

CHAPTER 1

How do archaeologists plan
projects in Africa?

INTRODUCTION

Alexandre Livingstone Smith¹

In Africa, like elsewhere, academic problem-oriented projects have long been the spearhead of archaeological research, but archaeological rescue operations, also known as Cultural Resources Management (or CRM), are growing in strength and numbers. While the first are generally designed to answer specific research questions in an academic environment, the latter have the broader objective to preserve a maximum of information regardless of any specific period or problem and are usually set in a business environment. There are a lot of common points to any archaeological project, but planning and managing academic or CRM projects can be very different.

In the field they differ drastically, as the agenda of construction works sets the pace of archaeological investigations in CRM. Hard choices and scientific shortcuts have to be made on the go, always keeping pace with the calendar of earthworks. To do this properly, one needs a lot of experience. Finally, whatever the project, at every turn, from inception to closure, the local communities need to be taken into account. Indeed, people living in the target area of an archaeological project play an important role. They may also, in some cases, benefit from the touristic development of archaeological heritage when local security and infrastructure allow it.

Also, at this stage, few African states have set standards of quality and good practice in CRM so the list of practical experience offered by the various contributors in this chapter may serve as a point of departure.

The organisation of academic international projects is summarised by **Anne C. Haour & Didier N'Dah**. Considering the building of networks and cooperation, they explain how students can (and must) take advantage of such projects to learn, but also to promote their own research agendas. They also consider the practical side of things such as planning fieldwork, including the budget and equipment. Important here is to highlight the ways in which a student may benefit from and use the considerable resources of international projects. Finally, everything comes with a price, the authors also underline the serious administrative requirements involved in the process.

¹ Heritage Studies, Royal Museum for Central Africa, Tervuren, Belgium.

Peter Mitchell, acknowledging the growing importance of Cultural Heritage Management projects in Africa, reviews the threats and opportunities offered by such endeavours. He considers the challenges of development, the assessment of archaeological impact as well as their agenda and their outcome in terms of capacity building, publication, and return to the community.

CRM is also at the core of **Noemie Arazi**'s contribution, but she focuses on the practical aspects of executing CRM on the ground. Case studies from Central Africa serve to explain the negotiation phase, the definition of the impact area, problems of manpower and the need to collaborate with local agencies, the problem of copyrights, as well as crucial questions concerning budget and equipment, security and preparations for fieldwork, and, finally, implementing fieldwork itself.

Richard Oslisly's contribution on CRM handles the case of rescue and preventive archaeology on roads, thermal power stations and quarries. He considers the assessment phase, fieldwork methodology and the prioritisation of sites with practical examples drawn from his experience in Cameroon.

Ibrahima Thiaw offers a west African perspective on CRM. Using Senegal as a case in point he identifies a series of problems related to the discrepancy between the fast growing body of data and material coming out of CRM work and the funding and coordination of national agencies that are assumed to process the results of CRM into research projects and public oriented activities.

Finally, **Nicolas David** considers the question of relations with the communities to whom the land belongs on which the excavations or field work takes place. He examines the question of contacts prior to, during and after field work based on his personal experience. Any student is likely to learn from this first-hand, practical and long experience to apply to his/her own interaction.

ORGANISING AN INTERNATIONAL ARCHEOLOGICAL RESEARCH PROJECT IN AFRICA

Anne C. Haour¹ & Didier N'Dah²

INTRODUCTION

Designing and implementing an international archaeological research project in Africa requires a certain amount of experience. In this chapter we examine the central workings of such a project. To this end, we will discuss challenges, preparation, timing, financing methods, and potential problems.

First, it should be noted that major funding is not generally offered to students, but rather to researchers who have already completed their PhDs and generally have some degree of experience. For example, for 'beginner'-level funding (the Independent Starter Grant) from the European Research Council (ERC), a candidate should have between two and seven years of post-doctoral experience.³ Many countries have their own researchfunding bodies, for example, the Arts and Humanities Research Council in Britain or the Agence nationale de la Recherche in France. Such bodies rarely fund fieldwork alone; most require long-term scientific projects focusing on research questions. These projects may include, but are certainly not limited to, field visits. Such projects call for administrative and financial resources beyond the capacity of the average student; budgets can quickly escalate, especially if funders cover the researcher's salary while he/she is devoted to project-related research, or overhead costs such as administration or premises.⁴ The funding application alone, which can be 30 pages or longer, represents a significant investment in time and energy. Finally, another point that is important to note is that, regardless of the funder, the chances of success are always slim: usually, fewer than 10% of applications are successful.

I. NETWORKS AND COOPERATION

A student of an African institution has an indirect means of access to this type of financing: the student may join a research project in which his or her professors are involved as partners or co-investigators. The student can thereby take advantage of the field opportunities this offers to build an independent research project (for a thesis, for example) around related themes. This is the most common approach and it applies to all students – African or otherwise – regardless of nationality. Most funders are pleased to participate in students' field training. Success depends on two conditions: the student should be among the best in his/her class, and have professors who are recognised internationally for their scientific profile and therefore offer the international partnerships necessary for setting up a project.

The first condition is something students can control – the second less so. Students may nevertheless conduct critical research before enrolling in a particular university: if there are options, they should look for institutions with an explicit strategy for integrating training opportunities into their scientific research, and where such research serves as a bridge to other regional and international scientific research institutions.⁵ Students should also look for professors who share this vision, who are open, and who have an international scientific profile. Very often this second condition can lead students to reorient their research to partner with an instructor who seems supportive.

Once enrolled, students should improve the odds as much as possible by participating in conferences and other scientific colloquia. These offer an opportunity to learn about research underway or being set up – bearing in mind that all major projects are prepared at least 18 months, and often years, in advance. Symposia and conferences are occasions not only to learn about current and future opportunities, but also to learn about and to make known one's own research, and to learn directly about the manner in which to present it and how to in-

1 Sainsbury Research Unit for the Arts of Africa, Oceania and the Americas, University of East Anglia, Norwich, Great Britain.

2 Département d'Histoire et d'Archéologie, Université d'Abomey-Calavi, Cotonou, Benin.

3 <http://erc.europa.eu/starting-grants/french>

4 The Arts and Humanities Research Council and the European Research Council are among those covering complete budget costs.

5 <http://www.uac.bj/public/index.php/fr/universite/missions-et-visions>

teract with researchers and other students. Face-to-face contact is unquestionably the best way to build personal connections, which can then be maintained at a distance, for example through email, the universal availability of which neatly overcomes geographical barriers. A word of advice, however: when emailing, remember that your correspondent is probably very busy and receives a large volume of mail. It is therefore best not to send general messages of the 'Hi, just saying hello' variety, but to write specific and concrete texts ('Hello, I wrote an article related to my research project on the manufacture of clay beads that I would like to submit to journal X. I have attached it. If you have a moment to look it over, I would be very grateful to know your thoughts').

Lastly, doctoral students, including those enrolled in African universities, can apply for scholarships or internships that allow them to undertake their own field research. Institutions such as the Académie de Recherche et d'Enseignement supérieur (ARES)⁶ in Belgium, the Agence universitaire de la Francophonie (AUF)⁷, the German Academic Exchange Service (DAAD),⁸ and the Association of African Universities (AAU)⁹ offer funding and mentoring that can help doctoral students pursue their dissertations. In most cases, such work is co-directed by the home university and the host university giving the students the opportunity to carry out their fieldwork. We also note that the Council for the Development of Social Science Research in Africa (CODESRIA)¹⁰ offers small grants to help masters and doctoral students complete their work.

II. PRACTIC ALITIES: SCHEDULE, BUDGET, AND EQUIPMENT

In each region of Africa, archaeological fieldwork takes place according to a fixed timetable. In the Sahel and Sudan zone, for example, the months from December to February are the most appropriate. The vegetation cover is reduced, there is no rain, and the heat is not excessive. The rainy season reduces access to certain regions (e.g., north-eastern Ghana is called 'overseas' by the people of

the south, due to the poor road conditions during the wet season) and there is a risk of trenches flooding. On the other hand, reading stratigraphic sections may be easier if the soil is moist.¹¹

An archaeological research project requires significant financial resources. For example, five weeks in the field with a staff of 15 researchers/instructors, 15 students/research assistants, and 40 workers will cost about 60,000 euros, with the majority spent on equipment, international flights, workers' wages, and stipends for students¹². A student undertaking a field project should expect to spend far less. By running fieldwork at the same time as the main project or soon after it, a student may be offered the use of excavation equipment for free or for a nominal fee. Students may also benefit from the network of administrative alliances that coordinators of the main project will have established with local institutions, and from workers already trained for the task. Maintaining and fuelling a vehicle remains a significant budget item; for research that doesn't require transporting too much equipment, a motorcycle might suffice. It is worth approaching the main project coordinators to see if the price of some radiocarbon dating can be covered. A student who happens to get one of the stipends discussed above can readily complete fieldwork after the main project is concluded.

