

THE INTERACTIONS BETWEEN SISTAN AND GREAT KHORASAN CULTURE (GKC) IN THE SECOND HALF OF THE THIRD MILLENNIUM BC

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Received: 21 February 2023

Accepted: 11 May 2023

Available online: 20 June 2023

Abstract: The identification of the geographical extent of the Bactria Margiana Archaeological Complex (BMAC) and the interpretation of the spreading map of the related archeological evidence in the ancient sites of the eastern half of Iran is at the beginning stage of its long journey. Several Studies led by many archaeologists from different backgrounds were carried out to define the relationship between the BMAC and the other neighboring cultural areas of the eastern half of Iran such as Dasht Gorgan, Hissar, Kerman, and Baluchistan. Still, the relationship between this culture and the cultural area of Sistan was neglected. According to the continuous excavations that led to the identification of the BMAC pottery, the investigations on the Sistan basin and in the archaeological excavations of Graziani, Taleb Khan, and the fourth period of Shahr-i Sokhta, as well as the identification of miniature columns and stone disks, regarding the similarities between the cultural artifacts of this geographical area and the examples identified in the BMAC such as marble vessels, metal reticular seals, memorial burials, all of these pieces of evidence propose the different hypotheses studying the relationship between these two areas. All the obtained evidence and the available cultural data relating to these two cultural areas tell that they had a mutual relationship during which the BMAC was both influenced by the Shahr-i Sokhta culture and influenced it. This article studies the relationship between these two cultural areas by emphasizing the BMAC pottery samples identified by chance throughout the excavations carried out to examine the Zabol-Zahedan water pipeline.

Keywords: Sistan, Shahr-i Sokhta, GKC, BMAC, Rud-i Biaban.

چکیده: تلاش برای شناخت گستره جغرافیایی و تفسیر پراکندگی یافته‌های فرهنگ بلخی- مروی در نیمه شرقی ایران در ابتدای راه خویش قرار دارد. مطالعاتی در ارتباط میان فرهنگ بلخی- مروی با حوزه‌های فرهنگی نیمه شرقی ایران (دشت گرگان، حصار، حوزه فرهنگی کرمان، بلوچستان) صورت پذیرفته ولی ارتباط میان این فرهنگ با حوزه فرهنگی سیستان مغفول مانده است. شناسایی سفال‌های فرهنگ بلخی- مروی در بررسی‌های حوزه سیستان و در کاوش‌های باستان‌شناسی گرازیانی، طالب‌خان و دوره چهارم شهرسوخته و همچنین شناسایی ستون‌های مینیاتوری و دیسک‌های سنگی در این حوزه و شباهت‌های میان آثار فرهنگی این حوزه جغرافیایی با نمونه‌های شناسایی شده در فرهنگ بلخی- مروی (ظروف مرمری، مهرهای مشبک فلزی، تدفین‌های یادمانی)، فرضیه‌های متفاوتی را در زمینه نحوه ارتباط میان این دو حوزه مطرح نموده است. با توجه به شواهد و داده‌های فرهنگی، ارتباط میان این دو حوزه فرهنگی را باید یک ارتباط دو سویه تلقی نمود که در طی آن فرهنگ بلخی- مروی هم از شهرسوخته تأثیر پذیرفته و هم بر آن تأثیر گذاشته است. این نوشتار با تأکید بر سفال‌های فرهنگ بلخی- مروی شناسایی شده از بررسی خط لوله انتقال آب زابل به زاهدان به مطالعه ارتباط میان این دو حوزه فرهنگی می‌پردازد.

کلمات کلیدی: سیستان، شهرسوخته، فرهنگ خراسان بزرگ، فرهنگ بلخی- مروی، رود بیابان.

I. Introduction

Bactria Margiana Archaeological Complex (BMAC) refers to all the settlements located in the geographical area of southern Turkmenistan, northeastern Iran, northern Afghanistan, southern Tajikistan, and Uzbekistan, dating back to 2400-1300 BC (Luneau, 2010: 24) (Fig. 1). Distinctive features of this culture consist of the typical forms of pottery (Fig. 2), the use of precious metals objects such as gold and silver, using luxury goods that are made of semiprecious stones, including Lapis lazuli, chlorite, agate, turquoise, and marble. In addition, a collection of unique ritual objects, including miniature marble columns, composed of Bactria figurines, truncheons, ceremonial axes, and, more significantly, the findings related to burial ceremonies and practices, such as animal burial, the variety and abundance of burials, the placement of food within the graves, and memorial tombs, have

contributed to the formation of this valuable collection (Luneau, 2014: 150; Lamberg-Karlovsky, 2013: 21-25).

The term BMAC was used by Sarianidi during his excavations in Afghanistan in the late 1970s (Sarianidi, 2002: 86-87). For the first time, Francfort proposed the name of the Oxus civilization because they considered the spread of this culture along the river named Oxus/Amu Darya (Francfort, 1984; 2005: 102; see also Lamberg-Karlovsky, 2013: 21). However, this designation is criticized for being limited to a small terrain of the Amu Darya River basin (Salvatori, 2016: 452). New archaeological data and evidence obtained from the northeastern and southeastern settlements of Iran, collected throughout the archaeological excavations and studies in different locations of Khorasan, Sistan and Baluchistan, and Kerman, represent the new areas that reflect the spread and influence of BMAC in the northeast, east and southeast

parts of Iran. Therefore, Biscione and Vahdati suggested the name Great Khorasan Culture (GKC) to designate these widespread features of the culture (Biscione and Vahdati, 2020: 528).



Figure 1. Geographical distribution of the materials of GKC in the eastern half of the Iranian plateau (After Biscione and Vahdati 2020), The map has changed: small red circle of the study area in Sistan with materials similar to the GKC.

The chronological classification includes three periods for BMAC: Period I: The formation of BMAC in the main and primary nuclei, this period includes two phases Ia (2400/2300 to 2200 BC) and Ib (2200/2250 to 2100-2000 BC), and in total covers the period of 2400/2300 to 2100/2000 BC. Period II: The expansion of BMAC to neighboring areas. This period includes two phases IIa (2000/2100 to 1800/1750 BC) and IIb (1750/1800 to 1500/1450 BC), which overall covers a period of 2000/2100 to 1500/1450 BC. Period III: The gradual decline and, finally the end of BMAC. This period includes the period of 1450/1500 to 1400/1300 BC (Cattani *et al.*, 2008: 43; Salvatori, 2010: 245) (Table 2).

II. Evidence of GKC in Iran

Attempts to recognize the GKC or BMAC in Iran and understand its geographical extent as well as the interpretation of the dispersion of its evidence in the eastern half of Iran are taking their first steps. In this regard, the connection between this culture and the Sistan Plain historically was neglected by researchers due to a lack of field research. The identification of BMAC pottery discovered in areas in Sistan Plain (Biscione and Vahdati, 2020; Moradi *et al.*, 2022), and

the archaeological excavations in the Graziani region (Kavosh *et al.*, 2019), Tepe Taleb Khan (Kavosh *et al.*, 2020: 140), Burnt Building (Biscione 1979, fig. 8), Building No. 20 (Moradi, 2022a: figs. 23, 34) and the building No. 26 (Seyyed Sajjadi and Moradi, 2016) in Shahr-i Sokhta, reporting the miniature columns and stone disks in Rud-i Biaban area¹ (Dales and Flam; 1969: 22; Tosi, 1970: 48; Posshel *et al.*, 2004: 26; Salvatori, 2008: 89; Moradi *et al.*, 2022: fig. 13) and also some similarities between the artifacts of Sistan and Khorasan area, including marble vessels, metal seals, memorial burials (Tahmasebi Zaveh and Iravani Ghadim, 2016), all propose a different hypothesis about the correlation between these two areas.

