

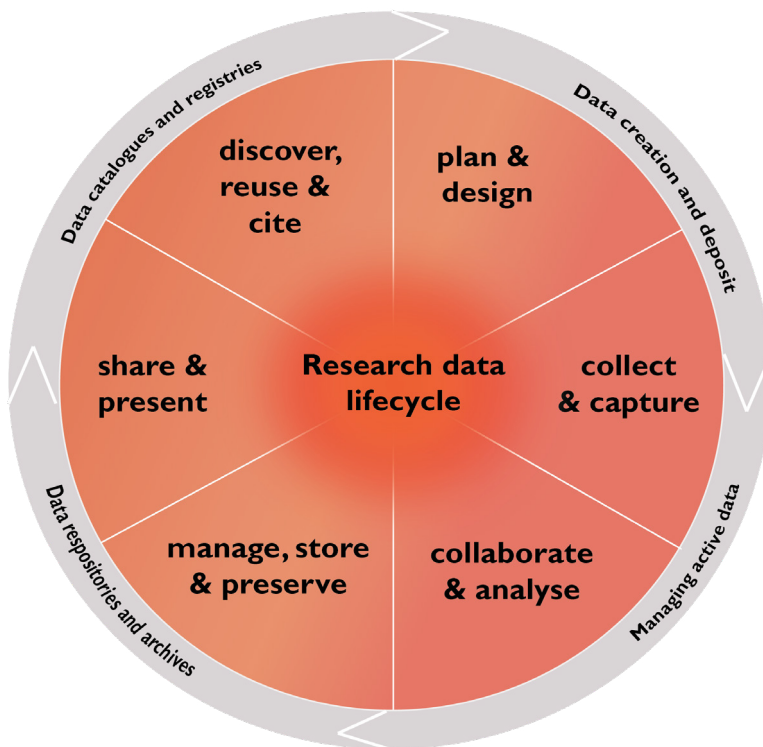
# MAEASaM

Mapping Africa's Endangered Archaeological Sites and Monuments

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Above: Graphic of a general research data lifecycle. Adapted from [Jisc Research data management toolkit](#).

## 🕒 Welcome to this issue

It has been a few months since our last update; our entire team with project partners and collaborators having been diligently working on the production, processing and dissemination of data across the project.

With that in mind, we thought it would be useful to look into the archaeological data management lifecycle - from collection to transformation, dissemination and preservation. Data, especially archaeological data, can be interpretative, often incomplete and sometimes imperfect. These qualities make it both exciting to work with and challenging to navigate. Embracing the potential and limitations of such data is a fundamental aspect of the project.

We kick things off with a simple, clickable summary guide, compiled by Elias Michaut (UCAM), drawn from insights provided by expert speakers at the MAEASaM-MAHSA Data Management online workshop held in July this year. This is followed by a contribution from the

Zimbabwe Museum of Human Sciences (ZMHS), where Bvocho, Mundopa and Mkenala shed light on their ongoing digitisation work involving the transformation of Zimbabwe's paper-based sites and monuments records into digital format.

The validation of archaeological sites through ground verification is a pivotal step in the data production process and workflow. In this context, colleagues from Kenya and Tanzania share their recent fieldwork experiences to verify both legacy and remote sensing data for archaeological sites.

We round up this issue with snapshots of some of the events, training and workshops with which the project has been involved in the last couple of months.

We hope you find this issue informative, and we look forward to sending you more updates soon.

