Coordination, dissemination and communication – management tasks and archaeology

Helena SEIDL DA FONSECA, Karina GRÖMER,
Matija ČREŠNAR, Carmen LÖW & Nadine ALPINO
(eds.)

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PREFACE

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Koordination, Dissemination und Kommunikation – Managementaufgaben im archäologischen Arbeitsumfeld: Einleitung zum Sonderband der Reihe Prähistorische Forschungen Online (PFOn)

by

Helena Seidl da Fonseca, Karina Grömer, Matija Črešnar, Carmen Löw & Nadine Alpino

The archaeological profession has been undergoing profound change for several decades. Archaeologists are increasingly required not only to conduct research and excavations, but also to manage complex projects professionally, communicate results to various stakeholders, and interact with a wide range of interest groups across institutional, professional, and social boundaries (Frangipane 2021, 595–616). This development is exemplary of a broader trend in the humanities and natural sciences: the recognition that coordinating a wide variety of tasks, disseminating knowledge and communicating research processes and results are not complementary secondary activities, but central components. This also applies to sustainable research and monument preservation, the subject of this publication.

Das archäologische Berufsfeld befindet sich seit mehreren Jahrzehnten in einem tiefgreifenden Wandel. Archäologinnen und Archäologen sind zunehmend gefordert, nicht nur zu forschen und Ausgrabungen durchzuführen, sondern komplexe Projekte professionell zu managen, Ergebnisse an unterschiedliche Stakeholder zu vermitteln und mit einer Vielzahl von Interessensgruppen über institutionelle, fachliche und gesellschaftliche Grenzen hinweg zu interagieren (Frangipane 2021, 595–616). Diese Entwicklung steht exemplarisch für eine breitere Tendenz in den Geistes- und Naturwissenschaften: die Einsicht, dass die Koordination verschiedenster Arbeitsaufgaben, Verbreitung von Wissen und Kommunikation der Forschungsprozesse und -ergebnisse keine ergänzenden Nebentätigkeiten sind, sondern zentrale

Fig. 1 and 2: History comes alive when you can actively participate and people are given the opportunity to understand objects and techniques from the past.
Abb. 1 und 2: Geschichte wird lebendig, wenn man sich selbst aktiv einbringen kann und Menschen die Möglichkeit geboten wird Objekte und Techniken aus der Vergangenheit zu begreifen
(Image 1: M. Tavernaro, Kuratorium Pfahlbauten; image 2: MAMUZ).

Session 496, "Coordination, Dissemination and Communication – Management Tasks in the Archaeological Work Environment", organised as part of the 29th Annual Meeting of the European Association of Archaeologists (EAA) in Belfast in 2023, arose from the desire to capture this ongoing development process and discuss it using concrete examples (EAA 2023, 224–225). Building on contributions from previous EAA conferences – in particular the 2019 round table meeting in Bern on professional communication in archaeology – the session addressed the question of how management, communication, and dissemination tasks can be integrated, institutionally anchored, and professionalised into everyday archaeological work (Löw et al. 2017, 627–641).

The six articles collected in this special issue of the Prähistorische Forschungen Online (PFOn) ("Prehistoric Research Online") series are mostly the result of this session and have been supplemented by another one. They highlight the diversity of current approaches, challenges and innovations. They range from participatory research and Citizen Science to public relations in contract archaeolo-

Die Session 496 „Coordination, Dissemination and Communication – Management Tasks in the Archaeological Work Environment", organisiert im Rahmen der 29. Jahrestagung der European Association of Archaeologists (EAA) 2023 in Belfast, entstand aus dem Impuls, diesen fortlaufenden Entwicklungsprozess zu fassen und mit konkreten Beispielen zu diskutieren (EAA 2023, 224–225). Dies geschah aufbauend auf Beiträgen früherer EAA-Tagungen – insbesondere bei der Round-Table-Sitzung 2019 in Bern zur professionellen Kommunikation in der Archäologie widmete sich die Session der Frage, wie Management-, Vermittlungs- und Kommunikationsaufgaben in den archäologischen Arbeitsalltag integriert, institutionell verankert und professionalisiert werden können (Löw et al. 2017, 627–641).

Die in diesem Sonderband der Reihe Prähistorische Forschungen Online (PFOn) versammelten sechs Beiträge gehen teils aus dieser Session hervor und wurden noch erweitert. Sie zeigen die Vielfalt aktu-

Fig. 3: Information afternoon organised by the Kuratorium Pfahlbauten on the diving work carried out for the annual monitoring of the UNESCO World Heritage Site in Lake Keutschach, Carinthia.
Abb. 3: Informationsnachmittag des Kuratorium Pfahlbauten zu den Taucharbeiten für das jährliche Monitoring der UNESCO-Welterbestätte im Keutschacher See, Kärnten
(Image: M. Tavernaro, Kuratorium Pfahlbauten).

gy and comparative analyses of science communication and community work in the context of UNESCO World Heritage. Together, they illustrate that contemporary archaeological practice increasingly requires the ability to mediate between management structures, research goals, and social responsibility.

Several overarching themes connect these contributions. The professionalisation of communication and public relations – whether through digital tools, participatory formats, or institutional strategies – underscores the growing role of archaeology as a mediator between research and the public. The case studies show that management and communication should not be understood as administrative duties, but as strategic and reflexive components of archaeological work that ensure its transparency and accountability and embed archaeological work in a broader social context.

Beyond its organisational and educational function, effective communication has been shown to contribute to the quality, sustainability, and social impact of archaeological research. Transparent, clearly structured communication builds trust between researchers, authorities, and the public, while participatory and dialogue-based formats deepen

Fig. 4: Structured teaching creates shared responsibility for our cultural heritage.
Abb. 4: Strukturierte Vermittlung schafft gemeinsame Verantwortung für unsere Kulturgüter
(Image: Lieselore Meyer, Kuratorium Pfahlbauten).

eller Ansätze, Herausforderungen und Innovationen auf. Sie reichen von partizipativer Forschung und Citizen Science über Öffentlichkeitsarbeit in der Auftragsarchäologie bis hin zu vergleichenden Analysen der Wissenschaftskommunikation und der Community-Arbeit im Kontext des UNESCO-Welterbes. Gemeinsam verdeutlichen sie, dass zeitgemäße archäologische Praxis zunehmend die Fähigkeit erfordert, zwischen Managementstrukturen, Forschungszielen und gesellschaftlicher Verantwortung zu vermitteln.

Mehrere übergreifende Themen verbinden diese Beiträge. Die Professionalisierung von Vermittlung und Öffentlichkeitsarbeit – sei es durch digitale Werkzeuge, partizipative Formate oder institutionelle Strategien – unterstreicht die wachsende Rolle der Archäologie als Mittlerin zwischen Forschung und Öffentlichkeit. Die Fallbeispiele zeigen, dass Management und Kommunikation nicht als administrative Pflichten zu verstehen sind, sondern als strategische und reflexive Bestandteile archäologischer Arbeit, die deren Transparenz und Verantwortlichkeit sichern und die archäologische Arbeit in einen breiteren gesellschaftlichen Kontext einbetten.

Über ihre organisatorische und bildungsbezogene Funktion hinaus trägt eine wirksame Kommunikationsarbeit nachweislich zur Qualität, Nachhaltigkeit und gesellschaftlichen Wirkung archäologischer Forschung bei. Eine transparente, klar strukturierte Vermittlung schafft Vertrauen zwischen Forschenden, Behörden und Öffentlichkeit, während partizipative und dialogische Formate die Beziehung zwischen Forschung und Gesellschaft vertiefen und gemeinsame Verantwortung fördern.

Mehrere Beiträge dieses Bandes veranschaulichen diese Vorteile:

Die von Julia Längauer und zahlreichen Co-Autor*innen in ihrem Beitrag ***„Walk the line: first experiences with multiple Citizen Science target groups in the transdisciplinary LBK research project ‘United by Crisis?’“*** beschriebenen Citizen-Science-Initiativen beschleunigen Forschungsprozesse und öffnen zugleich den Zugang zu wissenschaftlichem Wissen.

the relationship between research and society and promote shared responsibility.

Several contributions in this volume illustrate these advantages:

The Citizen Science initiatives described by Julia Längauer and numerous co-authors in their article **"Walk the line: first experiences with multiple Citizen Science target groups in the transdisciplinary LBK research project "United by Crisis?""** accelerate research processes and at the same time open up access to scientific knowledge. This is an exemplary project in which collaboration with Citizen Scientists not only enabled research areas to be surveyed more quickly and efficiently but also led to the formation of a community that extends beyond the goals of the project.

In **"Public Outreach activities in development-led Archaeology in Austria. An experience-based report"**, Jasmin Hangartner demonstrates how professional science communication in contract archaeology can transform formally binding public relations processes into opportunities for participation and joint value creation. The specific findings from Austria are discussed in conjunction with international studies on the topic.

Carmen Löw takes a different approach in **"Industry versus humanities – Science Communication and Outreach in an Industrial Research Project Compared to Projects in the Archaeological Sector"**. She illustrates that strategic science communication – inspired by industrial structures – can strengthen the visibility and accountability of archaeological institutions. With her specific perspective, having trained in both archaeology and communication sciences, she takes a unique position by also viewing scientific activity and its communication strategies "from the outside".

Cyril Dworsky and colleagues demonstrate in their article **"We can do it – with a little help from our friends: Community management in the context of archaeological heritage"** how active

Es handelt sich um ein beispielhaftes Projekt indem durch die Zusammenarbeit mit Citizen Scientists Untersuchungsareale nicht nur schneller und effizienter aufgenommen werden konnten, sondern eine Community gebildet wurde, die über die Ziele des Projektes hinauswächst.

Jasmin Hangartner zeigt mit ***„Public Outreach activities in development-led Archaeology in Austria. An experience-based report"***, wie professionelle Wissenschaftskommunikation in der Auftragsarchäologie formal verpflichtende Prozesse der Öffentlichkeitsarbeit in Chancen für Teilhabe und gemeinsame Wertschöpfung verwandeln kann. Die spezifischen Erkenntnisse aus Österreich werden mit internationalen Studien zum Thema diskutiert.

Einen anderen Ansatz verfolgt Carmen Löw mit ***„Industry versus humanities – Science Communication and Outreach in an Industrial Research Project Compared to Projects in the Archaeological Sector"***. Sie verdeutlicht, dass strategische Wissenschaftskommunikation – inspiriert von industriellen Strukturen – die Sichtbarkeit und Rechenschaftsfähigkeit archäologischer Institutionen stärken kann. Durch ihren spezifischen Blickwinkel mit Ausbildung sowohl in Archäologie sowie in Kommunikationswissenschaften nimmt sie hierbei eine besondere Position ein, indem sie den Wissenschaftsbetrieb und seine Kommunikationsstrategien auch „von außen" betrachtet.

Cyril Dworsky mit Kolleginnen demonstrieren im Beitrag ***„We can do it – with a little help from our friends: Community management in the context of archaeological heritage"***, wie aktives Community-Management im Welterbekontext langfristige Allianzen zum Schutz des kulturellen Erbes aufbaut.

Sabine Hagmann und Barbara Fath betonen in ***„World Heritage Property Prehistoric Pile Dwellings around the Alps – Mediation versus Marketing"***, dass eine strategisch verankerte Kommunikationsarbeit nicht nur zur Vermittlung archäologischer Ergebnisse beiträgt, sondern auch

community management in the context of world heritage builds long-term alliances for the protection of cultural heritage.

In **"World Heritage Property Prehistoric Pile Dwellings around the Alps – Mediation versus Marketing"**, Sabine Hagmann and Barbara Fath emphasise that strategically anchored communication work not only contributes to the dissemination of archaeological findings, but also strengthens trust between experts, authorities, and the public. If, on the other hand, this area is neglected, there is a risk of misunderstandings, a loss of social relevance and a weakening of the institutional capacity of archaeologists to act.

Finally, Natascha Bagherpour Kashani's contribution to **"Developments in Archaeology and Museums. Moving into the Future Through Equal Interdisciplinarity and Fee-Based Expertise"** addresses the question of how transdisciplinary collaboration and fee-based expertise das Vertrauen zwischen Fachwelt, Behörden und Öffentlichkeit stärkt. Wird dieser Bereich hingegen vernachlässigt, drohen Missverständnisse, ein Verlust an gesellschaftlicher Relevanz und eine Schwächung der institutionellen Handlungsfähigkeit archäologischer Akteure.

Zuletzt befasst sich Natascha Bagherpour Kashani mit ihrem Beitrag zu ***„Developments in Archaeology and Museums. Moving into the Future Through Equal Interdisciplinarity and Fee-Based Expertise"*** mit der Frage, wie transdisziplinäre Zusammenarbeit und auch honorarbasierte Expertise die Qualität komplexer Vorhaben im Bereich wissenschaftlicher Forschung in der Archäologie sowie Museumsarbeit und Wissenschaftskommunikation verbessern kann.

Gemeinsam belegen diese Beispiele, dass Kommunikation keine begleitende Tätigkeit ist, sondern ein Wirkungsverstärker für die grundlegenden Ziele der Forschung und Denkmalpflege

Fig. 5: Press conference held by the regional association "Pfahlbau am Attersee" (Lake Dwelling at Attersee) on the construction of a dugout canoe in Seewalchen am Attersee.
Abb. 5: Pressekonferenz des regionalen Vereins „Pfahlbau am Attersee" zum Bau eines Einbaums in Seewalchen am Attersee (Image: Helena Seidl da Fonseca, Kuratorium Pfahlbauten).

can improve the quality of complex projects in the field of scientific research in archaeology, as well as museum work and science communication.
Together, these examples demonstrate that communication is not merely an accompanying activity but can serve to amplify the impact of the fundamental goals of research and monument preservation. It bridges the gap between specialist knowledge and society, increases the efficiency of projects and ensures the long-term relevance of archaeological work. Such communication activities for a broader audience are increasingly being actively requested in calls for research projects, in addition to the scientific dissemination of results through publications and conferences, for example. And in the heritage sector, too, for example through the creation of European cultural routes such as the Iron Age Danube Route, scientific communication on archaeological sites is being bundled and thereby strengthened (de.ironagedanuberoute.com, 2024).

The contributions clearly show that the need for skills in project management and communication exceeds the scope of current university education in archaeology. New educational approaches and interdisciplinary cooperation at universities are therefore urgently needed. In order to meet these growing demands, archaeological education must go beyond teaching methodological and theoretical basics. Future curricula should incorporate project management, communication, and dealing with various stakeholders as core skills. This includes practice-oriented modules on science communication, digital dissemination, ethical cooperation with communities, and interdisciplinary teamwork. Cooperation between universities, museums, and heritage conservation institutions can create real learning environments in which students can understand and help shape the entire research cycle – from planning and financing to communication and evaluation. Such integration enables archaeology to better prepare future generations for the increasingly complex social, administrative, and communicative dimensions of their profession.

Overall, these contributions mark an important moment in the development of archaeology as a

sein kann. Sie überbrückt die Distanz zwischen Fachwissen und Gesellschaft, erhöht die Effizienz von Projekten und sichert die langfristige Relevanz archäologischen Handelns. Immer öfter werden derartige vermittelnde Tätigkeiten für eine breitere Bevölkerung auch bei Calls für Forschungsprojekte zusätzlich zu wissenschaftlicher Dissemination der Ergebnisse etwa über Publikationen und Konferenzen aktiv mit eingefordert. Und auch im Heritage Sektor, etwa durch Schaffung von Europäischen Kulturrouten wie die Iron Age Danube Route, wird Wissenschaftskommunikation zu archäologischen Stätten gebündelt und dadurch verstärkt (de.ironagedanuberoute.com, 2024).

Aus den Beiträgen wird deutlich, dass der Bedarf an Kompetenzen in Projektmanagement und Kommunikation die bisherige universitäre Ausbildung innerhalb der Archäologie übersteigt. Darum sind dringend neue Bildungsansätze und interdisziplinäre Kooperationen an den Universitäten notwendig. Um diesen wachsenden Anforderungen gerecht zu werden, muss die archäologische Ausbildung über die Vermittlung methodischer und theoretischer Grundlagen hinausgehen. Zukünftige Curricula sollten Projektmanagement, Kommunikation und den Umgang mit verschiedenen Stakeholdern als zentrale Kompetenzen verankern. Dazu gehören praxisorientierte Module

Fig. 6: Communication begins with the training of communicators.
Abb. 6: Vermittlung beginnt in der Ausbildung der Vermittler*innen
(Image: NHM Vienna).

profession. They call for the integration of communicative, didactic, and organisational skills into training and institutional practice, emphasising that responsibility for cultural heritage extends far beyond excavation and conservation – towards the cooperative shaping of knowledge, structures, and narratives across disciplinary and social boundaries.

Fig. 7: 18. April 2025 – World Heritage day at the Natural History Museum Vienna.
Abb. 7: April 18, 2025 – Welterbetag im Naturhistorischen Museum Wien
(Image: Helena Seidl da Fonseca, Kuratorium Pfahlbauten).

zu Wissenschaftskommunikation, zu digitaler Dissemination, ethischer Zusammenarbeit mit Communities und interdisziplinärer Teamarbeit. Kooperationen zwischen Universitäten, Museen und Denkmalpflegeinstitutionen können dabei reale Lernumgebungen schaffen, in denen Studierende den gesamten Forschungszyklus – von Planung und Finanzierung bis hin zu Vermittlung und Evaluation – nachvollziehen und mitgestalten können. Durch eine solche Integration wird die Archäologie befähigt, kommende Generationen besser auf die zunehmend komplexen sozialen, administrativen und kommunikativen Dimensionen ihres Berufs vorzubereiten.

Zusammen genommen markieren die Beiträge einen wichtigen Moment in der Entwicklung der Archäologie als Profession. Sie fordern die Integration kommunikativer, didaktischer und organisatorischer Kompetenzen in Ausbildung und institutioneller Praxis und betonen, dass die Verantwortung für das kulturelle Erbe weit über Ausgrabung und Konservierung hinausreicht – hin zu einer kooperativen Gestaltung von Wissen, Strukturen und Narrativen über disziplinäre und gesellschaftliche Grenzen hinweg.