Commenting on the similarities between southeastern Iran and the BMAC, Ascalone states that evidence discovered from the Shahr-i Sokhta and Bampur area in Baluchestan shows many similarities between these areas and the southern shores of the Persian Gulf on a new north-south trade axis. This road connects Turkmenistan, Sistan, and Kerman to new areas that in some cases, their movements can be interpreted as migration from the north (Ascalone, 2015: 97). He also states that only some parts of this area were connected to Afghanistan and Turkmenistan, among which the Shahr-i Sokhta had a glimpse into the magnitude of BMAC or Greater Khorasan Cultural Centers.

The lack of available materials and documents from the southeast regions of Iran does not allow the detailed reconstruction of the cultural framework of these areas. However, a cultural geographical expansion can be justified by proving the existence of a limited migration flow from the northern lands probably after the downfall of the distinguished settlements of BMAC centers in the north (Ascalone 2015, 99-100). On the other hand, interpreting the existing similarities, Sarianidi states that it is more correct to consider the similarities of the cultural materials at the excavated Bactriana and Margiana sites with the southeast of Iran as a sign of the development and expansion of the unique features of Iranian culture originated from Baluchi-Kermani artistic core (Sarianidi, 1997, quoted by Ascalone², 2015: 97). Simultaneously in the beginning of the period of formation of BMAC (2400/2300 BC), the population at Shahr-i Sokhta faced a population decline (Moradi 2022b: 361-363). The coincidence of the population decline in Shahr-i Sokhta and the expansion in BMAC in both regions of southern Bactriana and Margiana regions, as well as some similarities, prove the background of these materials in Shahr-i Sokhta.

¹ It has also been identified in the studies of Romroud and Rud-i Biaban, which were conducted by Leila Kikha in the summer of 2020 (unpublished).

² Since the book is written in Russian, it has to be referred to a second-hand source.

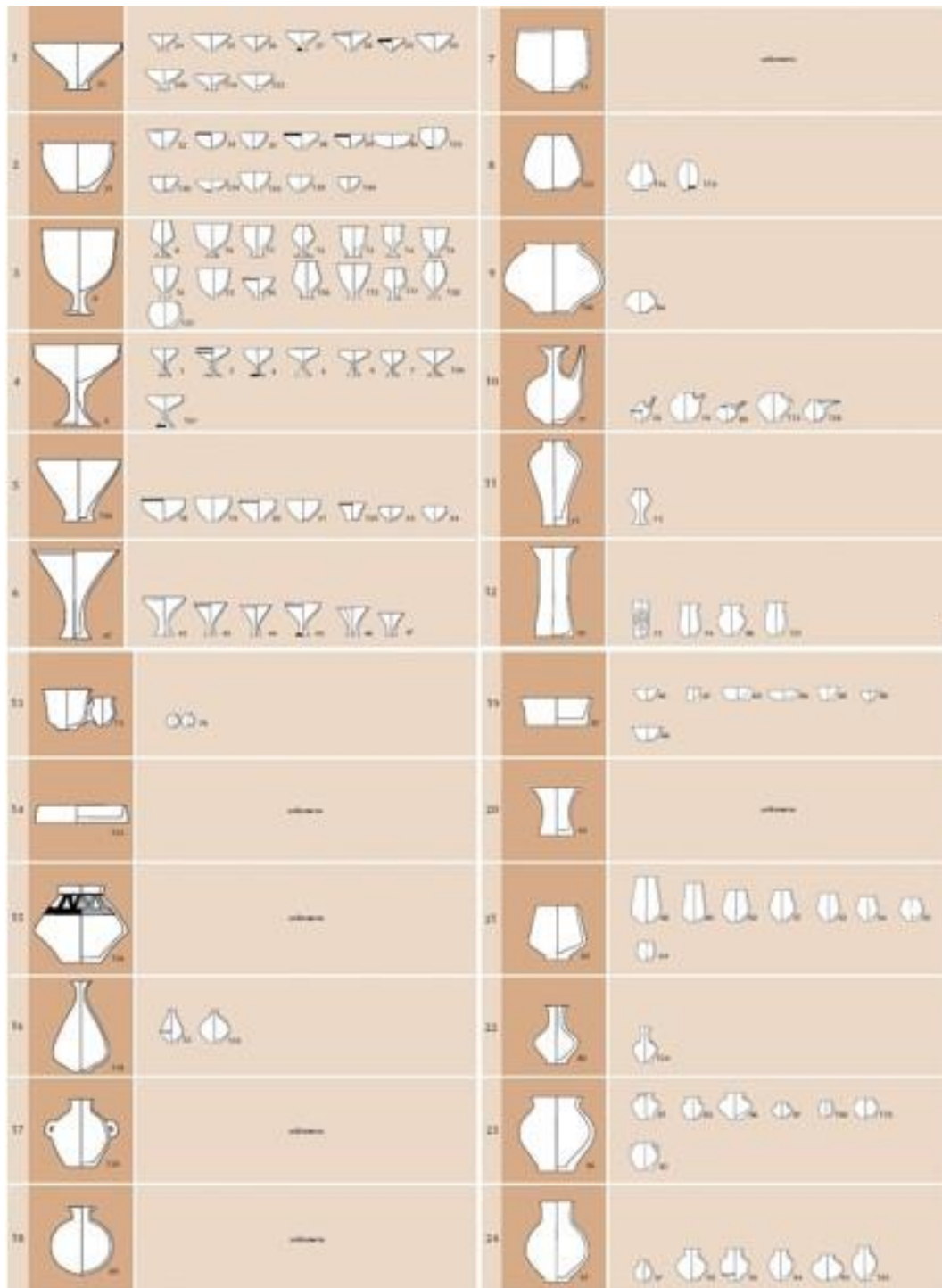


Figure 2. Typology of BMAC pottery in Gonur Tepe (Udemuradov, 2002: 133-136).

Regarding the most important cases, such as the ubiquitous data in hand, we can talk about the impact of the Shahr-i Sokhta on the formation of BMAC (Tahmasebi Zaveh and Iravani Ghadim, 2016). Considering the above reasons, a tenable hypothesis can be proposed to interpret and justify the formation of a part of BMAC as a result of a migration process in the second half of the third millennium BC from Sistan Plain. Added to the above reasons, the identification of BMAC pottery in the Sistan region, especially in the

Rud-i Biaban area (Moradi *et al.*, 2022), is a reason to prove the existence of human groups forming the BMAC settlements in Sistan.

The BMAC's distinguished pottery, along with the distinguished indigenous pottery of the region, was identified in the comprehensive studies of Sistan conducted by Mousavi, Haji, and Mehrafarin, which were briefly mentioned in Biscione and Vahdati, 2020. Also, the pottery of this culture, found during the archaeological survey of the water transmission line

from Zabol to Zahedan in the east and southeast areas of Shahr-i Sokhta, was recently identified in Moradi *et al.*, 2022: fig. 12 (Fig. 3).

