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Pastoralism in the Wadi Abu Dom *Sudan* Non-sedentary economical strategies in the Central Bayuda

Tim Karberg & Angelika Lohwasser¹

مستخلص:

منذ عام 2009 ، وثقت المسوحات الاثرية بوادي أبو دوم العديد من السجلات الأثرية المرتبطة بمفاهيم نمط الحياة المتنقلة والرعوية. على الأقل منذ "فترة المدافن المترسة" الإقليمية (التي تتطابق مع العصر المرؤوية بوادي النيل) ، يبدو أن الرعي قد لعب دوراً رئيسياً في اقتصاد بيوضة. على الهامش بين الفترة القديمة المتأخرة والمتغير المحلي للثقافة في العصور الوسطى ، تم استبدال الماشية باعتبارها الثروة الحيوانية المرموقة بالجمال. على المدى القصير وكذلك المستوى المتوسط ، قد تكون الاقتصادات الرعوية في بيوضة جزء من النظم الاقتصادية المتكاملة مع تفاعلات متعددة مع ثقافات واحات الصحراء ، وربما حتى وادي النيل. على الرغم من آليات التبادل الاقتصادي هذه ، وبالوسائل الثقافية والسياسية ، يبدو أن الرعاة في بيوضة لم يرتبطوا إلا بشكل وثيق فقط بوادي النيل في العصور القديمة والعصور الوسطى ، مما شكل ثقافة "بيوضة" مستقلة إلى حد ما.

1. Abstract

Since 2009, the Wadi Abu Dom Itinerary survey documented several archaeological records connected to mobile and pastoral lifestyle concepts. At least since the regional 'terrace tumuli period' (which corresponds to the Meroitic era of the Nile valley), pastoralism seems to have played a major role for the economy of the Bayuda. At the fringe between late antiquity and the local variant of the medieval culture, cattle as the most prestigious livestock were replaced by camels. On a short as well as a middle range level, the pastoral economies of the Bayuda might have been parts of integrated economical systems with multifold interactions with desert oasis cultures, and probably even the Nile valley. Despite these economic exchange mechanisms, by cultural and political means the pastoralists of the Bayuda seem to have been only loosely connected to the Nile valley based states of antiquity and medieval times, forming a more or less independent 'Bayuda culture'.

¹ Wadi Abu Dom mission (Muenster University)

2. Introduction

When we had the honor and pleasure to work with the late Khider Abdelkarim Ahmed – in the field in Sudan as well as during his stay in Berlin as a guest professor at Humboldt University – we often discussed the role of non-sedentary segments of past and present societies. Since 2009 we cooperated in the ethno-archaeological aspect of our research in the Bayuda. During the early years of the Wadi Abu Dom Itinerary research project, he provided us with his expertise when we tried to interpret the vague remains of non-sedentary lifestyle and pastoral economies within the archaeological record properly.

We deeply regret that he was not able to see the results of the archaeological survey in the Wadi Abu Dom, as it was completed in 2016, and its supplement by archaeological excavations at the settlement of El Tuweina since then. We hope that this contribution would have met his interests.

Within the Wadi Abu Dom, various remains of different patterns of mobility and its networks are visible in the archaeological as well as the ethnographical record.² At the beginning of the project, one of its main aims was the reconstruction of the so called ‘King’s road’ of the Napatan and Meroitic empire. After finishing the analysis of path networks and other mobility remains in the archaeological record visible in the landscape, it turned out that the Wadi Abu Dom and its immediate vicinity was not used by a single, concentrated long-distance road, but merely by a network of crisscrossing paths. The mobility patterns documented by such an infrastructure seem not to correlate with the idea of long-distance communication. We interpret them as remains of short to middle range traffic with the main goal of providing mobility within the area (and not only traversing it, as it would be the case with long-ranged roads). This short to middle range and network shaped traffic and communication patterns indicate that they were not determined only by trade, but by general mobile lifestyles and economic strategies, as found in an economy based at least partly on pastoralism.