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Walk the line: first experiences with multiple Citizen Science target groups in the transdisciplinary LBK research project "United by Crisis?"

by

Julia Längauer, Cornelia Hascher, Franz Pieler, Maria Teschler-Nicola, Johanna Irrgeher, Michael Schober, Markus Puschenreither, Olivier Duboc & Jakob Maurer

Abstract
The research project "United by Crisis? A transdisciplinary look at the early Neolithic communities in the Schletz settlement cluster" (projekt 2022–2025) aims to investigate a cluster of Early Neolithic (*Linearbandkeramik* – LBK, LPC) sites surrounding the LBK settlement of Asparn/Schletz (Lower Austria), which is famous for the large number of human skeletal remains with perimortal traumas discovered there, indicating a violent event approximately 7000 years ago. Within our research project, joint work with Citizen Scientists is a core feature, additionally motivated by extra resources granted for a "Citizen Science add-on" by the funding body (GFF NÖ – *Gesellschaft für Forschungsförderung Niederösterreich*). The Citizen Science activities within the project include collecting and processing of soil samples for isotope analysis by local schoolchildren, extensive line walking surveys and processing finds by lay experts and other volunteers. As part of our cooperation with Citizen Scientists, we also organise lectures and joint interpretation workshops. In our contribution, we want to give a short overview on first experiences with the implementation of the Citizen Science aspects in the project so far.

Zusammenfassung
Das Forschungsprojekt „Durch die Krise vereint? Eine transdisziplinäre Untersuchung frühneolithischer Gemeinschaften der Siedlungskammer von Schletz" zielt darauf ab, einen Cluster von frühneolithischen Fundstellen in der Umgebung der berühmten linearbandkeramischen Siedlung von Asparn/Schletz (Niederösterreich) zu identifizieren und zu untersuchen. Asparn/Schletz ist vor allem aufgrund menschlicher Skelettüberreste mit perimortalen Defekten bekannt, die auf ein gewaltsames Ereignis vor etwa 7000 Jahren hinweisen. Innerhalb unseres Projekts ist die Zusammenarbeit mit Citizen Scientists ein zentraler Bestandteil, wobei diese Zusammenarbeit vom Fördergeber (GFF NÖ – Gesellschaft für Forschungsförderung Niederösterreich) im Rahmen eines sogenannten *Citizen Science Add-On* durch zusätzliche finanzielle Mittel unterstützt wird. Die Citizen Science-Aktivitäten umfassen die Entnahme und Dokumentation von Bodenproben durch örtliche Schulkinder sowie umfangreiche *Line Walkin Surveys* und Fundbearbeitung durch interessierte Erwachsene mit und ohne Vorerfahrung. Zusätzlich zu diesen Aktivitäten organisieren wir Vorträge und Interpretationsworkshops. In diesem Beitrag möchten wir einige vorläufige erste Erfahrungen mit der Implementierung der Citizen Science-Aspekte im Projekt zusammenfassen.

Introduction

Working together with Citizen Scientists has a long tradition in archaeology. Even if this specific term was not in use, the contribution of "lay experts", "untrained volunteers", "collectors", or generally interested "amateurs" to archaeology has always been huge. One famous example here is the author Agatha Christie, who married the archaeologist Max Mallowan and became an important excavation

team member herself by taking care of the ivory finds and documentation (Spiegel-AgathaChristie, 2017). Looking at the history of research, one can argue that a clear differentiation between formally trained "archaeologists" and "Citizen Scientists" is a rather recent phenomenon that developed only gradually with the professionalisation of archaeology as a scientific and commercial discipline, especially during the 20th century. We perceive that during this process, due to different factors, the cooperation with Citizen Scientists has faded to the background at least in some areas of the discipline. That joint work with Citizen Scientists is increasingly gaining attention again in recent years, and is even actively supported by funding bodies, as it contributes to the transfer of knowledge between science and society, for example, and offers diverse – and new – opportunities for archaeological research. Within our transdisciplinary project "United by Crisis?" we will explore some of them. The project aims to investigate the surroundings of the famous Neolithic settlement of Asparn/Schletz (Lower Austria). Numerous human remains suggest a violent attack on this site in the Late Linear Pottery Culture (*Linearbandkeramische Kultur*, LBK, LPC), approximately 7000 years ago (Teschler-Nicola 2012).
Due to its size and earthworks, we assume that the site of Asparn/Schletz was the central site of a cluster of smaller settlements in the surrounding region (Pieler et al. in press 2025). By researching these settlements, we hope, among other things, to increase our knowledge on the background of the massacre and on the origin of the people who possibly lived and later died in Schletz (Fig. 1). To achieve this, we will use different methods within a transdisciplinary setting, from field surveys to anthropological analyses, from 14C-dating to strontium isotope analysis and the creation of an *isoscape* (= isotope landscape map) of the area of interest. Joint work with Citizen Scientists is deeply embedded within most work packages of the project.

Fig. 1: Remains of the massacre victims found in Ditch II during the excavations at Asparn/Schletz (Image: Landessammlungen Niederösterreich).

The target groups

Within the project call, we have defined four different target groups, three of whom will actively participate as Citizen Scientists within the project:
TG1 are pupils of the local middle school of Asparn an der Zaya. Two classes will accompany the project for a total of three school years.
TG2 are people that have experience with fieldwork, e.g. active collectors. We have included them in the project not only to gain access to their knowledge, experience, and finds, but also to raise their awareness and train them on how to document finds and find spots.
TG3 are people that do not have prior experience with fieldwork but are interested in participating.
TG4 is the public with a passive interest in the project, reached via newsletter, the projects website, and press releases.

TG1 was later involved particularly in tasks related to soil sampling for establishing an isoscape for a comparative database in which $^{87}Sr/^{86}Sr$ data obtained from human tooth remains could be compared to for answering questions related to mobility and migration. The pupils were recruited by an established collaboration between the MAMUZ-Museum and the local secondary school in Asparn/Zaya.
To establish contact with the other target groups (TG2–4), we chose multiple methods, ranging from a hand-out-postcard to an online-article within a major Austrian newspaper that features a monthly blog article written by archaeologists (derstandard-LängauerFreiwillige, 2023). We also created a project website (united-by-crisis.at) with an application form for interested Citizen Scientists. This application form included a short online questionnaire about the individual availability, special interests and the mobility of Citizen Scientists.
It became evident that the blog article had the biggest outreach, as it resulted in a huge number of applications within a very short time-span, even from outside of Austria. When we surpassed 100 applications, we stopped all promotion for active participation, as we exceeded the amount of people we can sensibly work with in an effective manner.
From these applicants, we chose about 50 to participate in an intense one-day workshop, held at the MAMUZ-Museum in Mistelbach/Lower Austria (Fig. 2). It consisted of a theoretical part, including an outline of legal requirements concerning archaeological research presented by colleagues from the Austrian Federal Monuments Office and a practical part in the field, where the Citizen Scientists were trained in survey methods and the identification of finds. This training developed over multiple steps, from a general introduction about what a find is, what a find might look like in the field, towards recognising real finds in the field. Also, the walking techniques and methodology were practiced in the field in several steps.

Methodology

Line walking surveys involve systematically traversing a landscape along predetermined paths, in our case with an individual line length of 40 metres and a participant spacing of 10 metres. During these surveys, participants walk along a designated line, scanning the ground for surface-level archaeological findings, such as pottery, chipped stone tools (e. g. blades), or other stone tools. However, since we work with Citizen Scientists, we instructed them to collect everything they discover with the exception of recent glazed ware, plastic, and other modern finds.
Every 40 metres a point is measured and the finds are assigned to it. The chosen line length and participant spacing was calibrated to ensure thorough coverage of the survey area, especially targeted towards

Fig. 2: Group picture during the workshop in Mistelbach (Image: Jakob Maurer).

the identification of LBK longhouses, while maintaining a manageable pace for data collection. By adhering to this methodical approach, line walking surveys enable archaeologists and Citizen Scientists (Fig. 2) to systematically document and map possible archaeological sites, providing valuable insights into the distribution and density of cultural heritage across diverse landscapes.

In the field – the line walking surveys (TG2, TG3)

The first line walking surveys including Citizen Scientists started in winter 2022. Altogether 25 Citizen Scientists have participated in nine surveys in different parts of the research area until now, with the lines covering a total length of approximately 180 km. Depending on the estimated size of the site, we have one or two teams, consisting of four to ten Citizen Scientists and one archaeologist per team (Fig. 3). For larger sites, we try to ensure a consistent team composition in order to guarantee uniform quality and comparable results, if the line walking surveys span over multiple days. The archaeologist, in the middle of the group, carries out the login and recording of the points via A-GPS. This work is ongoing as the fields are not accessible during the summer (vegetation) and mid-winter (snow). It is further complicated by the seasonal circumstances of winter with very cold weather, finds frozen to the ground, and very little light during the day.

Fig. 3: In the field. Group A is having a look at Group B´s work in the far background (Image: Julia Längauer).

In the lab – find processing (TG2, TG3)

The assistance of Citizen Scientists is also very productive during the post-survey finds processing. The individual tasks vary from cleaning and sorting finds to entering the data of those finds into a specific database (Fig. 4). As we have identified numerous potential sites during fieldwork, the number of finds we have to process is rather high as well. We have designed our database to be user friendly for Citizen Scientists, by now we stand at around 1600 entries, each representing at least one archaeological find. This work provides additional insight for the Citizen Scientists and rapidly develops their ability to recognise archaeologically relevant finds. We also invite the Citizen Scientists to participate in the interpretation of the maps created with their data. However, in many cases the Citizen Scientists currently participating in the project seem to prefer fieldwork to indoor work.

Fig. 4: In the lab. The Citizen Scientists are separating the finds for the database entry (Image: Julia Längauer).

Pro and cons of the work with Citizen Scientists

Over the span of the last years, we have been able to identify some preliminary assessments on our work with Citizen Scientists. It has to be stated firmly that positive effects outweigh negative ones by far.

Cons:

Working with Citizen Scientists can be time-consuming due to the need for management, supervision, and training. Not all volunteers start with the same level of knowledge or skill, which can result in discrepancies in the data, for example concerning the distribution of finds. We try to overcome this problem with intense, ongoing training, which consists of theoretical lectures but even more of hands-on training by letting Citizen Scientists work directly with already existing finds and also evaluate their finds directly in the field. After every other line, we gather, discuss, and show the individual collection of finds. The thought-out set up of Citizen Scientists in the field is placing a less experienced Citizen Scientists next to a more experienced one has proven very useful. Regarding these challenges, we observe a steep learning curve among the Citicen Scientists. Every Citizen Scientist assigned an anonymised ID-number and their progress in finds quantity, quality, and diversity is tracked. We plan to publish these results and others in the future after the end of the project.

Pros:

Despite the investment of time for training and supervision, involving Citizen Scientists significantly speeds up the project timeline. Many hands make light work, and the contribution of Citizen Scientists enables the project to progress at a pace that would not have been fundable otherwise. For example, in one case, two teams of Citizen Scientists with 14 participants, each lead by two archaeologists were

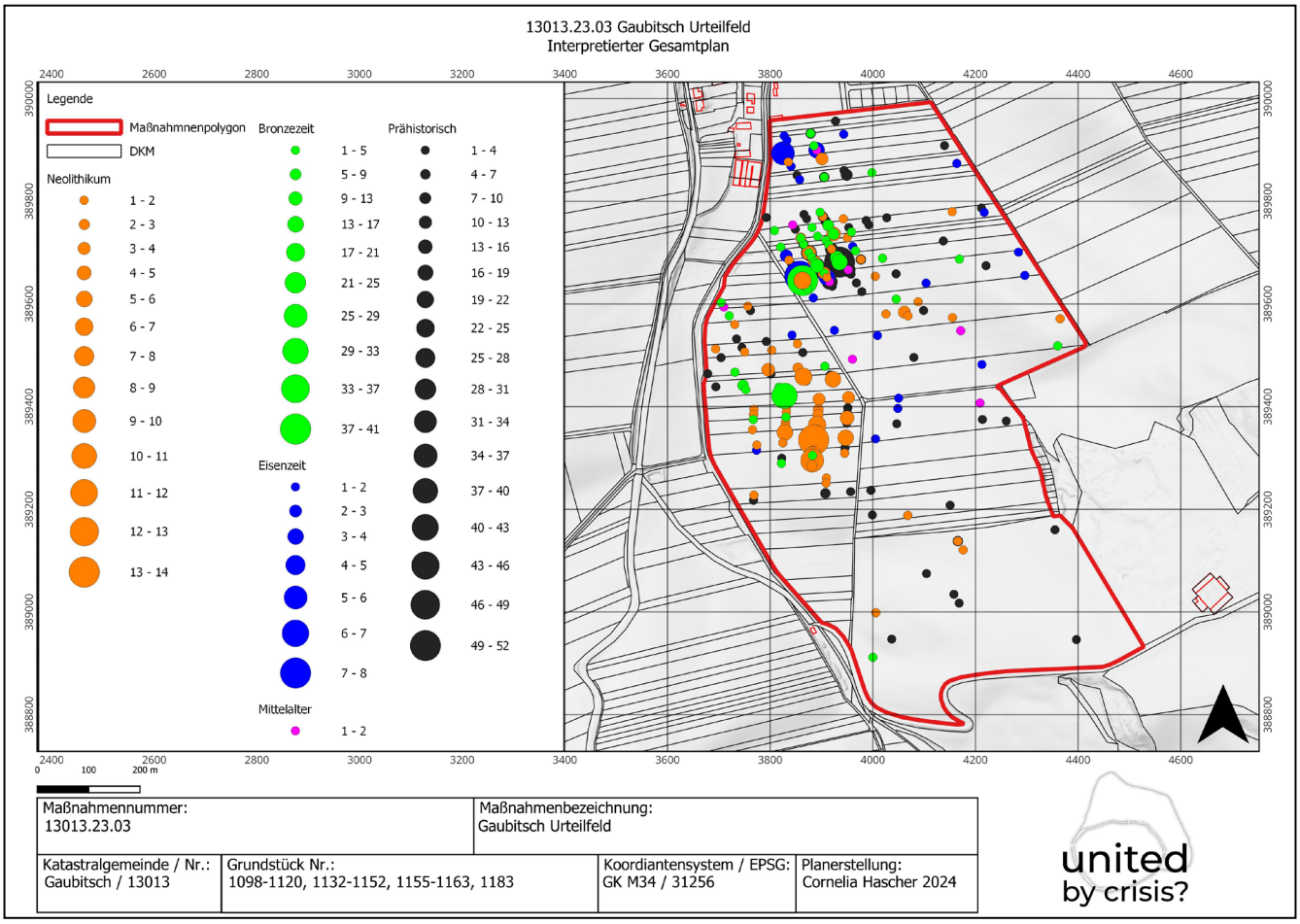

Fig. 5: Example of the processed and interpreted results of a line walking survey. This area was inhabitaed from the Early Neolithic to the Early Medieval Times (Image: Cornelia Hascher).

able to cover an area of about 65 hectares with only two days of fieldwork, discovering three different LBK-sites and additional sites of other periods (Längauer et al. 2025). Furthermore, the processing of finds also benefits from the involvement of Citizen Scientists and facilitates faster data analysis and interpretation (Fig. 5).

The close cooperation with local Citizen Scientists also led to the discovery of a plethora of private, previously unknown collections. Many of them stem from deceased relatives of the Citizen Scientists and include finds from sites that have relevance for our investigations. Additionally, those Citizen Scientists can provide a lot of knowledge about the history of their region, for example, when certain streets were built or a landscape feature was changed or destroyed. This knowledge is very valuable for the identification and verification of sites.

School students as Citizen Scientists in chemistry (TG1)

The cooperation also includes 36 children (TG1) from a local secondary school (Fig. 6) who took soil samples from the area around the upper Zaya Valley, aiming at the creation of a local isoscape. This isotope landscape will further be used as a comparative database for comparing Sr isotope ratios assessed in human bone remains excavated from Asparn/Schletz. Based on such comparisons, assumptions can be drawn about a possible autochthony/allochthony of individuals to the region (Irrgeher et al. 2011, 34).

Over a span of three school years, the pupils participated in different phases of the project. In a number of workshops, they learned about the site, the different methods used in the project, Neolithic nutrition, the relevance of strontium isotopes in archaeological research, and how to take soil samples including proper documentation, processing them in a lab, performing the chemical analysis, and interpreting the results. The schoolchildren were not only responsible for taking soil samples, but also for the dissemination of project results to their peers and parents. The approach of involving Citizen Scientists for soil sampling significantly influences the establishment of isoscapes as access to more relevant locations for samples is easily provided as well as the number of soil samples that can be taken in a short period of time is significantly higher.

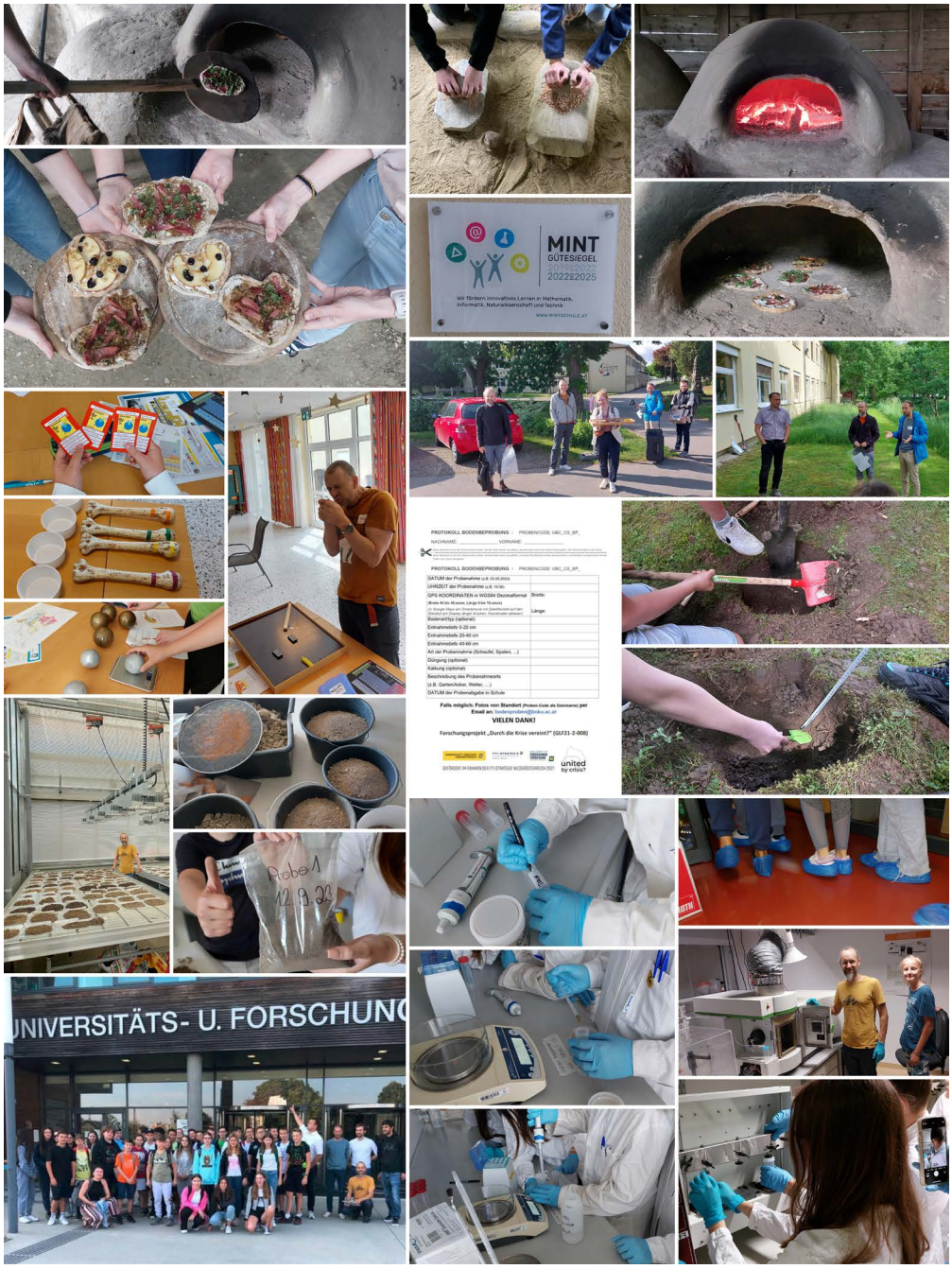

Fig. 6: Compilation of the multiple activities done by the pupils of the secondary school NMS Asparn an der Zaya (Images: Jakob Maurer, Julia Längauer).