Among 32 different sites identified in these studies, BMAC pottery discovered from sites No.11 (Tepe Taleb Khan), 12 (Tepe Taleb Khan 2), 24 (Rud 1), 26 (Taleb Khan 3), 27 (Taleb Khan 4), 29 (Kope Tepe 1),

30 (Kope Tepe 2), 31 (Kope Tepe 3), 32 (Kope Tepe 4) (Fig. 4). In addition to these cases, the pottery samples of BMAC were documented during the archeological excavations in Tepe Girdi and two areas near this site (Moradi, 2022c). The phase related to this culture is introduced as the Rud-i Biaban phase (Moradi *et al.*, 2022: 30-35).

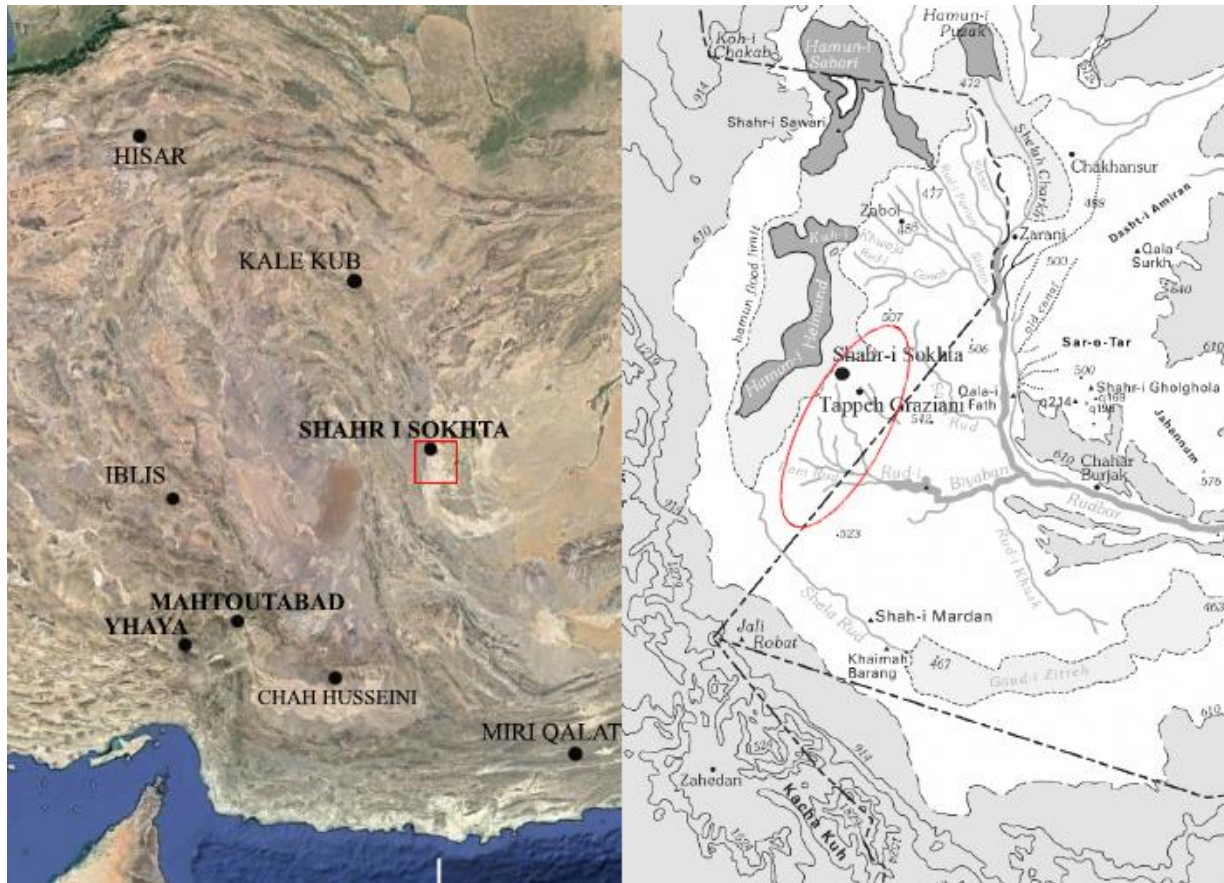


Figure 3. The area studied in the water pipeline examination (Moradi *et al.*, 2022: fig.1).

III. The chronological background:

All the data attributed to the GKC or BMAC in Sistan are the result of superficial studies, and the absolute chronology of this cultural period has not been estimated in Sistan so far. Therefore, to obtain the relative chronology of these findings, we considered elaboration on the typology of pottery, and the use of the chronology of Shahr-i Sokhta and Tepe Graziani as alternatives.

In the studies carried out on the sites with GKC pottery, the periodization of other surface pottery based on the Shahr-i Sokhta chronology has also been given. Among the 11 sites identified in the study of Moradi and his colleagues, 2 sites with Shahr-i Sokhta III pottery, 5 sites with Shahr-i Sokhta IV and Rud-i Rud-i Biaban phase pottery types, 2 with Shahr-i Sokhta III-IV and Rud-i Biaban phase, and 2 were allocated to Rud-i Biaban phase.

Biscione and Vahdati have identified 17 sites with

GKC pottery, based on a brief study of the preliminary reports of a survey on Sistan that was conducted by Mehrafarin and Mousavi Haji in 2010. They identified 11 sites with Shahr-i Sokhta period III pottery, 2 with Shahr-i Sokhta period IV pottery, 1 site with Shahr-i Sokhta III-IV pottery, and 3 sites that had only GKC pottery (Biscione and Vahdati, 2020: 539-540). The only area in the Sistan plain that has pottery similar to the GKC and has been excavated and has absolute dating is the Tepe Graziani shows 2350-2300 BC. The absolute dating layers in the Tepe Graziani display the date around 2350-2300 BC (Helwing *et al.*, 2019: 155). In Shahr-i Sokhta, such pottery was obtained from one of the rooms of the Burnt Building and the upper layers of buildings Nos.20 and 26. In buildings No. 20 and No.26, this pottery sample is of layers that are not related to the main body of the building and indicates the latest and very limited settlement on the ruins of the main building (Moradi *et al.*, 2022: 251-254).