Pastoral elements of the regional economy are documented in the archaeological record mainly by three different categories of archaeological features: camps sites, path remains, and settlement structures with remains of animal husbandry within the find material. Additionally, the general distribution patterns of

² For a general discussion of the traffic patterns within the Wadi Abu Dom, cf. (Karberg & Lohwasser, in print, pp. 102-104).

archaeological sites, especially graveyards, can also indicate mobile or sedentary lifestyles.

3. Camp sites

The major archaeological source for the reconstruction of mobile pastoral economies are remains of camp sites and overnight stops (Karberg & Lohwasser, in print, pp. 32-38). At the Wadi Abu Dom, two different types of these camp sites were found (Fig. 1): The first type consists of larger flat areas cleaned from stones with some ‘activity centers’ – mostly interpreted as fireplaces – and find concentrations within them.³ They are in most cases located at the banks of larger tributary khors to the Wadi Abu Dom in the hinterland, within some distance from the main wadi bed. Besides the generally indistinctive ceramics and other find material, they are not easy to date. Interestingly, this type of camp sites occurs quite often in the hinterland of the lower Wadi Abu Dom with its oases of El Rum and Ghazali, but declines rapidly east of Umm Beida. There – obviously in antiquity as well as in recent times – the landscape changes from the greener lower wadi dominated by a dense network of ground water wells to the much less fertile middle wadi. In the middle and upper Wadi Abu Dom, another type of camp sites dominates, which does almost never occur in the lower wadi: agglomerations of bed-shaped stone settings filled with gravel (Fig. 2). According to ethnoarchaeological investigations, they seem to have been used as sleeping facilities (Lohwasser, et al., 2015, pp. 116-117).⁴ In the upper Wadi Abu Dom east of Bir Merwa, they occur at camp sites as well as within long-term habitation sites. In the middle Wadi Abu Dom between Umm Beida and Bir Merwa, however, they are not associated with habitation structures at all, and thus have to be interpreted as camp sites and therefore records of mobile lifestyle concepts.

It remains unclear why in the different parts of the Wadi Abu Dom camp sites of mobile and therefore most presumably pastoral groups were organized and constructed in these different ways. According to our present knowledge, both types of camp installations seem not to differentiate chronologically from each other. Examples of both types were excavated exemplarily: Two ‘activity center camp sites’ as well as three ‘gravel bed camp sites’. In both cases, find material as well as radiocarbon samples date to the ‘box grave period’. Interestingly,

³ Similar camp sites have been investigated in other parts of the Middle East ethnologically and archaeologically; cf. (Saidel, 2001, pp. 153-155)

⁴ Cf. also (Tschernig & Shamsalola, in print)

earlier dates for camp sites did not show up in the trial excavations as well as the surface find assemblages investigated during the survey.⁵ Therefore, the differentiation between these types of camp sites must have had functional rather than chronological reasons. This could be connected with the observation that the ‘activity center camp sites’ of the lower Wadi Abu Dom mainly concentrate in the hinterland, while the ‘gravel bed camp sites’ are distributed much more homogeneously on the banks of the main wadi and its tributary khors: It can be assumed that the ‘activity center camp sites’ document a specific pastoral economic strategy which was intended to keep the direct interference with the main wadi bed and with its oasis agriculture at a minimum. The ‘gravel bed camp sites’, however, seem to document a society where pastoralism – and thus a mobile lifestyle – dominated the whole wadi area. At some spots which ecologically allowed some more sedentary strategies the transition between temporary camp sites and long-term habitation sites is much more fluent than in the lower Wadi Abu Dom. Obviously, the same types of lightweight architecture were used for both, and sedentarism as well as mobility were not categorically divided from each other. It seems more likely that typical patterns of a mobile and pastoral lifestyle were used as a basis, and improved for continued use whenever the ecological circumstances made a movement unnecessary for longer periods.

4. Path relics

Besides camp sites, paths are the second important cultural landscape element occurring in the Wadi Abu Dom which documents ancient patterns of mobility (Fig. 3). For reconstructing ancient mobility patterns, their chronological classification is rather important. Therefore, the fact that path remains are in most cases hard to date makes it difficult to use them as an archaeological source. Nevertheless, at least at some spots surface finds clearly associated with these paths allow some chronological interpretations. In these cases, most of the surface finds can be associated with the ‘box grave period’ which is the dating for most of the camp sites connected to mobility patterns based on pastoral economy as well. When combining the analysis of both archaeological categories, it seems even more clear that they document a specific pattern of a pastoral and mobile lifestyle in the Wadi Abu Dom chronologically assigned to the ‘box grave period’.

