Fāida shenū? (What is the benefit?): A framework for evaluating the economic impacts of archaeological employment

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This paper[1] is called *fāida shenū?* (what is the benefit?) because this was the most common question that residents of Nile-side communities in Sudan asked about archaeology.

And what *is* the benefit of archaeology for these residents? Some insights from one case study area in Sudan are offered in this paper. Like many others, it argues that archaeologists should take questions like these seriously and investigate them in a systematic way. They must understand how their work intersects with urgent issues in local and national society and take steps to address problematic elements of their practices. However, rather than issue imperatives, this paper presents an analytical framework that can be applied by archaeologists to help reach such understandings.

From 2013 to 2016, ethnographic fieldwork was undertaken at three sites in Sudan's Nile Valley: (north-south) Sai Island in 2014, Dangeil in 2013 and 2014 and Bejrawiya in 2015 and 2016. Each season this author was hosted by the resident archaeological team[2] and welcomed by community residents, to all of whom sincere thanks are owed.

To study 'benefit' from as objective a viewpoint as possible, the investigation was approached as an 'impact evaluation'. The central questions were: what are the social and economic impacts of archaeology on these rural communities? What socio-cultural value do community residents assign to history derived from archaeological investigations (official archaeological history)? And what economic revenues do archaeologists' field practices generate for the residents' households and communities?

There was, and continues to be, a robust rationale for this study. In part this is because archaeology is such a large-scale phenomenon. Since the turn of the 20th century significant numbers of archaeological teams have undertaken seasonal fieldwork in Sudan's Nile Valley: over 60 between 1960 and 1969 and at least 40 in 2015 (Jakob and Ali 2011, 516; see the Qatar-Sudan Archaeological Project website, 'QSAP Sites'). Significant political events have also accelerated the need for critical reflection because they call into question the ethics of archaeological practice. The construction of the Merowe Dam and the expulsion of salvage archaeologists from sites in the Fourth Cataract in 2006-8 and the Fifth Cataract in 2012-13 (Hänsch 2012; Kleinitz and Näser 2013), are clearly two such events. The unprecedented donation by Qatar of $135m to Sudan archaeology in 2013, administered by QSAP, is another (Bradshaw 2015).[3] However, the most pressing factor in justifying this study was, and is, the expenditure upon archaeology amid the ongoing penury in rural Sudan, where *c.* 57.6% of the population live below the poverty line (World Bank 2011, 2) and where I/NGO assistance is largely unavailable.

Unlike in the United States, South America, and the rest of sub-Saharan Africa, there is no study quite like this in Sudan. This is surprising as the question of how 'local communities' and other 'publics' perceive official archaeological histories – newly positioned as social constructions rather than facts – has been gaining attention since the 1990s, when in the context of reflexive and interpretive 'social archaeology', 'anthropologies of archaeology' were being initiated at Çatalhöyük in Turkey (Shankland 1996). Moreover, scholars have since developed these into 'archaeological ethnographies' (Meskell 2005), 'ethnographies of archaeology' (Edgeworth 2006) and 'archaeological anthropologies' (Casteñeda and Matthews 2008), all of which examine the (dis)junctures between archaeological practices and the geo-political, social and economic contexts in which they operate. These authors share a broad methodological approach based upon using anthropological tools such as participant observation. The declared aims of most are to address archaeology's shortcomings by critiquing their own roles in the production and use of the past in the present, and to improve archaeology as a socially cohesive and ethical practice.

This paper is aligned with these approaches in subject, method, and aim, and contributes to them not only by providing insights from Sudan for the first time but also by making a special addition to our knowledge of archaeology's economic impacts, which has received particularly little attention. This paper will deal with research findings from Bejrawiya and the UCL Qatar archaeological team working there; findings from Dangeil and Sai Island will be presented in other papers.

The context

Bejrawiya is located in the Shendi Reach of the Nile Valley, on the east bank of the river, some 200km north of Khartoum (Plate 1). There are at least two major archaeological complexes in the area: Meroe Royal City (henceforth 'Meroe') and Meroe's associated pyramids. Both these sites date to the so-called Kushite Napatan and Meroitic period of Sudan's ancient pre-Islamic history (*c.* 850 BC to AD 350) and have attracted a large amount of archaeological attention over the past 100 years (e.g. Garstang *et al.* 1914; Reisner 1923; Shinnie

[1] This paper has been adapted from Chapter 6 Part 1 of the author's doctoral thesis (Bradshaw 2017) and the presentation delivered at the SARS colloquium in May 2018.

[2] Julia Budka's AcrossBorders team at Sai Island, Julie Anderson, Salah Mohamed Ahmed and Mahmoud Suliman Bashir's NCAM team at Dangeil, and Jane Humphris' UCL Qatar team in Bejrawiya.