The basic equipment required for archaeological fieldwork is:

- stakes (15 cm long, to mark the trench);
- plastic containers, 20 l, to conserve water – buy empty vegetable oil containers instead of those used for gasoline;
- trowels;
- camera;
- GPS;
- first aid kit (disinfectant, gauze, bandages, etc.);
- 3 funnels;
- thick gloves (the type used for gardening);

6 http://www.cud.be/index.php?option=com_content&task=view&id=416&Itemid=143

7 <https://www.auf.org>

8 <http://paris.daad.de/daad.html>

9 <http://www.iau-hesd.net>

10 <http://www.codesria.sn>

11 Laporte, L. 2010. "Mégalithismes sénégalais – dualités exacerbées sur le site de Wanar", delivered at the 13th Congress of the Panafrikan Archaeological Association for Prehistory and Related Studies (PAA), 20th meeting of the Society of Africanist Archaeologists (SAfA), Dakar, 1-7 November 2010.

12 While a project can be completed with much more limited resources if it involves fewer students in training or has no international collaborators, this would not adhere to the ideals of a major European project with a pluridisciplinary and collaborative slant.



Fig. 1. Students recording a stratigraphic profile, site Alibori 2, Northern Benin. The sequence includes an early occupation at about 2,500 B.P. (Photo © D. N'Dah.)



Fig 2. Sieving of sediments at a site under excavation, site Alibori 2, Northern Benin. (Photo © D. N'Dah.)

- 100 large nails;
 - hurricane lamp;
 - canteen to store equipment;
 - 2 sieves (one 5 mm mesh, the other 2 mm mesh);
- bring material for repairs;
- 5 brushes;
 - foil for packing charcoal samples;
 - 2 rulers;
 - 3 buckets (preferably rubber);
 - 3 notebooks;
 - graph paper;
 - plastic bags for artefacts – 3 sizes, 200 in total. The plastic must be strong. It is also possible to hire a tailor to make canvas bags;
 - 200 labels;
 - 4 tape measures: two of a length of 5 m, two of a length of 30 m;
 - 10 pens;
 - box of chalk;
 - slate;
 - scissors;
 - 2 document cases;
 - piece of fabric to make shade for photos;
 - compass;
 - 2 marker stakes (1 m long);
 - bedding, kitchen, and miscellaneous materials (mats, plates, buckets, etc.);
 - pickaxe;
 - 3 machetes;
 - 2 shovels.

In addition, the student must design forms for recording information on sites located during survey and on artefacts collected during excavations, and for laboratory analysis of data. Students should also have excavation notebooks in which to record comments and impressions, which will help interpretation during the ground analysis of results.

III. ADMINISTRATIVE REQUIREMENTS

Funders will require scientific and financial reports at specified intervals and often require independent audits. If research funding comes from public funds – taxpayers' money – the obligation is to report adequately; the requirement is often the same for private funds. The situation varies according to the funder, but to take the example of 'beginner' and 'advanced' financing from the ERC, two scientific reports are required – one mid-term and another at the end of the project. These keep the ERC informed of the research progress and accomplishments, as well as publications and other activities, such as participation in seminars. At the same time, financial reports are required, typically at 18-month intervals, in order to justify spending. When funding reaches certain sums, an independent audit is required. In the case of the ERC, reporting dates are generally known, which prevents last-minute panic, but the situation is not as simple as one might think. The submission of reports is



Fig. 3. Excavation of a pottery concentration by a student of Université Abomey-Calavi, site Alibori 1, Northern Benin. (Photo © D. N'Dah.)



Fig. 4. Surface collection at site Alibori 2 (Northern Benin) by workmen and students. (Photo © D. N'Dah.)

done through a web portal,¹³ in language specific to the organisation, and signed paper copies are often also required. This can cause problems if a team member is in the field without a good Internet connection, or if there is no team member familiar with the official terminology. Donors are nevertheless aware of the need to maintain a balance between the obligation to justify the use of public funds and the need not to crush researchers under the weight of administrative requirements¹⁴.

Doctoral students who receive scholarships are also accountable to their supervisory institutions and the organisation granting the scholarship through annual reports on the progress of their work. They must adhere strictly to the timetable proposed in the award of the grant; any failure to do so amounts to breach of contract, and could lead to a loss of funding.

CONCLUSION

In conclusion, planning an archaeological project in Africa entails a good deal of lengthy preparation, including the submission of funding applications that require a significant investment of energy, relatively advanced scientific knowledge, and institutional support. This is why it is extremely rare that projects be allocated to students. Students may nonetheless benefit indirectly from others' financial, logistical, and training resources, provided they can, with the help of their instructors, plug themselves into international research networks. They can also apply independently for scholarships allowing them to complete the fieldwork for their dissertations.

¹³ <http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

¹⁴ 'ERC Grants aim to provide grant holders with simple procedures and reporting structure, in order to maintain the focus on excellence, encourage creativity and combine flexibility with accountability whilst being in complete accordance with the EU Financial Regulation and the Implementing Rules' (European Research Council, 2012, Guide for ERC Grant Holders, p. 15). http://ec.europa.eu/research/participants/data/ref/fp7/89557/guide_erc_grant_holders_en.pdf

CULTURAL HERITAGE MANAGEMENT IN AFRICA

Peter Mitchell¹

Africa's archaeological record is imperilled not just by natural processes of decay and disintegration, but also by human action. Across the continent, rapidly accelerating economic development and population growth threatens both the integrity and the persistence of archaeological sites. This chapter briefly identifies some of these threats and considers how the archaeological profession responds to them. As with other forms of archaeological fieldwork, several ethical issues (regarding capacity-building, training, community involvement, and timely publication) arise, not least because development-dictated projects may be more tightly constrained by external, non-archaeological considerations than is the case with purely research-oriented fieldwork.

I. RESPONDING TO THE CHALLENGE OF DEVELOPMENT

The political and economic imperatives to raise the living standards of Africa's population are compelling. Major development projects form part of the response to this challenge. As well as large-scale mining (Chirikure 2014) and the construction of pipelines for exporting oil and gas (Lavachery *et al.* 2010), they include the building of dams to provide water for agriculture, industry, human consumption, and hydroelectric power (Brandt and Hassan 2000). Dams pose a particular threat to archaeological resources because they often flood large areas that may have been especially attractive to past populations. However, the archaeological record is also affected by the cumulative impact of other, less immediately obtrusive processes, such as urban growth (Lane 2011), farming, and unregulated tourism, which is endangering the survival of many rock art sites (Liverani *et al.* 2000).

Laws to protect national archaeological heritages exist in all African countries, but scarce resources for monitoring potential threats or taking action to mitigate their impact often limit their effectiveness. Large projects that include funding from international donors, notably the World Bank, may constitute an exception since access to such funds may partly depend upon measures being taken to identify and mitigate a project's likely impact on the

archaeological record. Only rarely, however, must developers cover such costs themselves through the principle of the 'polluter pays', i.e. those who profit from destroying archaeological resources must pay the costs of minimizing that destruction. Moreover, few countries require a development's likely impact on the archaeological record to be evaluated before consent for it is given (Arazi 2011). In South Africa and – on a smaller scale – Botswana and Namibia most such assessments are undertaken by archaeologists working in the private, commercial sector, but although this increases the numbers of archaeologists available for heritage management projects, many ethical dilemmas remain (Ndlovu 2014).

II. ASSESSING ARCHAEOLOGICAL IMPACTS

Assessing the archaeological (and broader environmental) impact of a development project involves at least three stages. First comes an initial assessment based on existing knowledge of the area in question, including that obtained from previous fieldwork. This 'desk-top' study must then be followed up by fieldwork designed to investigate the affected area, identify archaeological sites at risk, and assess their importance. Limited test excavations may form part of this phase, along with survey work to locate archaeological materials visible on the surface, rock art sites, upstanding buildings or monuments, and other traces of past human activity. Having completed this first phase of fieldwork, its results must be evaluated: how large, unusual, or well preserved are the sites encountered? To what extent may they provide new or different information about past human activity, not just in the area to be directly affected, but also within the broader regional, national or even international context? Do any of them already benefit from specific legislative protection? Which archaeological sites or other localities, including cemeteries and graves, but also natural features of the landscape, hold special significance for local residents? The text here by Noemie Arazi looks at how such questions can be addressed in one specific archaeological context from Central Africa.