Conclusion

The project and the collaboration with the Citizen Scientists will continue for some time. However, after one year of intense collaboration with all four target groups, we can summarise some preliminary results. We think working together with Citizen Scientists is very rewarding, not only on a scientific level but also on a very personal level, as friendships between the Citizen Scientists as well as between archaeologists and Citizen Scientists have started to develop. This social aspect benefits not only the specific research, but also in the aspect of bridging potential scepticism of citizens towards science by free and respectful participation/integration in the project or through the project's dissemination activities. The project also strengthens society by establishing a point of entry for social contacts on local community level.
The effectiveness of Citizen Science-collaboration in scientific projects is greatly enhanced when Citizen Scientists are treated as equal partners. Private initiatives, such as restaurant visits or social gatherings, play a pivotal role in fostering communion and strengthening team cohesion. The enthusiasm and dedication exhibited by non-professional participants are remarkable, characterised by a steep learning curve and a genuine desire to acquire new knowledge and actively contribute to the project. While it is undeniable that a collaboration with Citizen Scientists requires a significant investment of time and resources, the outcomes fully justify that. The remarkable successes achieved thus far in the project underscore the value of this collaborative approach. We can name for instance the abundance of sites surveyed, the rapid surveying of extensive areas and the efficient handling of large volumes of finds. This demonstrates the immense potential of Citizen Scientists-initiatives in advancing scientific research.
With the help of Citizen Scientists, we were able to speed up the line walking surveys and have by now verified 13 LBK sites in the vicinity of Asparn/Schletz. We were also able to process the finds much faster, with a database that collects information on find distributions as well as the dates and expansions of sites. This helps us to better understand the role of these sites and their interactions with the "central site" of Asparn/Schletz (for example Lindinger et al. 2024, 25).
Working with TG 1 and TG 2/3 is an interesting contrast. The Citizen Scientists in the field are in many cases retired senior citizens, as this age group has the most time and flexibility to be available for longer periods of field work. They are a mixed team of locals, interested in their local history and archaeology, and non-locals with a strong interest in archaeology. TG1 are pupils that accompany the project during their individual development from children to young teenagers. We had to design the interaction and communications with those groups as age-appropriate as possible. TG4 is reached via our homepage and regular newsletters on the projects progress (united-by-crisis-latest-news, 2024). Working with all those different Citizen Science-target groups not only furthers the project in scientific terms, but also leads to a more intensive exchange of information with and towards a broad spectrum of people from different spheres of age, profession, and interest in archaeology. Therefore, projects like this are great tools that spread knowledge to a wider public of different age groups, beyond the professional circles of the scientific community. This Citizen Science-based project in archaeology, which integrates archaeological surveys and chemical analysis with diverse target groups, is remarkable because it democratises scientific discovery, fosters inclusive learning, and enhances cultural heritage preservation through collaborative, hands-on engagement.

Acknowledgements
We would like to thank all our participating Citizen Scientists for their enthusiasm, their consistency, and of course their amazing work. Without your dedication, this project would not be possible.

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Public outreach activities in development-led archaeology in Austria. An experience-based report

by

Jasmin Hangartner

Abstract
This paper provides a comprehensive overview of public outreach activities in development-led archaeology in Austria. It draws on the author's personal experience as a public engagement officer in an archaeological enterprise. This paper compares these insights with findings from international scientific studies conducted in similar sectors. It offers a nuanced perspective on the obstacles and opportunities in engaging with the public in development-led archaeology.

Zusammenfassung
Dieser Beitrag gibt einen Überblick über die Öffentlichkeitsarbeit in der anlassbezogenen Archäologie in Österreich, wobei er auf die persönlichen Erfahrungen der Autorin als Verantwortliche für Öffentlichkeitsarbeit in einem archäologischen Unternehmen zurückgreift. Durch den Vergleich dieser Erkenntnisse mit Ergebnissen wissenschaftlicher Studien, die in ähnlichen Sektoren international durchgeführt wurden, soll dieser Beitrag eine differenzierte Perspektive auf die Hindernisse und Chancen bei der Einbindung der Öffentlichkeit in der entwicklungsorientierten Archäologie bieten.

Introduction

This study offers a thorough examination of public engagement initiatives in development-driven archaeology in Austria. Utilising the author's expertise as a public engagement officer at an archeological firm, it concentrates on development-led initiatives. This study juxtaposes personal views with findings from worldwide scientific investigations in analogous domains. It provides a balanced viewpoint on the challenges and prospects of including the public in development-driven archaeology. The paper is structured as a two-step process. First, the history of development-led archaeology in Austria is outlined and the legal framework within which it operates is examined. Second, two case studies are presented.

The history of development-led archaeology in Austria and its current state

Development-led archaeology is now a major part of all archaeological field activities in Austria. The sector is primarily funded by developers and overseen by the Federal Monument Authorities Austria, the Bundesdenkmalamt (BDA). It is dominated by approximately 10 to 15 companies and societies. It is clear that, just as in the United Kingdom, private entities are responsible for most archaeological fieldwork in Austria. The exact figure for this is unknown, but it is estimated to be around 90 % (Fulford 2011, 33; Stefansdottir 2019).
The market for development-led archaeology in Austria has been around since the early 2000s, but it only took off after 2009 (Steigberger 2016, 179). In 2008, the Federal Monument Authorities Austria started a restructuring process, which was completed in 2010. This resulted in their withdrawal from the tendering process for development-led archaeological projects (Karl – Möller 2014, 24) as well as a

surge in archaeological projects. The Monument Authorities recorded 146 archaeological interventions in 2005, including excavations, surveys and monitoring. This number increased dramatically to 536 in 2011, which is more than three times the number recorded in 2005 (Steigberger 2016, 178). The surge in archaeological fieldwork has led to a major increase in employment, as evidenced by the "Discovering the Archaeologists of Austria" study (DISCO) conducted from 2006 to 2008 and again from 2012 to 2014 (Karl 2008; Karl – Möller 2014). These two studies focused on the overall archaeological workforce and provide an overview of the age, gender, qualification, and salaries of archaeological personnel, as well as the sectors in which they are employed. The studies show that development-led archaeological companies are the largest employers in Austria's archaeology sector. They account for an estimated 35 % of all archaeologists working in field archaeology (Karl – Möller 2014, 13).

However, there is a lack of research specifically examining public outreach initiatives within the context of development-led archaeology in Austria. A review of the websites of approximately 10–15 existing archaeological companies, combined with several years of personal experience for development-led archaeological companies, reveals that nearly all institutions have a commitment to outreach efforts (Austrian-Archaeological-Service-Providers, 2025).

The majority of these entities promote diverse forms of public engagement as part of their service portfolio, with the dissemination of publications and reports being the most prevalent strategy. A range of outreach activities has been identified, including the delivery of public talks, the contribution of materials and scientific knowledge to exhibitions, the acquisition of media coverage, the utilisation of social media platforms, and the creation of digital content on platforms such as Sketchfab. It is evident that these activities are centred on the dissemination of knowledge about archaeology and are predominatly organised according to a top-down approach. An exception to this generalisation is constituted by the Archaeological Social Initiative Styria (ASIST), a publicly funded initiative that seeks to enhance physical and social well-being by engaging individuals who have been unemployed for a considerable period in archaeological projects (EAC Guidelines 5, 2024, 46). However, establishing outreach projects that adopt a more bottom-up or innovative approach, moving beyond the sole focus of knowledge distribution, appears to be challenging in development-led archaeology.

The legal framework for development-led archaeology in Austria

The legal framework for development-led archaeology is established by national laws and international treaties. The cornerstone of this framework is the national heritage law known as the "Denkmalschutzgesetz" (DMSG), which originated in 1923 and has since been amended several times, most recently in 2024. The DMSG's primary focus is on the preservation of cultural heritage; it does not address the public's rights with regard to participation in archaeological or cultural heritage activities in general (Denkmalschutzgesetz, BGBl. Nr. 533/1923 in der Fassung BGBl. I Nr. 41/2024).

In accordance with the stipulations set out in the DMSG, the procurement of a construction permit for a project situated within an archaeologically significant area is contingent upon the implementation of specific preventive measures. Such may include the conduction of surveys or excavations, as deemed necessary by the relevant authorities. It is imperative that these tasks are carried out by an individual who has successfully completed a master's degree programme in archaeology. The financial burden of these costs is typically shouldered by the developer, in accordance with the "polluter pays" principle that is prevalent in numerous European countries, including Estonia, Finland, the UK, and Hungary. The entitlement to ownership of any archaeological discoveries is distributed equally between the individual who locates the artifact and the proprietor of the land on which it was found. In the event that the finder is employed

by the developer or proprietor of the property, the finds become the sole property of the hiring party. Reports of any archaeological work must be submitted to the Federal Monuments Authorities Austria within three months of its finalisation. The institution is then under an obligation to publish the reports within a minimum period of five years from the date of receipt (Fundberichte-aus-Österreich, 2025).

Another legal process that frequently involves development-led archaeologists is the environmental impact assessment (Umweltverträglichkeitsprüfung, UVP-G 2000). In this process, the impact of construction plans on cultural heritage sites is assessed, and measures to mitigate or prevent such impact are developed. These measures may include avoidance measures, such as the cessation of activities in the vicinity of a site of archaeological significance; substitute measures, such as the execution of archaeological excavations in its stead; and design measures, such as the valorisation of a cultural asset within the immediate project area or its wider environs (Bundesdenkmalamt 2024, 18). It is an exceptionally rare occurrence for the expert opinion to define measures within the spectrum of public outreach activities that have the potential to reduce or prevent the impact on archaeological sites during a construction project.
The international treaties relevant to archaeology include the Faro Convention and the Valletta Treaty. Both were ratified in 2015 and are regarded as being of equivalent status to federal laws. Following the ratification of the Faro Convention, the Austrian state government formally declared its commitment to the enhancement of public rights with regard to participation in cultural heritage initiatives. This commitment was further reinforced by the establishment of a legal framework that provides a robust foundation for the realisation of these rights (Council of Europe 2005). The Valletta Convention has demonstrated commitment to the protection of archaeological heritage, particularly in the context of development projects, and to the promotion of public awareness. Article 9 of the Valletta Convention is explicit in its delineation of initiatives designed to enhance public awareness. These initiatives include the following: the conducting of educational activities; the promotion of public access to significant archaeological sites; and the encouragement of the display of selected archaeological objects (Council of Europe 1992).

A review of the relevant legal framework reveals that national law incorporates a component of public outreach through the encouragement of the publication of the excavation reports by the Federal Monument Authorities Austria. However, it is important to note that this initiative is subject to limitations, as it is the sole public outreach instrument defined by the law. The primary focus of this initiative is predominantly oriented towards the preservation of monuments. This focus is also reflected in the grants available to private entities by the Federal Monument Authorities Austria. Despite the fact that these grants are, in principle, available for projects that increase the accessibility of monuments to the public or communicate their value, in the context of development-led archaeology, they are mostly awarded for planning, preservation, and research work rather than for public outreach activities (Bundesdenkmalamt 2023, 9–10). The underlying reasons for this phenomenon are not yet clear. One potential explanation could be a lack of project submissions in the field of public outreach, or alternatively funding decisions.
The implementation of the Valletta Treaty and the Faro Convention in 2015 both emphasise the right of citizens to participate in cultural heritage and pledge the signing parties to undertake activities to strengthen public awareness. Nevertheless, this implementation did not result in government measures that would encourage more outreach projects in development-led archaeology.
In contrast to the legislative framework observed in other countries, such as the UK, Austria does not possess a distinct set of laws that mandate social actions in construction projects, which frequently encompass public outreach in the domain of archaeology (Watson – Fredheim 2022, 3). This absence of legislation poses a significant challenge in the implementation of public outreach activities in development-led archaeology in Austria.

Challenges for public outreach projects in development-led archaeology in Austria

Drawing on personal experience, sector analysis, legal frameworks, and international research, several challenges to public outreach activities in development-led archaeology in Austria can be identified.
One of the most significant challenges by public outreach initiatives in the UK pertains to the financial sustainability of these projects (Orange et al. 2020, 16). This phenomenon is also evident in Austria. The development-led archaeology sector is characterised by low profit margins, with the primary objective of providing services to address the issue of archaeological "contamination" on construction sites. Within the context of this framework and the prevailing self-conception of the companies, the undertaking of public outreach projects is contingent upon separate financing. The limited financial resources available, the time constraints imposed, and the absence of awareness regarding available funding opportunities have collectively resulted in the inability to undertake comprehensive acquisition phases. This, in turn, has led to the absence of projects that could potentially be developed using public funds. This is also an issue when working with state-funded institutions, such as museums and universities. These institutions frequently lack awareness of the low margins and the fact that development-led archaeologists tend to be time-constrained and do not have the resources to foster these collaborations without funding.
The analysis of the legal framework indicated that, in principle, public funding for such activities exists to a limited extent; however, this funding is not currently utilised. Consequently, public outreach is constrained to low-labour activities, such as the presentation of results in the form of a talk at a conference or a local museum, or the provision of a guided tour on site.

A further legal challenge is the ownership of finds, which are to be divided equally between the finder (in the case of development-led archaeologists to the client of the project) and the owner of the property. In the event that the owner of the property and the builder are not one and the same entity, this engenders complications with regard to public outreach work involving the finds, particularly in circumstances where one party is interested in conducting such work and the other is not. Furthermore, construction professionals frequently express apprehension in regard to the disclosure of archaeological discoveries, which may result in a diminution in property value. To illustrate this point, one can consider the scenario in which the presence of new single-family residences becomes known to be situated above a cemetery.
In contrast to the United Kingdom, where clients specially in the public or sustainability sector frequently request outreach work, Austrian planning and building companies do not perceive archaeology as a means of generating social value or enhancing their outreach (Orange – Perring 2017, 145). In a period of five years spent working in this sector, only one public outreach project was initiated by the construction company regarding archaeology as a means of creating social value from the outset (see Case Study 2). This standpoint is further substantiated by the observation that development-oriented archaeological enterprises do not perceive it as their responsibility to engender social value that transcends the realm of knowledge creation in the field of archaeology (Watson – Fredheim 2022, 6). In this particular paradigm, public outreach initiatives are regarded as a supplementary component that can be undertaken, provided that the outcomes are deemed to be particularly remarkable and their worth is deemed to be intrinsic to the construction company. This paradigm typifies the majority of outreach projects within the author's professional milieu. It is challenging to communicate to potential clients the importance of engaging with the public in a variety of ways if the sector itself does not recognise this value.

The United Kingdom's experience demonstrates that the existence of a legal framework, such as the Social Value Act of 2012, which facilitates the argument for the production of social value from archaeo-

logy, does not guarantee its utilisation. This is primarily due to the reluctance of archaeologists themselves (Watson – Fredheim 2022, 5). In Austria, no such framework exists, thus rendering the opportunity unimplementable.
A further issue pertains to the dearth of public outreach aptitudes among personnel engaged in development-oriented archaeological units. Research conducted in the United Kingdom has demonstrated that a significant proportion of personnel within the sector have not received training in public engagement (Orange et al. 2020, 14). This also seems to be the case in Austria, as the subject is not a prevalent component in the curricula of either university or workplace training programmes. This predicament gives rise to two distinct issues. Firstly, opportunities for public outreach are not being recognised, and secondly, funding opportunities are not being utilised to their full potential.
Finally, the absence of data is a salient issue. There are very few studies (Karl – Möller 2014; Karl et al. 2014; Peter 2019; Trognitz 2021) that deal with public outreach in Austrian archaeology in general and none that deal with public outreach in development-led archaeology. This indicates that, in the absence of personal experience and studies from related domains, there is a paucity of data regarding the efficacy of outreach initiatives, the characteristics of participating audiences, and their expectations of such programmes.

Case Study 1: The perfect opportunity: The gold finds of Ebreichsdorf
The execution of this project was undertaken by the archaeological service provider Novetus GmbH on behalf of the Austrian Railway Company ÖBB. This was part of a major construction project for the railway line "Pottendorfer Linie", where Novetus was contracted to conduct all archaeological work, from preliminary prospecting during the planning phase to full-scale archaeological excavations. During the course of the project, a number of previously unknown archaeological sites were discovered and excavated between 2014 and 2022 (Binder – Stagl 2023). However, these findings were not initially utilised for public outreach projects. This outcome would have probably persisted were it not for the identification of substantial quantities of gold artefacts in a locality known as Ebreichsdorf.
In Ebreichsdorf, archaeological excavations were conducted prior to the construction of the railway station. During the course of the excavation, the remains of a substantial settlement from the Late Bronze Age Urnfield culture (1200–800 BCE) were unearthed, constituting an extraordinary discovery in itself (Binder 2023). However, this discovery was surpassed by the unearthing of a gold bowl, a bundle of gold threads, and several other gold objects. The discovery of these gold artefacts resulted in the establishment of numerous public outreach projects, despite the challenges posed by the ongoing COVID-19 pandemic. Firstly, the ÖBB organised a press conference (Fig. 1 and 2) at which the gold finds were exhibited to the public in a display case, accompanied by atmospheric music and a fog machine. Subsequent to this, an exhibition was established within construction containers on-site, with financial support from the ÖBB. The exhibition was open to the public for several weeks and showcased additional finds from the Bronze Age settlement, as well as artefacts from an Avar period cemetery (750–850 CE), which were also discovered during archaeological monitoring within the Pottendorfer Linie project. Guided tours for local schools were organised and led by archaeologists involved in the excavation.

