

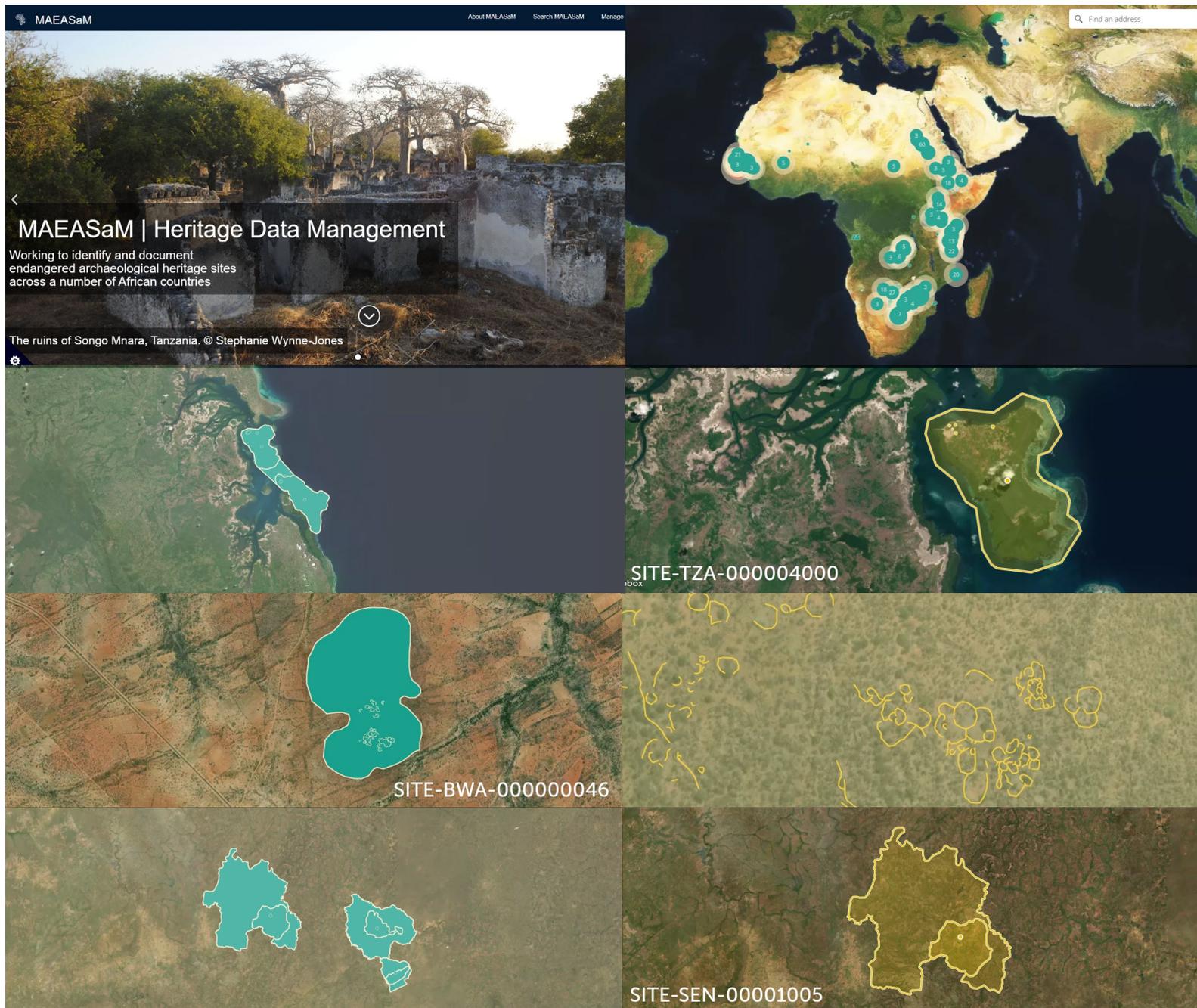
# MAEASaM

Mapping Africa's Endangered Archaeological Sites and Monuments

NEWSLETTER 9 | DECEMBER 2025



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MAEASaM Arches Demo Database front-end user interface. SITE-TZA-000004000 is of the UNESCO World Heritage site of Kilwa Kisiwani (Tanzania), SITE-BWA-000000046 is the national heritage site, Motsenekatse Ruin (Botswana) and SITE-SEN-00001005 is part of the UNESCO World Heritage Property of Bassari Country (Senegal).