However imperfect, some kind of formal or informal evaluation along these lines is necessary in order to establish a set of priorities for the second, mitigative

¹ School of Archaeology, University of Oxford, UK and GAES, University of the Witwatersrand, South Africa.

phase of fieldwork. In some cases, the archaeological or broader cultural value of certain sites or monuments may be such that developers have to amend their plans to avoid destroying them. But while it may be possible to reroute small sections of a road or pipeline at relatively little cost, this is generally not feasible for many projects, most conspicuously dams, not just because of their intrinsic size, but also because of the political and economic commitments already made to construct them. Mitigation, therefore, most frequently involves an element of triage, deciding what fraction of the archaeological sites present can be investigated or documented further and to what extent. The goal therefore unavoidably becomes one of minimizing the potential loss of evidence while securing as comprehensive an overview as possible of the area's total archaeology. Compounding the problem is the fact that archaeological investigations are often only carried out *after* decisions have been made to undertake a particular project and their results cannot therefore influence initial discussions about its practical feasibility or environmental desirability. Nevertheless, development projects may, if carefully planned, deliver scarce and difficult-to-repeat resources for investigating a region's archaeology beyond the strict confines of the sites that will be directly impacted by them (MacEachern 2010: 358).

III. WHO SETS THE AGENDA?

The agendas of cultural heritage management projects are therefore often ultimately set by developers, with archaeologists playing a game of 'catch-up' after the event. In this situation it is thus vitally important to explain clearly why the archaeological record matters and how – to be blunt – its successful mitigation may work to the credit of the corporation, donor or government agency involved. Moreover, in the absence of the 'polluter pays' principle or of a robust national system for ensuring compliance with heritage legislation, archaeologists may find themselves in a weak negotiating position when seeking funds to cover the costs of mitigation, not least because the mere removal of artefacts and other finds from the ground is, of course, just part of the story: as with any other archaeological project, long-term, secure, but accessible storage and curation of excavated finds, photographs, drawings and other project records does not come cost-free (see Kleinitz & Näser 2011 for a recent high-profile instance where this was not adequately covered). Where resources for these tasks are limited, or where national legislation

does not already dictate where the 'outputs' of a project should be conserved, appropriate provision must be identified and funding for it allocated. Likewise, it may not always be apparent to developers, including international donors, that significant post-fieldwork funding will almost inevitably be needed to analyse the finds made and bring them to publication (see below). To achieve these goals, and to make sure of having sufficient infrastructural assistance from developers where this is needed, archaeologists must be comfortable in advocating and arguing for what are essentially political, rather than narrowly academic, objectives. Lobbying for archaeological impacts to be assessed by archaeologically literate individuals in order to avoid situations in which projects may be approved without thorough investigation of the number and quality of heritage resources at risk of destruction is also essential (cf. Arazi 2011).

IV. BUILDING CAPACITY

Given the limited resources available for archaeological research in much of Africa and the current scale of infrastructural expansion across the continent, cultural heritage management projects hold enormous potential for boosting the growth of archaeology through processes of capacity-building. Recent initiatives drawing together participants from a range of African countries have been empowering in this regard (Arazi 2009). However, on large, donor-funded projects and smaller scale, commercially funded projects alike, significantly more needs doing to break out of the trap in which a few archaeologists (often foreign or, in southern Africa, white) employ many relatively unskilled workers as and when necessary, without providing those individuals with much by way of responsibility and even less by way of opportunities to learn how archaeological fieldwork should be conducted. Less hierarchical systems in which the burden of recording and interpretation are more widely shared and skills are transferred through on-the-job training can work, at least up to a point, in helping to build capacity for the longer term (e.g. Arthur *et al.* 2011), even if the costs in time and money of attempting this may deter many commercially oriented archaeologists from following suit. Happily, at least in principle, one major international donor – the World Bank – recently recommitted itself to strengthening institutions and encouraging training through the heritage-related projects that it funds in Africa and elsewhere (Arazi 2011).

V. THE CHALLENGES OF PUBLICATION

A major concern of much developer-initiated and developer-funded fieldwork is how, if at all, its results are made available to the broader archaeological community. There are several reasons for this: developers and donors may not feel/be obliged to fund publication on top of fieldwork or the analysis of field results; they may insist upon ‘gagging’ clauses in contracts that impose delays on publication or require papers to be vetted prior to their appearance; commercial archaeologists may lack the time or inclination to publish because this does not directly contribute to their profit margins; and, perhaps most important of all, the sheer quantity of information generated, especially where archaeological impact assessments are legally mandated prior to any development being permitted, exceeds the capacity of traditional journal or monograph outlets. One solution is to exploit new electronic media and place impact assessment reports on the Web, a policy followed by South Africa’s Heritage Resources Agency (SAHRA). Greater liaison with university teaching departments may also make material found in the course of cultural heritage management projects available for further research and study, even where specific funding for this was not included in a project’s original funding. In many countries more detailed regulation and effective oversight is desirable to ensure that archaeological impact assessments always provide a consistent minimum set of observations and catalogue of finds (see Lane, this volume, pp. 79-85).

VI. CULTURAL HERITAGE MANAGEMENT AND THE COMMUNITY

Recognising that the results of archaeological fieldwork need to be transmitted back to those among whom that work was undertaken is now widely understood. However, since developer- and donor-funded projects often impact on local communities (including destruction of culturally sensitive sites, loss of economically important resources, or even physical relocation) it is particularly important in the field of cultural heritage management. Good practice dictates that those communities should be consulted and kept informed at all stages, that such involvement should feed back into how fieldwork is undertaken (including creating employment and training opportunities), and that aspects of cultural heritage relevant to them, including living heritage, be included in what is investigated and recorded. Where archaeologists are unable, or unwilling, to engage in this way, or are perceived as mere agents of development projects that ride roughshod over community interests, it is not surprising that local residents resist their

presence (Kleinitz & Näser 2011). Though difficult, preserving a degree of independence from those ultimately funding archaeological research or undertaking the development project in question may thus be essential to ensuring that research is conducted in a community-engaged and ethically responsible way (cf. MacEachern 2010).

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CASE STUDY: HERITAGE MANAGEMENT IN CENTRAL AFRICA

Noemie Arazi¹

INTRODUCTION

Heritage management in the context of infrastructural development is a major concern for professionals involved in the safeguard of Africa's archaeological resources. Even sites inscribed on the World Heritage List need to face up to Africa's infrastructure boom (for recent examples see the Mapungubwe Cultural Landscape in South Africa and the Ecosystem and Relict Cultural Landscape of Lopé-Okanda in Gabon).

National legislation for the protection of cultural heritage exists in all African countries. However many countries still lack regulatory mechanisms such as open calls for tenders for independently led cultural heritage assessments and salvage excavations. Hence much of cultural resource management (CRM) work, especially in its initial phases, is carried out under the framework of Environmental Impact Assessments (EIA) whereby heritage professionals usually work as subcontractors to larger environmental firms that are appointed to lead the compilation of a project's EIA. What now follows is a practical account on heritage assessment in the context of EIA, drawn from experience in Central Africa.

I. NEGOTIATION

An important element to bear in mind for any expert involved in a cultural heritage assessment is to evaluate the project and its client. Does the project stem from the public or the private sector? From personal experience, public sector projects tend to be more challenging especially with regard to delays, ranging from project launch dates, to the approval of specialist reports and payment. Public sector projects, however, might be better suited for implementing the actual salvage of archaeological sites identified during an EIA as state institutions adhere more closely to regulations concerning the safeguarding of its cultural resources. Private sector projects tend to be managed more efficiently, especially if the client is sensitive to environmental, social and cultural safeguard policies. However, they might be less inclined to im-

plement salvage excavations, as the archaeological resources present within a project imprint constitute state resources. Having said that, there are no general rules to any of those projects as much depends on the contracting authority's experience in handling large-scale infrastructure projects, the project's financial management and the client's commitment to operate by the rules and regulations.