Table 1. Sites with BMAC pottery, a field study of the Zabol-Zahedan water transmission project

Row	Site code	Site name	Period	Phase	Date
1	11	Tepe Tale	Shahr-i Sokhta IV	Rud-i Biaban 2-3	2400-2000
2	12	Tepe Taleb 2	Shahr-i Sokhta IV	Rud-i Biaban 2-3	2400-2000
3	24	Rudi-i Biaban 1	Shahr-i Sokhta IV	Rud-i Biaban 2-3	2300-2000
4	26	Taleb 3	Shahr-i Sokhta IV	Rud-i Biaban	2300-2000
5	27	Taleb 4	Shahr-i Sokhta IV	Rud-i Biaban	2300-1800
6	29	Kete Tepe 1	Shahr-i Sokhta IV	Rud-i Biaban 1-2	2300-2000
7	30	Kete Tepe 2	Shahr-i Sokhta III-IV	Rud-i Biaban 2-3	2300-2000
8	31	Kete Tepe 3	Shahr-i Sokhta III-IV	Rud-i Biaban 2	2300-2000
9	32	Kete Tepe 4	Shahr-i Sokhta IV	Rud-i Biaban2	2300-1800

The pottery similar to those discovered from the banks of the Rud-i Biaban at Shahr-i Sokhta probably dates back to the latest period, indicating that the Burnt Building was occupied for a short time after the fire, around 2300 to 2200 BC. It should be noted that the date presented for the last settlement phase in the Burnt Building was 1800 BC (Salvatori and Tosi, 2005: fig. 12), which casts doubt on this dating and some. Some older estimations date it back to the second half of the third millennium BC, which considers the end of settlement in Shahr-i Sokhta (Jarrige *et al.*, 2011: 26-29). In the Burnt Building, the chronology presented is very controversial, and the date of 1800 BC is obtained from only one sample, and most of the samples show the date 2200 to 2000. Therefore, for the samples of the Rud-i Biaban phase, which is similar to the pottery of GKC, the date between 2300 and 2000 BC can be considered more relevant. This date is parallel to the dating related to the period I (phases Ia and Ib) of BMAC in northern areas of Great Khorasan (Table 1).

The carbon dating presented for the main construction of Building No.26 is about 2400 to 2300 BC³, which coincides with the most recently dated layer of Tepe Graziani. From the recently examined samples excavated from Shahr-i Sokhta, which includes all the settlement phases, no dating older than 2300 BC has

been obtained, and the dating, 2300 BC, remains constant (personal interview with Seyyed Sajjadi)⁴.

Therefore, for this layer, which has the cultural materials of Rud-i Biaban phase and pottery of GKC type at the same time, and due to the similarity of materials in Tepe Graziani and Rud-i Biaban phase in the southern part of Shahr-i Sokhta, Burnt Building as well as buildings 20 and 26, we can consider the date between 2000 to 2400 BC for phase Rud-i Biaban.

IV. The effects of Sistan on the northern part of Great Khorasan

As mentioned earlier, the existence of some similarities and historical background of some products of GKC in Shahr-i Sokhta is the most important thing that can be relied on to determine the impact of Sistan on the formation of BMAC or by recently labeled for this culture, the GKC. For example, the similarity between marble products and the temporal precedence of these productions in Shahr-i Sokhta, the precedence of metal seals, the similarity in some rituals and burial ceremonies between Shahr-i Sokhta and the GKC that the precedence of these burials in Shahr-i Sokhta has already been proven (Tahmasebi Zaveh and Irvani Ghadim, 2016).

Table 2. Chronology of BMAC.

Northern & Eastern Balkh	Southern Balkh	Marv	Date (BC)	Period
-----	Tepe Hirdai Dashly3	Layer 1 to 4 North Gonur, Kelleli 1	2300/2400 to 2200	Ia
-----	Dashly 3	Layers 1 to 4 of North Gonur, Royal Cemetery, Gonur Cemetery, Kelleli 3&4	2200 to 2000/2100	Ib
Sapalli, Djarkutan, Djarkutan 4, Phase B Shorty	Dashly 1-6, 9-14, Dashly Palace and Temple 3	Layer 6 North Gonur Cemetery, South Gonur, Togolok 1&21, Togolok Cemeteries 21&24	2000/2100 to 1800/1750	IIa
Djarkutan Fazkoz Ali, Molla Ali, Park 4-7 Molla Ali, Djarkutan Temple 6	Dashly 1&3, 5&8, 14 to 17 and 19, Tikar 1&2, Nichkin Farrokhabad oasis	Takhirbai3, South Gonur Surface Layer, Gonur Cemetery, Togolok 21	1800/1750 to 1500/1450	IIb
-----	Dashly 3, Tikar 1&2	Takhirbai 1&3	1500/1450 to 1400/1300	III

³ The results of new studies of the Shahr-i Sokhta chronology will be published soon.

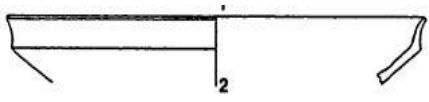



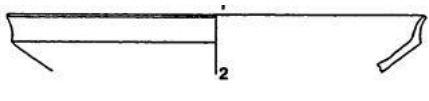



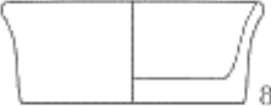

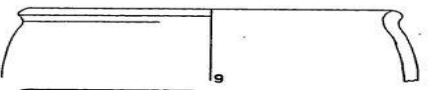

⁴ About 20 samples of charcoal from new excavations in Shahr-i Sokhta have been tested for absolute dating. See Ascalone and Sajjadi, 2022.

Also, according to the absolute dating on the Tepe Graziani pottery, the pottery of GKC and the collection of concurrent pottery excavated from this site eventually date back to 2350 BC (Helwing *et al.*, 2019: 151-155). On the other hand, the pottery of GKC was identified in some single-period sites along with the pottery of Shahr-i Sokhta period IV, which according to new chronology, is the end of period IV should be considered about 2300 BC (personal interview with Seyyed Sajjad; Ascalone and Sajjadi 2022). This datum proves that the studied pottery had existed in Sistan before the beginning of the spread of BMAC to the southern regions (Table 3).

Another evidence of the influence of Sistan on the pottery of GKC is the type of grooved pottery up to the Bronze Age. In addition to Tepe Graziani, they were identified in areas 23, 27, 29, and 30, as well as Tepe Girdi and its neighbor sites (Moradi, 2022c). And to a

limited extent in Gonur Tepe in Turkmenistan (Sarianidi, 2007: 56), as well as a shard of Tepe Toop Derakht and a piece of Tepe Shorcheh in Mashhad plain. Therefore, this type of grooved pottery can be introduced as a type of Bronze Age pottery, and its existence in Khorasan can be considered under the influence of Sistan culture. The historical background, diversity, and multiplicity of this type of pottery in Sistan, along with the limited number of this type of pottery in the GKC, emphasize the nativity of this pottery in Sistan. Therefore, the study of pottery species of this culture in Sistan is of fundamental importance in understanding the formation of the GKC. Consequently, migration from the cultural area of Shahr-i Sokhta to the geographical areas of Khorasan is considered one of the effective external factors in the formation of GKC.

Table 3. Pottery similar to the examples of the GKC in Tepe Graziani.