⁵ Which, of course, does not mean that earlier dating camp sites could explicitly be excluded.

5. Animal remains within settlement contexts

Besides these direct records of ancient mobility, there are also indirect indications for pastoral concepts or segments of economy. The most important of them are findings of animal remains within settlement contexts in the archaeological record.

Animal bones were archaeologically documented in the Wadi Abu Dom at various, very different archaeological sites. One of them is a settlement site consisting of agglomerations of round huts, partly connected with gravel beds, in the upper Wadi Abu Dom (Fig. 4). According to the general find material, especially the ceramics, it can be dated to the 'box grave period'. The architectural concept and layout of the habitat buildings resembles the lightweight architecture to be attributed to short-termed camp sites, but the construction techniques show that they were improved to meet the requirements of some more durable settlement: The fundamentals of round huts are stabilized by using a kind of double layer wall. The settlement was excavated in 2016. One interesting find was a rubbish pit close to the entrance of one of the round huts containing kitchen debris. It largely comprised from animal bones, mainly sheep and goat.⁶

The ecological circumstances of the direct vicinity show some indications of usable amounts of surface water during the time the settlement was in use. It was possible to carry rain-fed agriculture in the khor beds. Nevertheless, at the moment there are no hints for irrigation or other possibilities of stationary breeding of livestock in the region.⁷ For that reason, it must be assumed that livestock production was carried out on a pastoral basis. Any delimitations of land use visible at the surface – like optical or physical demarcations – are not preserved. The distribution patterns of different categories of archaeological features and finds do not support the idea of differentiated pastoral and agricultural land at this site. This might be due to the fact that agriculture – if it formed an integral part of the local subsistence at all – was so small in scale and dependent on the general pastoral economic strategy that the division of both activities was organized on a micro-social level and left no visible traces in the archaeological record.

Another settlement spot at the fringe between the middle and the upper Wadi Abu Dom is the large habitation site of El Tuweina. This building complex is

⁶ This is the result of a preliminary examination in the field; a detailed archaeo-zoological analysis is carried out at the moment.

⁷ Like ancient *Hafir* constructions as found in the Keraba and Butana; cf. (Scheibner, 2014)

rather unique in this area concerning its size as well as its layout and complexity (Eigner & Karberg, 2013). It dates to the late Meroitic period and shows characteristics of an elite residence. Several methods of food preparation were used here, including different types of barbeque (Fig. 5). Large amounts of animal bones were found, including goat and gazelle, but also significant amounts of cattle. Even regarding the fact that the area around Bir Merwa and El Tuweina is an ecologically favored zone until today and most presumably was also in antiquity (Karberg & Lohwasser, in print, pp. 92-93; Fig. 99) it is hard to imagine that the regional landscape was able to support larger amounts of cattle. In the Meroitic Keraba and Butana, cattle breeding was most presumably part of a highly integrated economy including pastoral and sedentary agricultural elements, feeding the cattle not only on natural grazing grounds but additionally on waste products of agriculture (Karberg, 2017). Such a mixed economy, as assumed for the Keraba at the same time as the settlement complex of El Tuweina was inhabited, would have relied on significant amounts of water. Water harvesting installations, like the *Hafirs* of the Butana and Keraba, would have been necessary for such an economic strategy (Scheibner, 2014). Natural grazing would have not been sufficient to support significant amounts of cattle on a pastoral basis (Schinkel, 1970, p. 209). *Hafirs* or other comparable water harvesting installations, as found abundantly in the Keraba in Meroitic times, are not documented at all in the archaeological record of the Wadi Abu Dom area (Karberg & Lohwasser, in print, p. 107).