## Editorial

By Paul Lane (MAEASaM Principal Investigator)  
and Stefania Merlo (MAEASaM Project Manager)

The ninth issue of the MAEASaM Newsletter (December 2025) marks an important milestone with the launch of the [MAEASaM Arches Demonstration Database](#), a public platform that showcases Africa's endangered archaeological sites and monuments. This issue highlights the technical

*continued...*

## SNEAK PEEK

- (p. 1) Editorial. By Paul Lane & Stefania Merlo
- (p.3) Explore the MAEASaM Arches Demo Database. By Renier van der Merwe, Mahmoud Abdelrazek & David Redhouse
- (p.5) Accessing Responsibly. By Orhun Uğur
- (p.6) Building a collection of controlled vocabularies for the Arches Database. By the MAEASaM Team



# MAEASaM | Heritage Data Management

Working to identify and document endangered archaeological heritage sites across a number of African countries

*Project team members and SAfA conference participants exploring the use of the MAEASaM Arches Demo Database during the 27th Biennial Meeting of the Society of Africanist Archaeologists (SAfA) in Algarve, Portugal (July 2025). Photographs by Lamine Badji (IFAN, University of Cheikh Anta Diop, Dakar).*

progress of the project and also its broader commitment to ethical, accessible, and structured heritage data.

At the heart of the newsletter is an introduction to the Arches Demo Database. Members of the MAEASaM Arches development team guide readers through the platform, explaining how to search for sites, navigate interactive maps, and explore detailed site reports. The Demo includes around 900 publicly available records from eleven African countries, drawing on UNESCO World Heritage properties, UNESCO Tentative List sites, and nationally gazetted heritage places. Although this represents only a fraction of the data digitised by the MAEASaM team in collaboration with stakeholders since 2020, it is hoped it demonstrates the flexibility of the Arches platform and its potential value for researchers, heritage practitioners, and the wider public.

Responsible access and reuse of data is another key theme. The article by our Digital Data Coordinator Orhun Uğur

focuses on the MAEASaM Demo Data Policy, explaining how metadata, licensing, and access levels are used to protect sensitive information while still supporting openness. In aligning with FAIR data principles and the CARE framework, the project has incorporated in the metadata schema information on copyright, Creative Commons licences, and citation.

The issue also reflects on the development of MAEASaM's extensive controlled vocabularies. With thousands of terms covering site types, materials, and chronologies, this work tackles long-standing challenges in structuring archaeological language while respecting regional diversity.

We hope that the MAEASaM Demo and the reflections that guided the collaborative work of the team and the project stakeholders will provide new ways to explore and care for Africa's archaeological heritage.

# Explore the MAEASaM Arches Demo Database

By Renier van der Merwe, Mahmoud Abdelrazek and David Redhouse

The Arches Development team provide a glimpse into our Demo Database and offer a guide on how to navigate and search the platform. Team members are continuing to update and modify the current system with the objective to enhance overall user experience. For an interactive web-based guide on how to explore the Demo platform visit <https://maeasam.org/explore-the-maeasam-arches-demo-database/>.

The MAEASaM Arches demonstration database is based on the main instance of the project's Arches platform which has been customised using seven resource models designed for the documentation of archaeological sites and monuments, and related information across eleven countries in Africa. The Demo database offers the opportunity to explore, navigate and access publicly available records about Africa's archaeological heritage sites. These sites include listed UNESCO World Heritage properties, UNESCO

Tentative List sites, and national gazetted heritage sites which have been identified by our collaborating national heritage institutions to be showcased for the purpose of this Demo. The Demo also illustrates the main capabilities of Arches and how it can be adapted for use by different stakeholders, each of whom may have different requirements and needs. The data (c. 900 site records) housed in this database is just a small sample of the thousands of digitised records compiled by the team since the start of the project in September 2020.