Tepe Graziani	Comparison reference	GKC	Graziani design number
	Hiebert, 1992: 106.2		136:9
	Sarianidi, 2007, 58:16		117:8
	Hiebert, 1992: p:106.2		123:16
	Masson, 1988: XXXII:10		116:21
	Hiebert, 1992: 145:4 Sarianidi, 2007: 61:87		132:2
	Hiebert, 1992: 132,9		128:13

V. GKC pottery in Rud-i Biaban area in Sistan (southern of Shahr-i Sokhta)

The identified pottery of GKC in the Rud-i Biaban basin is located in a collection of sites that have recently been named the Rud-i Biaban phase (Moradi *et al.*, 2022: 30) that's assumed to date back to the period 2300-1800

BC. This type of pottery is found in sites no.11 (Taleb Khan), 12 (Taleb Khan 2), 24 (Rud 1), 26 (Taleb Khan 3), 27 (Taleb Khan 4), 29 (Kete Tepe 1), 30 (Kete Tepe 2), 31 (Kete Tepe 3), 32 (Kete Tepe 4). Also, recently obtained from the excavation of the Tepe Girdi and three other sites around the Shileh River, 60 km south

of the Shahr-i Sokhta. There are two assumptions explaining the existence of this type of pottery: 1- These potteries are a sign of the expansion of trade relations and the influence of GKC in Sistan. 2- These potteries are the sign of a continuation of the pottery traditions that were formed in the period around 2300 BC in Tepe Graziani and Shahr-i Sokhta and the surrounding areas, and with the decline of settlements in these areas, this new pottery tradition in the basin of the Rud-i Biaban continued to use from 2200 to 1800 BC.

Proving or refuting one of the above hypotheses requires more evidence, considering the continuation of the above-mentioned pottery tradition in Sistan, and also the evidence of Sistan's influence on the formation of GKC. Rudi Biaban phase and pottery similar to GKC in this phase can be considered as a continuation of pottery traditions in Sistan, which was formed earlier, in the middle of the third millennium BC in the numbers of sites in Sistan, that provides postulates to explain the foundations for the formation of BMAC that can be named the formation phase of GKC.

VI. Archaeological evidence on the formation phase of GKC in Sistan

VI.1. Site No. 11 (Taleb Khan)

Tepe Taleb Khan with a height of more than 8 meters and an area of half a hectare, is located 15 km southeast of Shahr-i Sokhta, which was excavated by the Department of Archaeology of the University of Zabol for six seasons. According to the pottery typology and related dating, it belongs to the period III and IV of Shahr-i Sokhta (2400-1800 BC) and is divided into two periods; I and II. The identified GKC pottery dates back to the II period (Kavosh *et al.*, 2020: 139).

VI.2. Site No. 12 (Taleb Khan 2 or Tepe Yalda)

Tepe Taleb Khan 2 is located approximately 900 meters northeast of Tepe Taleb Khan1 and is contemporary with time Taleb Khan 1 (Fig. 5a: S.11.1-2).

VI.3. Site No. 24 (Rud-i Biaban 1):

Site No. 24 is located 100 meters west of Tepe Rud-i Biaban with an approximate height of 6 and a diameter of 60 meters. The pottery is parallel with Shahr-i Sokhta period IV or Rud-i Biaban phase with a small number of painted buff-ware pottery.

Surface shards include bowls with angled bodies, bowls with protruding edges, global jars with protruding knobs, and ocher or plain slip, already found on the upper levels of buildings Nos. 20 and 26 in Shahr-i Sokhta, Tepe Taleb Khan 1 and 2, and some satellite sites around Shahr-i Sokhta (Fig. 5b: S.24.3) (Table 4).

VI.4. Site no. 26 (Tepe Taleb Khan 3):

Site No. 26, located 2 km east of Tepe Taleb Khan, is a trapezoidal hill with a height of 8 and a diameter of approximately 150 meters (Fig. 5b: S.26) (Table 5).

VI.5. Site No.27 (Tepe Taleb Khan 4)

Site No. 27 is located near site No. 26 and consists of two small parts next to each other with a height of 4 meters and an approximate diameter of 30 meters. The pottery in this small site is similar to the pottery in the No. 24 in two ranges. Grooved pottery in association with Rud-i Biaban type is remarkable in site No. 27. These potteries with no cover or slip are rougher than the grooved pottery of Kuh-i Khawja, belonging to the Parthian period. On the other hand, paying attention to recent grooved shards excavated in Tepe Girdi, it is clear that these types of pottery have already related to the formation phase of GKC (Fig. 5a: S.27.1-8) (Table 6).

Table 4. GKC Pottery in Rud-i Biaban 1.

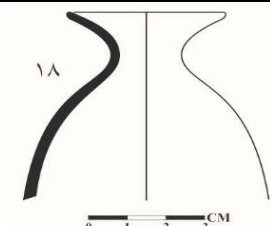
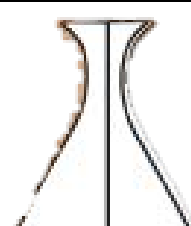
	Rud-i Biaban 1	Reference	GKC
1		Udemuradov, 2002: 136, T:118	

Table 5. Greater Khorasan Culture Pottery on Taleb Khan 3.

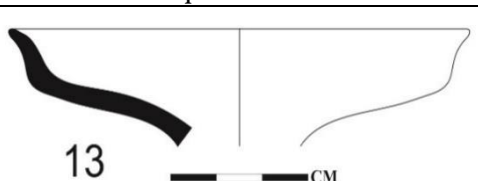
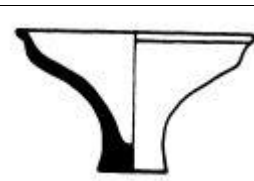
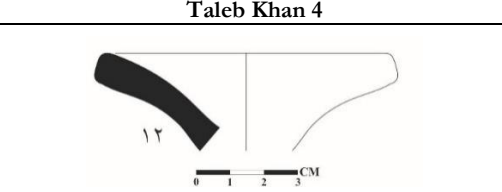
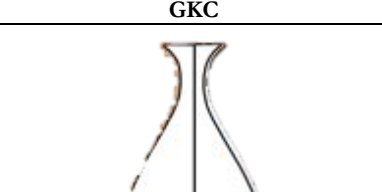
	Tepe Taleb Khan 3	Reference	GKC
1		Sarianidi, 1993: 32	

Table 6. Greater Khorasan Culture Pottery on Taleb Khan 4.