At the other hand, even today small scale sorghum cultivation is practiced in the Bayuda only by rain-fed surface water without artificial water harvesting by pastoralist groups (Schinkel, 1970, p. 161). Even if the harvest of sorghum or other crops is rather small, it is not necessary the case that cattle breeding must have followed the same ideas of economic productivity as in modern societies. The social prestige of cattle keeping and consumption could have created incentives to follow strategies which – by means of modern agriculture – would be assumed “unproductive” (Herskovitz, 1926, p. 247).⁸ Rather small amounts of cattle – not enough for a significant role within the general economy, but sufficient to fulfill the requirements of the prestige of a small elite – could have been fed on natural grazing grounds of the wadi banks and watered from wells or natural pools of surface water.

⁸ But cf. also (Karberg, 2017, p. 114)

6. Distribution patterns of archaeological record

Besides the remains of material culture directly connected to mobile lifestyles, also other elements of the archaeological record can indicate at least indirectly their relation to the amount of mobility which was practiced during the time of their installation. This is especially true for the distribution of graves. In the middle Wadi Abu Dom these distribution patterns are distinctive: The graves of the so called 'ridge grave period' (tumuli, dome graves, and crevice graves usually dated contemporary to the Kerma and Napatan period (Karberg & Lohwasser, in print, pp. 56-59) are found in frequent, but small and homogeneously distributed clusters. From the beginning of the Meroitic period onwards, tumuli (now situated at the terraces of the main wadi and its tributary khors) cluster to few, but much larger cemeteries (Karberg & Lohwasser, in print, pp. 60-66). This observation continues during the medieval period (Karberg & Lohwasser, in print, pp. 66-70). This is, of course, no direct proof for agricultural or pastoral economic strategies during the different periods, but at least indirect indications for the general mobility of these societies. While the existence of small, but frequent cemeteries fit to a lesser amount of mobility, the few, large grave concentrations of later periods might be seen in connection with rather mobile lifestyles where the local population was used to larger distances.

In the lower and the upper Wadi Abu Dom, the distribution patterns of graves are less distinctive. In the lower wadi, also in the later periods smaller and more homogeneously distributed graveyards occur, probably connected to the still existing oases in this part of the Wadi Abu Dom, and therefore a stronger presence of sedentary segments of the society in later periods as well. In the upper Wadi Abu Dom, at the other hand, obviously very low population densities in all periods except the Medieval era makes it difficult to get diachronic results concerning the development of mobility and sedentarism.

7. Conclusions

Various patterns of pastoralism can be reconstructed from the archaeological material. They can be differentiated geographically as well as chronologically. First, it is rather obvious that the material culture connected with mobile strategies differs significantly between the lower Wadi Abu Dom and the parts of the wadi east of Umm Beida. In the lower Wadi Abu Dom with its oases, campsites of mobile and pastoral elements of the ancient population are situated in the hinterland, and indicate short-term (but nevertheless repeated) use. It seems that the pastoralism documented by these camp sites and their connected

path patterns was part of a tightly interconnected economical strategy with different land use patterns in the oases of the wadi bed and the hinterland. Interestingly, there are no obvious visible physical demarcations between agriculturally and pastorally used land. This might indicate that the social connections between people practicing pastoralism and agriculture were close enough that systems of immaterial social control were sufficient to moderate possible conflicts. This would have been the case when parts of the core families dwelling in the oases practiced pastoral strategies by driving livestock to the rangelands in order to make use of land resources that could not be irrigated.

In the middle and upper Wadi Abu Dom the archaeological record indicates more homogeneous land use patterns. Since no traces of oases or ancient water harvesting installations like *Hafirs* were found here, it seems that the general focus of the local economy was on pastoralism. Nevertheless, agriculture could also have been practiced on basic level if possible, but not necessarily connected with sedentary lifestyle.⁹ In both cases despite the structure and distribution patterns of the campsites, no cultural or even ethnic differentiation between pastoral and sedentary groups can be derived from the material culture in the archaeological record.