## 1. How to access the MAEASaM Demo database

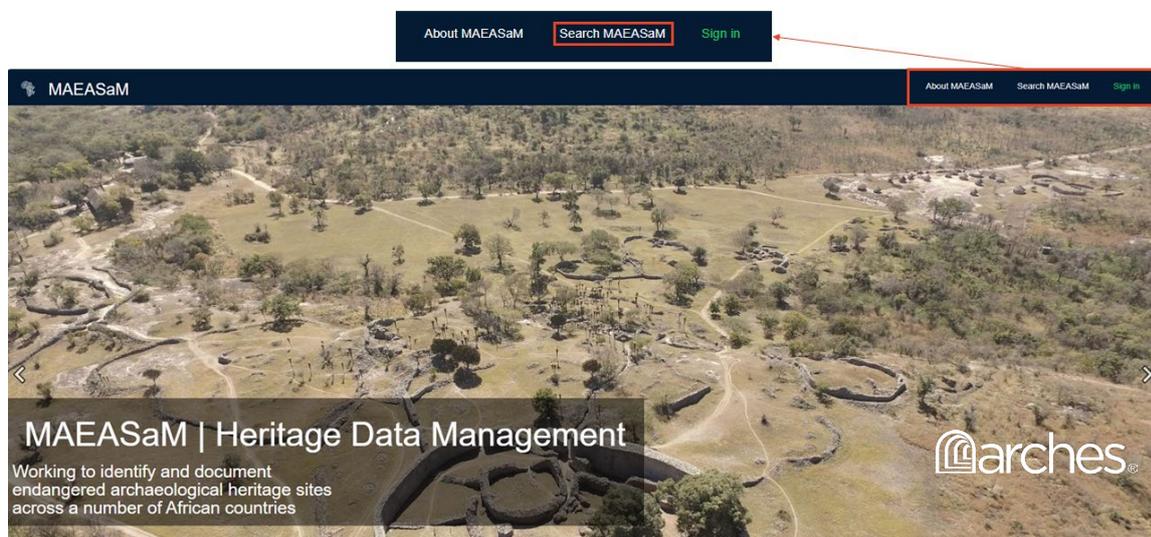


Figure 1: Main landing page of the MAEASaM Arches Demo Database (<https://tdb.maeasam.org>).

Navigate to <https://tdb.maeasam.org> and click on the 'Search MAEASaM' button on the top right corner of the Arches interface (fig. 1). You will not need to sign in to view, search and explore the Demo.

Take a few minutes to navigate around the Africa map to find your bearings! Figure 2 is a summary of the tabs and menus that you will find.

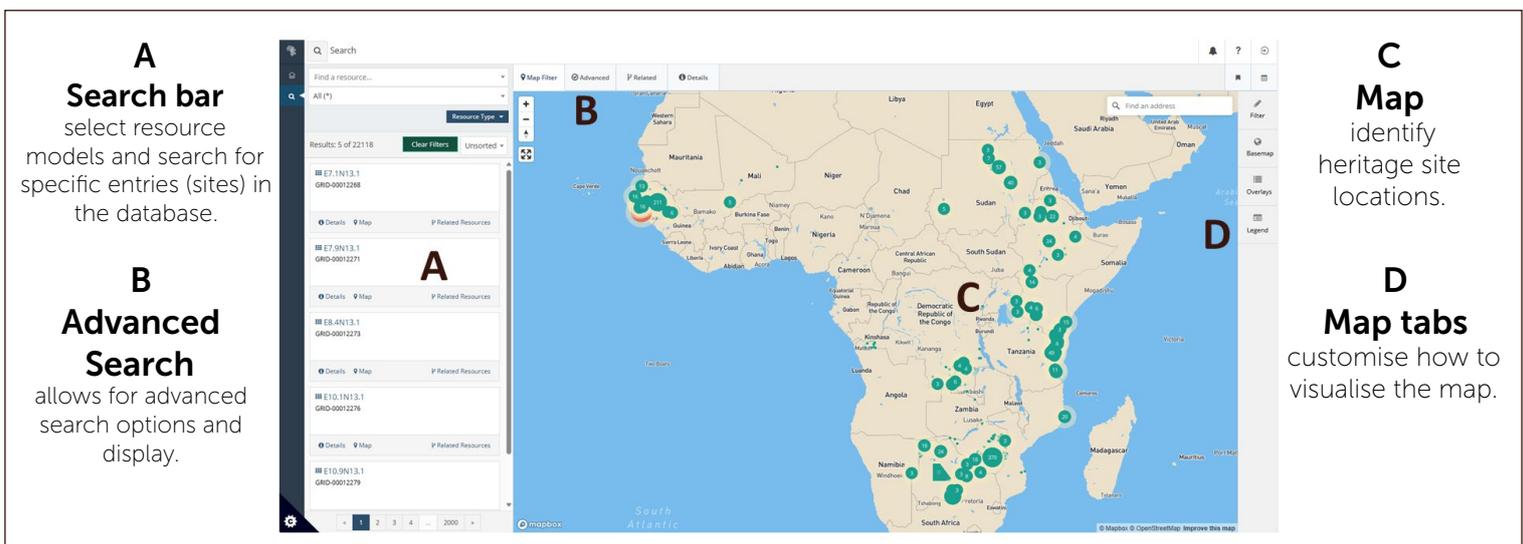


Figure 2: A summary of the tabs and search options on the MAEASaM Arches Demo interface.

## 2. Features to Explore

### i. Searching the platform (fig. 3)

To search for a specific heritage site in the database, navigate to the search bar and find the area that says 'Find a resource...'. Start typing the name of the site and a list of options will begin to appear. You can select the option that starts with 'Contains Term'.