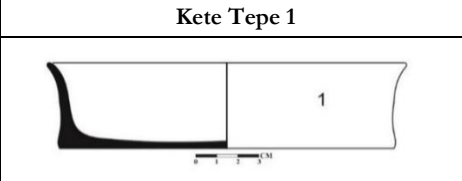
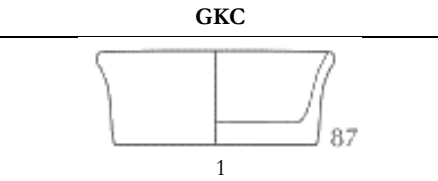
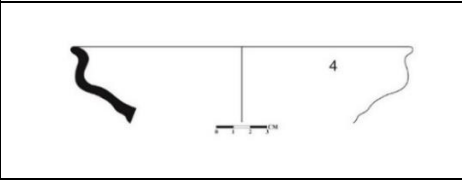
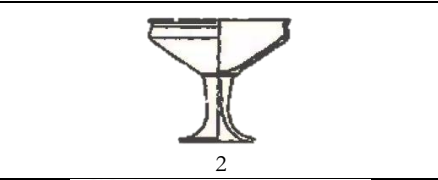
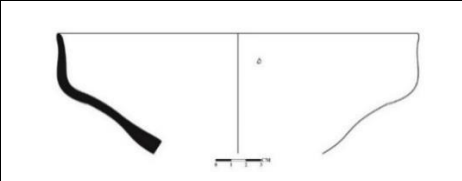
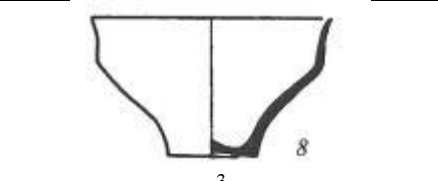
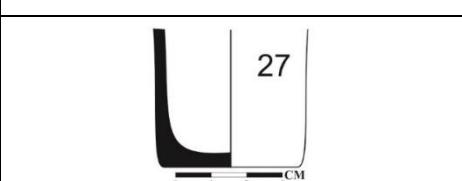
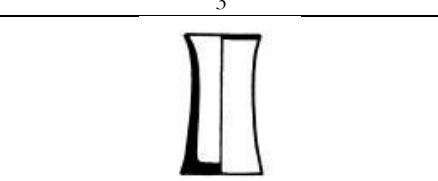
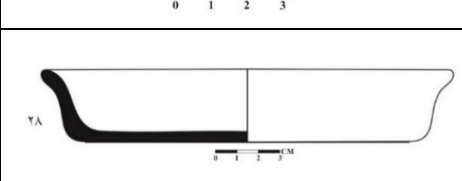
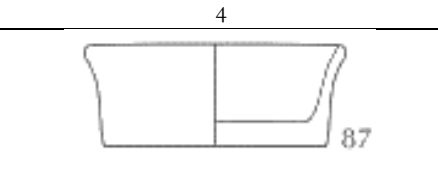
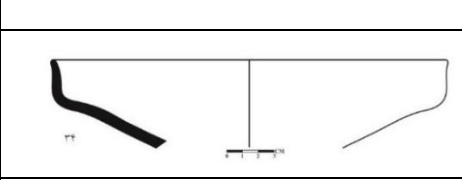
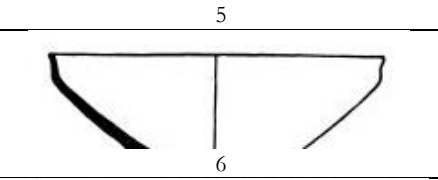
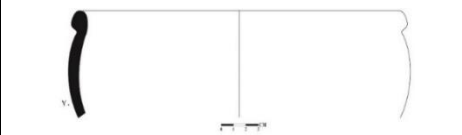
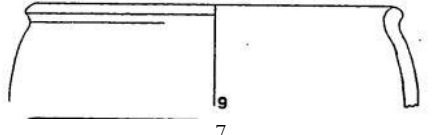
	Taleb Khan 4	Reference	GKC
1		Udemuradov, 2002: 136, T:118	

VI. 6. Site No. 29 (Kete Tepe 1)

Site No. 29 is located 15 km southeast of Shahr-i Sokhta and 5 km east of Tepe Taleb Khan. The height of this Site from the surrounding land is about 15 meters, diameter is 150 meters, probably built on one of the biggest Kaluts (yarding) on the edge of the plain. This site is located next to the bed of Rud-i Biaban and has a surface covered with pottery with a

considerable dispersion of buff and reddish wares. The pottery is comparable to site No. 24. Among them are engraved examples related to period III of Shahr-i Sokhta. There are also some examples of reddish pottery with dark brown motifs that were not common in the Shahr-i Sokhta pottery tradition. A bronze seal and alabaster vessels are other superficial findings (Fig. 5a: S.29.1-18) (Table 7).

Table 7. Greater Khorasan Culture Pottery in Kete Tepe 1.

	Kete Tepe 1	Reference	GKC
1		Udemuradov, 2002: 136, T:87	
2		Udemuradov, 2002: 136, T:2	
3		Masson, 1981: pl.: XXXII8	
4		Udemuradov, 2002: 136, T:70/ Sarianidi, 1993: 31	
5		Udemuradov, 2002: 139, T:87	
6		Sarianidi, 1993: 32	
7		Hiebert, 1992: 114,4	

VI.7. Site No. 30 (Kete Tepe 2)

Site No. 30 is located 30 km southeast of Shahr-i Sokhta in the Rud-i Biaban basin, a trapezoidal mound stretched from north to south with a height of about 8 meters. It has two ridges on its north and south sides

and based on surface materials, it seems to belong to the period III and early IV period, as well as the Rud-i Biaban phase. The painted pottery samples were divided into two spectra of unadorned buff-ware and reddish (Fig. 5a: S.30.1-8) (Table 8).

Table 8. GKC Pottery in Kete Tepe 2.

	Kete Tepe 2	Reference	GKC
1		Udemuradov, 2002: 136, T:30	
2		Hiebert 1994: 114,4	

VI. 8. Site No. 31 (Kete Tepe 3)

Site No. 31, 4 meters high and 70 meters in diameter, was located the north of Site No. 30. The pottery of this site is classified into two spectra of buff, and reddish ware that the painted wares belong to the buff-ware

tradition and chronologically are comparable to the Phase 3 of period III, dating back to 2500 BC. Unadorned potteries in sites Nos. 29 and 30 are comparable to samples belonging to the Shahr-i Sokhta IV and Rud-i Biaban phase (Fig. 5b: S.31) (Table 9).

Table 9. The pottery of GKC in Kete Tepe 3.

	Kete Tepe 3	Reference	GKC
1		Hiebert, 1994:134,4	

VI. 9. Site No. 32 (Kete Tepe 4)

This site is also a small semicircular mound with a height of about 4 meters above the ground. The pottery of this site, like site No. 31, follows the same tradition,

but most of the pottery of the site can be attributed to the Shahr-i Sokhta IV and the Rud-i Biaban phase (Fig. 5a: S.32.1-4) (Table 10).

Table 10. GKC Pottery in Kete Tepe 4.

	Kete Tepe 4	Reference	GKC
1		Hiebert, 1994: 106, 11.	
2		Hiebert, 1994: 105.4	
3		Udemuradov, 2002: 137, T:56	

VI. 10. Tepe Girdi and surrounding areas:

Tepe Girdi (No. 273) with approximate dimensions of 100 × 100 meters, and a height of 3 meters is located 60 km south of Shahr-i Sokhta and 4 km north of the Shila River (Shala Rud) (Fig.6). This site is the southernmost site of Shahr-i Sokhta, which has been excavated so far. Four trenches were excavated on this site under the direction of H. Moradi, and two of them had GKC materials. Remains related to GKC excavated from the trenches along the site, which was MU on the

western edge, was a pit or garbage pit, and NY1 on the southern edge of the site, which seems to be a depot or dump in which a large number of pottery pieces of GKC can also be seen. Some shards that are similar to the mentioned culture have also been found from the surface survey of the site (Moradi, 2022c). Also, similar pottery was found in several areas around the site, which include area No. 1, two kilometers south of the site, area No. 2, one kilometer south of the site, and area No. 3, 100 meters in the north (*Ibid*) (Table 11).

Table 11. Greater Khorasan Culture Pottery on Tepe Girdi.


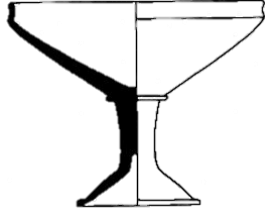

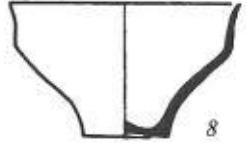


	Tepe Girdi	Reference	GKC
1		Sarianidi, 1993: 32	
2		Udemuradov, 2002: 136, T:33 Masson, 1981 :XXXIII8	
3		Udemuradov, 2002: 136, T:134	



Figure 4. Areas Nos. 29 and 30 are among the most significant areas with GKC pottery.

