, provided that information can be kept private should its disclosure negatively impact on any person's economic interests, privacy, or on the conservation of a heritage resource or site (South Africa, Department of Arts and Culture, 1999).

SAHRIS requires that sites are geocoded when being captured, and while the functionality exists for the capturer to confine the visibility of a site to nominated individuals (Jackson, 2015), the question remains as to whether this is sufficient, especially considering that by default all sites are recorded publically. In the case of archaeological or palaeontological resources that are open to public visitation the risk of looting remains high; should these resources be accessible on an online platform (Chirikure 2013) However, closing access to these records would prevent developers and heritage practitioners from being able to consult the site location data during planning and management. This matter requires further investigation before a policy decision can be made.

### 9.4. Uptake of SAHRIS amongst provincial authorities

During the roll out of SAHRIS each of the PHRAs were visited in order to provide training, however it was soon discovered that four of the nine PHRAs had sporadic, throttled or unstable internet connections. SAHRA attempted to engage with the matter by dealing with the State Information Technology Agency (SITA) under whom most of the PHRAs IT requirements were handled, however this was not successful and it became evident that internet access in these offices were treated as a non essential service despite the roll out of web based system that would enable them to fulfil their legislated mandate (Wiltshire and Smuts 2014). In fact even amongst the functional PHRAs there has been resistance to the adoption of SAHRIS and to date it is only SAHRA and one of the PHRAs that have fully adopted SAHRIS. One PHRA even went as far as

attempting to develop their own system which replicates the functions of SAHRIS (Heritage Western Cape, 2015).

### 9.5. Daily work with SAHRIS from a Heritage Officer's perspective

When working with SAHRIS on a regular basis some drawbacks are noticeable. One of them is the inefficient workflow between the different tabs and pages, again due to the complexity of the system. Furthermore, a guided map or tabs would facilitate the application process. Additionally, automated responses would solve time constraint issues when working with deadlines. As an example, users are not being automatically notified by updates or status changes or when a permit report is due. If an applicant forgets to change the status to "submitted" or leaves it in "draft", the HO fails to pick it up and process it in good time, which becomes problematic when working according to a tight schedule.

## 10. Conclusion

SAHRIS has changed the manner in which heritage resources are managed in South Africa and opened up new possibilities for heritage management within the digital sphere. However, this shift has not been without its problems. Challenges include the complex nature of the system in its attempt to accommodate a wide variety of uses, which impacts the ability to easily navigate it. Furthermore, the questions of privacy and conservation are matters that require unpacking in order to ensure that a balance is reached between the public's right to access heritage information and the need to conserve these finite resources. However, such difficulties are far outweighed by the positive results experienced since the systems launch, and SAHRA remains dedicated to the constant improvement of the system and will engage with users in order to ensure that heritage continues to be managed in the digital sphere in South Africa.

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