II. IMPACT AREA

Environmental firms in need of cultural heritage subcontractors have a tendency to remain vague about the extent of a project's impact area in order to limit the period of fieldwork to a minimum, which naturally bears directly on a heritage assessment's budget. It is therefore advisable to obtain as much information as possible on the extent of a project's impact area and its characteristics regarding vegetation and topography in order to make a realistic offer on the duration of fieldwork, team composition, subsequent sampling strategies and budgeting. Information on the scope and topography of the study area are also important tools for planning a methodology. If previous studies have already been done in the region, the methodology needs to include a literature review of the study area, the assessment's aims and objectives, the scope of the proposed work, details about prospection techniques and the project team.

III. MANPOWER

When planning the team as a subcontractor to an environmental firm, a point should be made about the necessity for at least two experts as two trained individuals can cover more ground and more importantly, identify more sites, than just one person. Whenever possible a national counterpart should also be part of the team. Not only do they know the local context far better than expatriates but experts from national institutions tend to bring the necessary weight on sensitizing the client and funding agencies on follow-up programs if needed, which might range from construction monitoring to sal-

¹ Université Libre de Bruxelles and Heritage Studies, Royal Museum for Central Africa, Belgium.

vage excavations, training, and publication. University students should also be involved, as training in cultural heritage assessment is a major necessity in many African countries.

IV. COPYRIGHTS

An important element is the issue on copyright, as most consultants need to sign a confidentiality and copyright agreement, hence ownership of all the resulting data goes to the client. In that case, heritage professionals should define the length of the copyright agreement to make sure that publication of the data will be possible after an agreed-upon period. This is an issue of great importance, especially in Africa, as many EIAs are done in so-called ‘virgin territory’, areas that have never undergone any systematic investigation by heritage professionals.

V. BUDGET & EQUIPMENT

In regard to expert salaries, one should take into account years of experience, past assignments in similar projects, the security situation of a project’s impact area, and the client’s background. For instance, a multinational company might offer better wages than a public sector project financed by a governmental institution. It is also necessary to obtain information on available resources in the impact area. Mining projects tend to have basic installations already in place, including accommodation, canteens, four wheel drives, etc. In that case the budget might be limited to the team’s travel costs, visas and medication. If the EIA takes place in a location with no logistical resources yet in place, the heritage expert will have to organize and budget for a vehicle, possibly a chauffeur, petrol and the team’s per diem. Provisions should also be made to pay for a local guide or informant who can accompany the team during prospection and assist with interviewing local authorities and communities.

Basic fieldwork equipment such as a GPS, plastic bags, photographic scales, etc., can also be included in a heritage assessment’s budget while photographic equipment and/or laptops are more difficult to budget during the initial phase of an EIA.

The project duration also bears direct consequences on a budget. Generally, cultural heritage assessments include a desktop study, fieldwork, and reporting. The desktop study can be done by one individual, whereas fieldwork is done by an entire team. Reporting involves the principal experts.

VI. SECURITY

Many infrastructural development projects occur in conflict or post-conflict areas, which are often far removed from major population areas and healthcare centres. The archaeological salvage project for the Lom Pangar Dam, currently taking place in the East Region of Cameroon with a team of ten archaeologists, is a case in point. The country is currently under intense pressure from regular Boko Haram incursions in the north, ongoing political instability in the neighbouring Central African Republic (CAR), and a considerable influx of refugees from Nigeria, Tchad and the CAR (Simms 2014). Even though the Lom Pangar team is so far only indirectly affected by these developments, they need to keep constant watch on security issues, especially once they start prospecting the zone earmarked for the reservoir, a remote area with little to no mobile phone coverage.

VII. PREPARATION

Once a contract for a cultural heritage assessment has been signed and the dates for fieldwork have been set, topographic maps of the study area are needed before the start of fieldwork in order to plan survey strategies.

For the desktop study two kinds of data are generally analysed: published data, such as articles and books and unpublished data and collections stored in museums and museum archives. For the first type of data, bibliographic references for most countries are available from university libraries and/or Internet databases. In the absence of any previous investigations on what constitutes an infrastructure project’s immediate impact area, published data should be consulted on neighbouring regions. Desktop assessments should also integrate the anthropological and art historical literature, as spaces and objects that are of cultural or spiritual/religious importance to local communities constitute significant elements of heritage assessments in the context of an EIA. Archives and museum collections can contribute with additional data on unpublished material.

VIII. FIELDWORK

Once in the field, situations can vary drastically depending on the presence or absence of a base camp in a project’s impact area. If a base camp should be present, which – as already mentioned – is usually the case for mining projects, the cultural heritage team might be met by a health and safety officer, who usually holds



Fig. 1. Field walking along lines on ploughed ground at Tenke Fungurume in the Katanga Province of the DRC. (Photo © N. Arazi.)

an induction briefing on the mining concessions' rules and regulations concerning security, driving, and other safety issues. When working in Tenke Fungurume in the Katanga Province of the Democratic Republic of the Congo (DRC), which boasts the country's biggest copper and cobalt mining operation, our team was assigned to the mining company's environmental unit. We reported to the unit's executive manager on a daily basis in order to keep him up-to-date on our progress while they assisted us with all sorts of logistical issues. We were also in contact with the mining company's social unit as they advised us on the mining concession's local authorities and helped us in setting up meetings with them and the communities. In the absence of a base camp or any other logistical assistance by the contracting authority, the team is faced with issues of car rental, petrol, accommodation and food, which we experienced for the EIA study of the Lom Pangar hydroelectric project in Cameroon.

Turning to the technical aspects of fieldwork, the general goal of any heritage assessment is to identify the potential archaeological and cultural significance of an area earmarked for development. This is usually connected to construction work and road building. The assessment determines whether the area of development impact is likely to contain significant archaeological resources and makes recommendations as to whether the archaeological remains can be avoided or if an excavation is necessary before development work can commence. Considering the vast terrain of areas to be impacted by development, the major goal is to cover as much ground as possible. At

Tenke Fungurume, for instance, three survey procedures were tested: transects, area surveys and thematic surveys.

Transects, which involves field walking in grids or along lines, worked best on either ploughed ground or surfaces with little vegetation (**fig. 1**). Area surveys, which consist of the systematic coverage of a specific portion within a study zone, usually larger than a transect, did not turn out to be the most effective method in Tenke Fungurume due to the sheer enormousness of the impact area and the fact that no significant finds were made. Thematic surveys, which involves the search for archaeological material in particular locations to test hypotheses about past uses of those spaces, turned out to be an efficient method in addition to the transects. In the former case we concentrated on areas close to water sources and termite heaps in order to identify possible metallurgical sites.

Interviews constitute another important element in heritage assessments as they provide highly useful information concerning the location of sites that are of cultural or spiritual/religious significance to local communities. In the case of the Tenke Fungurume study, most interviews were held with the village chiefs, known in the area as '*chef de terre*' and '*chef de localité*'. Other points that can be discussed during those interviews include local history and settlement in the impact area.

Each site or find spot needs to be recorded with a handheld GPS, so that identified sites can later be mapped on geo-referenced maps. It should be underscored, however, that in the case of an archaeological field survey, the results constitute only a sample of the archaeological potential of a given landscape. In other words, one could come back to the same area at different times of the year for several years in a row and find new sites, owing to vegetation cover that changes at different seasons of the year or human-induced change (**figs. 2 and 3**).

In landscapes with compromised visibility such as forested areas, subsurface testing methodologies such as coring and shovel test pits can be effective tools for archaeological surveys. However, the limited time and personnel allocated to heritage assessments render the systematic application of those methods often too time consuming. Hence, survey activities in forested environments, as was the case for the Lom Pangar hydroelectric project, tend to concentrate on road cuts and cultivated fields as well as on the presence of anthropogenic tree species for the discovery of sites or at least clues of ancient human activities.



Fig. 2. First field survey at Tenke Fungurume (DRC) during the month of December, showing extensive vegetation cover (and copper deposits in the background). (Photo © N. Arazi.)



Fig. 3. Second field survey at Tenke Fungurume (DRC) during the month of September after human-induced fire for slash-and-burn agriculture. Even though overall visibility was better than during the first field season, the blackened ground tended to conceal archaeological remains. (Photo © N. Arazi.)