Another differentiation concerning pastoralism and mobile lifestyles can be drawn by chronological means. Interestingly, neither any of the ‘activity center campsites’ of the lower nor the ‘gravel bed campsites’ of the middle and upper Wadi Abu Dom can be dated clearly earlier than the Post-Meroitic period, mostly they belong into the medieval epoch. The development of new types of camp sites – most probably documenting also new pastoral strategies – at the fringe between late antiquity and the early middle ages might correspond with the regional introduction of the camel, which is in most cases dated more or less into the same chronological framework. Nevertheless, comparisons of the ancient material culture with subsistence strategies of the recent population as well as the analysis of animal bones from the archaeological record (i.e. the medieval settlement 12204) indicated that – besides camels – small livestock like goats also played an important economic role.

In earlier times, especially the (late) Meroitic period represented by the elite settlement at El Tuweina, pastoralism also seems to have played an important role as indicated by the amount of animal bones in the kitchen debris – but in

⁹ Similar structures with mobile social groups practicing integrated economies connecting pastoralism and small scale, rain fed agriculture were ethnologically documented in the Bayuda (Schinkel, 1970, p. 161) as well as the Butana (Akhtar-Schuster, 1995, p. 67).

this period, direct archaeological remains to be connected with pastoral strategies are still missing. In the middle Wadi Abu Dom, the distribution patterns of cemeteries might indicate a change from sedentary to more mobile lifestyles before the beginning of the Meroitic era. This could correspond to the general idea that pastoral animal husbandry as a specific economic strategy developed in central Sudan during the first millennium BC (Brass, 2015, p. 258).

Additionally, the mixture of livestock in the economy of this period, especially the role of cattle breeding, is still unclear. The integration of the 'Bayuda culture' into the northeast African 'cattle complex' cultures as already assumed for the hinterland cultures of the Meroitic Keraba (cf. (Karberg, 2017)) seems possible, but this assumption needs more research data for future verification or falsification.

Besides the reconstruction of pastoral elements in the ancient societies during different periods, also the role of mobile elements of the ancient population in long distance communication is another aspect of our research in the Wadi Abu Dom. At the beginning of 'Wadi Abu Dom Itinerary' project in 2009, the search for the so called Napatan and Meroitic 'king's road' was one of its main aims (Lohwasser, 2009, pp. 103-105). During the survey, it turned out that at least no direct installations to be expected at such a royal road – like caravanseries, hydremata, fortified sites, or temples – were found along the course of the Wadi Abu Dom (Karberg & Lohwasser, in print, pp. 102-103). But this does not necessarily mean that the wadi did not play any role in long distance communication. If these communication patterns are not understood as a linear trunk road, but as a network shaped system, the mobile elements of the indigenous population could have functioned as experts for trade and transport. Therefore, long distance communication in such a scenario would have been not a direct, but an indirect one. Analogies for such indirect trade networks can be found, for example, in Roman North Africa (Law, 1967, pp. 192-193). For these economical concepts, recent research points out that the expertise of mobile local population elements for long distance trade should not interpreted as an independent enterprise besides a pastoral basis of the subsistence economy, but indeed as a fully integrated economical system where direct subsistence production, external exchange of surplus production of pastoral goods, and an integration of foreign products into such exchange systems are closely connected to each other (Scheele, 2017, pp. 58-60).

If the mobile population of the ancient Bayuda practiced similar economical strategies as the inhabitants of the deserts of Roman North Africa, the question arises which products were parts of the external exchange processes. Since in the graves and settlements excavated in the Wadi Abu Dom so far no significant amount of products was found that were clearly imported, they can have been only consumables or organic material, not visible in the archaeological context. The products of the ancient exchange networks in the Western Sahara were salt, but also grain, dates, and pastoral products (Scheele, 2017, pp. 57-58). A significant amount of salt as trade good along the Wadi Abu Dom seems rather unlikely, but dates, grain and pastoral products could have been exchanged between the oasis dwellers of the lower wadi and the pastoral groups of the middle wadi. Especially in the medieval period, also the upper wadi could have been incorporated into these exchange networks. Until now, no traces of the exchange of larger amounts of such consumable products were found in archaeological contexts. Some room structures at the settlement complex of El Tuweina were earlier interpreted as storage rooms (Eigner & Karberg, 2013, pp. 56-57), but according to recent excavations, they seem to have been used as living quarters.