Two years after the excavation, the finds – comprising more than 300 boxes – were donated to the Natural History Museum in Vienna. The artefacts are now permanently exhibited in the museum's gold cabinet. Additionally, a scientific conference on prehistoric gold discoveries was convened at the museum, and a prominent science publication was disseminated, showcasing the most recent scientific findings (Binder et al. 2023). A film that had accompanied the scientific investigations since its discovery, funded by the Federal Monument Authorities Austria, was also released (Linzbauer 2023).

Fig. 1: The presentation at the press conference (Image: Andreas Rausch, Novetus).

Fig. 2: Honorary guests at the press conference marvel at the gold finds (Image: Andreas Rausch, Novetus).

Despite the inclusion of numerous public outreach and engagement activities within the scope of this project, it is evident that these endeavours were rendered feasible solely by the fortuitous discovery of a remarkable artefact, the cultural and material significance of which was immediately evident to all parties. Other sites discovered during the construction of the "Pottendorfer Linie", which have the potential to significantly contribute to local and regional history, were not incorporated into these outreach activities. It is also apparent that there are no plans to alter this in the future, largely due to financial limitations. In contrast to the UK, where archaeology is often systematically used to enhance the social value of projects and improve their image, this potential remains largely untapped in Austria (HS2-Archaeology, 2025).

Case Study 2: The creation of a medieval-themed garden in Klein-Harras, Lower Austria

This project was also undertaken by Novetus GmbH in cooperation with the W.E.B Windenergie AG prior to the construction of several wind turbines (Ragger – Simon 2021). The excavation and geophysical surveys, which were conducted as part of the environmental impact assessment requirements, revealed new insights into a deserted medieval village situated in the forest in Klein-Harras, Lower Austria.

In this project, the starting point differed significantly from the project in Ebreichsdorf in that the public outreach department of W.E.B. Windenergie AG swiftly recognised the potential benefits that archaeology could offer their company. Consequently, from the outset, a series of outreach initiatives (Fig. 3 and 4) related to archaeology were planned. However, a constraint was imposed: the landowner expressed a desire for the location of the archaeological site to remain undisclosed, citing concerns that the hunting forest might be disrupted by metal prospectors. Notwithstanding this limitation, a number of projects were successfully implemented, including a newspaper article that appeared in the archaeology blog of Der Standard, one of Austria's major newspapers (Ragger – Simon 2022).

The aspiration was also to install a permanent display that would convey the history of the site. The development of a long-term concept was a collaborative endeavour involving all relevant stakeholders, including archaeologists, wind turbine builders, the local community, and landowners. The concept included the development of a plot of land owned by the community and located on the outskirts of the town, rather than in the forest, into a medieval-themed garden (Filzwieser et al. 2023). The conception of the garden was to convey the history of the lost medieval village and the daily life of its inhabitants by

Fig. 3: Theme board in the medieval garden in Klein-Harras (Image: Jasmin Hangartner, Novetus).

using plants that they would have encountered and utilised in their daily lives. The conceptualisation of this project was realised through a collaborative endeavour with a professional landscaper and the local embellishment society, with financial provision forest stemming forest from W.E.B. Windenergie AG. The society's wish for the plants to be low-maintenance was a key factor in the selection process. Following the completion of the planting and the installation of the panels, the garden was declared open to the public.

Conclusion and future directions

The present study examined the current state of public outreach work in development-led archaeology and the legislative framework that shapes these activities. The challenges are primarily rooted in the legislation's structural issues, constrained financial margins, and the pervasive perception of public outreach as an ancillary component rather than a significant opportunity for social engagement.
A pivotal step towards this objective could be the effective implementation of the Faro Convention

Fig. 4: Presentation of the archaeological finds at the opening event of the wind turbines (Image: Jasmin Hangartner, Novetus).

within the realm of development-led archaeology. This would facilitate greater public access to local history, a goal often neglected by prominent state-funded museums and universities due to their centralised locations and limited outreach to peripheral regions. Furthermore, the acknowledgement of the societal value of archaeology, extending beyond its contribution to historical knowledge, has the potential to further enhance public outreach initiatives.

Evidence from the UK suggests that when developers understand this potential, they are open to embracing it as part of their projects (Watson – Fredheim 2022). It is encouraging to note that the European Archaeological Council has released a framework to highlight the public benefits of development-led archaeology (European Archaeological Council 2024).

However, further research is required to enhance our comprehension of development-led archaeology in Austria and to formulate strategies for the more effective integration of public outreach.

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Industry versus humanities – Science communication and outreach in an industrial research project compared to projects in the archaeological sector

by

Carmen Löw

Abstract
This article examines core differences and intersections in science communication between industrial and archaeological research. Drawing on my role as Global Science Communication Manager in the Horizon Europe project ReSoURCE and two decades of experience in archaeological outreach, the article reflects on institutional logics, audiences, and structural frameworks in both sectors. It advocates for cross-sectoral learning and the integration of communication training into academic research education.
This article is based on the Horizon Europe project ReSoURCE – Refractory Sorting Using Revolutionising Classification Equipment, Grant Agreement No. 101058310. Project partners include RHI Magnesita, Fraunhofer ILT, Montanuniversität Leoben, SINTEF, CPI and Crowdhelix. (Project-Resource.eu, 2025)

Zusammenfassung
Dieser Beitrag untersucht zentrale Unterschiede und Überschneidungen in der Wissenschaftskommunikation zwischen industrieller und archäologischer Forschung. Aufbauend auf meiner Rolle als Global Science Communication Manager im Horizon-Europe-Projekt ReSoURCE sowie auf zwei Jahrzehnten Erfahrung im archäologischen Outreach reflektiert der Artikel über institutionelle Logiken, Zielgruppen und strukturelle Rahmenbedingungen beider Sektoren. Er plädiert für sektorübergreifendes Lernen und für die Integration von Kommunikationskompetenz in die wissenschaftliche Ausbildung.
Der Beitrag bezieht sich auf das Horizon-Europe-Projekt ReSoURCE – Refractory Sorting Using Revolutionising Classification Equipment, Fördernummer 101058310. Projektpartner sind u. a. RHI Magnesita, Fraunhofer ILT, Montanuniversität Leoben, SINTEF, CPI und Crowdhelix. (Project-Resource.eu, 2025)

Introduction

After nearly two decades in science communication for archaeological institutions and projects, the Horizon Europe project ReSoURCE marked the authors first intensive involvement in an industrial research setting. ReSoURCE, funded by the European Commission and coordinated by the industrial group RHI Magnesita, is an interdisciplinary innovation project aimed at reducing the carbon footprint of the refractory industry through the development of advanced recycling and sorting technologies. The disciplines involved range from mineralogy and artificial intelligence to hyperspectral imaging, laser technologies, and circular economy engineering.
The thematic shift from cultural heritage to technological sustainability also entailed a change in communicative culture. In this article, the author compares the communication practices, objectives, and institutional frameworks of both sectors based on insights gained through her own professional experience. While industrial communication often centres around reputation management and strategic positioning, archaeological outreach tends to focus on educational aims and cultural transmission. At the same time, the external expectations placed on both sectors have increasingly converged – demands for transparency, societal relevance, and demonstrable impact are growing across the board.

Strategic logics and institutional cultures

In industrial research projects such as ReSoURCE, science communication is an integral component of strategic project planning. Communication efforts are already embedded in the grant application, tied to key performance indicators (KPIs), and subject to regular evaluation. The intended audiences range from regulatory authorities, scientific peers, investors, and journalists to policymakers and potential clients. In this context, communication functions as a tool for risk mitigation, trust building, and value articulation. In contrast, communication in archaeology is often approached – more idealistically – as a bridge to public understanding, a means of cultural memory, or a form of societal legitimation. While public funding is also standard in this sector and communication activities may be outlined in project proposals, it is far less common for communication to be professionally staffed or institutionally integrated. Instead, communication responsibilities are frequently assumed by researchers themselves, often without training, structural support, or defined resources.

Who funds what – and why it shapes communication

The source of research funding has a significant influence on whether and how communication with the public takes place. A fundamental division in funding logic can be observed:

Basic research – that is, research primarily aimed at expanding knowledge without immediate commercial application – is predominantly funded through public sources (Statistik Austria 2024; Wirtschaftskammer Österreich 2012, 5). This includes university-based research, cultural- and heritage-oriented initiatives, and foundational work in the natural sciences. States invest in such research because its benefits are long-term, general, and not easily monetised. From an economic perspective, basic research is considered a public good, non-excludable and non-rivalrous in nature, and is therefore unlikely to be adequately funded by private actors alone. Public institutions and governments play a key role in supporting such research to avoid market failure and ensure long-term societal benefits (OECD 2002; European Commission 2021).

In contrast, applied research is directed toward the development of technologies, products, or services with clear commercial or strategic relevance. This type of research is typically funded by private enterprises, often supplemented by public co-financing mechanisms such as Horizon Europe, the Austrian Research Promotion Agency, or public-private partnerships (Statistik Austria 2024; Wirtschaftskammer Österreich 2012, 5). For businesses, investment in research is a means to secure competitive advantages, expand market share, or improve efficiency.

Current funding data: a comparative illustration

Austria provides a clear example of the structural divide in research funding: In 2024, 50 % of total Research & Development (R&D) expenditure came from the private sector, according to Statistics Austria (Statistik Austria 2024). These funds flowed almost exclusively into applied research conducted within companies (Wirtschaftskammer Österreich 2012, 5). An additional 34 % of R&D funding originated from public sources, especially federal ministries, and was largely directed toward basic research at universities and public research institutions (Statistik Austria 2024). Universities and higher education institutions contributed another 22.4 % to the country's overall R&D output – primarily through non-commercial research (Statistik Austria 2024).

On the European level, the picture is similar: according to Eurostat, basic research is primarily publicly funded, while over 70 % of corporate R&D budgets are allocated to product development and market-oriented innovation (Eurostat 2023).

Implications for science communication

These funding structures shape communication cultures in fundamental ways:
Publicly funded research is subject to expectations of transparency and accountability in the use of public resources. Science communication in this context is understood as part of a broader societal mandate and expected to explain, legitimise, and share knowledge.
In contrast, privately financed research is often constrained by competitive considerations, intellectual property rights, and regulatory obligations. Communication in these contexts tends to be strategic, selective, and reputational rather than educational or participatory.
The result is a paradox: the areas where public engagement and transparent knowledge sharing would be most valuable – such as in technologies with significant societal impact – often offer the least access to communicative insight. Conversely, participatory and dialogic science communication frequently thrives in publicly funded, culturally embedded, or small-scale research settings, which is precisely where financial and organisational resources are most limited.

Fig. 1: Automated Sorting Equipment – RAPTOR on site (Image: ReSoURCE - LSA).

Who communicates – and where? A question of funding

Science communication in the sense of an open dialogue with the public primarily occurs where research is publicly funded – as is typically the case in archaeology. In Austria, around 50 % of total R&D expenditure comes from the private sector, mostly directed toward strategic and proprietary innovation.

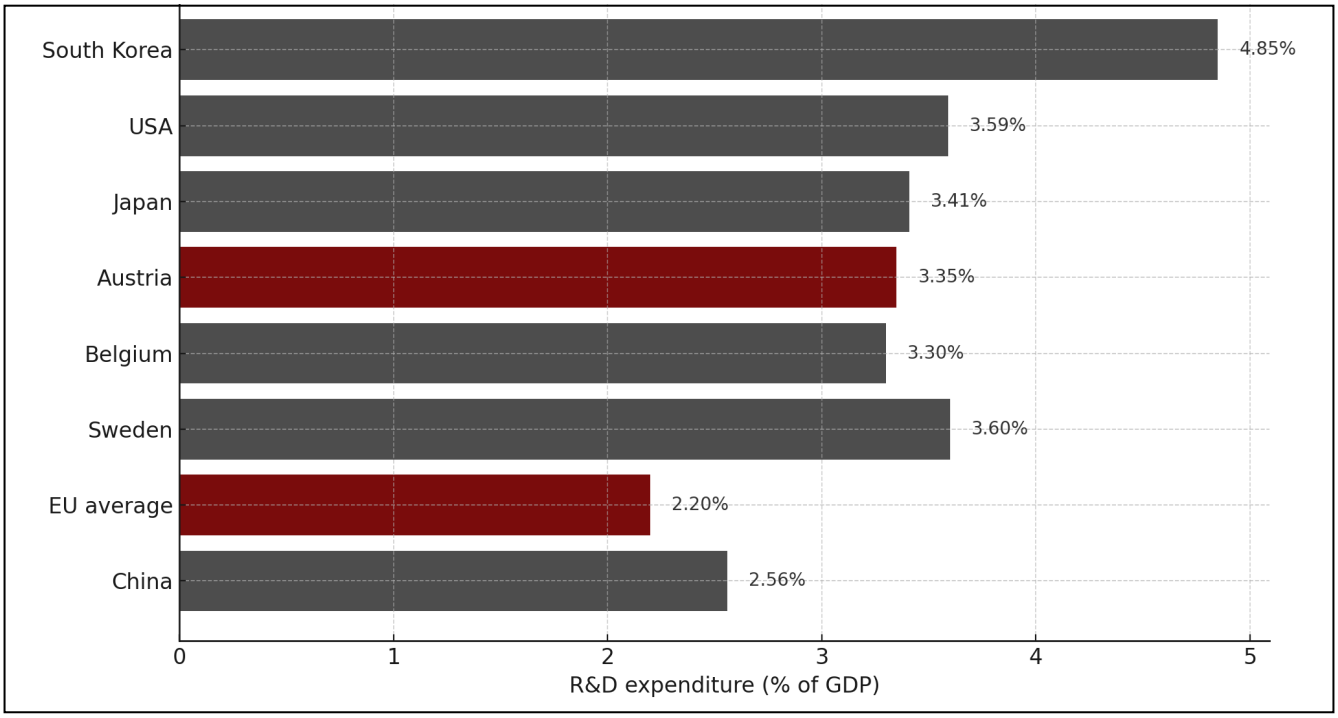

Fig. 2: International Comparison of Research & Development Intensity (2022–2024) (Image: Statistik Austria 2024).

Public sources contribute approximately 34 %, while universities and higher education institutions account for an additional 22.4 % of national R&D investment (Statistik Austria 2024).
This means that the most visible communicators tend to be state-funded institutions, such as universities, public research centres, and cultural organisations. In contrast, research conducted by the private sector is less likely to be communicated openly, often due to concerns around competition and intellectual property. Here, Fig. 2 provides an international comparison of R&D intensities, while Fig. 3 illustrates the division of funding sources in Austria and the EU.

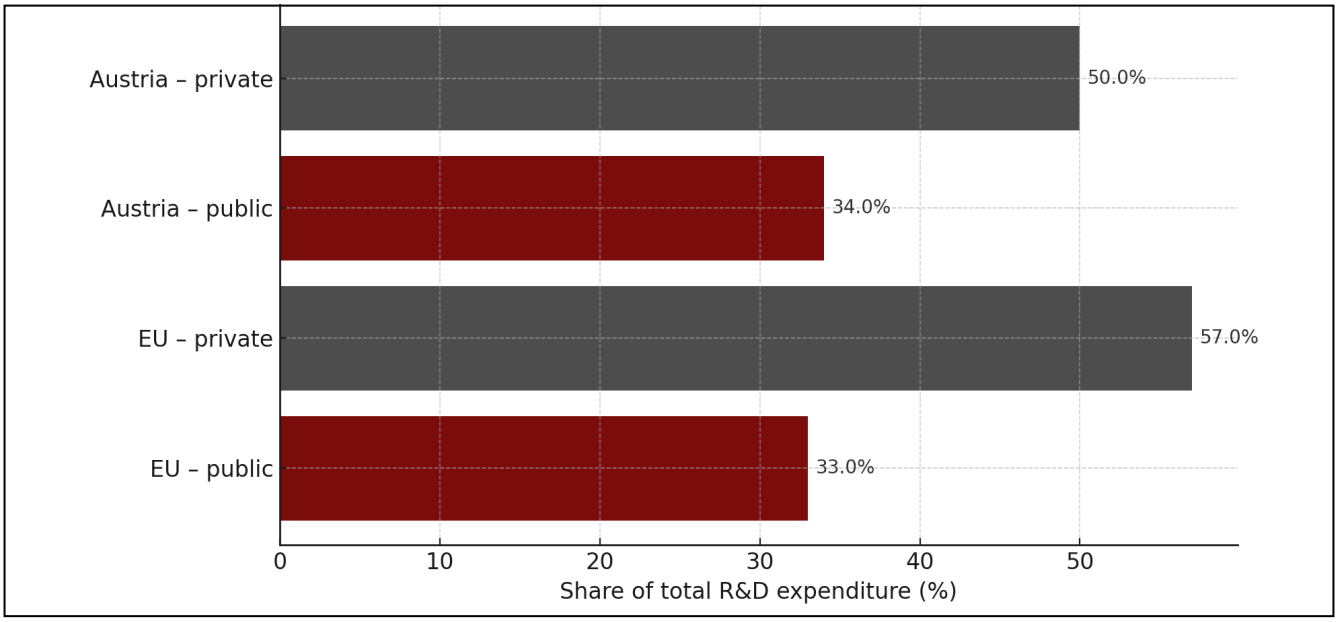

Fig. 3: Sources of Research & Development Funding in Austria and the EU (2023–2024) (Image: Statistik Austria 2024).

In both cases, the private sector provides the majority of investment. However, the one-third share of public funding plays a critical role, particularly in enabling science communication formats oriented toward social benefit. These funding realities help explain why participatory formats tend to flourish in public-interest contexts, even though they often operate with comparatively small budgets.

Tools, tensions, and shared pressures

Despite their different objectives, both industrial and archaeological research must navigate shared developments: digitisation, stakeholder pluralism, and increasing demands for open science.

The tools used for communication, however, differ significantly. In archaeology, targeted digital formats such as the Stiegenblog – a science weblog launched to accompany the recovery and study of a prehistoric wooden staircase in Hallstatt (Fig. 4) (Grömer and Kern 2018, 166) – have demonstrated how digital storytelling can engage both local and international audiences. With more than 45,000 visits and wide media resonance, the blog became not only a public outreach tool but also an educational platform and an archival resource for future communication initiatives (Löw et al. 2016).

Fig. 4: Salt mine Hallstatt with exhibition and animation of the Bronze Age staircase (Image: NHM Wien and Scenomedia).