[3] While vicissitudes in funding streams make it uncertain what the total funding bill will be, it will still be unusually high for archaeology. In March 2018, the figure was stated to be over $50m (*The Peninsula* 2018).

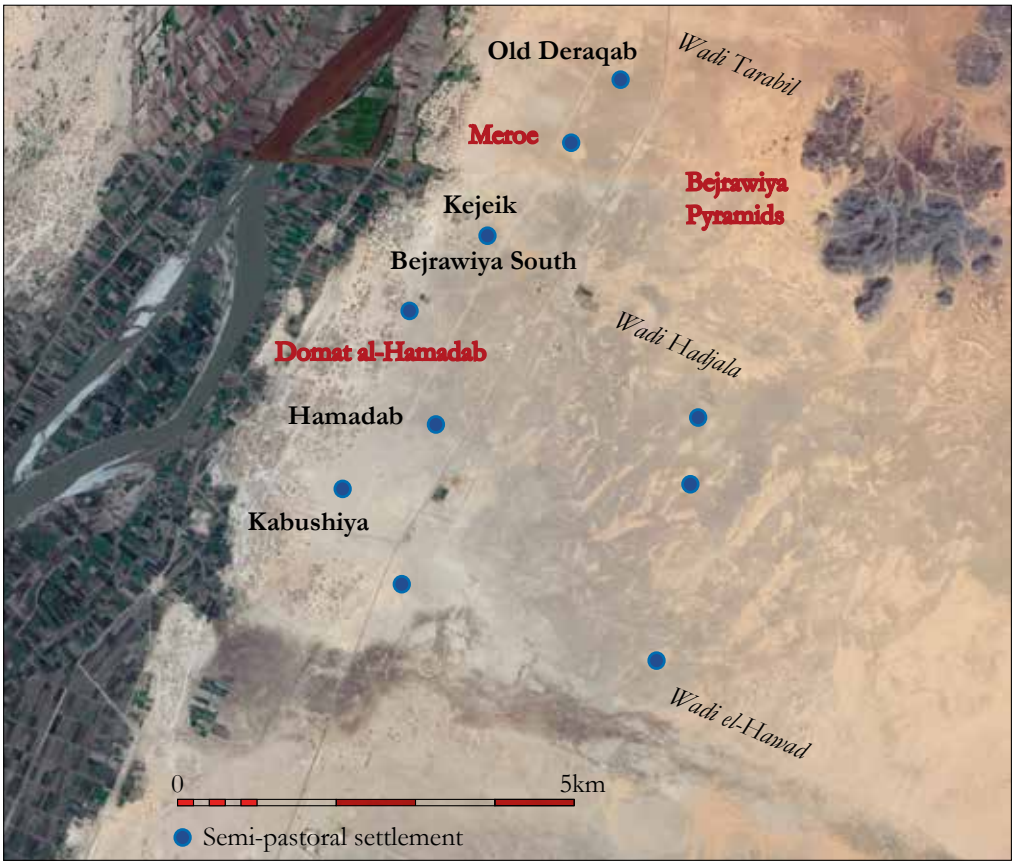

Plate 1. Map of Bejrawiya (satellite image: GoogleEarth).

1967; Hinkel 1992; Grzymski 2005; Riedel *et al.* 2017). As important historical monuments they were named in 2011 as part of the 'Island of Meroe', Sudan's second UNESCO World Heritage Site.

Such histories and monuments are assigned value not only by archaeologists and the largely Western public, but also by some Sudanese in Sudan and the diaspora who identify as part of the modern Nubian *gabāil*[4] (s. *gabīla*). The Nubians, particularly their elites and intelligentsia, have claimed such archaeology (*athār*) as physical evidence of their ancient heritage (*turâth*) and their indigeneity to the Nile Valley.[5] However in this region of Sudan, residents predominantly identify as Arabs of the Ja'aliyīn *gabīla*. They regard the Shendi Reach as their ancestral homeland (*dār*) and work as farmers and professionals, such as teachers and traders. There are many branches of the Ja'aliyīn, but when asked about their history, community historians ultimately trace their ancestry to al-'Abbas ibn 'Abd al-Muttalib, the uncle of the Prophet Muhammad and a member of the Quraysh, through Ibrahim Ibn Idris, known as Ibrahim Ja'al, and one of his descendants, Arman.[6]