IX. REPORTING

Once the fieldwork has been accomplished, all collected data need to be assembled, analysed, and presented in a report. In structure, a heritage assessment report contains standard sections such as the methodology and approach of the study, the description of sites and presentation of results, geo-referenced maps of the identified sites and their location within the impact area, and photos of the sites and surface material. But there are also distinctive sections that are specific to a heritage assessment report in the context of an EIA. These include the policy and legal frameworks on heritage preservation and the in-

stitutional regulations the client adheres to in relation to cultural heritage management; an assessment of site significance, which usually refers to sites of aesthetic, historic, scientific, social or spiritual value for past, present or future generations (see The Burra Charter, The Australia ICOMOS Charter for Places of Cultural Significance, International Council on Monuments and Sites. 1999; for a specific example see Heritage Council of New South Wales 2009); and an assessment of the project's potential negative impacts on the area's cultural resources and the mitigation measures for limiting the project's adverse impacts. The former should include an assessment of both the direct impacts associated with destruction or physical disturbance and the indirect impacts caused by changes in topography, water table levels, land use practices, and induced development (see Cultural Heritage in Environmental Assessment 1994). Appropriate approaches for mitigation activities may range from avoidance of sites to archaeological monitoring of sub-surface clearing and trenching activities, salvage excavations, soil and rock stabilization, the application of chance find procedures as well as capacity building of institutions involved in heritage management. The latter usually applies to countries that lack institutional capacity in cultural heritage management.

CONCLUSION

It has been shown that heritage assessments in the framework of EIA follow generic processes as defined by the EIA process (see Abaza *et al.* 2004). EIA reports strive to be, in the words of the International Association of Impact Assessment, 'purposeful, rigorous, practical, relevant, cost-effective, efficient, etc.' (International Association for Impact Assessment 1999); hence, heritage professionals need to apply a great deal of pragmatism in order to achieve the required objectives and results. Indeed, it should be borne in mind that private and public sector projects alike do not seek to finance costly and time-consuming archaeological research projects but the most efficient and cost-effective measures to comply with national and international standards in regard to heritage preservation. Coming back to this chapter's case studies, it is interesting to note the following: the Lom Pangar hydroelectric project, which stems from the public sector, now has a considerable salvage excavation program underway, in spite of long delays. In con-

trast, Tenke Fungurume, a private sector project, has not launched any mitigation processes to this day despite the identification of more than a hundred archaeological find spots.

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RESCUE AND PREVENTIVE ARCHEOLOGY: ROADS, THERMAL POWER STATIONS AND QUARRIES

Richard Oslisly¹

INTRODUCTION

For almost 15 years, with the assistance of international cooperation, consortia and funding parties, preventive and rescue archaeology has developed considerably in Africa. Cameroon and Gabon, for example, have developed major infrastructure projects: pipelines, roads, thermal power stations, dams, quarries, etc. These major projects are carried out in accordance with the public interest objective of safeguarding the national heritage, through the development of rescue archaeology in certain cases (discoveries after or during construction) and, recently, of a genuine preventive archaeology component. It is through respect for cultural heritage protection laws during major public works and through the systematic establishment of a preventive archaeology component in the environmental and social impact assessment (ESIA) and in the environmental and social management programme (ESMP) corresponding to the compensation measures that diagnostic operations, surveys and archaeological excavations are funded. The fundamental question, during these ESIA's, will be to know the (diagnostic) procedures and (landscape reading) methods that will lead us to discover and prioritize archaeological sites. We will see through three examples of rescue archaeology and preventive archaeology how we applied the research methodology in the context of the Central African forest.

I. PREVENTIVE ARCHAEOLOGY ASSESSMENT DIAGNOSIS

Before going to the site, one needs to prepare by examining:

- the specific bibliography (reports, articles...) on the Internet and comparing references;
- the geographic area, using topographical maps of various scales in order to obtain toponyms and discern types of relief;
- a recent satellite image of the region (via free Internet sites), because in Central Africa topographical maps are very often old;
- the mapping of vegetation formations, to sharpen inter-

pretation of the landscape and to learn about the habits and customs of the people in relation to their environment;

- a pedological map that shows the quality of the soil (rich soil could have supported past cultivation) and any clay-bearing hydromorphic flats (pottery);
- a geological map that will help determine the materials used by prehistoric humans and the location of minerals (iron metallurgy).

II. FIELD METHODOLOGY: HOW TO FIND AND WHERE TO LOOK?

After analysing map data on the future project, zones with archaeological potential must be identified. In the Central African forest, 90% of identified archaeological sites (Oslisly & White 2003) were discovered on the summits of hemispherical hills relatively close to a watercourse and on top of ridges. When prospecting, one should examine roadsides by paying special attention to hill peaks and laterite deposits.

Moreover, botanical knowledge is necessary, because certain trees indicate the past human presence; for example, if on a hill summit you find *Elaeis guineensis* palm trees combined with *Mangifera indica* mango trees and *Dacryodes edulis* butter fruit trees, you are in the presence of an old abandoned village. Also on hill summits, if you find pure stands of *Aukoumea Klaieneana* gaboon mahogany or *Lophira Alata* red iron wood, you are in all likelihood in an area once home to slash-and-burn agriculture or a village; these species are heliophilous and easily take root in areas deforested by humans. Depending on the Central African ecoregion, there are of course other tree species on these hills indicative of a past human presence, such as *Baillonella toxisperma* (moabi), *Canarium schweinfurthii* (African elemi), *Triplochiton scleroxylon* (obeche in Nigeria, wawa in Ghana, ayous in Cameroon, samba in Côte d'Ivoire), *Ceiba pentandra* (kapok) and/or *Dracaena arborea* (dragon) (Oslisly & White 2003).

This method of discovery, which draws on several disciplines, is called 'landscape reading'. To check its validity, use an auger to drill holes, whether by transect or grid, that will almost certainly reveal the presence of charcoal and sometimes pottery shards.

¹ Institut de Recherche pour le Développement, UMR 208 IRD/MNHN, Patrimoines locaux, Agence nationale des Parcs nationaux, BP 20379 Libreville, Gabon.

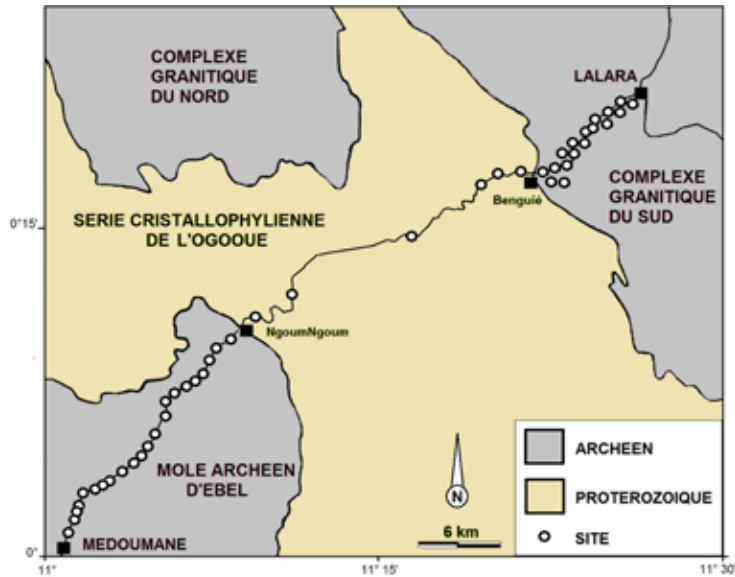


Fig. 1. Archaeological sites along the road between Medoumane and Lalara. Geological formations of the Archean (in grey: Northern and Southern Granitic Complex, Archean Complex of Ebel), and of the Proterozoic (in yellow: Metamorphic series of the Ogooue). (© R. Oslisly.)



Fig. 2. Mpolongwé: discovery of a pit (dark area) in the trench. (Photo © R. Oslisly.)

III. CLASSIFYING SITES

During the archaeological diagnostic phase and depending on the number of artefacts and their features, such as the diversity of decoration and shapes of pottery or the quantity and quality of flaked pieces, as well as their spatial distribution and stratigraphy, sites are classified by ‘priority’, which is a fundamental notion for decision-makers and builders.

Low priority: the site has a small area with some artefacts and does not require excavation.

Medium priority: sites of average size that will be excavated later; most often they are sites whose majority of remains lie outside the construction zone.

High priority: sites with abundant remains that will be excavated immediately because they are often located in the construction zone.

Each site that is discovered will be named after the closest place name on the topographical map, positioned using GPS coordinates and recorded.

We will examine results obtained using this research method from three specific cases: a road in Gabon that involved rescue archaeology, and a thermal power plant construction site in Cameroon and a quarry in Gabon, both of which involved preventive archaeology.