In industrial contexts, such formats are often considered too risky. Legal restrictions and internal compliance protocols significantly limit communicative freedom.

At the same time, archaeological communication can benefit from industrial methods, particularly in terms of stakeholder analysis, impact measurement, and strategic communication planning. In earlier work, the author has emphasised the importance of identifying and incorporating stakeholder values from the beginning of a project to ensure sustainable and effective communication (Löw 2016).

Audience orientation and public value

A central difference between industrial and archaeological communication lies in how audiences are conceptualised. Industrial communication is typically oriented toward institutional stakeholders, such as investors, funding bodies, media, and regulators. Archaeological communication, by contrast, increasingly views the public not just as a recipient but as a co-producer of knowledge.

A notable example of this approach is the Zeitensprung project led by the Austrian Kuratorium Pfahlbauten and its institutional partners (Pfahlbauten.at-Zeitensprung, 2025). It demonstrates how targeted science communication, educational outreach, and partial public participation can be

Fig. 5: Guided tour at the underwater excavation at the site Seewalchen 2015 (Project Zeitensprung) (Image: Jakob Maurer, Kuratorium Pfahlbauten).

meaningfully interwoven (Fig. 5). The exhibition "Ein Zeitensprung zu den Pfahlbauten", developed in 2017 in close collaboration with local communities, was deliberately shown in low-threshold venues such as town halls, schools, and banks, outside the traditional museum environment (Löw – Dworsky 2018; Löw 2023).

A comprehensive outreach programme accompanied the exhibition (Fig. 6 and 7): public and school-based guided tours, a live underwater video stream, modular educational stations placed across the village, a Citizen Science component involving local participants, and a multi-award-winning science blog hosted by the Kuratorium Pfahlbauten (Löw 2023). The goal was to render the often invisible UNESCO World Heritage visible, foster regional identification, and make the use of public research funding transparent and relatable.

Fig. 6: Annpouncement for the public exhibition during the underwater excavation at site Weyregg II 2016–2017 (Project Zeitensprung) (Image: Helena Seidl da Fonseca and Carmen Löw, Kuratorium Pfahlbauten).

Fig. 7: Zeitensprung-Public exhibition at a local school in Weyregg am Attersee (Image: Helena Seidl da Fonseca and Carmen Löw, Kuratorium Pfahlbauten).

The project's ambition went beyond education or reputation management: it implemented the international standard for World Heritage communication as set out by UNESCO's Operational Guidelines, which call for *"a thorough shared understanding of the property* […] *by all stakeholders, including local communities and indigenous peoples"* (UNESCO 2021, §111). The German Museums Association echoes this responsibility in its recommendation for institutions: *"Museums must take seriously the people for whom they work."* (Deutscher Museumsbund 2019, 5)

Zeitensprung realised this principle with clarity: not as a one-way dissemination effort, but as a communicative space where understanding, belonging, and participation were intentionally cultivated, through content, setting, media, and interpersonal interaction.

Conclusion and outlook

Communication in industrial and archaeological research operates according to different logics: strategic versus normative, competition-driven versus education-oriented. Yet both are increasingly subject to the same expectations: transparency, relevance, and interdisciplinarity.

The ReSoURCE project has shown how strategically structured communication can function within complex stakeholder environments in the industrial sector. At the same time, the participatory, value-driven approach of archaeological outreach remains indispensable, especially when it comes to fostering trust and enabling democratic engagement with knowledge.

The strengths of both sectors can and should be combined. What is needed is a culture of science communication that is both effective and ethical. This requires reform in research training, shared tools for evaluation, and – above all – a genuine willingness to learn from one another.

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World Heritage "Prehistoric Pile Dwellings around the Alps": mediation versus marketing

by

Barbara Fath & Sabine Hagmann

Abstract
By inscribing the "Prehistoric Pile Dwellings around the Alps" on the World Heritage List, UNESCO has placed a unique archaeological context spanning prehistoric sites from 5000 to 500 BCE under the protection of the international community. The 111 sites are hidden under water, in moorlands, or buried under constructions, often making them inaccessible for visitors. In addition to protection, dissemination therefore plays a particularly important role. Numerous museums in the six countries involved present the pile dwellings and their significance as a World Heritage Site complex through exhibitions and accompanying educational programmes. Since the inscription in 2011, however, further formats have been developed to make these World Heritage Sites accessible. Excessive tourism poses a major threat to many World Heritage Sites. In the case of the pile dwellings, sustainable and heritage-friendly tourism can be used as an opportunity to raise awareness of the uniqueness of the pile dwellings and their need for protection.

Zusammenfassung
Mit der Aufnahme der „Prähistorischen Pfahlbauten um die Alpen" in die Liste des Weltkulturerbes (whc.unesco.org-list) hat die UNESCO einen einzigartigen archäologischen Kontext, der prähistorische Stätten aus einer Zeitspanne von 5000 bis 500 v. Chr. umfasst, unter den Schutz der Weltgemeinschaft gestellt. Die 111 Stätten liegen versteckt unter Wasser, in Moorgebieten oder sind unter baulichen Konstruktionen verborgen, sodass sie für Besucher in der Regel unzugänglich und nicht sichtbar sind. Neben dem Schutz kommt daher der Vermittlung eine besondere Rolle zu. Zahlreiche Museen in den sechs Ländern präsentieren durch Ausstellungen und pädagogischem Begleitprogramm die Pfahlbauten und ihre Bedeutung als Welterbe. Seit der Einschreibung 2011 wurden aber noch weitere Möglichkeiten entwickelt, um die Welterbestätte der Öffentlichkeit bekannt zu machen. Übermässiger Tourismus stellt für viele Welterbestätten eine große Gefahr dar. Im Falle der Pfahlbauten könnte nachhaltiger und denkmalverträglicher Tourismus als Chance genutzt werden, um das Bewusstsein für die Einmaligkeit und Schutzbedürftigkeit der Pfahlbauten zu schaffen.

Prehistoric Pile Dwellings around the Alps – inscription and management

Since 2011, 111 pile-dwelling sites have been inscribed on the World Heritage List as a serial transnational World Heritage Site under the title "Prehistoric Pile Dwellings around the Alps" (whc.unesco.org-list). The six countries bordering the Alps – Switzerland, France, Italy, Slovenia, Austria, and Germany – are involved in this World Heritage Site as applicants.
As part of the application process, a joint list of all known pile-dwelling sites in the six countries was compiled for the first time. A selection of 111 prehistoric sites dating from 5000 to 500 BCE was chosen from the more than 1000 pile-dwelling sites on that list to represent the lakeshore and moorland settlements that had been identified at the time of the application on the World Heritage List. Only the selected sites bear the World Heritage title. Nevertheless, all the other sites listed in the application are associated

sites and are part of the phenomenon of archaeological sources preserved in waterlogged conditions. UNESCO has formulated a total of 10 criteria for cultural and natural heritage sites. To be inscribed on the World Heritage List, a site must fulfil at least one of these criteria. The "Prehistoric Pile Dwellings around the Alps" are inscribed on the basis of criteria iv and v:

Criterion (iv):
The series of pile dwelling sites are one of the most important archaeological sources for the study of early agrarian societies in Europe between 5000 and 500 BCE. The waterlogged conditions have preserved organic matter that contributes in an outstanding way to our understanding of significant changes in the Neolithic and Bronze Age history of Europe in general, and of the interactions between the regions around the Alps in particular.

Criterion (v):
The series of pile dwelling sites has provided an extraordinary and detailed insight into the settlement and domestic arrangements of prehistoric, early agrarian lake shore communities in the Alpine and sub-Alpine regions of Europe over almost 5000 years. The revealed archaeological evidence allows a unique understanding of the way these societies interacted with their environment, in response to new technologies, and also to the impact of climate change.

UNESCO's mandate to the contracting parties and thus to the competent administrative authorities is to protect and preserve the World Heritage Sites for future generations. Furthermore, the research and dissemination of facts about World Heritage sites are among the core tasks undertaken by the States Parties when inscribing a site complex on the World Heritage List, as required by UNESCO. The pile-dwelling sites are located in the shallow water zones of the circumalpine lakes, in bogs, and in river valleys. These sites are generally not visible above ground (Fig. 1). To enable the preservation of the organic materials, the layers of artefacts must be constantly exposed to oxygen in a water-saturated environment. In times of climate change, the protection and preservation of archaeological sites is therefore a particular challenge.

Fig. 1: View of Lake Inkwil (Canton Solothurn, Switzerland). Hidden around the small island is the CH-SO-02 site, which is part of the serial and transnational World Heritage Site "Prehistoric Pile Dwellings around the Alps" (Image: Pierre Harb).

Cooperation around the Alps – the "International Coordination Group UNESCO Palafittes"

For a transnational serial World Heritage Site, supra-regional cooperation across the member countries is of particular importance. In the case of the "Prehistoric Pile Dwellings around the Alps", the International Coordination Group UNESCO Palafittes (ICG) was established (palafittes.org). It is a working group made up of representatives from the six countries involved. One country chairs the working group for two years at a time and organises the working group's meetings in spring and autumn. The regular

exchange of experiences and the coordination of joint projects is essential for cooperation between the countries involved and thus for the preservation of the World Heritage Site complex. This exchange between the six countries is the more important, as the administrative structures, the monument protection laws, and the anchoring of the UNESCO World Heritage Convention in the respective monument protection laws are very different in each of the participating nation states (whc.unesco.org_conventiontext).

This is also reflected in the management plan. Joint projects are described in the international chapters of the management plan. The chapters with the six national management plans contain the plans and projects of the individual countries. The monument protection regulations in the respective countries apply.

Monitoring and protection

Article 4 of the World Heritage Convention states that each State Party *"recognises it as its responsibility to ensure the identification, protection and conservation of the cultural and natural heritage referred to in Articles 1 and 2 situated within its territory and its transmission to future generations"*.
Dealing with archaeological finds and structures in a waterlogged, preserved environment requires special conditions. Specially-trained archaeological research divers monitor the sites, e.g. in the shallow water zone of Lake Constance, and – where this is possible in accordance with the legal framework – carry out excavations.
Regarding the management plan for the World Heritage Site, an interregional project was carried out jointly by Switzerland, Germany, and Austria over a period of four years. In this project, protection concepts for underwater archaeological monuments were developed and tested. In addition to the monument protection authorities, the Limnological Institute of the University of Constance and the Lake Research Institute of the Baden-Württemberg State Institute for the Environment, Measurements and Nature Conservation were also involved in this project.
The use of honeycomb-shaped gravel fills has proven to be a successful protective measure. The sediment remains trapped in the honeycombs and erosion can thus be mitigated. Erosion markers were placed in the sites to monitor erosion. Flexible chains, plastic rods, and oak stakes were tested as well.
The erosion markers must be checked and recorded regularly. Initially, this monitoring was carried out every two years. Due to climate-related changes, the sites should be monitored even more closely in future. In particular, the landward side areas of the sites, which have previously been the focus of limited monitoring measures, must also be taken into account (Fig. 2).

Since the inscription in 2011, one can observe that the warmer average annual water temperatures in Lake Constance have led to increased growth of aquatic plants. In addition, neozoa have been observed in Lake Constance for several years. In addition to camber crabs, it is above all the quagga mussel that has now colonised numerous sites. The quagga mussels form thick layers on the lakebed, but also tend to use prehistoric piles that protrude from the subsoil. With every mussel that is pecked off from a pile by water birds, a piece of pile is also lost.

Fig. 2: Gravel ship and special pontoon off Sipplingen with freshly placed gravel surface (light-coloured square that stands out from the lake bed). Gravel bodies placed in 2006 (left) and 2011 (right) are visible as light-coloured areas (Landesamt für Denkmalpflege im Regierungspräsidium Stuttgart, image: Joachim Köninger).

The sites in the bogs are often threatened by the lowering of groundwater levels as well. In the Federsee fen region, for example, the moorland areas are managed by nature conservation in close cooperation with monument preservation. As a result, in both the southern and northern Federsee fens, large areas could be rewetted. The water inflow is regulated by weirs and the water levels are recorded weekly.

Mediation at museums and on-site

Some UNESCO heritage sites from Baden-Württemberg (denkmalpflege-bw.de) might serve as examples: The poor visibility and limited accessibility of the sites pose particular challenges for science communication and dissemination activities. They are not only located underground, underwater, or under constructions, but are often also situated in poorly accessible terrain or in designated (nature) conservation areas. The State Office for the Preservation of Monuments in the Stuttgart Regional Council and, in most cases, the nature conservation organisations, recommend that the areas in question be treated with care. On the shores of Lake Constance, for example, it is recommended that the sensitive sites are not visited by swimmers or hobby divers to prevent looting or other forms of destruction. Boats are prohibited from anchoring in the area of the sites.
In 2011 and 2012, the municipality of Uhldingen-Mühlhofen worked with the local population and the Pfahlbaumuseum at Unteruhldingen to develop a masterplan for the Unteruhldingen-Stollenwiesen site. An information point was set up directly at the site, the shore areas at the sports boat harbour were redesigned and the famous pile-dwelling museum with its large open-air site is located in the immediate vicinity. Playgrounds relating to the pile dwellings can be visited in Unteruhldingen as well as in Bodman-Ludwigshafen (Fig. 3).

Fig. 3: Pile dwellings' themed playground in Unteruhldingen, Lake of Constance, Germany (Image: Sabine Hagmann).

In Bodman-Ludwigshafen, signs on the playgrounds provide background information about the World Heritage Site "Prehistoric Pile Dwellings around the Alps". In Constance, the Archaeological State Museum mainly shows the latest research findings.
In the "Historical Hall" of the Rosgarten Museum, visitors can travel back in time to the discovery of the pile dwellings on Lake Constance. The original display cases and the arrangement of finds from the Neolithic and Bronze Age provide an insight into how fascinating the pile dwellings were for their discoverers. Some museums are run by non-publicly funded associations, such as those in Allensbach and Öhningen-Wangen, as well as the tourist information centre in Sipplingen, provide lively information about the respective lake dwelling complexes on site.
The Federsee Museum in Bad Buchau is a modern showcase museum and includes an outdoor area with reconstructed buildings from various periods of the pile-dwelling era in the Federsee fen region. The sites in the Federsee fen are accessible via hiking trails and link the natural landscape with the archaeological finds. The Federsee Museum provides an extensive science communication programme, which introduces children and young people to the subject of pile-dwelling archaeology.
With the former private collection of the dentist and Upper Swabian archaeological pioneer Heinrich Forschner (1880–1959), the Biberach Museum has an extensive collection from the "Siedlung Forschner" and "Schreckensee" sites discovered by Forschner, both of which were inscribed in the World Heritage Property listing. The archaeological exhibition was redesigned to celebrate the pile dwellings being recognised as a World Heritage Site.
Experience has shown that the educational work carried out during archaeological excavations is the most successful teaching device. To accompany the major state exhibition *"4000 Jahre Pfahlbauten"* ("4000 years of pile dwellings"), which was displayed in Bad Schussenried and Bad Buchau in 2016, excavations took place at the site of Olzreute-Enzisholz (municipality of Bad Schussenried) from June to the beginning of October 2016 and were made accessible to the public on a large scale. In addition, roll-ups, flyers, and brochures provided information on the work of the Wetland Archaeology Department of the State Office for the Preservation of Monuments in the Stuttgart Regional Council. In addition, a specially set up field laboratory offered visitors the opportunity to demonstrate the process of tree ring measurements on wood. On some weekends, experts were also on site to provide insights into their respective specialist areas: sedimentology, archaeobotany, pollen analysis, archaeozoology, and anthropology were represented. The work involved in cataloguing and describing the finds was also presented. This gave visitors a comprehensive insight into the interplay between the various disciplines in the practical

Fig. 4: On-site mediation as part of the excavations at Schreckensee, Baden-Württemberg, Germany 2018 (Image: Gerhard Tempel).

Fig. 5: Open Monument Day at the Schreckensee excavation site 2018, Baden-Württemberg, Germany (Image: Gerhard Tempel).

excavation work. Some interested parties visited the excavation regularly to observe the progress. Overall, there was a great deal of interest from the public.
When planning an extensive monitoring programme to examine the state of preservation of the archaeological layers and the overall condition of the site for 2018 at the site of Schreckensee (municipality of Wolpertswende), fixed dates for information events were established from the outset. At these events, in addition to information about the UNESCO World Heritage Site, guided tours of the excavation and the presentation of finds were offered, as well as experimental archaeology and hands-on projects. A freely accessible tent with a small exhibition on the World Heritage Site "Prehistoric Pile Dwellings around the Alps", on scientific methods and with informational material to take away was available on site for the entire duration of the excavation (Figs. 4 and 5).

Joint mediation of a serial and transnational World Heritage Property

Magazines, guides, flyers, and information brochures were printed in all participating countries. Since 2020, the format "Palafittes News" has been providing the latest news on the protection and preservation, research and communication of the "Prehistoric Pile Dwellings around the Alps". The website palafittes.org provides an overview and varied information about the serial transnational World Heritage Property.
In the Slovenian municipality of Ig and the French community of municipalities around Lac d'Aiguebelette, information centres for the World Heritage Property (morostig.si; maisondulac-aiguebelette.com) have been set up in recent years. The *"Archäomobil Ostschweiz"* ("Archeomobile East Switzerland") is a joint project of several cantons that travels to schools and communities and provides information about the World Heritage Property, as well as various other archaeological focal points (Fig. 6).

In Austria, scuba divers can find out more about the World Heritage Property and pile dwellings in a specially-designed themed underwater diving park. The former Pfahlbauten-Informationszentrum Baden-Württemberg (pile dwelling information centre in Baden-Württemberg) was represented at the state fair Caravan-Motor-Tourism from 2012–2023. The *"Archeo Natura"* Park in Fiavè in Italy has been open since 2021 and offers visitors an extensive programme on the subject of pile dwellings and World Heritage (Fig. 7).

Fig. 6: The *"Archäomobil Ostschweiz"* in action with the "Pile dwellings" themed case (Image: Barbara Fath).

Fig. 7: Reconstructed pile dwellings in the *"Parco Archeo Natura"* at Fiavè (Italy). The site is located next to the actual discovery site and is mainly booked for guided tours in combination with the museum in the centre of Fiavè (Image: Helena Seidl de Fonseca).

In addition to these educational programmes, there are also recurring events that travel through the six countries. An international logboat regatta is organised – where possible – in one of the six countries involved in the World Heritage Property every year since 2015. In most cases, the logboats used for the competition are made locally with the involvement of various local partners (Fig. 8).

Fig. 8: The newly completed logboat is carried to the watering-in centre by volunteers from the community of municipalities at Lake Aiguebelette, France (Image: J. Pierre Dupraz).