In Bejrawiya there are three main Ja'alī villages (north-south): Old Deraqab, Kejeik and Bejrawiya South. Constrained by the river to the west, the Ja'aliyīn have been slowly outgrowing these core villages since at least the 1980s, and have now established off-shoot villages to the east. However, in moving eastwards the Ja'aliyīn have run up against groups of pastoralists who have settled on Bejrawiya's periphery over the past 40 years, many of whom self-identify as Arabs from the Manāsīr *gabāil* (from the north) and Hassaniyya *gabāil* (from the south west). Generally speaking, the Manāsīr are pastoralists or nomads, many of whom migrated with their herds from the volcanic fields of the northern Bayuda Desert.[7] Like the Ja'aliyīn, the Manāsīr claim descent from Abbas of the Quraysh through Ibrahim Ja'al. However, while the Ja'aliyīn ultimately trace ancestry through Arman, the Manāsīr assert ancestry through a descendant called Mansour. In contrast to both, the pastoral-nomadic Hassaniyya self-identify as part of the Kawāhla *gabīla*, who claim descent from Zubeir ibn el-Awwam of the Kusai of Arabia through a certain Kahil, and consider their homeland to stretch west from the White Nile into Kordofan. Both the Manāsīr and Hassaniyya were pushed out of their homes by desertification and other pressures on land and water, and moved to the Shendi Reach because of the small animals markets nearby and the broader link to animal trade routes that run north and east.

For everyone in Bejrawiya, life is hard. Insecurity is perpetuated by rapid population growth and a chronic lack of cultivable land and pasture (see papers in Gertel *et al.* 2014). Strain on farming land near the Nile to the west or along the wadis to the east is exacerbated by periodic government confiscations of private and customary spaces. Commercial or governmental agricultural projects and the state's long-term renting of land to foreign investors has disadvantaged pastoralists by occupying their former grazing lands and blocking their traditional migration routes to the east. Bejrawiya residents thus perceive themselves to be squeezed on all sides. They are further confronted with periodic shocks such as

[4] *Gabīla* is often translated as 'tribe', for example in Maliñski 2014. See Ahmed 2002 for a discussion of the concept and for reasons why this translation is problematic.

[5] Ethnographic data collected by the author at Sai Island and in London and Doha support this statement. For more about the construction of Nubian identities cf. Poeschke 1996.

[6] The veracity of the Nubian and Ja'aliyīn's ancestral claims is debatable, but presenting that dialogue is not the purpose of this paper.

[7] Not all Manāsīr are pastoralists and nomads; many are farmers that, before the construction of the Merowe Dam, lived on the banks of the Nile around the Fourth Cataract. It was some of these Manāsīr that expelled the archaeologists from the sites in 2006-8 (above).

floods and droughts, yet have little credit available to (re)invest nor state welfare to rely upon. The national unemployment rate was estimated to be 14.8% in 2012, rising to 20% and 24% for women and young adults respectively (IMF 2014, 19). Survival, and certainly prosperity, is based upon exploiting personal networks, livelihood diversification and remittances from family members working away. In River Nile State, 32% of the population live below the poverty line, defined in 2011 as USD1.9 per day or some USD693 per year. This figure rises above 40% in relation to the state's rural inhabitants. Politically, due in part to the divisive policies adopted by the colonial Anglo-Egyptian government (1899-1956), the present government with its modern Arab-Muslim identity has failed to unite the diverse population as a nation (Ahmed 2002) and the post-colonial state remains dysfunctional and ineffective (Salih 1999; Adar 2001). In such contexts, social units such as *gabāīl* assume a vital role in providing a basis for identity formation, key socio-economic services, and thus also mobilization and action (Bradshaw 2017, 93-132).

In these specific conditions, what are the social and economic impacts – and benefits – of archaeology on and for these communities?

The limited socio-cultural value of archaeology[8]

The first finding was that discourse about 'archaeology' or 'ancient history', 'Kush', 'Meroe', 'Napata' and 'World Heritage' was largely absent in Bejrawiya, save for among some Ja'alī community elders, teachers and leaders. Residents generally did not talk about archaeology at all, and certainly did not use these terms. When asked, most Ja'alī, Mansūrī and Hassanī respondents referred to the sites vaguely as the 'area'(*muntiga*) or 'station' (*mungīf*), a 'thing' (*hāja*). When asked to present their own heritage, the material culture displayed included wells (*bi'r*), wooden ploughs (*mihrāth*) and waterwheels (*sagiyya*), animal skin sacks (*girba*, *sazin*) and gourds (*gara'*). Finally, when telling their history (*tarikh*), elders and community leaders centralised narratives that emphasized their Arab and Muslim identity; they vigorously rejected the suggestion that there might be any connection between them and pre-Islamic people that lived in Bejrawiya before them.