A. Médoumane-Lalara road in Gabon (from 9,000 BC onwards)

The landscape reading method led to the discovery of 52 sites along 84 km of this road in the centre of the country. The roadsides were meticulously examined to

obtain the most thorough archaeological diagnosis. Sites fell into three zones, from east to west: zone 1, from Médoumane to Ngoumngoum, contained 29 sites; zone 2, from Ngoumngoum to Benguié, contained only 6 sites; zone 3, from Benguié to Lalara, contained 23 sites. Locating the sites on a geological map revealed that zones 1 and 3 were on Archean formations and thus ancient (**fig. 1**), with many hemispherical hills separated by a very developed hydrographic network conducive to the establishment of villages. Zone 2 contained the more recent (Proterozoic) geological formations that display sharp, sloping relief more favourable to human passage (Oslisly & Assoko 2006). In total along these 84 km, 56 sites and 2 iron ore mines were discovered, or one site every 1,500 m.

B. Thermal power plant at Mpolongwé in Cameroon (10,000 BC to 400 AD)

At the request of AES Sonel electricity company, in 2010 we began a survey of the future location of the Mpolongwé thermal power plant, where a permanent watercourse meandered around two hemispherical hills. Pits and a layer of flaked stone were discovered. After 22 hectares of forest were cleared, we began working in close collaboration with the construction company, which progressively levelled the main hill in strips 2 m wide by 40 m long, in order to level the site. From the first shovelful, pits appeared (**fig. 2**) and were immediately marked, protected and, soon after,



Fig. 3. Mpolongwé: grid excavation phase. (Photo © R. Oslisly.)



Fig. 4. Mikaka: aerial view of protected zones Z1 and Z2; the rectangles correspond to boreholes made during the diagnostic phase (adapted from COMILOG by R. Oslisly.)

excavated (fig. 3). During this work, 50 archaeological structures were discovered: 37 pits, 12 archaeological levels and a forge. Material remains (392 kg) included flaked stone, pottery fragments, earthenware, remnants of metallurgical activity (iron tools), beads, and glass.

C. Quarry at Mikaka in Gabon (11,000 to 6,000 BC)

During a 2013 environmental impact assessment of a future quartz quarry by the Ogooué mining company (COMILOG), numerous stone flakes of jasper were discovered, lying on the rocky slabs of the land within the purview of the quarrying permit. In the context of the environmental and social management programme (ESMP), COMILOG funded a preventive archaeology project.

Preliminary diagnostics helped define a first zone

(Z1) in the form of a butte where four boreholes were made (fig. 4), revealing several levels of which the oldest dated to 9,500 BC. This zone was fenced off for protection. For the second zone (Z2), corresponding to the site of the future service station, a more advanced examination was carried out with the support of a backhoe that dug 41 pits totalling 246 m³ over an area of 3,000 m² and yielding almost 1,000 flaked stones. This second zone was also fenced off with a view to future excavation. Mikaka is the first open air site comprising levels of occupation of hunter-gatherer-stone-knappers ranging from 3,000 to 9,500 BC.

These three examples illustrate perfectly the importance of a research methodology based on a multidisciplinary approach in a forest environment.

Moreover, preventive archaeology facilitates access to data that would have been difficult to access via conventional archaeology. Earth-moving equipment has opened otherwise inaccessible forest areas to prospecting and excavations. During each project, preventive archaeology proved to deliver a very positive experience and demonstrated that it is possible, without adverse economic impact, to have fruitful collaboration between scientists and developers. It furthermore contributes to the practical training of students through frequent fieldwork missions, and also to their earning academic degrees.

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MANAGING CULTURAL HERITAGE IN AFRICA: A STUDY OF IFAN IN SENEGAL

Ibrahima Thiaw¹

INTRODUCTION

Founded in 1936, IFAN (originally Institut français d'Afrique noire; renamed Institut fondamental d'Afrique noire – African Institute of Basic Research – in 1966) is staffed by professionals and amateurs dedicated to the inventory, acquisition, and preservation of cultural resources. This staff, consisting mostly of expatriates, were the first to fight for the defence and preservation of Senegal's archaeological heritage in a context in which the discipline had little historical presence. Local populations were only involved in archaeology as labourers or, at best, as sources of information.

Even today, only professionals are really involved in the preservation of archaeological resources in Senegal. IFAN's activities are still limited to small-scale acquisitions and inventories, and managing collections of previously acquired materials. Participation in international programmes, often initiated by universities or research institutes in North America or Europe, remains the main source for new acquisitions and archaeological knowledge (Thiaw 2012).

Over the past five years, however, a preventive archaeology programme has been established to serve developers whose activities threaten cultural resources. Simultaneously, IFAN has been trying to create closer ties with the state services that are its primary source of funding. Unlike the colonial government, however, the postcolonial government has given it no specific mandate.

This article examines the role of the IFAN archaeological laboratory in the management of Senegal's cultural heritage. Their mandate changes according to the needs of government administrations, colonial or postcolonial, as they seek to establish policies concerning the use and development of the territories in their jurisdiction. After becoming a part of the University of Dakar in 1959, IFAN was gradually forgotten. This raises questions about the social role of the university, one of

the central missions of which is to serve surrounding communities. Here we will analyse, on the one hand, the tensions between the normative and operational frameworks and, on the other, the issues, opportunities, and practices related to preventive archaeology in Senegal, where community engagement is low, with small margins for manoeuvre. The experience acquired over the past five years by the IFAN archaeology laboratory will serve as a basis for exploring the future of preventive archaeology in Senegal.

I. LACK OF SYNERGY BETWEEN ADMINISTRATIVE AND OPERATIONAL BODIES

The first regulatory framework for the management of cultural assets with which the principle actors were bound to comply was established during the colonial period. Following independence in 1960, one of the major obstacles to the development of preventive archaeology was the lack of clarity concerning the jurisdictions of the administrative apparatus managed by the Ministry of Culture through the Direction du Patrimoine ('heritage office') and the operational branch of archaeological research, namely the IFAN archaeological laboratory based at Cheikh Anta Diop University in Dakar.

Postcolonial legislation has remained unchanged since law 1971-12, which regulates excavations and discoveries (Naffé *et al.* 2008). Operationally, it is based on no territorial administration, and cultural heritage management remains centralised. There is no synergy between the administrative (Direction du Patrimoine culturel) and operational (IFAN) bodies, even though these two structures have been under the direction of the same person for the last four years. The result is that a great deal of pillaging and destruction goes unnoticed.

Beginning in the middle of the 20th century, the various inventories of heritage resources drew a map that offered territorial administrations the tools needed to establish resource management policies. At the end of the 1950s, most topographical maps included ruins and historical sites, as well as places of worship, such as sacred woods, mosques, churches, cemeteries, etc.

¹ Archeology Laboratory, IFAN/Cheikh Anta Diop University, Dakar, Senegal.



Fig. 1. Visit to the burial mounds at Ndayane, Diourbel, Senegal. (Photo © I. Thiaw.)

We note however that more attention was paid to the intangible heritage than to archaeological sites (Arazi & Thiaw 2013).

National or regional inventories have increased since the 1970s. These have strengthened the archaeological map of Senegal, even if the archaeological laboratory was not associated with the most recent inventory, commissioned by the Direction du Patrimoine in 2003. These efforts have not led, however, to a national database that might serve as a tool for heritage management. The Direction du Patrimoine is happy to grant research permits without having to worry about follow-up or database management. The archaeology laboratory, on the other hand, expands its collections, but barely manages to organise them due to limited space and resources. On an operational level, IFAN's cultural preservation activities are still limited to acquisition and salvage.

II. PREVENTIVE ARCHAEOLOGY IN SENEGAL: PRACTICES, OPPORTUNITIES, AND CHALLENGES

The first attempts at preventive archaeology in Senegal took place in the mid-1990s in the context of the Cayor Canal project with the Consortium SNC-Lavallin/BCEOM. The works, which consisted essentially of surveying, were directed by Massamba Lame. It would be another ten years before another attempt was made, this time with the Oromin Joint Venture Group (OJVG). In 2009, an international team made up of SRI Inc., Nexus Heritage, and the IFAN Cheikh Anta Diop archaeology laboratory undertook the evaluation of heritage resources in the OJVG mining perimeter, located in Sabodala,

in eastern Senegal. The partnership with SRI Inc. and Nexus Heritage was strained by the developer's reluctance to make use of more expensive international experts. This pioneering experiment contributed to professional development, with the training of a dozen students. This continued outside of Senegal and allowed capacities to be strengthened, laying a foundation for preventive archaeology.

Since then, the IFAN archaeology laboratory has progressively developed programmes in collaboration with other local or international firms to ensure that the cultural component is included in major projects' environmental or social impact studies. It continues to focus on training students in order to build an operational team capable of responding in Senegal and elsewhere (**fig. 1**). Students are offered the opportunity to take part in fieldwork, which is often missing from training programmes at Cheikh Anta Diop University.