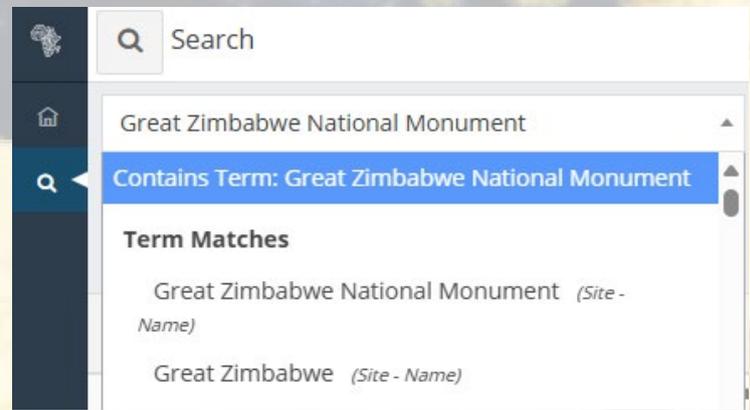
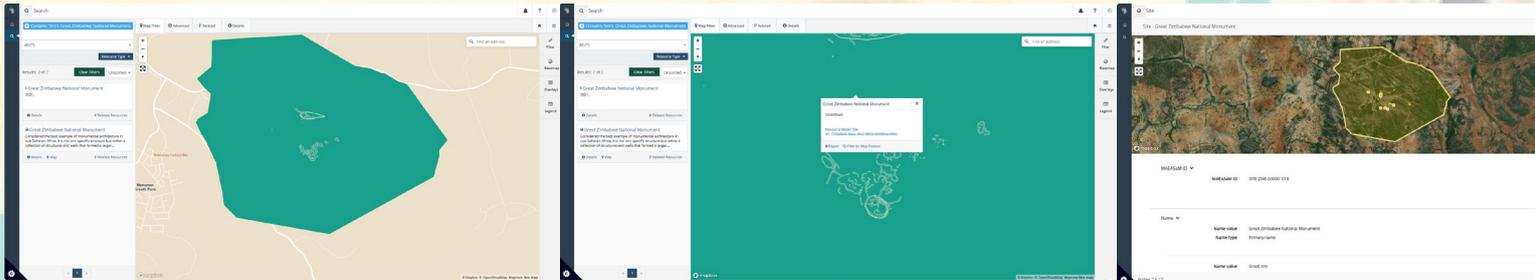


Figure 3: An example of searching the Arches platform using the Search bar. Site entered in the illustration above is of Great Zimbabwe National Monument (Zimbabwe). [MAEASaM ID: SITE-ZWE-000001018](#)

### ii. Accessing site records (fig. 4)



Once the term has been selected, the display will change to show the entries that match your site query.

To open the record of the site:

- click on the name of the record on the Results bar; **or**
  - click on any of the green elements on the map.
- A new tab will appear with the report.

Example of a site report for Great Zimbabwe National Monument ([MAEASaM ID: SITE-ZWE-000001018](#)).

Figure 4: Illustration of how to open a MAEASaM Arches Site Report.

### iii. Exploring connections and relationships between sites (fig. 5)

Once the report is open, start exploring information about the site. There are a number of interactive links that will provide additional information. Some of the reports also contain images. Click on the images to enlarge them.

Links to other resources in the database are also clickable. For example, 'Relationships to other sites', 'Chronology', 'Sources', and 'Recorder details'. Once these related links are clicked a new record will open containing further information.

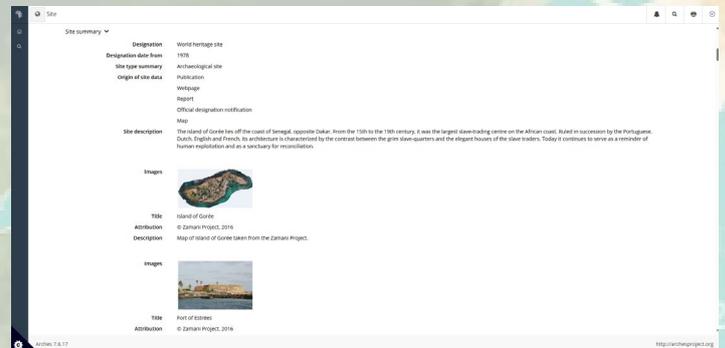


Figure 5: Arches Site Report for the UNESCO World Heritage Property of the Island of Gorée, Senegal. [MAEASaM ID: SITE-SEN-00001001](#)

### iv. Site locations (fig. 6)

A key feature of [Arches](#) is its ability to incorporate geospatial data into a written record. Arches can capture point, line and polygon spatial data that can illustrate many different site features. For example, in the record from Lamu Old Town, Kenya ([MAEASaM ID: SITE-KEN-00001001](#)), the polygon captures the core area of the site as well as the nominated buffer zone. Each point and/or polygon displayed on the Arches map is captured in Well Known Text (WKT) format. We have also included 'Former' coordinate information that captures information about original site coordinates (e.g. from publications) and their spatial accuracy as well as information about how these coordinates have been transformed for display in Arches.