This does not mean the archaeological sites are devoid of cultural meaning to Bejrawiya's residents. Indeed like many residents of the Nile Valley, some of the Ja'aliyīn connect them to beliefs about spirits (*jinn*), gold (*dhahab*, also see Osman (1992)) and women's rituals (especially the *zār* 'cult'). Meroe, with its acacia providing shade for families, and the pyramids providing space for crowds, are also used as social venues for the joint festivals on New Year's and Independence Day. However, these connections seem largely confined to the older generations of the Ja'aliyīn (*c.* 50 years old +) and the Ja'aliyīn who live or have lived in the immediate vicinity of the sites. Moreover for a number of reasons, such as periodic site management activities, these connections are diminishing fast. The cultural value attributed to archaeology is, therefore, even more limited for the Manāsīr and Hassaniyya, many of whom have not grown up around the sites, and whose conceptions of heritage are often connected with pastoral material cultures, not static stone and mud-brick monuments.

In the present context, then, most people who live around archaeological sites in Bejrawiya do not identify with the idea of 'Kushite' or 'Napatan' or 'Meroitic' archaeology. Instead they identify by *gabīla* and by other identities that provide them with the ontological and economic support they need in the absence of the nation-state, and naturally place greatest value upon their own histories and heritages. Under these specific socio-economic and political conditions regardless of the 'truth' of these historical constructions, archaeology (*athâr*) is not heritage (*turâth*), and it does not (and cannot) serve the cultural needs of – or benefit – Bejrawiya's diverse residents.[9] Indeed as Trigger (1994, 345) predicted almost a quarter of a century ago, 'the time when the findings of archaeology will be of interest to most Sudanese seems far off.'

Changing focus: what is the benefit?

The finding above has important implications for the question of archaeology's benefit. In short, and as Smith (2006) also notes, 'heritage' is a value that is actively ascribed, not automatically assigned. In the case of archaeological sites, if residents choose to embrace them as part of their heritage, then they are also more likely to view the sites' investigation by archaeologists as a benefit and their neglect viewed as a detriment. However, if the residents do not attribute meaning to the sites in this way, then they may be less likely to interpret archaeology's historical pursuits as a benefit, and have alternative and/or competing measures of its value.

Of course there are many meanings of 'benefit', and archaeology is measured and valued in a variety of different ways (Lafrenz-Samuels 2008; Burtenshaw 2014). However in Bejrawiya, the residents seemed to measure archaeology's benefit primarily in economic terms. Its perceived failure to provide economic dividends was introduced into most conversations, regardless of the residents' age, *gabīla* or livelihood. Ja'alī farmers were often quick to describe archaeology's failure to provide their village with much-needed services; Mansūrī and Hassanī pastoralists were keen to secure the economic support of archaeologists, particularly given their struggles in the face of governmental and foreign agricultural development schemes. In the absence of services and support, the residents asked, what is the economic impact of archaeology?

Few scholars have tried to answer this question (Gould and Burtenshaw 2014). Those that have tended to focus on tourism, such as Brodie (2010, 273), who showed that in 2003 the archaeological tourist circuit in north-eastern Peru attracted 69,000 foreign tourists. Spending an average of USD119 per day for an average of five days, they provided *c.* USD40

[8] This section is a very brief overview of Chapter 5 of the author's doctoral thesis (Bradshaw 2017, 136-182).

[9] Analyses of data from Dangeil suggests that a similar conclusion could be drawn there, though this awaits further study.

million to the economy. Such success perhaps explains why tourism has figured so heavily in archaeologists' plans in Sudan. Indeed the emphasis on tourism development grew after Meroe and other sites were granted UNESCO World Heritage status in 2011, and gained further momentum in 2013 when over 40 international teams received funding from QSAP, which included a mandate to develop tourism.

However, unlike in Peru, tourism in Sudan has stimulated no such economic impact. Even in 2011, the UNESCO Nomination File (Sudan's application for World Heritage status) describes not only the lack of infrastructure but also the challenges to the meaningful trickle down of existing tourism revenue (El-Masri 2010, 162, 182, 198, 204). Although archaeology is under-funded worldwide, the disjuncture between Sudan's ancient archaeology and the central government's vision of the modern Arab-Muslim state means that the budget allocated to NCAM is certainly not enough to support tourism development. Bejrawiya is one of the most visited archaeological areas in the country, yet residents pointedly described tourism as an 'overdue' prospect, still an aspiration rather than a reality. This was one of the few topics all residents agreed upon, including the traders who work at the sites (Plate 2), and corroborates the author's own

Plate 2. Traders at the pyramids, November 2015 (photo: R. Bradshaw).

long-term observations since 2011. Looking ahead, political realities, the perceived lack of security and the real lack of infrastructure suggests that for the foreseeable future, the economic impact of the tourism industry will be negligible.