Today, despite some reluctance, many mining companies have progressively integrated archaeology into their environmental and social impact studies. This progress has yet to incite the Ministry for Culture and the Direction du Patrimoine to become actively involved in the process, notably in assessing reports and following up on recommendations.

As a result, the economic and cultural impact of these studies remains negligible. Preventive archaeology is still limited to small-scale surveys undertaken to meet donor requirements and obtain licences. Lack of government involvement in the process means that the recommendations made during the pre-feasibility stage are rarely followed.

On the other hand, some decisions require cooperation between various stakeholders, the relevant government services, funders, and developers. Classification criteria, site importance assessment, the decision to acquire or avoid, as well as the management and improvement of collections, are important aspects of preventive archaeology that suffer from a lack of coordination and cooperation between these actors.

The interests of the authorities responsible for culture are limited to maintaining a handful of colonial buildings in urban zones and to sites included on the World Heritage list, which are used to fuel political propaganda. Just like the sites classified on the national list, these sites are exposed to all kinds of attacks (Thiaw 2014). Certain na-



Fig. 2. Well-maintained and protected sacred site in the village of Andiel, Bedik country (Kédougou Region). (Photo © I. Thiaw.)

tional companies continue to destroy multiple archaeological sites situated within or near their projects.

In the middle valley of the Senegal River, several sites that had been inventoried were destroyed as part of land-management activities. Like the dams at Diama and Manantali, which were built without any consideration of the archaeological component, the exploration underway as part of the phosphates project in Matam is taking place without any attention paid to the rich archaeological resources present in the vicinity. The Diallowali site inscribed on the national list has been assigned to a private developer. Not far from there, Nder, an historic village and the 19th century capital of the Waalo kingdom – where women self-immolated in a final act of resistance to slavery – is on the verge of being wiped from the map without any reaction from the authorities at the Ministry of Culture, who had listed it as a national heritage site.

In the Saloum Delta, a World Heritage Site, several shell middens (such as those at Faboura) have been completely destroyed during the construction of the Joal-Ndangane road. Those at Niodior and Dionewaar are on the verge of disappearing (Naffé *et al.* 2008). More recently, the construction of the Dakar-Diamniadio toll-road led to the destruction of several archaeological and historical sites, including parts of the famous Thiaroye camp, which is an important site of remembrance linked to the Tirailleurs sénégalais mutiny during the Second World War. In Keur Momar Sarr, the SDE was built at the Tata of Yamar Mbodj – a classified national heritage

site – without any impact study performed or any form of mitigation undertaken. The Ndayane site, located in the city of Diourbel and on the national heritage list, has become an enormous garbage dump coveted by developers, and already largely occupied by the city hospital. In light of the current situation, preventive archaeology in Senegal remains a huge project. It is therefore surprising to hear politicians speak about the centrality of culture to their development policies.

III. THE FUTURE OF PREVENTIVE ARCHAEOLOGY IN SENEGAL

The future of preventive archaeology in Senegal is therefore bleak. Without the involvement of public authorities, professionals and stakeholders at the community level have nowhere to turn. It is difficult to apply the ‘polluter pays’ principle when government services show neither the necessary vigilance nor political will. The absence from the field of state authorities or funders leads to all kinds of abuses. Links to the state are even the pretext on which national companies refuse to comply with procedure. They consider archaeological-resources management and related costs to be obstacles to development.

The development of preventive archaeology requires a more sustained engagement with community stakeholders. Collaboration is necessary and must lead to the joint definition of research agendas by professionals and local communities and the identification of relevant issues.

If it is to play its role fully, preventive archaeology must extend its reach beyond its field *stricto sensu*. It must look at both the tangible and intangible cultural heritage, ancient and contemporary, and to its future. This approach, which makes it possible to link the past, present, and future, could be particularly productive for surveying in the context of development programmes. Such an approach, which takes charge of the intangible heritage as well as sacred and ancestral sites, could persuade local populations, whose interest in this type of heritage is evident (**fig. 2**). The term ‘preventive archaeology’ is too narrow to include these equally important aspects. We also recommend closer collaboration with populations in order to move towards cultural engineering capable of proposing credible and durable development solutions for the management of cultural heritage and historic landscapes.

CONCLUSION

In Senegal, the preservation and enhancement of the cultural heritage has long been considered an indispensable part of development. As of today, however, this has not yet been translated into action. The normative and administrative structures and the operational structures, largely inherited from the colonial system, have barely evolved since 1970. Cultural heritage resources are being lost beneath the weight of a modernity and a modernisation that places little importance on archaeological heritage. The question of 'the future of tradition' is more relevant than ever (Diagne 1992).

Heritage management policies conflict with the demands of development policies. Rather than guaranteeing prevention by eradicating or limiting the negative effects of various projects, archaeological resources management consists of inventories and acquisitions in zones where the process of destruction is already underway. These interventions, which take the form of salvage, may have allowed IFAN to amass rich collections, but make it a prisoner of its time and of an out-dated paradigm.

Some timid progress has been made since 2008. There has been a great increase in prevention missions, with important implications not only in terms of heritage management in the broad sense, but also in the training of students.

Faced with rapid urbanization and the creation of new agricultural and residential zones as well as hotel

and road infrastructure, faced with mineral exploration and exploitation, etc., these preventive missions remain negligible. The Ministry of Culture must urgently and in partnership with professionals set out legislation that conforms to international norms and standards, and establish a national database of archaeological sites.

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RELATIONS WITH LOCAL COMMUNITIES

Nicolas David¹

In the early 1960s, I was Hallam Movius's foreman at the Upper Palaeolithic site of Abri Pataud in France's Dordogne department and on the weekends used to play midfielder for Les Bisons, the Les Eyzies soccer team. Although not a model of archaeological relations with a community, the situation displays some of the elements. While I did not become an 'Eyzien', I made lasting friends and had fun besides gaining status as someone involved and wishing to contribute. Movius's enthusiastic presence at matches confirmed the engagement of the whole dig.

My field research in Africa has been more ethno-archaeological than archaeological, but I have made several, mainly test, excavations with small teams in Cameroon (e.g. David 2008), the CAR, Nigeria and South Sudan. My archaeological experience is thus not unlike that of African and Africanist researchers running their own programs for the first time. I should add that my teams have never engaged in what is now known as 'community archaeology', in which the host community is a full partner in the archaeological enterprise. An article by Peter Schmidt (2014) and its rich set of references provides an excellent introduction to that topic. Community archaeology is a highly desirable but not always achievable form of practice, for example when archaeologists carry out research with and among groups that, for lack of education, extreme poverty or other impediments, are incapable of acting as partners. In such cases it is nonetheless very much to the benefit of the research to conform to the ideals of community archaeology, involving and benefiting community members in all possible ways, including training, and leaving a material and documentary legacy that will one day be appreciated by community descendants.

I. FIRST CONTACT

I have organized this piece in terms of the progression of research, starting with the choice of a particular place to undertake fieldwork. A local community is

always going to be involved, and all the ministerial, provincial and other permits in your pocket will be useless unless the host community is willing to cooperate and support your work by providing – besides labor – knowledge and many-sided human interaction. So first contact is critical as the start of a relationship of reciprocity that must be perceived as balanced by all parties. Luckily you are interested in something that interests them: their past and their present. For even if the chosen community is one of recent conquerors, as at Bé in northern Cameroon, its inhabitants knew a great deal about making a living in that environment, and were intrigued by the mounds produced by their predecessors (David 1971). In 1967, accompanied by Eldridge Mohammadou, ethnohistorian, guide and friend, we toured much of Cameroon looking for sites that might inform on the Bantu expansion. I wanted to work at Bé as soon as I saw it. After visiting the chief, Alhaji Hamman Sali, explaining my interest, and getting his permission, Eldridge and I hiked to the highest of its settlement mounds – well over a thousand years of stratigraphy. By the time we got back to the chief's residence I had the outlines of a project. The chief and councilors listened graciously to my off-the-cuff presentation, then approved in principle. And so we left.

Leaving is helpful; it gives time for the community to become accustomed to the possibility of your living amongst them, to discuss its potential advantages and disadvantages and relations with the researcher. Over the next months I kept the chief informed of developments by letter. When I returned the following fall with a team and two vehicles, I was no stranger, having morphed from casual visitor with odd ideas to someone of substance who had kept his word. We were up and digging in days.