## 🕒 SNEAK PEEK

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### Snapshots

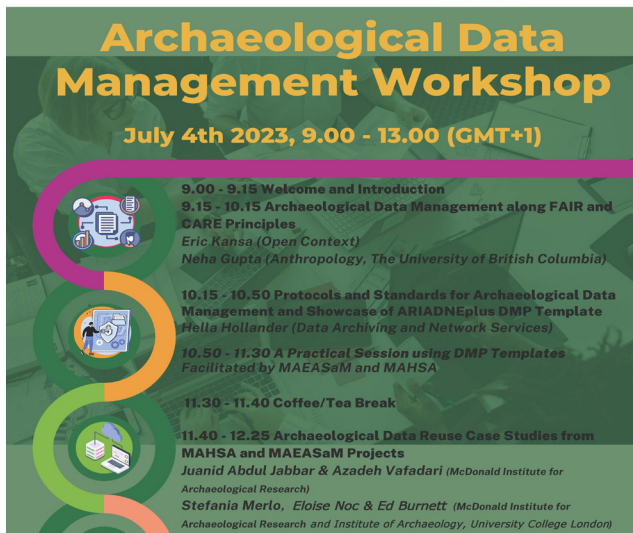
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## Archaeological data management: a quick summary guide

Reflecting the importance and complexities of archaeological data management, a half-day, open access online workshop was held jointly with MAHSA (Mapping Archaeological Heritage in South Asia) on 4 July 2023, attracting more than 100 participants on the day. Below we outline some key principles highlighted by the speakers, who included Eric Kansa ([Open Context](#)), Neha Gupta (University of British Columbia), Hella Hollander ([DANS](#)), Sacha Jones ([Open Research Services, Cambridge University Libraries](#)) and MAEASaM and MAHSA members.



### 1. FAIR and CARE

Eric Kansa and Neha Gupta's presentations focused respectively on FAIR principles (Findable, Accessible, Interoperable, Reusable) and CARE principles (Collective benefit, Authority to control, Responsibility and Ethics).

- FAIR Principles - [GO FAIR](#): mostly concerned with making data reusable and interoperable with a focus on metadata. They include technical standards that can be implemented to promote data interoperability.
- CARE Principles — [Global Indigenous Data Alliance](#): rooted in Indigenous data governance, sovereignty and ethics, with the aim of benefiting Indigenous Peoples and local stakeholders, in full acknowledgement of power differentials, sensitivity of information and provenance.

Both FAIR and CARE are relevant to the work of MAEASaM, given its large scale and the (post)colonial context in which a lot of the data entered was collected.

### 2. Data management planning tools - ARIADNEplus

Hella Hollander's ([DANS](#)) presentation plus a demonstration by Paola Ronzino ([ARIADNEplus](#)) signposted useful information such as:

- Guides and training materials developed by DANS to 'FAIRify' data management and make data reusable: [DANS Training](#)
- User-friendly online tools from the ARIADNEplus European project to help with data management planning, based on open and FAIR principles:
  - 'Comply or explain' six-step protocol for archaeological data management: [Data protocol](#)
  - Template for creating an archaeological data management plan: [ARIADNEplus Data Management Plan Tools](#) organised around six questions - Data summary, FAIR data, Allocation of resources, Data security, Ethical aspects, Other.
  - Training/other resources: [ARIADNEplus training hub](#)

### 3. Data preservation and long-term data storage

Sacha Jones outlined some key steps for ensuring data can be found, understood and used in the future for as long as necessary, including not leaving preservation until the end of the data lifecycle. These principles included saving in open or common file formats; see for example guidance from:

- University of Cambridge: [Data Management Guide](#)
- UK Data Service guidance: [ukdataservice.ac.uk](http://ukdataservice.ac.uk)
- Library of Congress: [Research Guides](#)

### 4. Data collection and reuse: case studies from the MAEASaM and MAHSA projects

Stefania Merlo, Eloise Noc & Ed Burnett (MAEASaM) and Junaid Abdul Jabbar & Azadeh Vafadari (MAHSA) presented on data production processes and workflows drawing on case studies from the projects. There are various definitions of data reuse as highlighted by [deSandt et al. \(2018\)](#). Both projects discussed:

- the diversity and heterogeneity of heritage data and that there is a need to understand the contextual framework in which these data are created, what type of interventions might need to be made, and how these data can potentially be reused.
- there are multiple different types of workflows that can be developed to suit individual researcher needs.



Above: The digitisation team from the Archaeology Unit at Zimbabwe Museum of Human Sciences (ZMHS) in Harare. Pictured left to right: Rejoice, Moses Mkenala and Nyararai Mundopa.