In 2023, the regatta took place for the first time in Germany on Lake Constance. Here, it was forestry trainees who completed the logboat in the courtyard of the *Archäologisches Landesmuseum Baden-Württemberg* (State Archaeological Museum Baden-Württemberg) under the guidance of experimental archaeologist Frank Trommer. The dugout canoe was then launched on Lake Constance so that the national and international teams could compete against each other in two separate competitions. In addition to the competition itself, there is an extensive accompanying programme on the regatta weekends with a science fair hosting various information stands about pile dwellings, experimental archaeology and world heritage, public lectures, exhibitions, guided tours, or, as in 2024 at Lac de Saint Point (France), a theatre play specially staged for the occasion (Vidal 2025, Fesq-Martin 2025 (in print)).

Conclusion

The tasks that UNESCO assigns to the States Parties are the preservation and protection of the sites, their research (Article 5) and their dissemination/communication (Article 27). It states that the public must also be fully informed about *"the dangers threatening the heritage"* and the measures taken under this World Heritage Convention.

The question of where the line can or must be drawn between science communication/dissemination and tourist marketing is a controversial one. As the sites are not visible above ground and are often located in nature reserves which restricts access or necessitates adjusted visitor guidance, it is generally the museums that are involved in communicating pile-dwelling archaeology and carrying out important work in the interests of the World Heritage Property. Associations and communities are also involved in many places and often with a great deal of voluntary commitment in the interests of the pile dwellings. However, it is challenging that towns and municipalities have expressed their disappointment, as the UNESCO label, which is highly valued by tourists, does not correspond to the usual tourist valorisation – tour of the monument – in the case of the pile dwellings. The visitors stand on the shores of the lakes or walk through, for example, the Federsee area, but they do not see any site. In terms of preserving the pile dwellings, however, it is a good thing that they have not been at risk from over-tourism due to their own high profile.

However, their hidden nature makes it all the more important to raise public awareness to their need for protection and conservation. Therefore, in addition to educational venues such as museums and open-air museums, also special exhibitions and public events, programmes for schools, and adult education are absolutely necessary to strengthen and sustainably anchor an understanding of the uniqueness and need for protection of the common World Heritage Property "Prehistoric Pile Dwellings around the Alps".

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We can do it – with a little help from our friends: community management in the context of prehistoric pile dwellings

by

Cyril Dworsky, Fiona Leipold, Barbara Fath & Helena Seidl da Fonseca

Abstract
This article highlights the central role of community management in protecting a serial World Heritage Site, the UNESCO World Heritage Site "Prehistoric Pile Dwellings around the Alps". This World Heritage property comprises 111 prehistoric sites in six countries, concealed beneath bogs, lakes, and rivers. Using the example of the Kuratorium Pfahlbauten, which manages the Austrian part of this World Heritage Site, we demonstrated how underwater heritage, which is more or less invisible, is protected and presented in Austria – by strategic collaboration with local residents, lake users, heritage associations, and educational institutions, as well as by public outreach and public relations, especially in the digital space. It is evident that the successful management of a World Heritage site depends on building networks of engaged advocates for a shared cultural heritage.

Zusammenfassung
Dieser Artikel beleuchtet die zentrale Rolle des Community Managements beim Schutz einer seriellen Welterbestätte, dem UNESCO-Welterbe „Prähistorische Pfahlbauten um die Alpen". Diese Welterbestätte umfasst 111 prähistorische Fundstellen in sechs Ländern, die in Mooren, Seen und Flüssen verborgen liegen. Am Beispiel des Kuratorium Pfahlbauten, das den österreichischen Teil dieser Welterbestätte managt, wird dargestellt, wie das weitgehend unsichtbare Unterwassererbe geschützt und präsentiert wird – durch strategische Zusammenarbeit mit den Menschen, die am See wohnen oder ihn nutzen, mit Heimatvereinen und Bildungseinrichtungen sowie durch Wissensvermittlung und Öffentlichkeitsarbeit, insbesondere auch im digitalen Raum. Dabei wird deutlich, dass erfolgreiches Welterbe-Management auf dem Aufbau von Netzwerken engagierter Fürsprecher für ein gemeinsames Kulturerbe beruht.

UNESCO World Heritage "Prehistoric Pile Dwellings around the Alps" – one site, many hands

Since 2011, "Prehistoric Pile Dwellings around the Alps" is a transnational UNESCO World Heritage Site comprising 111 archaeological wetland sites across six countries. In the same year, the International Coordination Group (ICG) was established to oversee this serial and transnational site. The International Coordination Group consists of representatives from six countries and 27 regions, as outlined in its official management plan (Fig. 1) (ICG 2021). Its core responsibilities follow the aims of the UNESCO World Heritage convention: conservation, protection, research, and communication of the site's outstanding universal value of the inscribed properties (whc.unesco.org, 2024). The work of the International Coordination Group is structured around principles known as the "five C's": Credibility, Conservation, Communication, Communities, and Capacity Building (whc.unesco.org, 2024). These form the framework for cooperation across national and regional boundaries. In addition, there is a sixth "C" for the coordination of this transnational and serial property.
The national implementation of the efforts from the International Coordination Group varies based on administrative systems. In Switzerland, the 56 sites are managed by cantonal archaeological services,

unified under the association Swiss Coordination Group UNESCO Palafittes. Austria's five sites are overseen by local site managers and coordinated nationally by the non-profit organisation Kuratorium Pfahlbauten. In Germany, the site management is divided between the state office for monument preservation in Baden-Wurttemberg and in Bavaria, with the German Coordination Group ensuring collaboration across inner-German province boarders

In France, the management falls to regional cultural departments representing the Ministry of Culture across two regions. Italy's 19 sites are supervised by regional superintendencies operating under the Ministry of Culture. Slovenia's two sites are managed by Ljubljansko Barje Nature Park.

Despite the diversity in national structures, the ICG fosters shared strategies, common standards, and collaborative projects. The organisation emphasises the collective responsibility of all participating states. Though there are 111 individual sites, they are recognised as one unified World Heritage Property. The loss or endangerment of any single site could jeopardise the status of the entire designation of the "Prehistoric Pile Dwellings around the Alps".

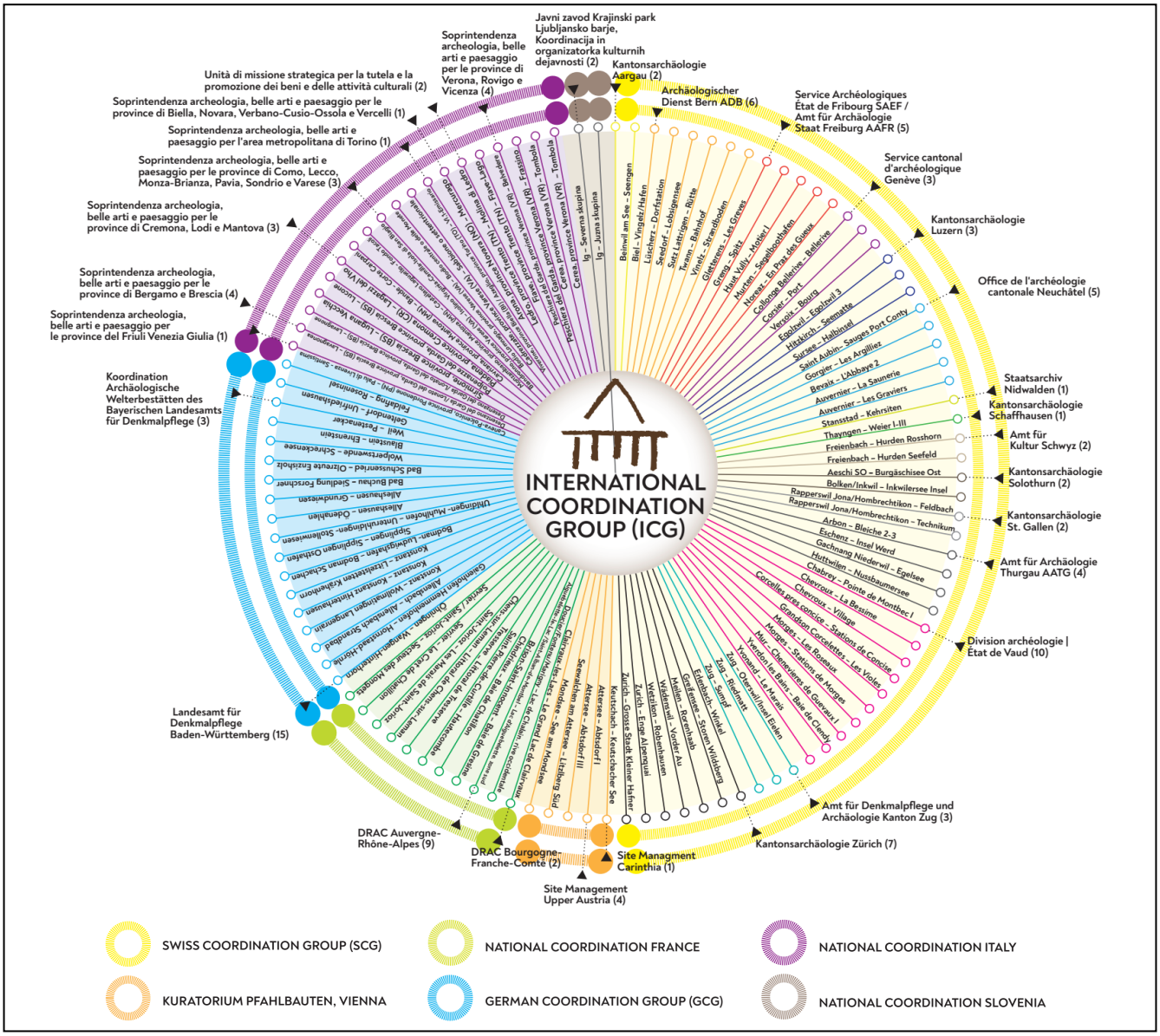

Fig. 1: Overview of the ICG and the management structures in the six countries on national and regional level (Image: Barbara Wais, Palafittes).

Kuratorium Pfahlbauten - Austria's voice for underwater World Heritage

Austria contributes five sites to the serial UNESCO World Heritage – four in Upper Austria and one in Carinthia – dating from the 4th to 2nd millennium BCE. These submerged settlements offer exceptional preservation of organic materials, providing insights into early agrarian societies (Holzer 2020; Jakobitsch et al. 2023; Jakobitsch 2025; Nagy 2025). Despite their significance, the underwater nature of these sites poses challenges for public visibility and engagement. The Kuratorium Pfahlbauten addresses these challenges through a combination of / by means of integrated management, research, and outreach strategies.

The organisation Kuratorium Pfahlbauten is a non-profit association founded and predominately funded by the Austrian Republic and the federal states of Carinthia and Upper Austria. In both federal states, there are regional site managers who are locally responsible for the protection and cultural mediation of the sites. The tasks of the site managers consist of cooperation with municipalities, companies, and civic society organisations, regular monitoring of the sites, local and regional public relations work, and the promotion of regional outreach projects with various partners. They oversee local implementation, ensuring that national strategies align with site-specific needs. A national coordination office is located in Vienna and is affiliated as an independent research organisation to the Natural History Museum Vienna. It oversees projects across federal states and state borders, initiates project applications, and handles finances.

The association's board includes representatives from the responsible Ministry for Culture (currently Federal Ministry for Housing, Arts, Culture, Media and Sport), the cultural directorates of Upper Austria and Carinthia as well as leading scientific institutions such as the Natural History Museum Vienna and the federal provincial museums in Klagenfurt and Linz. The board decides on strategic matters, projects, and the allocation of funds. A scientific advisory board can be convoked to support the Kuratorium Pfahlbauten with expertise on archaeological and monument conservation issues.

As the national representative within the International Coordination Group, the Kuratorium Pfahlbauten collaborates with its counterparts in Germany, France, Italy, Slovenia, and Switzerland to ensure cohesive management of the World Heritage Site.

It is a lean but highly networked body that bundles scientific, conservation, and social tasks relating to the UNESCO World Heritage Site of the pile dwellings in Austria. It combines national responsibility with international cooperation and particularly emphasises on participation and the visualisation of the concealed cultural heritage under water (Dworsky et al. 2022).

Unlike neighboring countries such as Germany and Switzerland, Austria does not have an uninterrupted, decades-long research tradition or established structures for the study and protection of underwater monuments (Dworsky & Poppenwimmer 2022; Hafner & Harb 2009; Samonig 2003). However, with the designation as a UNESCO World Heritage Site, the state of Austria committed itself to pay special attention to the sites and to meet the requirements of UNESCO as defined

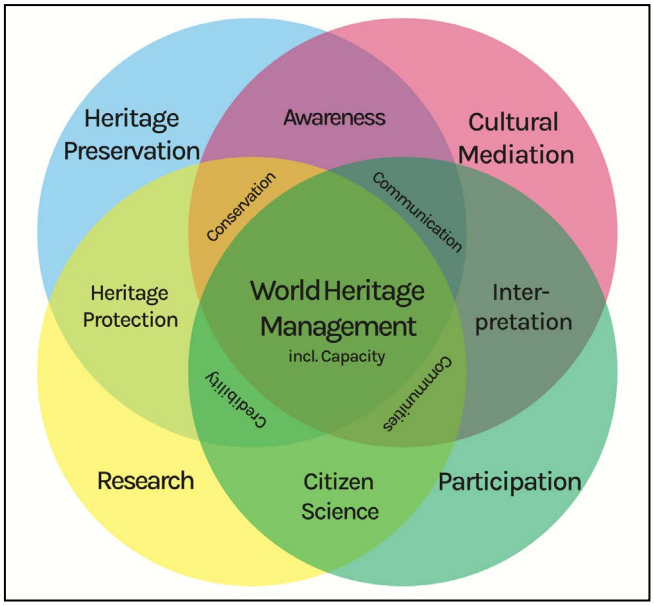

Fig. 2: Tasks and responsibilities in the World Heritage Management, including the 5 C's of UNESCO (Image: Cyril Dworsky, Kuratorium Pfahlbauten).

1972 (whc.unesco.org, 2024). It is the task of the Kuratorium Pfahlbauten to ensure the successful implementation of these requirements. This includes main responsibilities such as heritage preservation, cultural mediation, research and participation, and follow-on cross-cutting topics such as heritage protection, rising awareness, interpretation, and inclusion of citizens into the scientific process (Fig. 2). In the case of Austria, it was necessary to start this task from scratch. Consequently, the Kuratorium Pfahlbauten's areas of responsibility as a non-profit organisation extend to various domains related to underwater cultural heritage. Central to this is the overall World Heritage management and related coordination tasks, which exist at national and international levels, as well as at various administrative and community levels. While this abundance of tasks offers many opportunities for innovation, it also presents a certain challenge for a small organisation. This is especially true for the key factor community management.

Community management – which community?

"Cultural heritage is community based and hence heritage communities play a relevant role in its framing. Conservation of this cultural capital is essential, both for its intrinsic value and its potential as an investment from which future development – cultural, social and economic – may be generated." (ESPON 2021)

Community management and people-centred approaches in cultural heritage preservation take on many forms and are emphasised as good practice in the Operational Guidelines for the implementation of the World Heritage Convention (whc.unesco.org, 2024; Bruku 2015; Court & Gamini 2015). These approaches involve strategical coordination and empowerment of various stakeholders who protect, interpret, and sustainably use cultural assets. Recognising the diversity of communities is essential. In the context of the prehistoric pile dwellings in Austria, "communities" encompasses not only residents and municipalities at the heritage sites – including residents living next to the protected zones, local historians, historical associations, volunteers, and museum representatives – but also political decision-makers, heritage professionals, conservationists, students, educators, researchers, and universities. Finding the right contacts, building a network, and maintaining lasting relationships is important in order to achieve the greatest possible impact in an effective and sustainable manner. A dedicated stakeholder matrix, e.g. the well-known Mendelow's Matrix, is useful for efficiently achieving specific objectives (Fig. 3) (Mendelow 1991). It is important to revise the matrix regularly, as players can change and new interest groups can emerge.

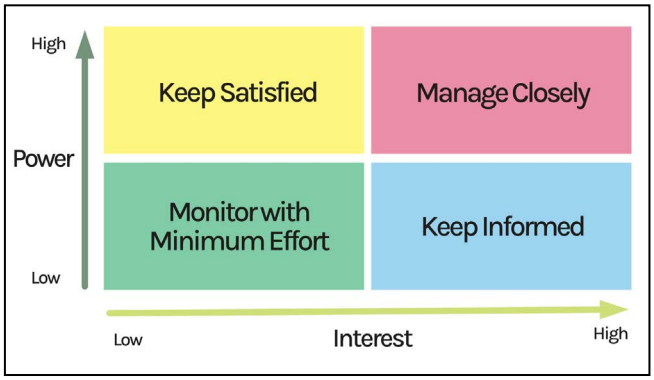

Fig. 3: Stakeholder Management diagram after Mendelow (Image: Cyril Dworsky, Kuratorium Pfahlbauten).

The pile dwellings in Austria

A UNESCO World Heritage Site may hold multifaceted significance for a community. It can strengthen cultural self-awareness and foster pride in one's history and cultural identity, while also contributing to social unity or the reflection on personal and universal values. While the World Heritage inscription brings international recognition and increased attention, this must be considered thoroughly. World Heritage is opening opportunities in education, tourism, and economic development. Still – following the

recommendations in the Operational Guidelines – it shall encourage the community to play an active role in protecting and preserving the heritage, striking a balance between use and conservation.
However, it is often not immediately apparent to a community why a World Heritage Site is valuable or beneficial. This is particularly true for underwater archaeological sites, which are often more or less invisible from the surface and completely inaccessible. Visiting the sunken pile dwelling monuments in the lake is usually not possible. In Austria, for example, all such sites are located within diving prohibition zones due to widespread looting in the 1980s, as well as the fragile nature of the remains on the lakebed (Seidl da Fonseca et al. 2024a, Offenberger 1986). Exclusive underwater tours must be registered separately with the regional authority (district commission) and require specially trained guides, as well as visitors with a certain level of scuba training and reliable buoyancy control skills (Fig. 4). For this reason, sites in this category are often considered less significant for touristic marketing from an economic perspective, as they are not directly accessible to tourists, as opposed to artefacts from prehistoric settlements in museums. This unfortunately undermines the recognition of the nature of the Outstanding Universal Value of the sites for the public and leaves more room for potential conflicts of interest.

Fig. 4: Guided tour for special interest group to the World Heritage Site of See am Mondsee (Image: Helena Seidl da Fonseca, Kuratorium Pfahlbauten).