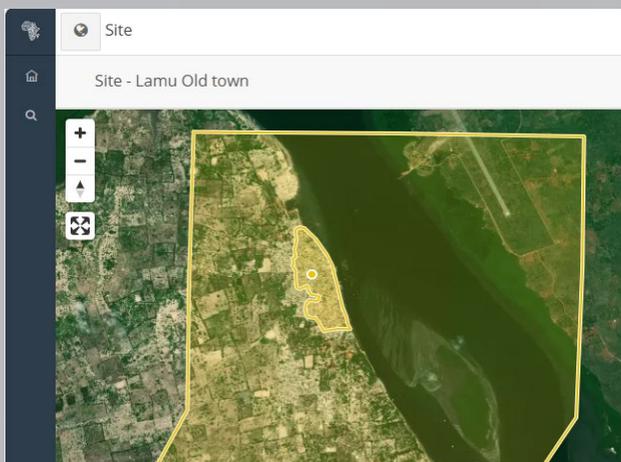


Figure 6: Displaying different types of spatial data in Arches. Example from the site of Lamu Old Town (Kenya). [MAEASaM ID: SITE-KEN-00001001](#).

**Note:** As this is a Demo instance of MAEASaM Arches database, not all features have been activated.

## 🎯 Accessing Responsibly

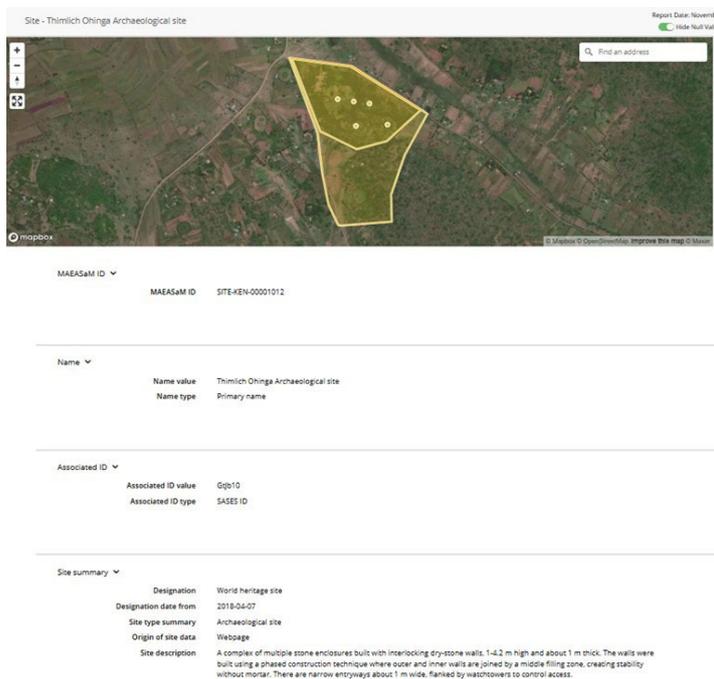
By *Orhun Uğur*

Accessibility and data reuse are synonymous with [FAIR data principles](#) but how to handle, share, and reuse data can involve great heterogeneity and complexity and is often dependent on institutional or individual researcher requirements. Knowing how to access and reuse data responsibly has been a priority in the development of the project's Arches database. MAEASaM Digital Data Coordinator, Orhun Uğur, explains the importance of the [Arches Demo Data Policy](#) and provides useful tips on how to access data responsibly.

The project, working with national heritage custodians and collaborators, has been preparing heritage data digitally with great care to make it accessible and meaningful. From planning the initial data workflow involving the collection of data, cataloguing and digitising, cleaning and curating, organising and validating, to being ingested into the Arches repository. The Demo group of collections have been collated from existing publicly available records including information about African heritage sites that are on the UNESCO World Heritage and Tentative lists as well as national gazetted sites.

We have been very mindful not to simply release these data unprotected into the wild, wild web (www). We safeguard it with required metadata elements and share it under a clear [Data Policy](#) which explains how to use it responsibly.

Metadata is the first piece of information that an end-user will encounter when opening a site report in Arches. For example, figure 1 illustrates the report page of the



**Figure 1: Arches Site Report for the site of Thimlich Ohinga (Kenya). MAEASaM Site ID: SITE-KEN-00001012.**

“  
**For the lifecycle of any research data, including cultural and natural heritage data, to be fulfilled, it must be shared and reused. Data comes alive when it is accessed and engaged with, rather than left unused.**  
 ”

— *Orhun Uğur*

Thimlich Ohinga Archaeological site in Kenya ([MAEASaM ID: SITE-KEN-00001012](#)). All site related information is presented in a 'metadata:data' structure, including elements such as an ID, name and name type, site description and other descriptive attributes about the site.