## 🕒 The digitisation of ZMHS archives

By Godhi Bvocho, Nyararai Mundopa & Moses Mkenala  
Zimbabwe Museum of Human Sciences (ZMHS)

For a long time, the Zimbabwe Museum of Human Sciences (ZMHS) has been grappling with a large corpus of paper-based and other material forms of records that are now very fragile. Traditionally these records can only be accessed in physical format by visiting the museum. The National Museums and Monuments of Zimbabwe (NMMZ), in partnership with Uppsala University (Sweden) and the MAEASaM project, have initiated a digitisation project focussing on records belonging to a large sites and monuments archive housed at ZMHS.

The ZMHS documentary archive forms part of The National Archaeological Survey Catalogue for reported and confirmed sites found in Zimbabwe. The archive has a long history that can be traced back to 1948 when it was formally constituted by the Historical Monuments Commission during the colonial era.

The current project aims to contribute towards the preservation of this endangered documentary archive and to help in the critical monitoring and protection of archaeological heritage over time. The project is led by a team comprising of the

Project Coordinator and Regional Director Godhi Bvocho, a digitisation technician Moses Mkenala, and an archaeology curator, Nyararai Ellen Mundopa, from ZMHS. University students on industrial attachment to the museum are also assisting in the project.

### Why do we digitise our records when we already have them on paper?

In the case of ZMHS, the documentary archive is digitised largely to ensure that researchers and other users can continue to have access to heritage information without damaging the original source. Digitising may also help museum staff to be able to access and retrieve information for management and curatorial purposes more easily. It is estimated that museums display only about five percent of their collections at any given time with the remainder 'hidden' in the archive.