Archaeologists have also studied 'looting' as an activity that produces economic dividends for local communities. Studies of the legal antiquities trade have shown the significant financial impact of such activities, in some cases even discovering that 'one major find can provide the equivalent of a family's annual income' (Hollowell 2006, 75). Regarding illegal digging, profound moral arguments have also been made about looting being part of a broader fight to achieve 'economic justice' in contexts where corruption is common (*ibid*, also see notes in Brodie 2010, 262-3). While the financial impact of looting sites in Sudan seems limited, and few objects are circulating in the market (see the British Museum's 'Circulating Artefacts' project website), it would nevertheless be wise to assume that looting provides worthwhile economic benefits for some households in Sudan, despite the great risk it poses, even if this conclusion cannot be quantified.

The economic impact of site management activities upon land holdings and yields has been far less studied than either tourism or looting, yet these activities are critical considering the insecurity felt by residents vis-à-vis the loss of their land as mentioned above. Gomes (2006), for example, was 'removed' from a community in Brazil's Amazon rainforest, on the periphery of the pre-colonial Indian chiefdom of Santarém (AD 1000-1500). It was only later she understood that her teams' excavations – in and around private and customary landscapes – were dispossessing residents of their ancestral land and livelihood. Shankland (1996; 1999) also reflected upon the unceremonious erection of fences around archaeological sites in Turkey, although, like Gomes, he leaves the question of these barriers' economic impacts unanswered, so the precise financial impact of such management activities is unclear. In Sudan, while many teams are required by NCAM and QSAP to expand archaeology's economic benefit via improved site management and the construction of information centres, the author's research in Bejrawiya suggests that these activities may have the opposite effect of that intended (Bradshaw 2017, 217-236).

The most obvious line of enquiry about archaeology's economic impact, and possible benefits is, therefore, about employment on excavations (Plate 3). It is a long-standing practice across the globe, and is also important to consider in the context of high unemployment (above). Yet even this is under-studied, and there are shortcomings in the two key investigations available. Comparing the archaeological wage

Plate 3. UCL Qatar excavation employees, April 2016 (photo: T. Scheibner).

with non-archaeological wages, and the official minimum wage, Gillot (2010) concluded that archaeological employment has a positive economic impact on the community of Afamia in Syria. However, Gillot used only two quantitative metrics and failed to note the conditions of the wider labour market nor the value of archaeological employment as an option for those who take such jobs. In contrast to Gillot, Shankland concludes that 'the money paid to [residents near Çatalhöyük] [by the archaeologists] represents only a tiny proportion of [the village's] overall economy' (Shankland 1999, 143). Unfortunately his attention to this topic is cursory and he does not offer financial calculations to substantiate his claim.

Of these four potential paths to investigating archaeology's economic impact, the impact of site management and archaeological employment were explored in this author's doctoral thesis. Of these two, the results of the examination into employment are presented in this paper.

A framework for evaluating the economic impact of archaeological employment

The question of how to objectively evaluate the economic impact of archaeological employment on excavations[10] proved difficult with no pre-existing framework available, no relevant archaeological legislation, nor any guidelines to inform such activities. Like academic opinion above, residents' opinions were divided and only provided subjective valuations. Broadly speaking, residents who did not have jobs with the archaeologists deemed archaeology to be beneficial only to those working as, or related to, an archaeological employee; thus, they regarded themselves to be non-recipients of archaeology's economic benefit. Yet one resident, who worked with Peter Shinnie (in the 1970s) and Friedrich Hinkel (in the 1990s), and who had three nephews employed in archaeological teams, responded 'Nothing!' upon being asked what economic impact archaeological wages have had for him. A UCL Qatar employee went further, saying, 'we want to deliver this message [to the archaeologists]: the people here don't get *fāida* [from archaeology].'[11]

Suitable quantitative metrics were also hard to devise because employment records are private. However the UCL Qatar project director explained the basic wage structure and supported the author's request to gather data via semi-structured interviews with 11 excavation employees in February 2015.[12] Hurdles remained: relating earnings more specifically to total household incomes in Bejrawiya was also hampered by the paucity and unreliability of official data. Nevertheless, after a number of attempts, a framework for evaluating the impact of archaeological wages on individuals, households and communities was developed.

The framework is based upon a number of quantitative and qualitative metrics, which can be broken down into three series of calculations and questions (Table 1). The first series, of four questions (1-4), establishes the gross revenue of archaeological employment on excavations:

What is the basic daily wage given to employees in local currency and US dollars (USD) each season?
How many days has each season lasted?
How many residents[13] are receiving this wage (being employed) each season, and each season on average?
What is the total number of seasons each employee has been employed? Which individuals are being hired most frequently?

These questions, when answered, should deliver an accurate picture of how many people in the locality are receiving, and how much they are receiving, from archaeologists on a daily, weekly, seasonal and, if extrapolated, an annual basis.