VII. Sistan's influence on the forming of Great Khorasan Culture

It should be noted that the influence of Sistan in the formation of GKC in Khorasan areas should not be considered the abandonment of Sistan in this period. Identification of some distinguished works of GKC indicates the cultural exchanges between these two regions from 2200 to 1800 BC. Some of the significant works of GKC, including miniature columns in Sistan (miniature columns found during archeological

excavations and studies in the Sistan region of Afghanistan by Godari Shah (Possehl *et al.*, 2004: 26, fig: 13), Chahe Ismaeil (Salvatori, 2008: 89; Tosi, 1970: 48), Shele river (Dales and Flam, 1969: 22), from Abdali Tepe in Iranian Sistan (Salvatori, 2008: 89; Tosi, 1970: 48). All samples indicate cultural exchanges between these two areas during the period 2200-1800 BC, maybe shortly after the environmental crisis in Sistan around 2300 BC.

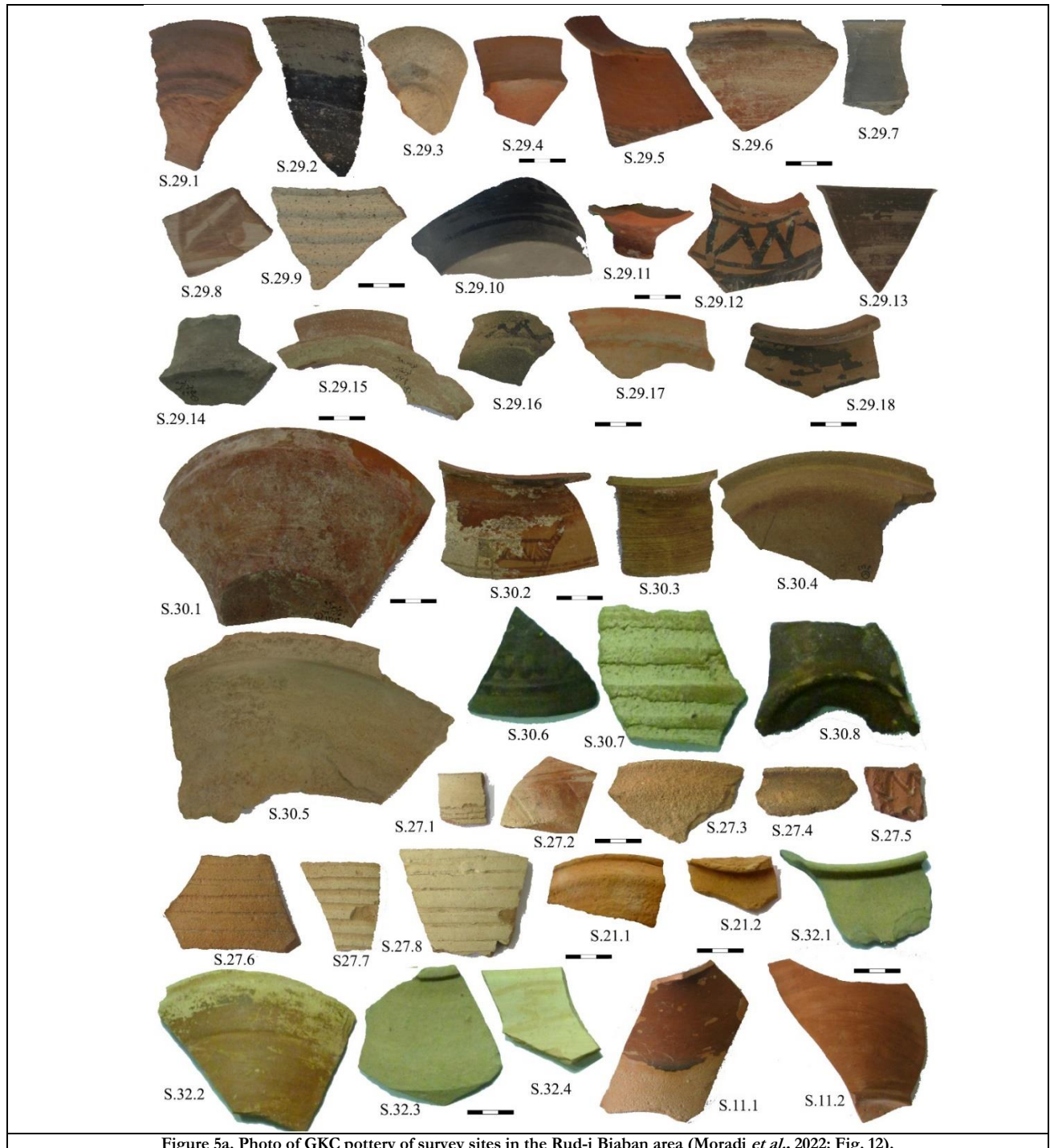


Figure 5a. Photo of GKC pottery of survey sites in the Rud-i Biaban area (Moradi *et al.*, 2022: Fig. 12).