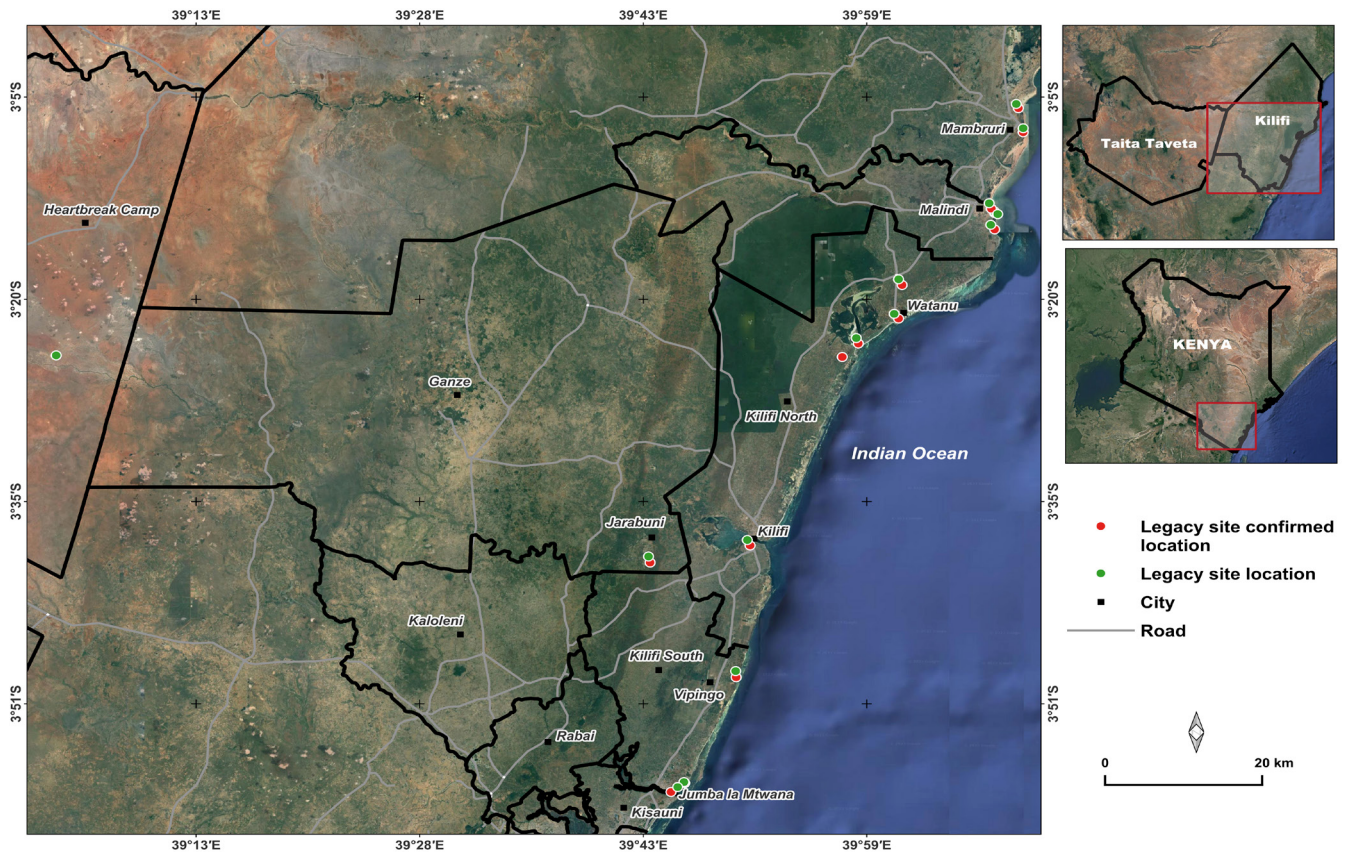
### What we are digitising

We have prioritised digitising records that are unique, currently not in the public domain, and are not accessible elsewhere in a digital format. We also believe that it is important to digitise as many of the earliest and most ephemeral records as possible. So far, we have worked on a list of site index cards and are currently in the process of scanning site files. All of this is conducted using a high-quality flatbed A4 scanner with larger sized records being sent out to a vendor for scanning and further metadata capturing. We also use a three-tier checking system which involves three people to verify

the metadata of the scanned documents. The process of digitisation will be ongoing.

### Looking to the future of digitisation in museums

As the adoption of digital technology is growing at an astonishing rate, so should follow greater visibility of the museum, not only in the protection, conservation and management of cultural heritage but also in its accessibility to different publics.



Above: Map illustrating the area of fieldwork in coastal Kenya and the distribution of sites visited. Map created by Nicolas Sagna, IFAN-UCAD.

## From Mombasa to Malindi: an archaeological survey of coastal Kenya

By Angela Kabiru<sup>a</sup>, Pamela Ochungo<sup>a</sup>, John Kanyingi<sup>a</sup>, John Munyiri<sup>b</sup> & Franklin Onyango<sup>b</sup>

a. [British Institute in Eastern Africa \(BIEA\)](#)

b. [National Museums of Kenya \(NMK\)](#)

Angela Kabiru, Pamela Ochungo & John Kanyingi from the British Institute in Eastern Africa (BIEA) and John Munyiri & Franklin Onyango from the National Museums of Kenya (NMK) launched their second phase of archaeological fieldwork along the coast of Kenya. From Mombasa to Malindi, 41 archaeological sites and commemorative monuments were located, digitally recorded and assessed in terms of their current state of conservation. Below is their account.

Our March 2023 fieldwork formed part of the second phase of our coastal survey in Kenya. Previously, the team visited an area that stretches over 100 km between Vanga (at the border with Tanzania) and Mombasa, with the aim of verifying sites identified through remote sensing and revisiting a selection of sites known through legacy

records (i.e., sites and monuments reports, site index cards, topographic maps) to establish their current state of conservation. What we found during this initial investigation was that many locations of sites reported from archival records were problematic with some sites located hundreds of metres from reality. This second phase of fieldwork was therefore aimed at not only documenting sites further along the coast but to see if we could address some of the challenges in verifying the location of these sites on the ground. Here we extended the survey to include an additional area of 117 km from Mombasa to Malindi along the 420km Kenyan coastline (see map above).