Case study 1 – fish vs monument

The prehistoric village submerged in Lake Keutschach, Carinthia's only UNESCO World Heritage Site, exemplifies the conflict between landowner interests and underwater monument protection (www.pfahlbauten.at, 2024). These remains are dating to the beginning of the 4th Millenium BCE and thus represent the oldest known lakeshore settlements in the Austrian Alpine region, making them of outstanding significance for research on Neolithisation and our understanding of early agriculture development.
The prehistoric structures occupy a shallow area (834 m²) in the centre of the lake covered only by a thin layer of silt and sand, rendering them highly vulnerable to external forces (www.pfahlbauten.at/

projekte, 2025). Currents and wave action by the water continuously erode the protective sediment, exposing and damaging archaeological layers. Further destruction occurs during spawning season when zander (pikeperch/*Sander lucioperca*) – introduced in the 1920s – disturb the lakebed through constant finning above their nesting pits, removing protective sediment and exposing prehistoric remains (Fig. 5). The zander's presence has made this shallow area popular with sports fishermen, whose anchored boats severely damage exposed settlements while fishing lines snag on protruding posts, potentially pulling them from the lakebed (Dworsky et al. 2025).

Fig. 5: A zander floating above his nesting pit and exposed cultural layers in Lake Keutschach (Image: Henrik Pohl, Kuratorium Pfahlbauten).

The World Heritage designation in 2011 necessitated immediate action. Two critical measures were identified: establishing a clearly marked no-anchoring, no-fishing exclusion zone around the core area, and terminating zander restocking programmes to allow the gradual decline of this non-native species sustained by recreational fishing. Success depended considerably on local stakeholder cooperation.
A 2014 stakeholder analysis identified the key parties for this initiative:

1. The landowner (Lake Keutschach, as some other Austrian lakes, is privately owned)
2. The Municipality of Keutschach
3. The Klagenfurt Land District Authority
4. Lake users: sports fishermen, holidaymakers and boaters

During consultations with stakeholders, conflicts of interest emerged between the landowner and lake users on one side and monument protection on the other. The landowner generates income from fishing licenses and wants to maintain the zander population, a prized angling species. An initial attempt to demarcate a protection zone failed, when locals and the lake owner deemed the installed plastic buoy barrier visually intrusive and incompatible with the lake's idyllic character. Following negotiations, the floating chain connecting the marker buoys was removed. The protection zone is currently marked only by four large buoys displaying prohibition signs for anchoring and fishing. Despite the ban, fishing within the protected area persists. While boats generally respect the zone and no longer anchor inside, they moor at the boundary buoys and cast lines into the protected area. Consequently, alternative protection

methods were required. After consulting with the Federal Monuments Office, the Kuratorium Pfahlbauten decided to cover exposed cultural layers on the lakebed with basalt mats (Fig. 6). Though this measure significantly alters the underwater monument's appearance, it does not interfere with the authenticity and integrity of the site and balances preservation with the region's economic and social needs. In 2025, the final exposed cultural layer area was covered with protective mats, with ongoing monitoring assessing whether these measures effectively preserve the UNESCO World Heritage Site's conservation status.

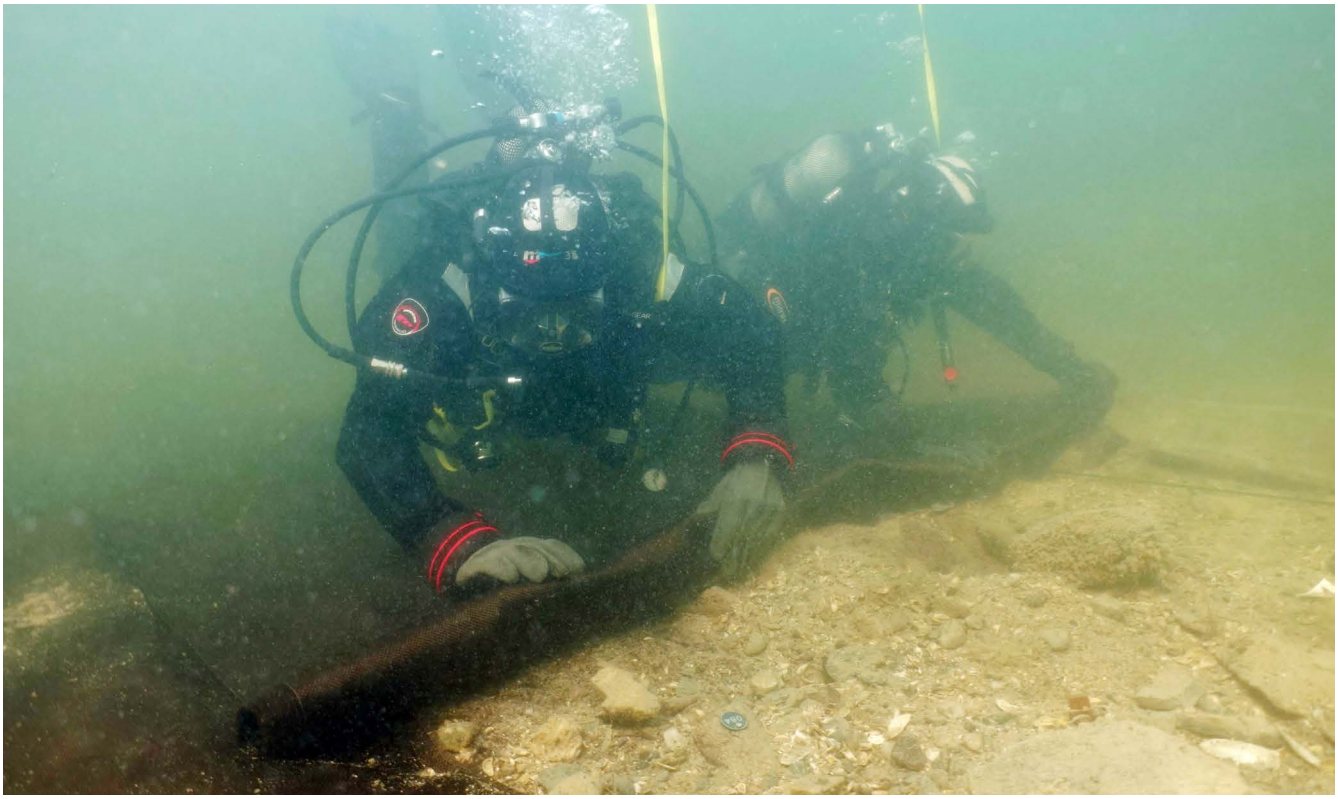

Fig. 6: Installation of the protection mats made of basalt fabric at Lake Keutschach (Image: Henrik Pohl, Kuratorium Pfahlbauten).

Breaking through entrenched traditions on the usage of the lake by the stakeholders proved to be difficult and required sustained engagement. Monitoring compliance remains challenging and depends on strong collaboration with the landowner and supervising fishermen, alongside improved education for sports fishers. Information brochures were therefore produced and distributed when fishers purchased licenses, while a lecture series for Keutschach residents aimed to communicate the site's value and fragility. These measures encouraged local residents to monitor the area and raise awareness among holidaymakers.

Case study 2 – leisure vs protection

The situation differs on the Lakes Attersee and Mondsee, where local residents even welcomed the anchoring ban from the beginning and sometimes pushed the process, as it ensured peace and quiet along their properties by preventing tourists from mooring in shallow waters. The dangers of anchoring are similarly severe to these prehistoric sites as in Keutschach: anchors dig into the lakebed, while anchor chains drag across the surface of the lake bottom, abrading protective sediment layers. Annual monitoring clearly reveals damage caused by anchoring.

At these shoreline zones of the Lakes Attersee and Mondsee, people have lived in pile dwelling settlements since the Neolithic period. Most Austrian lakeside settlements were mainly inhabited between 4000 and 3500 BCE, which corresponds to a phase in human history known as the Copper Age or the Late Neolithic period. Some pile dwellings date back to the Bronze Age, between 1800 and 1500 BCE. The last remnants are isolated settlements from the Iron Age between 800 and 100 BCE. Currently, 29 sites are scientifically verified in Austrian lakes, five of which are on the UNESCO World Heritage List. The extent of the settlements and their chronological sequence have not yet been comprehensively investigated. The number of independent settlements can therefore only be estimated at present, particularly in the densely populated beach areas in the north and northwest of Lake Attersee (www.pfahlbauten.at/sites, 2025). The prehistoric village remains have been remarkably well preserved on the lakebed. What nature has protected for nearly 6000 years can be destroyed in moments through anchoring in these sensitive areas. Therefore, the District Authority issued an ordinance prohibiting anchoring and dragging chains in the pile dwelling shoreline zones of Lake Mondsee and Lake Attersee to prevent damage to the pile dwellings. Signs mark these bans, and the local population supports enforcing compliance out of their own interest (Fig. 7).

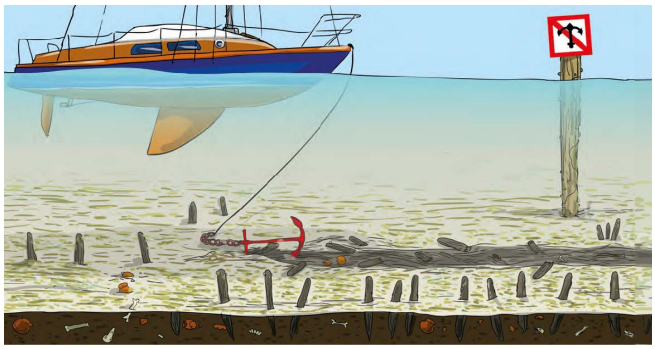

Fig. 7: Illustration to promote the protection zone in Lake Attersee (Image: Leopold Maurer, Kuratorium Pfahlbauten).

Today, all Austrian UNESCO World Heritage Sites are located within anchor-free protection zones (Seidl da Fonseca et al. 2024b). Achieving this required consultation not only with relevant authorities but also with local residents and landowners. While protection measures could be imposed top-down or enforced through costly legal disputes, the most efficient approach involves developing solutions backed by convincing arguments and securing early support from allies. This requires equitable dialogue and perspective-sharing among all stakeholders. While engaging existing stakeholders – landowners, lake users, and local authorities – is essential for immediate protection measures, long-term stewardship requires expanding the circle of invested parties to include new generations and diverse community groups.

New and old players – approaching new communities and formats

Monuments are preserved best when there is an awareness of the specific meaning they hold for surrounding communities. When the public values its cultural heritage, the number of advocates increases – along with greater willingness to support conservation efforts, including financial costs and regulatory compliance.

In Austria, 160 years after the initial discovery of prehistoric pile dwellings, their UNESCO World Heritage inscription in 2011 marked a pivotal step toward cultivating such awareness by creating new potential allies in the stewardship. The recognition spurred the formation of three new local associations to complement the already existing organisations, such as the "Heimathaus Schörfling" or the "Heimatbund Mondseeland", founded in the early 20th century, and other private heritage associations: "Pfahlbau am Attersee", "Freunde der Archäologie – an den Seeufern des Attersees und seines Hinterlandes", and "Pfahlbauten Seental Keutschach – Freunde des Welterbes". Although one association has since disbanded due to aging membership and a lack of generational renewal, these organisations play a vital role in disseminating knowledge about underwater cultural heritage and advocating for its value.

Fig. 8: Presentation for local pile dwelling associations after a rescue excavation at Lake Attersee (Image: Cyril Dworsky, Kuratorium Pfahlbauten).

Their collaboration with professional heritage institutions strengthens mutual learning and expands outreach through combined networks (Fig. 8).

Active participation of the public, especially by local stakeholders, is central to this mission of the World Heritage. Initiatives such as the project "Doing World Heritage – Understanding World Heritage" carried out by the Kuratorium Pfahlbauten in cooperation with the Natural History Museum of Vienna, and other projects, involving school students in scientific fieldwork, foster a sense of ownership and responsibility among the younger generation (OeAD 2017). Such participatory formats enhance educational outcomes and encourage long-term support for heritage conservation. Also, the research project "Zeitensprung" represents a broader effort to advance archaeological research and build local capacity in heritage management with the inclusion of Citizen Scientists. The project is an underwater archaeological initiative, led by the OÖ Landes-Kultur GmbH and the Kuratorium Pfahlbauten in Upper Austria, which began in 2015 and is planned/scheduled to continue until 2027. It is funded by the Directorate for Culture and Society of the provincial government of Upper Austria and will culminate in a large exhibition format and culture initiative in 2027, called KulturExpo (Pohl 2019, Weidinger et al., in print). Interdisciplinary educational / interpretive materials – developed for school workshops – integrate history and natural sciences, embedding pile dwellings meaningfully into contemporary curricula and inspiring curiosity about Austria's prehistoric past. (For more information about the projects visit: www.pfahlbauten.at)
Given the inherent difficulty of engaging the public with submerged heritage, innovative interpretive tools are essential. One of them is the Pfahlbauten Wimmelbild (pfahlbauten.at/wimmelbild) – an inter-

active digital tool co-created with young people to illustrate prehistoric recycling practices. Funded by the Austrian Research Promotion Agency, it merges education and entertainment to make archaeological knowledge accessible to wider audiences (Seidl da Fonseca et al. 2024a). Digital tools are also leveraged to enhance visibility. The PfahlbauKompass (kompass.pfahlbauten.at) project, for instance, digitises significant archaeological finds, and presents them in immersive virtual exhibitions. By contextualising artifacts within their original underwater settings, these resources offer engaging experiences and highlight the importance of site preservation (Leipold et al. 2025).
The Kuratorium Pfahlbauten also experiments with unconventional exhibition formats, such as installations in unexpected public spaces and live broadcasts from underwater excavations (https://www.youtube.com/watch?v=SkKRUGAoUkc&t=6022s) (Fig. 9). These formats seek to integrate submerged heritage into everyday life and broaden participation in heritage discourse. This supports our mission to engage with new communities, and exploring novel approaches remains essential. It not only builds resilient networks but also opens new avenues for collaboration and innovation in heritage communication and stewardship.

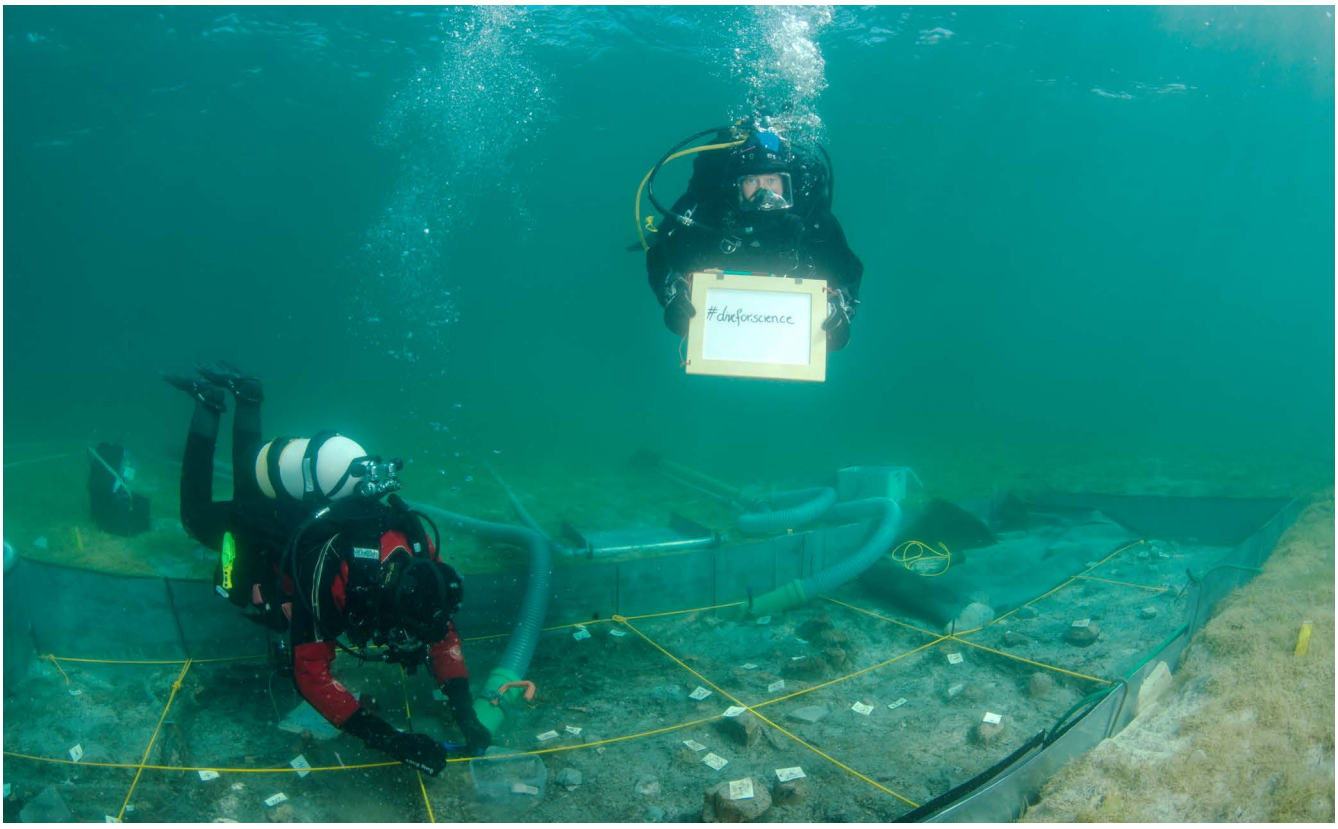

Fig. 9: “Dive for Science” live from the underwater archaeological excavation in Weyregg/Lake Attersee (Image: Harald Hois).

Conclusion

Management of a serial and transnational UNESCO World Heritage Site such as the “Prehistoric Pile Dwellings around the Alps” relies fundamentally on strategic implementation of coordination, dissemination, and communication. These three tasks are not auxiliary functions; they are essential management pillars that ensure the long-term relevance of the heritage and hence a successful preservation.

Coordination is indispensable in aligning diverse national, regional, and local stakeholders toward common goals. Given the complexity of a site that spans six countries and over one hundred locations, harmonised planning and decision-making structures are required to guarantee compliance with UNESCO standards and to respond effectively to emerging challenges. Coordination also enables the pooling of resources and expertise, fostering synergies that would be unattainable through isolated efforts.
Dissemination is key to ensuring that the knowledge generated through archaeological research and site monitoring is not confined to specialist circles. By making information accessible through educational programmes, digital platforms, and public exhibitions, dissemination fosters transparency, inclusivity, and public trust. It supports evidence-based policymaking and empowers communities to engage meaningfully with their cultural heritage.
Communication, in turn, serves as the connective tissue between institutions, experts, and the public. It translates complex scientific data into narratives that resonate with broader audiences, making invisible underwater heritage both visible and relevant. Communication is also a critical tool for conflict resolution and stakeholder engagement, helping to mediate between conservation needs and competing interests.
Together, these three interlinked tasks ensure that World Heritage management transcends administrative obligations and becomes a shared, living responsibility – rooted in collaboration, awareness, and the active participation of diverse communities.