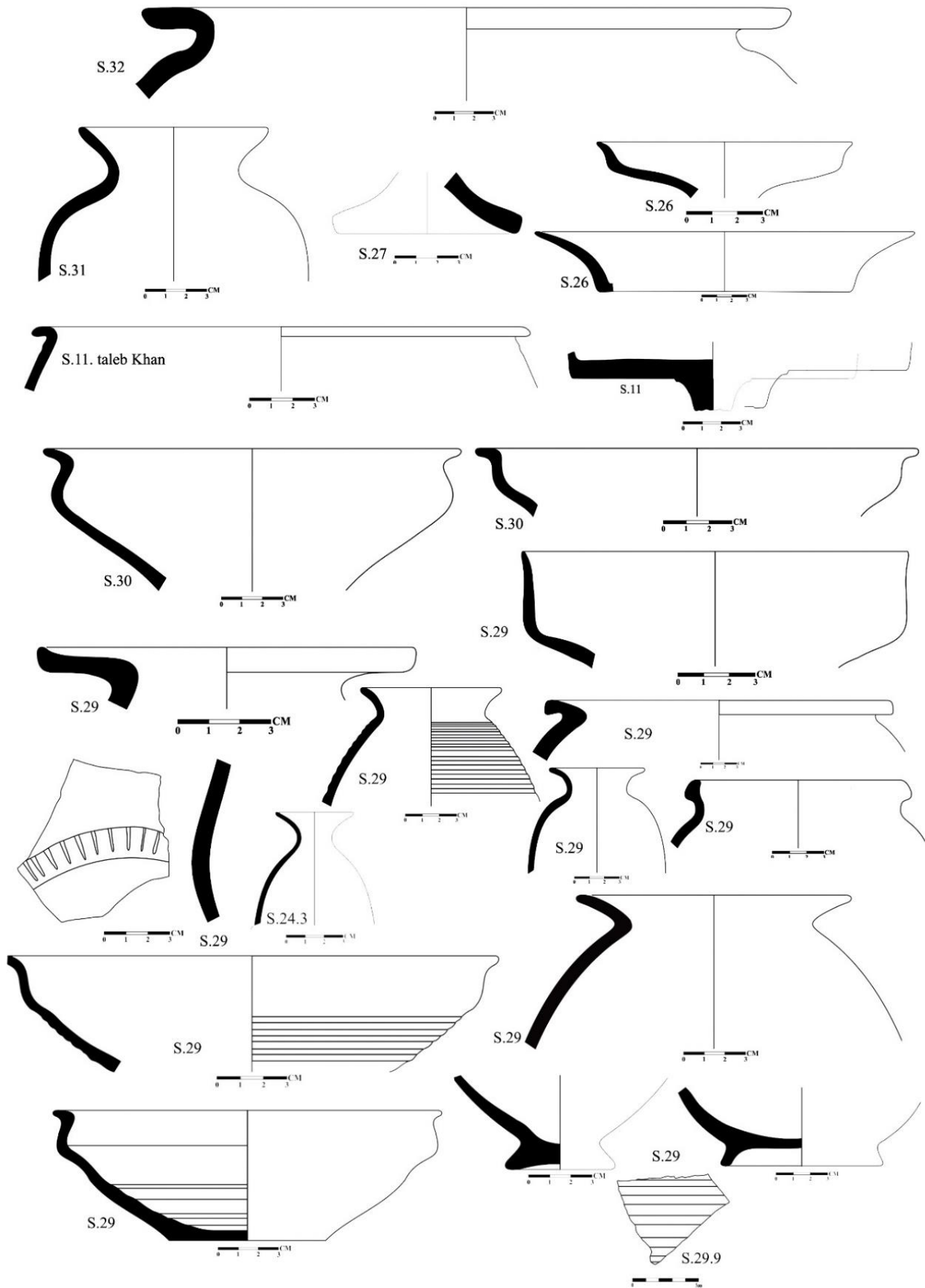


Figure 5b. Pottery design of the GKC (Moradi *et al.*, 2022: Fig.11).

It can be considered that the development of GKC in the eastern half of Iran has been carried out by human groups related to this culture pursuing their prior commercial and economic goals in the Sistan region and especially in the Rud-i Biaban basin.

Previously, many studies have documented the presence of immigrant human groups of this culture in southeastern Iran. In Shahdad (Ascalone, 2015: 99-100),

(Hiebert and Lamberg-Karlovsky 1992: 1), Nisa in Bam Cemetery in Bam area (Tahmasebi Zaveh and Irvani Ghadim, 2016) in Kerman, Khurab (Lamberg-Karlovsky and Schmandt-Besserat, 1977: 126; Sajjadi, 1995: 174, 1374), Tepe Rajab or Cemetery No. 14 (Saeidpour *et al.*, 2022: fig. 6) and Damin (Tosi, 1970: 9-50; Sajjadi, 1995: 173) in the Bampur valley in Baluchestan.

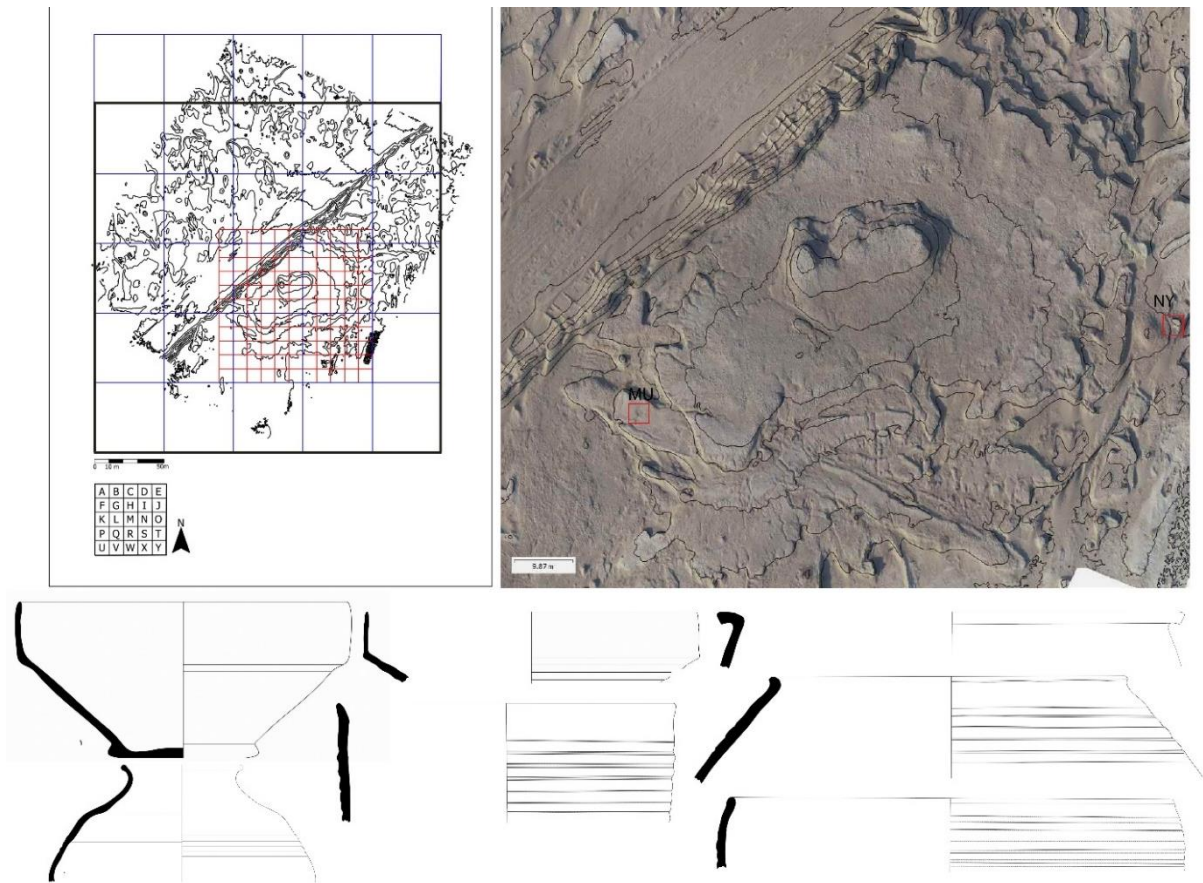


Figure 6. Tepe Girdi, the location of trenches from which the pottery of the GKC has been obtained and the design of pottery (Moradi, 2022c).

VIII. Conclusion

As a result, based on the new data from archaeological excavations in Sistan such as the excavation at Shahr-i Sokhta since 1999 that states that the population declined in Shahr-i Sokhta from 2300 BC onward, and also the pottery findings from Buildings Nos. 20 and 26, an absolute chronology of the layer GKC in Tepe Graziyani, different random surveys in this area that show the existence of some GKC or

BMAC products in the Sistan region such as the grooved pottery of the Bronze Age, it can be stated that Sistan played a key role in the formation of GKC by a possible migration in 2400-2300 BC from south to north. On the other hand, after such influence, relying on documents such as miniature columns and stone slabs identified in Sistan, we can talk about the influence of GKC on the Sistan, especially the area of Rud-i Biaban in the later time around 2200 BC or later.

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