In total 41 sites were confirmed and digitally documented using the project's [KoBoCollect](#) app. Five previously unreported sites were found, adding to an already complex and rich history of this region. Sites included mosque ruins,

Islamic tombs, gazetted heritage properties and commemorative sites. We started our survey in Mombasa conducting conservation assessments on several gazetted properties that are protected under the Museums and Heritage Act (2006) of Kenya and managed by the National Museums of Kenya. On the fourth day of our survey, we located Mtwapa, a Swahili port city located on the north side of Mtwapa Creek which had been gazetted in 1935. In the late 1960s, [Garlake](#) documented over 60 houses there (see [Wilson 1980](#) and [Kusimba 1998](#)). [Wilson \(1980:54\)](#) observed that the site was of great archaeological potential for settlement pattern studies, surveying and mapping, architectural study and excavation with few other sites rivalling it in quantity and quality of its standing remains. The site was considerably larger than it is today. Upon our visit we found that

continued on page 5.



Left: (a) Mtwapa, a Swahili port city located on the north side of Mtwapa Creek, (b) standing qibla in Watamu and (c) town ruins of Mnarani. Photographs courtesy of the BIEA and NMK.

some elements of the site have been partially destroyed by private developments including modern housing as well as by the unmonitored growth of thick vegetation causing some structural damage to the architecture. We later recorded a remarkably well-preserved temple ruin in Watamu which is now situated within a modern housing complex. Towards the end of our survey, we visited Mnarani Ruins in Malindi. Mnarani was one of the first properties to be gazetted when the Preservation Ordinance Act came into effect in 1927. Kirkman (1959)

reported that tombstones from several of the tombs fell around 1925 when firewood cutters and cultivators moved into the area. The Public Works Department then worked to consolidate the mihrab and two tombs. Today, Mnarani is a popular tourist site with many tourists coming from Malindi.

In his detailed reports on the state of conservation on Kenyan coastal sites, Wilson (1978, 1980, 1982) identified several threats to coastal heritage sites, and similar threats were identified during our survey. The most severe of these is

mechanical and chemical weathering due to erosion by wind and water. Changing land use patterns including urban expansion are other areas of concern. On our visit we found that many of the sites were well maintained and are currently in a stable or good condition. However, others require urgent interventions in terms of repairs and maintenance, especially those located on private land.



The team from left to right: Pamela Ochungo, Lyrics Otunga, Angela Kabiru, John Munyiri, Franklin Onyango, James Njenga around the Great Baobab of Mnarani ruins, Malindi. Baobab trees may live for several thousand years and are thought to be an abode for the spirits and therefore considered sacred by local communities.

## ○ Mapping heritage sites in mainland Tanzania

By Thomas Biginagwa <sup>a</sup>, Stephanie Wynne-Jones <sup>b</sup>, Akinbowale Akintayo <sup>b</sup>, Daryl Stump <sup>b</sup> & Titus Ombori <sup>a</sup>

a. [Department of Archaeology and Heritage Studies, University of Dar es Salaam, Tanzania](#)

b. [Department of Archaeology, University of York, UK](#)

Members of staff and postgraduate students of the Department of Archaeology, University of Dar es Salaam embarked on a ground-truthing survey of archaeological sites as part of the MAEASaM project in Iringa, Mbeya and Ruvuma regions of Tanzania. This involved validating the geographic locations of archaeological sites that have been documented from legacy data; ground-truthing the presence (or absence) of possible sites in areas where predictive modelling has predicted the highest probability of having a site; as well as ground-truthing sites that have been identified via remote sensing (Google Earth Survey). In addition, to further locate these sites, community mapping and oral interviews were carried out during the fieldwork (see map below).

Prior to the fieldwork, the survey team had an opportunity to attend both virtual and physical training organised by project members from

the University of York. The training focused on the use of [KoBoCollect](#) for conducting field data collection as well as techniques used for transect surveys. The location of some known sites was pre-loaded on tablets before going to the field.