(1) In Bejrawiya, in 2015-16, the UCL Qatar employees received a basic wage of SDG60 per six-hour workday (USD9.8 at the average official exchange rate recorded between November 2015 and March 2016).
(2) The length of each season was slightly different (see below).
(3) Since 2013 UCL Qatar has employed 35 different men, although the number employed each season varied from 11 to 18, averaging 15 men per season.
(4) The nature of the employee group has changed over time, but from late 2014/early 2015 to 2016, 16 men worked for three seasons or more, signaling the annual re-hiring of a regular working group (see footnote 12).

Over 35 days in November-December 2015, 16 employees earned a collective total of SDG30,200 (USD4,950.80) (Table 2). On an individual basis, employees earned from SDG720 (USD118) to SDG2,260 (USD370.50). The average individual earning was SDG1,887.50 (USD309.40).

Over 18 days in March 2016, 15 employees collectively

[10] There are usually other jobs on offer to residents from the archaeologists, such as domestic help in dig houses (e.g. cooking and cleaning) or as off-site archaeological assistants. Occasionally these are taken up by women, but most jobs are done by men. Other members of the community can also be hired (e.g. as builders), and NCAM offers a few permanent jobs in site protection, such as with the Tourism Police or as archaeological site guards. These deserve attention as they generate revenue, but are outside the scope of this study. The same can be said of the archaeological team's seasonal expenditure on renting houses, buying equipment and materials for archaeological work purchased from Sudanese vendors, as well as consumable items purchased from the local markets. A relevant discussion of these expenses can be found in Boytner (2014, 274), although this author is dubious about his conclusion that archaeologists 'do [economic] good' by simply 'doing [archaeological] research'.

[11] Everyone whose testimony is presented here gave their informed consent to be involved in this research.

[12] These interviews morphed into longer conversations and continued independently into the winter 2015 and the 2016 seasons when the author was working as Community Engagement Team Leader with UCL Qatar (Humphris and Bradshaw 2017; Humphris *et al.* forth.), and thus were not the sole source of ethnographic data used in this research.

[13] Because of the manual work involved, archaeologists in Sudan usually employ male, not female, adult residents (aged over 18).

Table 1. A framework for evaluating the economic impact of archaeological employment.

Gross Revenue	
1	What is the basic daily wage given to employees in local currency and US dollars (USD) each season?
2	How many days has each season lasted?
3	How many residents are receiving this wage (being employed) each season, and each season on average?
4	What is the total number of seasons each employee has been employed? Which individuals are being hired most frequently?
Real Terms Impact	
5	How many households is the archaeological wage contributing to? What proportion is this number of the total number of households in the community?
6	How does the wage compare with the official minimum wage?
7	How does the wage compare with annual rural household consumption?
8	How does the wage compare with other, non-archaeological wage labour occupations?
9	Has the wage kept pace with inflation?
10	Have wages increased in line with the depreciation of the local currency?
Contextual Factors	
11	What size are the employees' households relative to the national average?
12	What is the average number of individuals dependent upon each employee (the dependency ratio)?
13	What are the non-financial benefits of a job in archaeological employment? (timing of wages, proximity to home, safety etc.)
14	How many other teams are working in the community?
15	For how long has work been consistently or periodically on offer in the community?

Table 2. Total and average earnings for UCL Qatar employees, November to December 2015 and March 2016.

	2nd Nov. – 6th Dec. 2015; 16 employees	**3rd Mar. – 20th Mar. 2016**; 15 employees	**2nd Nov. 2015 – 20th Mar. 2016**; 12 employees
Total earnings (SDG)	30,200.00	17,195.00	36,510.00
Total earnings (USD)	4,950.80	2,729.40	5,985.25
Average earnings/employee (SDG)	1,887.50	1,146.30	3,204.50
Average earnings/employee (USD)	309.40	187.90	525.30

earned a total of SDG17,195 (USD2,729.40). Individually, each employee earned from SDG360 (USD59) to SDG1,385 (USD227) from the work they did for the project. The average individual earning was SDG1146.30 (USD187.90).

The 12 UCL Qatar employees who were employed during both periods (for 53 days over the five-month period from 2nd November 2015 to 20th March 2016) earned a total of SDG36,510 (USD5,985.25). Individual combined earnings ranged from SDG1,260 (USD206.60) to SDG3,525 (USD577.90). The average total individual earning for these 12 employees was SDG 3,042.50 (USD498.77). Excluding one individual who earned only SDG1,260 (USD206.60 – because he worked far less than the other 11 employees – the average pay for those who were employed over the 53-day period rises to SDG3,204.50 (USD525.30).

The second series, made up of six questions (5-10), was designed to respond to queries about what impact these wages have in real terms, for the employees and their households, and for Bejrawiya:

How many households is the archaeological wage contributing to? What proportion is this number of the total number of households in the community?

How does the wage compare with the official minimum wage?

How does the wage compare with annual rural household consumption?