Therefore, mobile and pastoral components of the ancient economy in the area of the Wadi Abu Dom seem to have been part of highly integrated micro- and macro-economic concepts. They included tight interconnections between agricultural and pastoral production where irrigation or rain-fed agriculture was possible. Additionally, we reconstruct exchange processes of pastoral and agricultural products on short-range level (i.e. between independent pastoral groups and groups practicing pastoral-agricultural mix economy) as well as middle-range level (i.e. as far as into the Nile valley). The role of product exchange especially over middle ranges need further investigation, for example by archaeo-botanical analyses, but the actual survey and excavation data already indicate the importance of changing mobile-pastoral lifestyle patterns in the Wadi Abu Dom as part of a highly integrated, mutually interdependent cultural and economic system.

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Figures

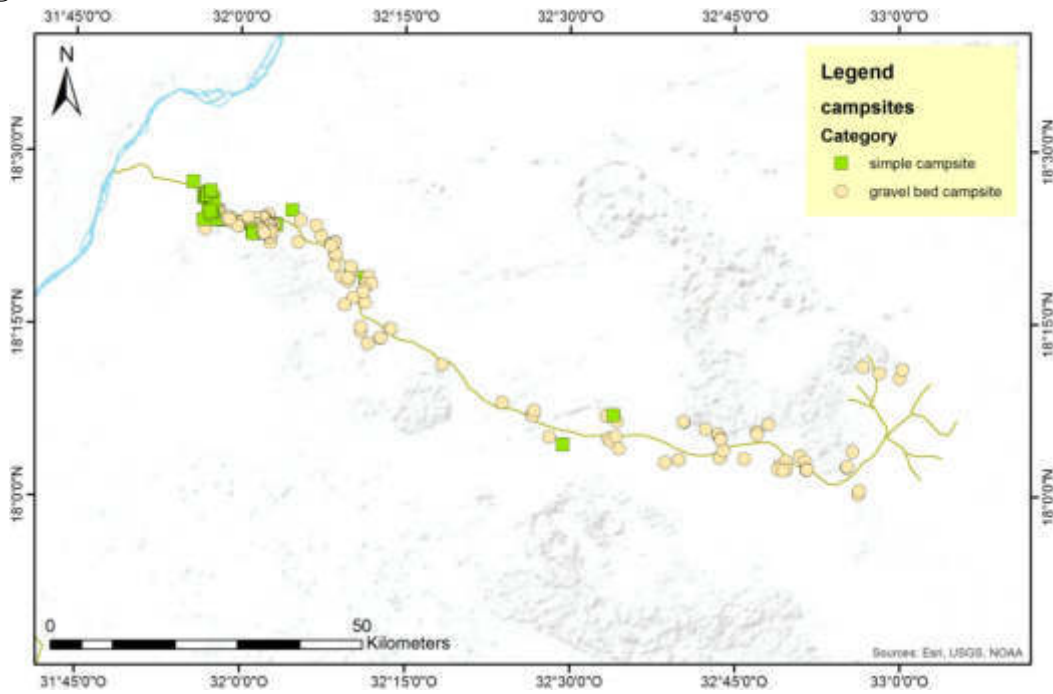


Fig. 1: Distribution of different categories of camp sites in the Wadi Abu Dom



Fig. 2: ‘Gravel bed campsite’ 5348-9

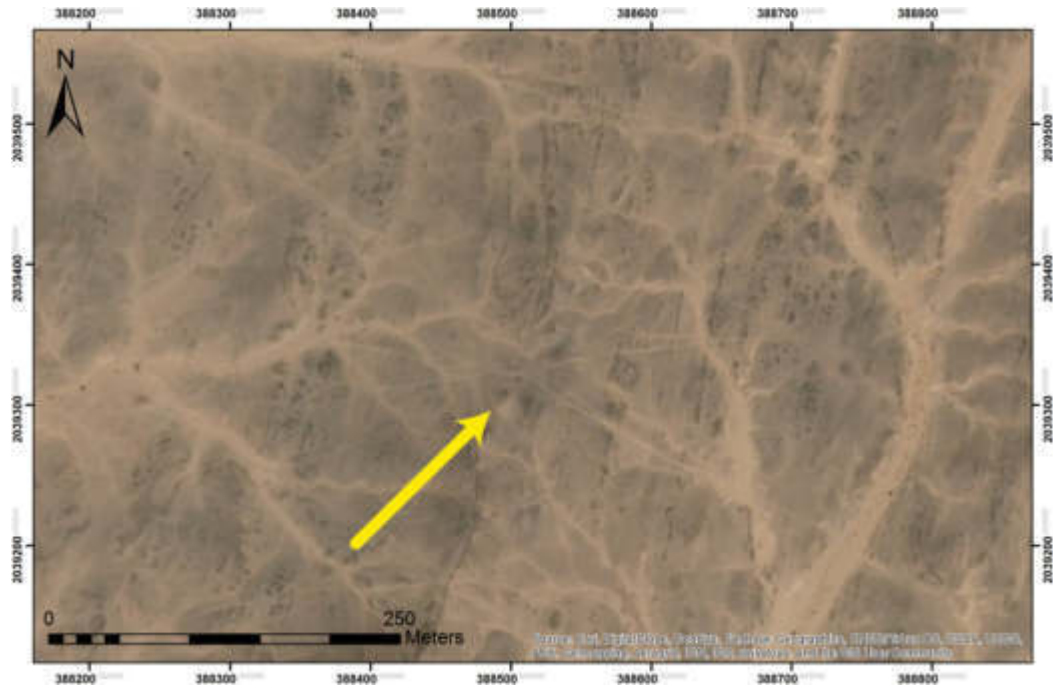


Fig. 3: Path relics near the Wadi Abu Dom

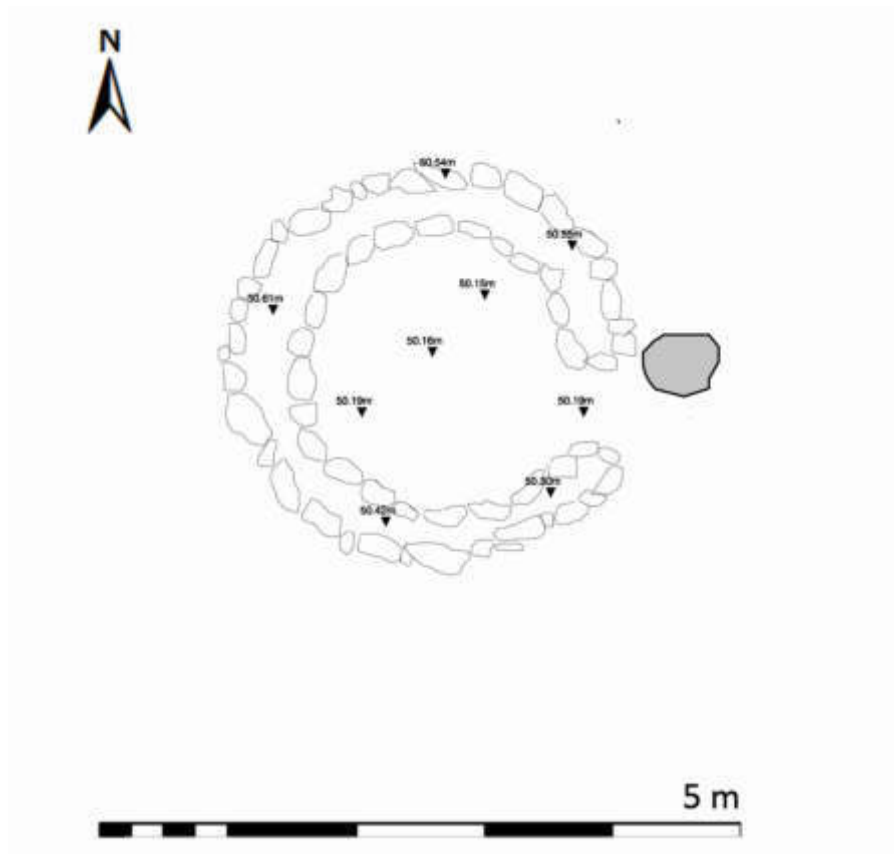


Fig. 4: Hut 5 at medieval settlement site 12204; close to the entrance pit with animal bones



Fig. 5: Barbecue installation at El Tuweina