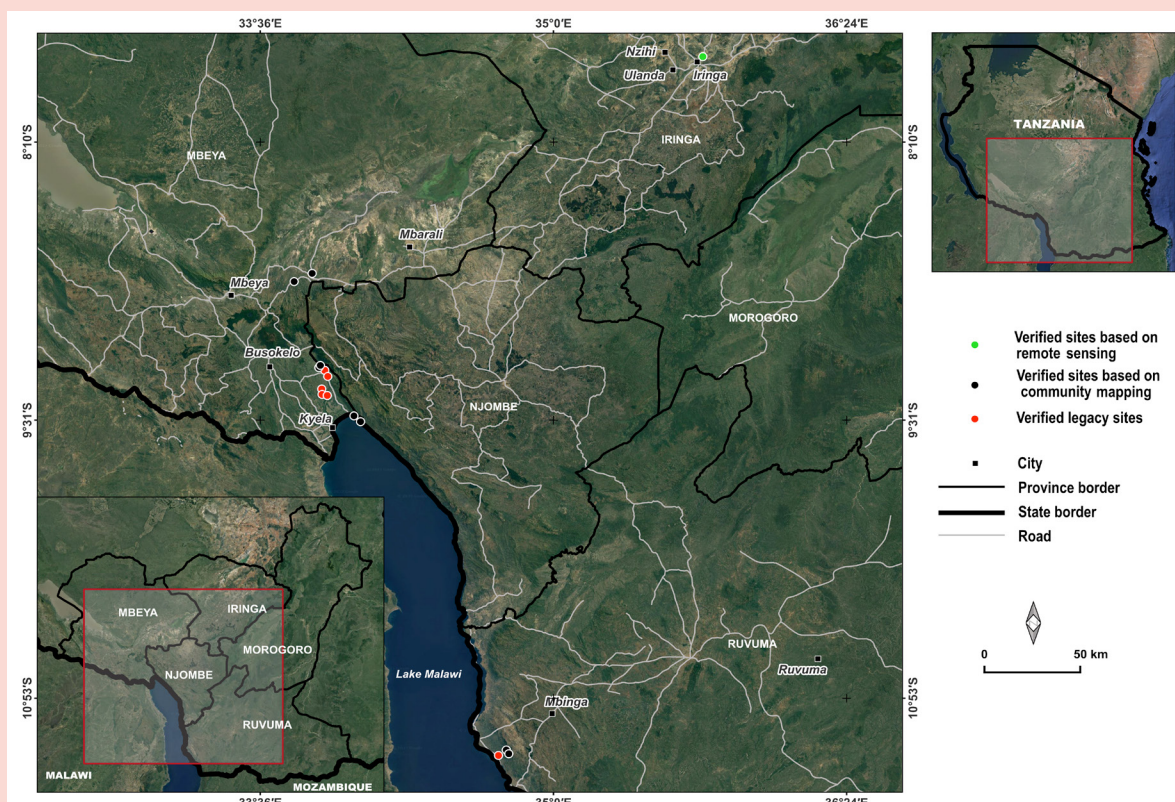
In Iringa region, nine sites from the Nzih, Ulanda, Isakalilo, Mwitivila and Mkwawa wards were visited and information about them was documented. In Mbeya region, three districts of Busokelo, Kyela and Mbarali were surveyed, where ten new Middle Stone Age, Later Stone Age and Historical sites were discovered. Lastly, in Ruvuma region, two districts (Mbinga and Nyasa) were surveyed, and three new sites were documented in Lundo ward.

One of the challenges encountered during the fieldwork was that most of the sites are located on high elevations and physical strength was required to access them. For example, it took the team over two hours to climb the Mtwivila, Kibebe, and Mkwawa hills in the Iringa region. However, we were



Above: (a) A limestone cave discovered in Mbeya and (b) a rock shelter discovered in Iringa. Photographs courtesy of Tom Biginagwa (UDSM).

undaunted and able to navigate past the challenges in most cases.