An important metadata group in the Arches Site Record is the Copyright and Access Group and provides rights-related information including the name of the Rights holder, the type of copyright licence attributed to the data, and the level of access (Table 1). In the Demo instance, data are made available to the public. However, the Arches platform also supports closed access and restricted access options.

**Table 1: A summary of the MAEASaM Copyright and Access group in Arches Demo Database**

<b>Rights holder</b>	Defines ownership and gives credit to the contributor (the rights holder). If a public user requires more information about the source or to provide feedback, contact the contributing institute in addition to viewing the repository entry.
<b>Licence</b>	We follow the <a href="#">Creative Commons licences</a> to show end users how to interact with the record, how it can be reused and what restrictions are applied. The default licence for the MAEASaM Arches Demo repository is <a href="#">CC BY-NC-SA</a> , which requires end users to give attribution, prohibits commercial use, and mandates sharing under the same terms. Contributors, however, are free to adjust the licence for individual records if necessary.
<b>Access level</b>	Permissions can be set based on the requirements of partner institutions' including internal policies regarding the sensitivity of data. Our vision is to make data as open as possible in line with the <a href="#">FAIR</a> (Findable, Accessible, Interoperable, Reusable) principles, but it is equally important to govern access ethically according to the <a href="#">CARE</a> (Collective Benefit, Authority to Control, Responsibility, Ethics) framework.



records, we recognise that the naming and classification of objects, places, sites, chronological periods, etc., are often subjectively defined, dependent on context, and can be non-transferrable across different regions, time periods, and linguistic groups.

Our work in developing the MAEASaM controlled vocabulary collections has offered us the opportunity to reflect on the current use of terms in the Archaeology discipline and how we might further the inclusion of diverse and, at times, conflicting concepts relating to heritage through the use of multilingual thesauri that have alternative terms and concept qualifiers.

## Importance of building a vocabulary collection

The use of controlled vocabularies in a digital environment allows us to compare heterogeneous heritage information by offering a shared form of communication to describe data through specified terms and concepts. Such vocabularies can be structured as simple alphabetical lists or built into hierarchies containing complex relationships to express broader and narrower concepts (fig. 1). Without the use of controlled vocabularies, we might lose the ability to harmonise heterogeneous heritage information and to conduct comparative analyses using different search queries. For example, by specifying a particular chronological period or site type, we are able to retrieve records about sites that share the same or similar conceptual terms not only at a regional scale of analysis but also at national and/or transnational scales of inquiry (fig. 2).

**Figure 1 (left): Hierarchical structure of the MAEASaM Relative Chronology vocabulary collection. Structure reveals broader chronological terms (e.g. [Later Stone Age \(Southern Africa\)](#)) followed by narrower concepts such as pottery types (e.g. [Early Cape Coastal Ware \(ceramic\)](#)).**

Broader/Narrower Concepts

- MAEASaM Bulk
- ... ChronoNameValue
- ..... Stone Age (Southern Africa)
- ..... Later Stone Age (Southern Africa)
- ..... **Ceramic Final Later Stone Age (Southern Africa)**
- ..... **Bambata Type A (ceramic)**
- ..... **Early Cape Coastal Ware (ceramic)**
- ..... **Late Matopan (ceramic)**
- ..... **Later Stone Age Grass-tempered Ware (ceramic)**
- ..... **Lugged Ware (ceramic)**
- ..... **Rippled Rim Ware (ceramic)**
- ..... **Southeastern Southern Africa Pre-Agriculturalist Ware (ceramic)**

**A**

Search: Contains Term: Iron Age (Eastern Africa)

Results: 5 of 19

- Iron Age (Eastern Africa)  
CHRN-00000289
- Sacred Mijikenda Kaya Forests  
The Mijikenda Sacred Kaya forests are an outstanding and unique African example of how the collective attitudes and beliefs of a rural society have shaped or sculpted a...
- Kaya Giriama (Fungo)  
Kaya Giriama, also called Kaya Fungo is the primary kaya of the Giriama people. It is located in the deep hinterland on the high coastal plain...
- Kaya Ribe  
Kaya Ribe the Kaya of the Wa Ribe people, is located about 2 km east of the Mombasa-Kaloleni road about 40 km from Mombasa. The general are...