How does the wage compare with other, non-archaeological wage labour occupations?

Has the wage kept pace with inflation?

Have wages increased in line with the depreciation of the local currency?

(5) In Bejrawiya, wages earned from UCL Qatar have an economic impact beyond the individual employee because they augment the income of their household. Since 2013, income from seasonal wage employment generated by the archaeological activities of UCL Qatar has, therefore, directly benefited at least 35, or 7.14%, of the *c* .490 households in the area.

(6) This is a small percentage, but quantitative data demonstrate that the archaeological work paid well relative to the official minimum wage, which was SDG5,100 (USD894.70) per year in 2015-16. A 53-day period (e.g. that spanning between November 2015 and March 2016) thus earned employees an average of 60% of the annual minimum wage. The highest paid employee (SDG3,525) earned 69% over these 53-days alone; even the lowest paid (SDG1,260) earned 24.7% during the same period.

(7) Furthermore, if average annual total rural household consumption was, in early 2017, *c.* SDG7,680 (USD1,163.60) at the national level, and assuming household consumption in line with the national average for rural areas, the average earnings of UCL Qatar employees in the 53-day period between November 2015 and March 2016 equated to 39% of annual rural household consumption. In other words, for UCL Qatar employees in Bejrawiya, earnings from less than two months of archaeological employment alone could sustain household consumption for approximately five months of the year.

(8) However, the hourly archaeological wage is low compared with other non-archaeological wages, such as planting and harvesting crops on agricultural schemes, and gold mining: a notoriously dangerous and often a disappointing endeavour, but one that can potentially earn a man over double the archaeological wage per week. As one man said when showing me a piece of gold he prizes, '*This* is benefit.' (Plate 4).

Plate 4. A Mansūri man displays his idea of 'benefit': gold, November 2015.

(9) Furthermore the wages barely kept pace with inflation, which was 30%, 37%, 17% and 19% in 2013, 2014, 2015 and 2016 respectively (World Bank 2017), suggesting a 10% decline in real wages during this period, despite the nominal increase in wages from SDG30 in 2013 to SDG50 in early 2014, and then SDG60 in late 2015.

(10) This is extremely worrying, as budgets in local currency would have expanded by 45% over the period 2013-16 solely due to the devaluation of the SDG (assuming that the official exchange rate was used as the method of currency conversion).

The quantitative evidence shows that archaeological employment has a significant economic impact, but the question remains about whether it is a *benefit* of archaeology. The archaeological wage given by UCL Qatar to its employees is demonstrably positive in some ways, but also has some major deficiencies: the employees' claim that archaeological employment pays poorly is clearly not unfounded and should not have been ignored for so long.

The conclusion about whether archaeological employment is positive (*beneficial*) or negative for employees' households and the community at large can, therefore, be informed by less-quantifiable but nevertheless important qualifying factors. This is the third and final set of questions (11-15):

What size are the employees' households relative to the national average?

What is the average number of individuals dependent upon each employee (the dependency ratio)?

What are the non-financial benefits of a job in archaeological employment? (timing of wages, proximity to home, safety etc.).

How many other teams are working in the community?

For how long has work been consistently or periodically on offer in the community?

(11) Demographic and employment data abstracted from the interviews conducted with 11 UCL Qatar employees in February 2015 show that they all contribute to large households, just under nine on average, which is much higher than the national average of 6.1 (CBS 2010, 14).

(12) Their dependency ratio is also high: there are on average 5.7 persons of dependent age (under 15 and over 65 years) for every resident of working age; the national average ratio is 4:1 (UNFPA 2012).

(13) Qualitative data also suggest that a job in archaeological employment was seen by employees and their household members to have redeeming non-financial qualities: it is safe, close to home, asks for only short hours, pays in much-needed cash, and is relatively reliable. Jobs also grant each employee a certain amount of status and socio-economic influence by virtue of their proximity to archaeologists (and thus others in powerful positions), the privilege of having first refusal for additional paid work, and, further, being more likely to have other relatives in archaeological employment.[14] Importantly for the Ja'alī farmers, archaeological employment is on offer twice during the 'annual deficit period', when farming households are most economically strained and obliged to seek credit: the archaeologists typically arrive in October/November, before the start of the period, and once again in the New Year, until March, at the end. Data also suggest that the cash earned in March is particularly advantageous to those households that have taken out loans, since the government usually requires households to repay their loan during the succeeding 'surplus' period (April-July). Archaeological employment thus figures in both farming

[14] The complex social impacts of archeological employment in Bejrawiya – for example the conflict caused by archaeologists' annual re-hiring of a regular working group who become the sole recipients of this status and socio-economic influence – are examined in Chapter 6 Part II of the author's doctoral thesis. The results show, for example, that between November 2015 and March 2016, 70% of archaeological income went to 2% of the local population, and that this exacerbated pre-existing social tensions. Happily, collaboration between this author and the UCL Qatar project director has resolved this problem as much as possible.

and pastoral households' strategy of off-farm livelihood diversification in a tough and variable economic climate in which most households are severely pressed financially and some endure periods with no non-agricultural and non-pastoral income at all (CBS 2010, 29).