II. IN THE FIELD

Though this was by no means my only reason, I demonstrated respect in my dealings with Hamman Sali by learning Fulfulde, the language of the Fulbe (or Fulani, Peul, etc.). This I did in Philadelphia by using a dictionary and grammar and listening to Eldridge's record-

¹ Emeritus Professor of Archaeology, University of Calgary, Canada.

ings of the exercises in the latter – and then spending every weekday breakfast for a semester teaching the language to Frank Bartell, my future chief assistant. In the event, French was the language of the dig, but after four months excavating I was able to conduct ethnoarchaeological research in Fulfulde thanks to a local assistant, Souaibou Barkindo, who spoke no French but communicated with me at a level of difficulty precisely adjusted to my increasing competence.

‘Field assistants are born, not made ... but sometimes they are thrust upon one and require a great deal of training.’ I wrote on this important topic in *Ethnoarchaeology in Action* (David and Kramer 2001: 73) and will not repeat it here, except to say that I had an assistant thrust upon me in the first year of the 1984–2008 Mandara Archaeological Project (MAP). He was bright and energetic but, a proud descendant of the slave-taking Wandala state, regarded Mandara Moun-

tains montagnards, whose ancestors were the slavers’ prey, as inferior beings. During that season we were engaged in survey and test excavations and were able to take advantage of his good qualities. But he was not rehired when we returned in 1986 to do ethnoarchaeology. One’s field assistant (interpreter, guide, and if all goes well eventually confidant and friend) should then be a member of the host community, intelligent and curious (though not necessarily highly educated), discreet, tolerant and sympathetic, and from neither too high nor too low a position in society. If such a person works with you a good length of time, he or she will learn a great deal about the research (and much more), which they relay to other community members. An assistant, well-trained and informed on his or her society and its past, is not the least legacy that an archaeologist can leave to the host community. I should add that assistants must also cope with the suspicion that they are failing to redistribute the large sums of money they are believed to be earning. This brings me to the subject of wages.

Hiring is a political act that the outsider is required to perform when least qualified to do so. The political aspects include whom and whom not to hire (and risk offending) and how much to pay them. I have found it best to hire a majority of the workers from among those resident in the immediate vicinity of the site (**fig. 1**). This can be justified to the larger community in terms of their availability. Laborers’ wages are typically derisively low for workers, some of whom can be more quickly trained than most Westerners to grasp the principles of stratigraphy, discriminate between minor strata and recognize faint architectural features. (This proved useful when I happened on the remains of a massacre in southern Sudan and had to prove to my Dinka employees that the remains were not those of their ancestors.) On the other hand, the outsider is unwise to upset the local labor market by offering substantially higher wages. It has been my practice to start workers at a wage marginally above the local standard – and to increase it rapidly for the better excavators. You avoid antagonizing local employers and at the same time gain goodwill and respect.

It’s not just a matter of money. In Africa, far more than in the West, personal and business relationships go hand in hand. In 1975 I brought a small team from the



Fig. 1. Paying the workmen their wages at DGB-2, a monumental site in Cameroon. Nic David calculates, Frank Kense counts banknotes. Edward Matenga, the conservator of Great Zimbabwe, and Gerhard Müller-Kosack observe. (Photo © Judy Sterner.)



Fig. 2. Judy Sterner shares photos of Canada with Gobway, a Sirak potter, and her family. Cameroon, 1990. (Photo © Nicholas David.)

University of Ibadan, Nigeria, to the Central African Republic to work on monumental Tazunu sites (David 1983). In this impoverished country, almost empty of people, the villages were strung out along the roads waiting endlessly for the schools and clinics that had been promised them by their President-for-life and later Emperor Jean-Bédél Bokassa. We hired workers at going rates but found they were incapable of handling the massive granite slabs and uprights of the Tazunu without extra protein in their manioc-based diet. So each day we bought them meat.

Entering a new culture is learning to swim in a sea of expectations that one negotiates through reciprocities of various kinds, from simple greetings to substantial and ongoing exchanges (**fig. 2**). The outsider is often in a position to offer transport, for example, and when Judy Sterner and I got settled at Sukur in Nigeria (www.sukur.info), she offered first aid to our neighbors while at the same time training one of our assistants, to whom we eventually passed on our copy of *Where there is no doctor* (Werner *et al.* 1993).² Crucially important amongst these reciprocities is the exchange of information with interested members of the community and particularly its leaders. It is essential that what you are doing is done in the open; people are suspicious, and if an occasional spectator-damaged section wall is the price of transparency, it is well worth paying.

² Judy was qualified to provide first aid. All members of the MAP 1986 team took a St Johns Ambulance course, an investment that paid off, for example when Kodzo Gavua resuscitated a Mafa baby who had ‘died’ twice.



Fig. 3. The going away party organized by Sukur and Damay for Nic David (in front of the great baobab) and Judy Sterner (on the dance floor) in March 1993. (Photo © James H. Wade.)

The previous paragraphs offer sufficient clues as to the types of behaviors that are likely to lead to good relations between archaeologist and the community – and hopefully between the community and the other outsiders in the archaeologist’s team.³ If the team is resident away from the community, it may be able to live in its own bubble and have little contact outside of work. This, I was told by an amused Tale teacher in 1991, was why the Canadian International Development Agency compound in Bolgatanga, Ghana, was known to locals as ‘Johannesburg’. But, although it may take a little courage to make the initial move, every archaeologist needs to get involved and to learn as much about local life and culture as is possible – without bringing him or herself into conflict or disrepute with the host community, thereby endangering the project. (As team leader, you must be prepared to send an offender home if necessary.) Good behavior requires good manners and achieving a balance between willingness to enter into others’ lives and maintenance of your own identity (**fig. 3**). You will make mistakes, as I did in 2001 when first venturing up Mount Oupay in Cameroon searching for monumental sites on a Mafa festival day. I was handed a bowl of beer and, before drinking and without thinking, spilled a few drops on the ground. My host, greatly affronted, took this as a claim to his land. I apologized, explaining that my libation was intended, as elsewhere in the mountains, for Zhigile, the creator

³ The chapter on fieldwork and ethics in David and Kramer (2001: 63-90) offers much more on this and related topics.



Fig. 4. Leaving Mokolo in 1990 at the end of the first Cameroonian phase of the Mandara Archaeological Project. (Photo © Nicholas David.)

god. We parted on reasonably good terms. Learning another's culture requires both sensitivity and a willingness to take risks.

I am very conscious that, were I digging in an urban environment such as Soweto rather than a village in Central Africa, opportunities and problems in the area of community relations and community archaeology would be very different. But principles remain the same.

III. THE TIES OF DEPARTURE

Leaving a community in which you have spent months and invested much of yourself is hard. Besides the personal, there are a thousand professional things to do. It is emotionally draining (**fig. 4**). A extraordinary phase, one in which you never felt more alive and which is critical to your career, is coming to a end. It is an opportunity for generosity; there are goodbyes to be said; you are torn between reluctance to leave and wanting to get out of there as quickly as possible.

But in one sense you never leave. The network of reciprocities extends from the village back to your base. You make sure that photographs and later publications, CDs and DVDs are sent back to the community. Perhaps you author a website with room in it for community contributions and the intention of ultimately handing it over to your hosts.⁴ Interactions gradually become less frequent, but years later you may find yourself writing a reference or receiving requests for assistance in, say,

⁴ See www.sukur.info. While few rural communities in Africa have access to the internet, computers that can read CDs and DVDs are becoming ever more common. Whole websites distributed on CDs and DVDs and locally copied can this achieve wide distribution on many parts of Africa.

completing a school or building a road. And that is even if you never return: a relationship that continues with multiple visits over decades is in every way richer, more academically productive and more likely to benefit the community that has contributed so much to your career (see Heckenberger 2009). Judy Sterner and I have just completed a paper that evaluates the benefits and costs to Sukur of its citation as a World Heritage Cultural Landscape.⁵ You can take the archaeologist out of the site but not the community out of the archaeologist. It's with you for life and, in my case, never more so than as I write. The Islamist Boko Haram insurrection (see <https://www.mandaras.info/InformationToShare.html>) has murderously disrupted the lives of Mandara montagnards in both Nigeria and Cameroon, and there is so very little I can do to help (but see www.bokoharamvictimsrelief.org).

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⁵ This is to appear in a volume edited by Peter Schmidt and Innocent Pikirayi that constitutes the outcome of a 'Workshop on Community Archaeology and Heritage Work in Africa' held at the University of Florida, Gainesville, in March 2014.