**B**

Search: Contains Term: cairns

Results: 3 of 3

- Stone Cairns and Material Culture of the Middle to Late Holocene Lake Turkana  
2016, Wright David ; Grillo Katherine ; Soper Robert
- Kalokol Pillar Site  
Kalokol pillar site has 19 burial pillars and two cairns. The basalt pillars were brought from the source that is about 1 km away., Pastoral Neolithic (Eastern Africa)
- Stone Pillar sites of Turkana basin  
The stone pillar sites of the Turkana Basin are linked to the early development of food production in East Africa, unlike typical megalithic sites associated with settled farming societies...

**Figure 2: (A) An example of searchability in Arches using controlled vocabularies for relative chronology (e.g. contains term 'Iron Age (Eastern Africa)' and (B) an illustration of searchability for a particular site type (e.g. contains term 'Cairns').**

## Grappling with concept definitions and practical applications

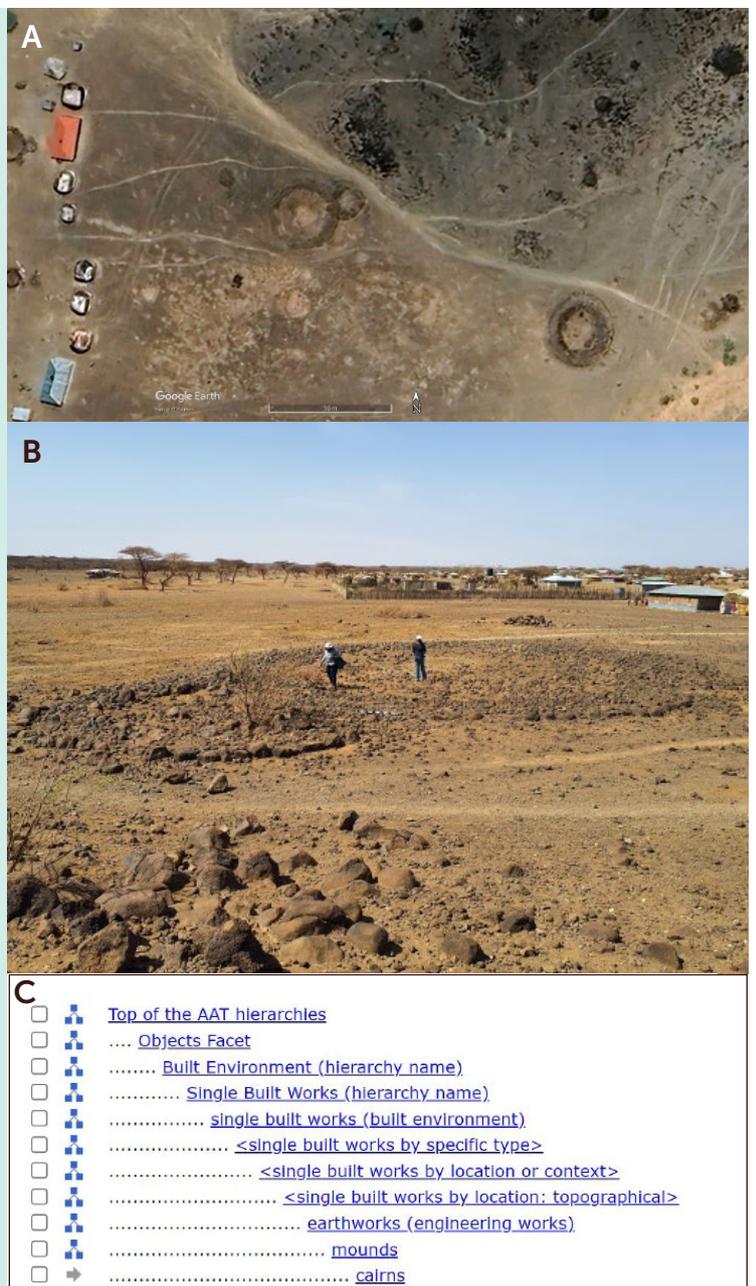
We often encounter multiple challenges in harmonising complex heritage information. For example, the defining of different site types and functions, site features, and chronological periods are by no means straightforward. This is something that has been highlighted by [McCoy \(2020\)](#), particularly around the issues associated with defining a 'site' and how the conceptualisation of such remains theoretically and practically problematic especially when visualising and representing it within geospatial contexts. Chronological concepts are by no means an exception. For example, a period that has been defined by one archaeologist may be differently defined by another. A period may also contain different meanings in different geographic contexts and timespans ([Rabinowitz et al. 2016](#)).

In trying to grapple with these ambiguities, the team began comparing various online Thesauri (including the [Getty Art & Architecture Thesaurus](#), [FISH Terminologies](#), and [EAMENA Arches Database](#) for site concepts and [PeriodO](#) and [iDAI ChronOntology](#) for relative chronologies) and mapped these concepts to one another in order to identify any differences and/or similarities in the way that they have been structured and defined. The mapping exercise revealed interesting results: 1. there currently exists a great deal of variability in how different online Thesauri go about structuring, categorising and defining unique terms and that the structuring of such Thesauri is dependent on the aims and objectives of those who are organising and collating them; and 2. many of the regionally specific terms relating to different site types, features, and temporal markers for the large majority of sub-Saharan African archaeology are largely absent from online Thesauri, making any further comparative analysis difficult (fig. 3).