(14) The economic impact of archaeological wages upon the community is hard to quantify above and beyond the assumption that wages impact the community via the employees' and their household's day-to-day expenditure on goods and services. However in Bejrawiya more precise impacts are visible because there are – and have always been – an above-average number of archeological projects in the area. In 2015-16, at least five teams were active in and around Meroe, albeit to different degrees,[15] and the Qatar Mission to the Pyramids of Sudan (QMPS), a multi-national team based at the pyramids, employed with and via NCAM at least 40 men from the area to conduct excavations in late 2015 and in the years since. Data generously provided by the director of another project *c.* 3km to the south of Meroe (DAI Domat al-Hamadab) show that in 2013-14, the mission employed 30 residents and, by common agreement, paid the same wage as UCL Qatar.[16] Some of these employees have also been working with one or other of the archaeological teams referred to for many years now.

(15) Indeed the sheer length of time residents have been employed by archaeologists, which is over 100 years on and off, is also significant: for example, John Garstang hired up to 500 employees for his excavations at Meroe (Garstang *et al.* 1914, 46), and Peter Shinnie hired 100 men to work for him as he excavated at Meroe in 1971 (pers. comm. John Robertson (Shinnie's colleague), October 2016).

Summary

On aggregate, the wages earned from the seasonal work offered by UCL Qatar has a positive economic impact upon the broader community of Bejrawiya as well as upon the households of employees. Although a modest proportion of the community's households are involved in archaeological employment (7.14% between 2013 and 2016), the above-average household size of the employees and their high dependency ratios mean that the earnings from archaeology go further than they might do elsewhere. Furthermore, undertaking archaeological employment provides both pastoralists and farmers with an opportunity to diversify their livelihoods and income streams to minimise insecurity in an environment of scarcity and economic uncertainty. Archaeological employment provides not only a wage but also carries important non-monetary benefits, including proximity to home; safety and regularity; payments in cash, which is scarce and which arrives at a convenient point in the capital cycle; and, perhaps most importantly, unlike other jobs in the region, offers the employees new channels through which social, economic and political networks can be expanded. Given the above-average number of archaeological teams that work in and around Bejrawiya, and the years over which archaeological employment has been on offer, these findings can be scaled up. Perhaps most impressively, though, close examination of wage data also suggested that earnings from archaeological work could be very significant for the individuals involved; in just 53 working days over the November 2015 to March 2016 period, the UCL Qatar excavation employees earned on average 60% of the annual official minimum wage; or, 39% of average annual rural household consumption.

However, while these quantitative data clearly show the positive economic impact of archaeology, qualitative data provided by UCL Qatar employees showed they were largely of the opinion that their compensation was low compared with other wage labour occupations. The evidence presented in this paper has substantiated this perception, at least in part, and suggests that it is related to the impact of high inflation in recent years, which includes an approximate 10% decline in real wages for archaeological work from 2013 to 2015. This is absolutely unacceptable. Alongside a general reform in how wages are calculated, and in addition to seasonal wage recalibration, project directors should, therefore, carefully consider the economic context when calculating the seasonal wage. For example they should ascertain and respond to data on local minimum wages for daily work, and update these figures each season; inflation rates and subsidy cutbacks on key staples such as bread and fuel should also be taken into account. While the lack of formal or official guidelines available to help project directors do this is regrettable, it provides no excuse for the continuation of exploitative work practices.

Conclusion

This paper has sought to provide substantive answers to the important questions of archaeology's impact and perceived benefit, and to present a transferable framework that archaeologists can use to gauge the value and impact of archaeological work in both quantitative and qualitative terms. The strength of such a framework lies in its placement of archaeological employment in its socio-economic context, and takes into account seemingly mundane characteristics, such as the seasonal timing of its availability and the form of payment. The framework has already been utlilised by UCL Qatar to raise wages and inform its employment strategy with great effect, and it is hoped that archaeologists working elsewhere can also use it to measure the economic impact they have, so that the powerful effects of what we do can be properly understood and problematic issues addressed wherever possible.

[15] In 2015-16, and apart from UCL Qatar, teams at Meroe included a team from the German Archaeological Institute (DAI) and Sudanese teams from the University of Khartoum, sometimes in collaboration with the Royal Ontario Museum, Toronto, Canada.

[16] This agreement also includes the other archaeological teams at Meroe and the pyramids, plus those farther afield at Muweis and el-Hassa.

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