"C[ultural] *H*[eritage] *is to be considered as the 'cultural capital', inherited from the past, which people consider as a reflection and expression of their evolving values, beliefs, knowledge and traditions and from which, through the investment of human ingenuity and effort, originate the rich and varied cultures of modern Europe."* (ESPON 2021)

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Developments in archaeology and museums – Moving into the future through equal interdisciplinarity and fee-based expertise

by

Natascha Bagherpour Kashani

Abstract
Fee-based expertise and interdisciplinary cooperation help compensate for deficits in project, communication, and ethical skills within archaeology and museums. They improve the quality of complex work and open new career opportunities for academically trained archaeologists. Four examples — the Water Project in Iran, the Qishla Dohuk training programme in Iraq, the OPEN LAB for science communication and a dementia-museum initiative – show how collaboration, external consulting, and social responsibility generate positive results. Integrating specialists, including commercial actors, shall not be understood as insufficient competence, but as a driver of innovation and knowledge growth in archaeological and museological practice.

Zusammenfassung
Honorarbasierte Expertise und interdisziplinäre Kooperationen tragen dazu bei, projektbezogene, kommunikative und sozial-ethische Defizite in der Archäologie und Museumsarbeit auszugleichen. Sie verbessern die Qualität komplexer Vorhaben und eröffnen neue berufliche Perspektiven für akademisch ausgebildete Archäolog*innen. Vier Praxisbeispiele – das „Wasser Project“ in Iran, das Ausbildungsprogramm Qishla Dohuk in Irak, das OPEN LAB zur Wissenschaftskommunikation und ein Demenz-Museumsprojekt zur kulturellen Teilhabe – zeigen, wie Zusammenarbeit, externe Beratung und soziale Verantwortung zu erfolgreichen Ergebnissen führen können. Die Einbindung externer oder fachfremder Spezialist*innen stellt dabei kein Zeichen mangelnder Kompetenz dar, sondern wirkt als Innovationsmotor und erweitert das Wissen in archäologischer und musealer Praxis.

Archaeological science and museums in transition

Archaeology and museum work can no longer be understood exclusively as research-oriented sciences or collecting and exhibiting institutions. They are in the interplay of social expectations, political responsibility, digital transformation, and ethical debate.
Research projects are becoming increasingly complex and require skills that go far beyond basic fundamental research, traditional field methods, basic conservation knowledge, object analysis, and exhibitions. For example, archaeologists today need to have knowledge in areas such as project and financial management and both not only concern themselves with content, but also have to incorporate ethical issues, participation, and inclusion into their work, while museum curators must address not only the communication of science, but also ethical issues, participation and inclusion in their work. This must also include current socially relevant topics such as gender equality and racism.

A need for new skills

Although archaeology is already a highly interdisciplinary field, traditional university curricula focus predominantly on theoretical and methodological content. However, planning and implementing publicly funded projects now also requires knowledge of financial and resource management, team organisation,

strategic decision-making, and the acquisition of funding in complex and competitive procedures. Equally necessary are skills in dealing with various interest groups, target-group-specific communication, including moderation and conflict resolution, as well as the ability to communicate complex content in a didactically appropriate manner. Yet some archaeologists and some museum professionals often still might regard new or external disciplines as so-called "auxiliary sciences" or "tools" rather than as equal partners. What is clear in any case is that education specialists and science communicators are neither involved in the training of archaeologists nor are they regarded as equal partners of archaeologists and museum professionals. However, it is through the equal combination of specialist knowledge and profession-related key competencies that archaeological and museological work can meet current requirements.

Sustainable benefits for society

Projects that are publicly funded increasingly have to not only be academically convincing, but also transparent, accessible, and designed with sustainable development goals in mind (SDG-Portal, 2015). These include, for example, goals such as health and well-being (SDG 3), for example in the sense of "healing culture". The concept of "healing culture" argues that cultural participation can verifiably contribute to health (Sonke et al. 2025, 3.9.2.; Murtin 2024: 18–24; Fancourt – Finn 2019). Other goals are high-quality education (SDG 4), and climate action (SDG 13). Scientific work must therefore increasingly be able to show the long-term benefits it brings to society and the environment. We must not forget that it is society that finances our research and our museums with its tax money.

Making cross-career entry easier?

As societal demands increase, museums and archaeological institutes are faced with the challenge of meeting these expectations. In this context, interdisciplinary cooperation, fee-based external expertise, and curriculum adjustments are becoming increasingly attractive options, as the range of work available in archaeology is expanding. It is also becoming easier for future graduates to enter and develop in other professional fields if necessary. The latter is already common practice in various countries: a long-term study of 11,000 female graduates (1960–1989) from Oxford University, United Kingdom, shows that graduates from different studies in humanities often take in occupations in management and finance jobs (Kreager 2013). Another study shows that only a small proportion of employees in the financial sector studied finance; 20.4 % come from the social sciences and 11.9 % from the humanities (Greaves 2019). Even though the studies tend to focus on elite universities, they still provide quantitative evidence. According to a press release from the Stifterverband, humanities scholars in Germany have good chances of succeeding in other professional fields (Stifterverband-Org, 2019).

After all, not every archaeologist wants to or is able to remain in the profession after graduation. However, the partial migration of humanities scholars to other sectors is not a loss but can even be considered a gain in the long term. People who have studied archaeology or cultural studies later carry this understanding into other professional fields – often into positions with greater social or financial scope for action. This increases the likelihood that they will consciously perceive, support, or even promote archaeological research and museums because they know their value from their own experience. More young people might be better able to decide to study archaeology if they could see the opportunities and role models available to them in numerous and diverse professional fields after graduation.

Why poor collaboration hurts our discipline

In archaeological research and museological projects, on the other hand, insufficient cooperation and external expertise can have far-reaching consequences. A lack of expertise in areas such as project management, interdisciplinary and international cooperation, public communication or ethical responsibility can

lead to inefficient processes or even problematic results, for example in the handling of human remains or in frustrating cooperation partners. Only average results of a project make it difficult to attract further funding, as decision-making bodies pay attention to the applicant's past projects. Furthermore, poor cooperation prevents archaeological finds and discoveries from being made available to the public and the scientific community, which hinders general progress.
At the same time, the forementioned problems result in a structural deficit within the departments: a lack of areas of activity and opportunities for further development may cause highly qualified specialists or graduates to leave the subject and to move abroad maybe to unrelated industries.

Collaboration creates innovation

In this context, drawing on external expertise supplements rather than diminishes the actors' own knowledge, authority, or narrative agency. Involving specialists from transdisciplinary fields acts as a driver of innovation. Such collaborations have been shown to increase the quality of archaeological research and museological projects by introducing new perspectives, enabling practical learning and contributing to measurable social effects (Faiella 2025; Boom 2018): This not only results in more professional and effective project structures, but also in forms of social participation that generate broad legitimacy through participatory collaboration or sustainable development strategies, for example.
Furthermore, such collaborations may promote the development of new career fields for archaeologists, for example in consulting roles, in science communication or in the field of sustainable cultural heritage development or such as its protection and public involvement in its preservation, or its usability for tourism. For example as science communicator in archaeology, digital heritage specialist or cultural tourism developer.

Examples from practice

On this basis, the following four examples show how interdisciplinary cooperation is already being put into practice. Whether in the so-called "Water Project" with technical cooperation, in the Qishla Dohuk training programme with a participatory culture of responsibility, in the OPEN LAB with transparent science communication, or in inclusive museum initiatives – external expertise and cooperation expand the scope of action for archaeological institutions and museums and make a decisive contribution to ensuring that they remain socially effective and sustainable (Yoshida et al. 2024).

The Water Project, Iran: interdisciplinary solutions and resilience

In the West-Iranian village of Hamzehloo, erosion, overgrazing, and, above all, climate change have led to water shortages. This has also endangered the neighbouring cultural heritage site (Bagherpour Kashani – Yoshida – Stöllner 2021), an ancient salt mine that has been protected by the villagers for decades from illegal mining and thus from the destruction of its archaeological layers. However, the villagers' migration due to the lack of water supply is threatening this protection of the site. A collaboration between archaeologists, geologists, and water engineers in a water supply

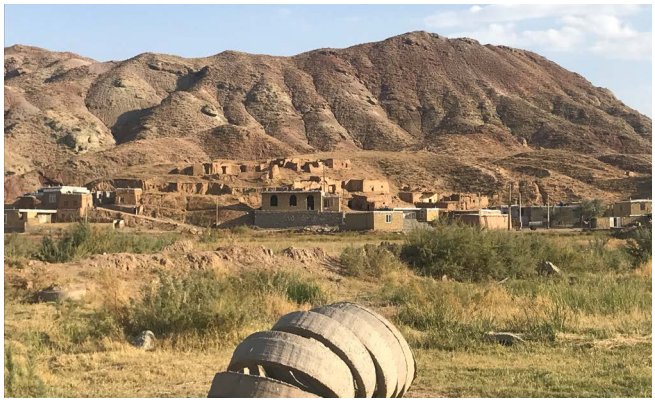

Fig. 1: In the background, the village of Hamzehloo; in the front, concrete rings for manual well construction. (Image: Natascha Bagherpour Kashani, German Mining-Museum, Bochum).

project aimed at bettering the living conditions of the villagers should counteract this and improve the situation of the local people (Bagherpour Kashani – Herd – Boenke 2025, 2–3; Gerda-Henkel-Water-Project, 2023; IWAR-TU; Bagherpour Kashani – Yoshida – Stöllner 2021, 40; Bagherpour Kashani 2020, 233–234).

The prospect of drinking water returning soon led to a noticeable stabilisation of society in the affected village: people who had previously migrated due to poor living conditions took heart and began to return. Interdisciplinary measures – such as the construction of wells and the planning of a long-term water infrastructure – gradually created a resilient foundation for everyday life (Figs. 1 and 2). At the same time, the local population was actively involved in these processes (Gerda-Henkel-Water-Project, 2023). Improving their living conditions also recognises and supports the important role they have long played as guardians of their region's cultural heritage. Archaeology can therefore also be development work, benefiting directly from external expertise and, as a result, from the water supply for the next excavation campaign. In the future, the village and excavation site shall be embedded in a concept for sustainable tourism and education.

Fig. 2: In the village of Hamzehloo: The foundations are being laid for the building that will house the desalination plant. (Image: Natascha Bagherpour Kashani, German Mining-Museum, Bochum).

Qishla Dohuk (KRI): education and participation

The heritage initiative "Qishla Dohuk. An Archaeological Site for the People" trained students in Dohuk (Kurdistan), Iraq, to become future monument caretakers and project-capable archaeologists (Yoshida et al. 2024; Gerda-Henkel-Qishla-Dohuk, 2023). The cultural heritage service provider iconyk (ikonyk, 2025) and the Kurdistan Archaeology Organisation (KAO, 2023) collaborated with the Archaeological Institute of the University of Dohuk and developed a concept for the preservation and use of the Qishla Dohuk cultural heritage site. The site is located in the center of the provincial capital and reflects the history of the city from the Mitanni (15th century BCE) to the Islamic periods. The aim was not only to document archaeological finds, but above all to build the skills necessary for the responsible preservation and communication of archaeological heritage.

The project combined practical training with participatory learning: the students of the University first documented archaeological finds and learned basic methods of evaluation, then developed their own perspectives on the future of the site through a participatory learning programme and a "future workshop" – organised by the economic partner iconyk and KAO – that enabled them to reflect on their role as caretakers of their region's heritage (Fig. 3). This empowered students to interpret and take responsibility for their cultural heritage. Based on the event, the municipal cultural authority finally decided to take action with regard to Qishla Dohuk and to press ahead with planning.

This approach not only generated additional knowledge, but also promoted a local culture of responsibility in which students no longer see themselves as mere assistants to international cultural heritage specialists – often experts from the United States, Europe or China who usually provide the funding and therefore set the agenda – but as active participants in the cultural heritage of their region. Although no concrete measures for monument preservation were implemented directly within the framework of the

project, it clearly demonstrated the impact of empowering young archaeologists: for the first time, they experienced how they can influence cultural heritage management and understand their profession in a broader sense.

Fig. 3: Students from Dohuk University engaged in the future workshop (Image: Natascha Bagherpour Kashani, NBK-Innovationsberatung, Darmstadt).

OPEN LAB:
science communication as a key competence

The OPEN LAB project was an innovative approach to science communication, in which archaeological and conservation research did not take place behind closed laboratory doors, but was made comprehensible in real time. The OPEN LAB made it possible to make research on Iranian salt mummies visible and digitally accessible via social media (Yoshida et al. 2024; Yoshida – Bagherpour Kashani – Amin Shirazi 2021, 50; Bagherpour Kashani – Yoshida – Stöllner 2021, 39; Bagherpour Kashani – Yoshida in print; Gerda-Henkel-Open-Lab, 2023).

It enabled the public to directly follow the analysis and conservation of the 2400 year old Iranian salt mummies – also known as the "Saltmen of Iran" – and to accompany scientific processes. In the salt mine called Douzlakh, near the villages of Hamzehloo and Chehrabad, not only were eight mummified humans from the period between 400 BCE and the 5th/6th century AD found, but also other organic materials that provide insight into life and work in ancient times (Stöllner – Aali – Bagherpour 2020). It became clear how the mummies are documented, scientifically examined and conserved (Fig. 4). Videos, interviews and insights into ongoing analyses highlighted not only the scientific value of the finds (@saltmen-of-iran), but also the challenges of dealing with human remains, for example with regard to ethical decisions, conservation responsibilities and local interests.

Fig. 4: In winter 2020, a conservator from the RCCCR (the Iranian Conservation Authority) examines human remains in the cold museum rooms in Zanjan (Image: Mohammadreza Alikha, German Mining-Museum, Bochum).

A laboratory was set up in the National Museum in Tehran and another in the Zanjan Saltmen and Archaeological Museum in northwestern Iran. Originally, the plan was to allow visitors to take part. However, in the midst of the COVID-19 pandemic in 2020, the team was forced to modify its plans at short notice and switch to purely digital formats. The digital opening of the laboratory in turn created a new form of dialogue

between research and society. Within months, a professionally prepared and targeted social media (@saltmen-of-iran), attracted a wide, engaged audience in Iran and abroad.
The success of the project shows that young people are interested in archaeology when they are involved, by giving them access to the researchers' activities through pictures and videos and by allowing them to join in the discussion (mainly on Instagram due to COVID-19). Laboratories and museums can serve as places of learning, and ethical issues – such as the treatment of deceased human remains – can be negotiated transparently and respectfully, as in an online discussion forum on human remains affiliated with the project (Yoshida – Bagherpour Kashani 2025). The ethical dialogue clarified how to treat the salt mummies respectfully as both scientific data and deceased individuals, creating shared awareness of the ethical boundaries and sensitive communication required in their presentation.

Dementia and museums: stakeholder management and social responsibility
Museums are increasingly faced with the task of involving diverse target groups and designing their content in an inclusive and participatory way that for example people with dementia and their support networks also have access to cultural content. People with dementia are still rarely reached by cultural institutions, even though they have a fundamental right to participation (UN Declaration of Human Rights, 1948, 27). In care facilities, cultural activities often focus on singing, dancing, or reminiscing about pop music. Such activities lack diversity and varied intellectual stimulation, while "dementia-friendly" museum programmes are rare and often difficult to access (Liersch –Hofmann – Suárez 2024; Mammel 2023). Most of these are guided tours in the museums for people with dementia and their relatives, sometimes at times that are not always convenient for people in need of care.
In order to give people with dementia access to museum experiences, cooperation with care institutions and other specialist areas is necessary. Once such a network is established, a community-based mediation model emerges that understands archaeology and culture not only as knowledge resources, but also as social support structures. This shows that archaeology and museums, with their objects, are social actors, and cultural participation can contribute to a better quality of life (SDG-Portal, 2015). The development of appropriate offerings requires interdisciplinary cooperation.

Fig. 5: To exchange and collect knowledge, different methods were used, including the "World Café" and the development of personas (Image: Natascha Bagherpour Kashani, NBK-Innovationsberatung, Darmstadt).

An example of this is the Focus Group "Museum & Dementia" (LinkedIn-kulturelle-Teilhabe, 2025), held in Germany in November 2025 (Fig. 5). It was organised by the agency *Innovationsberatung für Museum und Kulturerbe* (Bagherpour Kashani 2025), specialising in development and funding strategies for museums and heritage projects (Bagherpour Kashani 2025), in cooperation with the University of Würzburg, the German welfare association AWO Unterfranken and the eight museums of the city of Aschaffenburg.
As a practical partner, one of the museums in Aschaffenburg made its historic rooms and exhibition available as a source of inspiration (Fig. 6). Under the direction of the independent agency and the university institute, 15 experts from archaeology, museum, psychology, caretaking and other fields developed ideas for accessible

Fig. 6: Art historical and archaeological objects from the multidisciplinary museum provided impulses for a detailed discussion on how people with dementia may react to certain artefacts. Of course, those affected will be involved in a further step (Image: Natascha Bagherpour Kashani, NBK-Innovationsberatung, Darmstadt).

formats and collected approaches that combine museum education, memory techniques, and care-oriented methods. Together they developed conceptual foundations for culture-based concepts.

The aim of the project is – based on scientific methods – to strengthen cultural participation as a fundamental part of everyday life and to perceive people with dementia – including those with a migrant background – as active citizens. Museum content should stimulate memories, enable social encounters and make self-efficacy tangible. In this way, culture is not only communicated but also becomes an instrument of social health and participation (LinkedIn-cultural-participation, 2025).

Conclusion: Leading archaeology and museums into the future through alliances

The increasing challenges in archaeology and museums can no longer be met solely through standard academic training and working methods. The integration of external and interdisciplinary expertise is therefore not a sign of weakness or incompetence. On the contrary, it demonstrates an understanding of the complexity of the situation and a commitment to putting together the necessary network of experts. This understanding is a key factor for future development. The examples mentioned in this article show that such alliances strengthen project quality, expand the social impact of museums and archaeology, and open up new professional fields. In this way, archaeology becomes an active agent that not only researches and preserves heritage, but also engages in social, ethical and political issues.

Evidence-based research will need to show how far such collaborations can fulfil the social mission of museums and archaeology. Nevertheless, these alliances offer a promising path towards securing and shaping the future of archaeological science and cultural heritage.

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