In light of these findings, it was important to make the MAEASaM vocabulary collections as flexible as possible where in some instances alphabetical lists could be generated without making structured hierarchical relationships whilst in other cases allowing for more complex relationships to be established. Definitions also had to be adapted, where appropriate, in order to cater for concepts relating to sub-Saharan African archaeology which have been missing from predominant Euro-American definitions.

## Building the MAEASaM vocabulary collection

The MAEASaM vocabulary collections were compiled from both known and existing Thesauri (Table 1) as well as from an extensive but non-exhaustive literature survey of past and current African archaeological textbooks and



**Figure 3: Mapping the concept of Cairn using the [Getty AAT Thesauri](#) and comparing for cairns defined in an eastern African context. Image A of double ringed stone cairns seen from satellite imagery. Map data: Google, © 2004 Airbus (accessed 12-11-2025). Image B: Ground view of double ringed stone cairns from Kalacha (northern Kenya). Photograph by Angela Kabiru (BIEA). Image C, the Getty AAT containing different site types.**

regionally specific journal publications. The Relative Chronology vocabulary collection was expanded from 100 unique terms to contain over 500 regionally specific terms through the consultation of over 300 publications in both French and English. Like many other online period thesauri or gazetteers, the aim of the MAEASaM Chronology Collection is not to resolve dating problems, but instead to flag alternative interpretations and debates. Where applicable, concepts may carry a qualifier to distinguish similar or same terms (names) but with different definitions based on geographic and/or temporal context.

## The use of qualifiers in some of our vocabulary

The use of a concept qualifier allows us to distinguish the broader context of a term or another significant

defining characteristic of that term. In the MAEASaM Relative Chronology thesaurus qualifiers have been used to specify the same terms but with different geographic or temporal extents, and to distinguish a term by the 'chronology type' by which it has been defined. Where applicable, qualifiers have been represented by parentheses ( ) at the end of a term. Instances of qualifiers include for example: [Middle Stone Age \(Southern Africa\)](#), [Acheulean \(Senegal\)](#), [Letsibogo \(ceramic\)](#), [Khami Indo-Pacific series \(glass bead\)](#), [Reef-coral buildings \(architecture\)](#), etc.

**Table 1: Available online Thesauri and gazetteers consulted for compiling the MAEASaM controlled vocabularies.**

<b>Getty Art &amp; Architecture Thesaurus® Online (Getty AAT)</b>	Structured resources that can be used to improve access to information for art, architecture, and other material culture. ( <a href="#">Link</a> )
<b>Forum on Information Standards in Heritage (FISH Terminologies)</b>	Terminology used for recording archaeological techniques, objects, monuments, materials, heritage threats, etc. ( <a href="#">Link</a> )
<b>EAMENA Project</b>	Vocabulary Collections from the Endangered Archaeology in the Middle East and North Project. ( <a href="#">Link</a> )
<b>International Council on Monuments and Sites (ICOMOS)</b>	Guidance on Heritage Impact Assessments for Cultural World Heritage Properties. ( <a href="#">Link</a> )
<b>PeriodO</b>	A gazetteer of scholarly definitions of historical, art-historical, and archaeological periods. It eases the task of linking among datasets that define periods differently. ( <a href="#">Link</a> )
<b>iDAI.ChronOntology</b>	A webservice that connects period terms to datings. ( <a href="#">Link</a> )

## Expanding and accessing the vocabulary collections

Whilst the project's vocabulary collections will undoubtedly continue to expand with the addition of more regionally specific terms in Phase 2 of the project, we hope that the vocabulary work developed thus far will contribute towards placing African archaeological concepts and terms within an open linked data environment and by emphasising the need to revisit and perhaps redefine our past and current uses of terms in the African Archaeological discipline. We are also looking forward to the release of [Lingo](#) for Arches version 8. Lingo is a management tool for shared controlled vocabularies to describe cultural heritage data and will be more accessible to end-users. The release of Arches Lingo is expected for early next year (2026).

### Citations

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## Stay in touch!

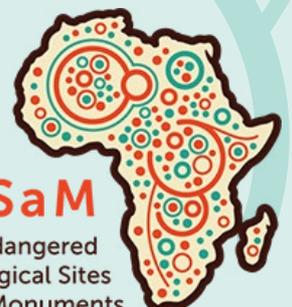
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