Above: Map illustrating the areas of fieldwork in Tanzania and the distribution of sites visited. Map created by Nicolas Sagna, IFAN-UCAD 6



Above Left: Workshop members from the National Museums and Monuments of Zimbabwe, Department of the National Museums and Monuments of Botswana, University of Pretoria and colleagues from the Origins Centre (WITS) and Uppsala University in Johannesburg (5 - 8 June 2023). Right: Participants from the National Museum of Tanzania, Zanzibar Museum and Antiquities, University of Dar es Salaam, Ethiopian Heritage Authority, Addis Ababa University, National Museums of Kenya, British Institute in Eastern Africa and the University of Cambridge in Nairobi (2 – 4 August 2023).

📍 Regional workshops: Building networks and digital tools for Africa’s Archaeological Sites and Monuments

Project partners from Southern Africa and Eastern Africa ran two regional workshops on the theme of building networks and digital tools for archaeological heritage documentation and management in Africa. The events were attended by over 36 project partners and collaborators who gathered at the Origins Centre (WITS), Johannesburg (5-8 June) and the British Institute in Eastern Africa (BIEA) and National Museums of Kenya (NMK) in Nairobi (2-4 August). Several important themes were reflected upon:

- 📍 **Mapping heritage information: past, present, and future:**
  1. Digital data infrastructures and the role of heritage information
  2. Working from analogue to digital
  3. Trying out the tools: Arches database
- 📍 **Digital sustainability and data management:**
  1. Thinking about digital heritage data for the long-term
  2. Build your own Data Management Plan (DMP)
- 📍 **Joined up thinking for the monitoring of heritage sites**
  1. Networking for strategising at regional level

Thanks to all our collaborators and partner institutions as well as to guest speakers (Prof. Serena Coetzee and Prof. Innocent Pikirayi from the University of Pretoria and Prof. Hussein Farah from the Technical University of Kenya) for making the events a great success. We look forward to the next regional workshop taking place in Senegal soon. In the meantime, you can click [here](#) to visit the regional workshop photo gallery.

📍 Presenting archival data for environmental modelling at SCOLMA 2023

Stefania Merlo (MAEASaM Project Manager) presented a paper on the climate emergency and coastal heritage sites in Africa at the annual SCOLMA Conference (the UK Libraries and Archives Group on Africa) in London. This year’s conference set out to explore the library and archive relating to Africa and the environment, and how these records are collected, catalogued, preserved and used in research and teaching. The event raised important questions on how records are being used to document and understand the history of climate change, and how to help predict future emergencies and influence current policy.

Stefania’s paper presented on the methodology that the MAEASaM project has been developing to integrate long-term knowledge on heritage sites through the digitisation of archival data such as sites records, including photographs and drawings, topographic maps and published papers, and cutting-edge climate models to predict the present and future consequences of climate change on the preservation of African coastal heritage sites. A case study looking into the coastal heritage of Kenya, Tanzania and Senegal was used to illustrate the methodology and reflect on its potentials and issues.

## Reflecting on invisible records and the digitisation of the past at the Obliterate Workshop 2023

In the 'Obliterate' workshop, held at the Origins Centre, University of the Witwatersrand (Johannesburg), 7-8 September 2023, participants were asked: how we can engage in new methods of making the museum relevant to African realities today?

The project presented a paper on the complexities and challenges of working with some of the legacy records. Often, these records consist of multiple resources and are rarely directly accessed as whole, whether by the general public or by practitioners themselves. They are in many ways invisible. Here we reflected on the potential opportunities for enabling the visibility and accessibility to these rich 'texts' through digitisation. Such archives are central for everyday decision-making about heritage, but they also require careful introspection, particularly about past and current ontologies that shape how heritage is practiced today.



Above: MAEASaM Regional Project Manager, Faye Lander, with MAEASaM Project Manager, Stefania Merlo, presenting at the Obliterate Workshop in September 2023.

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MAEASaM, McDonald Institute for Archaeological Research, University of Cambridge,  
Downing Street, Cambridge CB2 3ER, UK  
+44 (0)1223 333538

Editorial Team:  
Faye Lander, Christine Matthews, Stefania Merlo

MAEASaM logo and newsletter template designer:  
Rana Zaher

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