

Review

Exploitation, Transport, and Circulation of the Rohri Hills Chert (Sindh, Pakistan) during the Indus Period

Paolo Biagi 

Department of Asian and North African Studies, Ca' Foscari University of Venice, Ca' Cappello, San Polo 2035, I-30125 Venezia, Italy; pavelius@unive.it

Abstract: During the third millennium cal BC, the Indus communities exploited great quantities of chert from the Rohri Hills mines in Upper Sindh for making different types of artifacts. This paper discusses the way chert was transported to the Indus Civilization centers and the problems related to the type, quantity, and quality of raw material and artifacts that were transported, including when, why, and where. This paper raises the question of land and water transport. Both these methods were probably used according to the landscape location of the Indus sites. Another problem concerns the landscape characteristics of the Indus Valley during the Bronze Age before the climate changes that took place around the end of the third millennium cal BC and the disappearance of the Hakra River, which was an important watercourse during the Indus phase. What do we know of the way the Indus communities exploited, transported, and circulated knappable chert? Why have the Indus settlements excavated around the Rohri Hills, the largest chert mines of the Indian Subcontinent, yielded little evidence of chert artifacts and nodules? What do we know of this important problem, which is strictly related to the everyday life of the Indus communities and their economy? Why this problem has been systematically neglected by most archaeologists despite its importance?

Keywords: Greater Indus Valley; Bronze Age; Indus Civilization; chert mines; land and water transport



Citation: Biagi, P. Exploitation, Transport, and Circulation of the Rohri Hills Chert (Sindh, Pakistan) during the Indus Period. *Heritage* 2024, 7, 4249–4264. <https://doi.org/10.3390/heritage7080200>

Academic Editor: Maja Krzewińska

Received: 27 June 2024

Revised: 23 July 2024

Accepted: 7 August 2024

Published: 9 August 2024



Copyright: © 2024 by the author. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

This paper discusses some aspects of the Bronze Age Indus Civilization, which flourished in the northwestern regions of the Indian Subcontinent during the third millennium cal BC [1]. This paper focuses on the Indus chert mines of the Rohri Hills in Upper Sindh, where the Italian–Pakistani Joint Rohri Hills Project carried out surveys and excavations in the 1990s [2]. The Rohri Hills have yielded the largest chert mining areas of the Indian Subcontinent, whose exploitation took place during the Bronze Age. The main scope of this paper is to define the way the chert mined from the hills was transported, how, where, when, and why. To reach the goal, the landscape around the Rohri Hills, the way the Indus and Hakra/Ghaggar (henceforth Hakra) Rivers changed their courses [3–7], and the distribution of the Indus sites so far known in the area will be considered [8].

W.T. Blanford was the first to write a description of the Rohri Hills in 1880. In his seminal volume on the geology of western Sindh, he reported the characteristics of the Kirthar limestone which constitutes the hills (ref. [9], p. 45). “*These hills form a rocky area, surrounded by all sides, except the south, by the alluvial plain of the Indus, and slightly broken up at their northern extremity, where they are intersected by the river. To the south the rock is covered up by blown sand, but the latter, farther to the southward, appear to rest on alluvium*” (ref. [9], p. 101). Another point of great interest in Blanford’s description is “*an escarpment along the western side of the hills, and the beds dip thence with a steady gentle slope, rarely exceeding 2°, and in many places less than 1°, to the eastward*” (ref. [9], p. 102). The presence of chert artifacts is reported on the following page: “*The flints weather out and cover the surface throughout a large area; cores and the flakes split form them being scattered about in abundance in some places*” (ref. [9], p. 103).

The first knapped stone artifacts were discovered near Sukkur a few years before by Lieutenant-General G. Twemlow, “three feet below the rock in the bed of the river (Indus)” [9–11]. The hills did not attract the attention of other geologists until 1937, when H. De Terra and T.T. Paterson visited Sukkur. These authors were the first to suggest a chronology for the lithic assemblages discovered near Rohri [12], provide a schematic profile of the hills around Sukkur and Rohri with the location of the knapped stone artifacts in situ, and describe their stratigraphic position on the top of a silt deposit above which “lie migrating dunes” (ref. [13], Figure 193). In their paper, they report the presence of “conical cores and very thin long blades reminiscent of the stone industry of Mohenjo Daro” (ref. [13], Plates XLIX and L), which are characteristic Indus Civilization artifacts.

The Indus chert workshops became even more important after the publication of the knapping floors discovered on the terraces that rise south of the city of Rohri by B. Allchin [14]. More recently, two chert mines excavated along the western edge of the Shade Shaheed terraces were AMS-dated to the Mature Indus Civilization, more precisely to the middle of the third millennium cal BC (RH-862: 3880 ± 70 BP; GrA-3235; RH-59: 3990 ± 24 BP; GrM-21237) [2,15].

Environmental Setting

The characteristics of the landscape surrounding the Rohri Hills, the presence of two important rivers with very different courses and behaviors, the Indus, in the west, and the Hakra, in the east, and the thick alluvial Indus Plain [4], (ref. [16], p. 83), will be considered before discussing the way chert artifacts and other lithic material, among which are limestone blocks, were transported to the Bronze Age Indus centers (Figure 1).

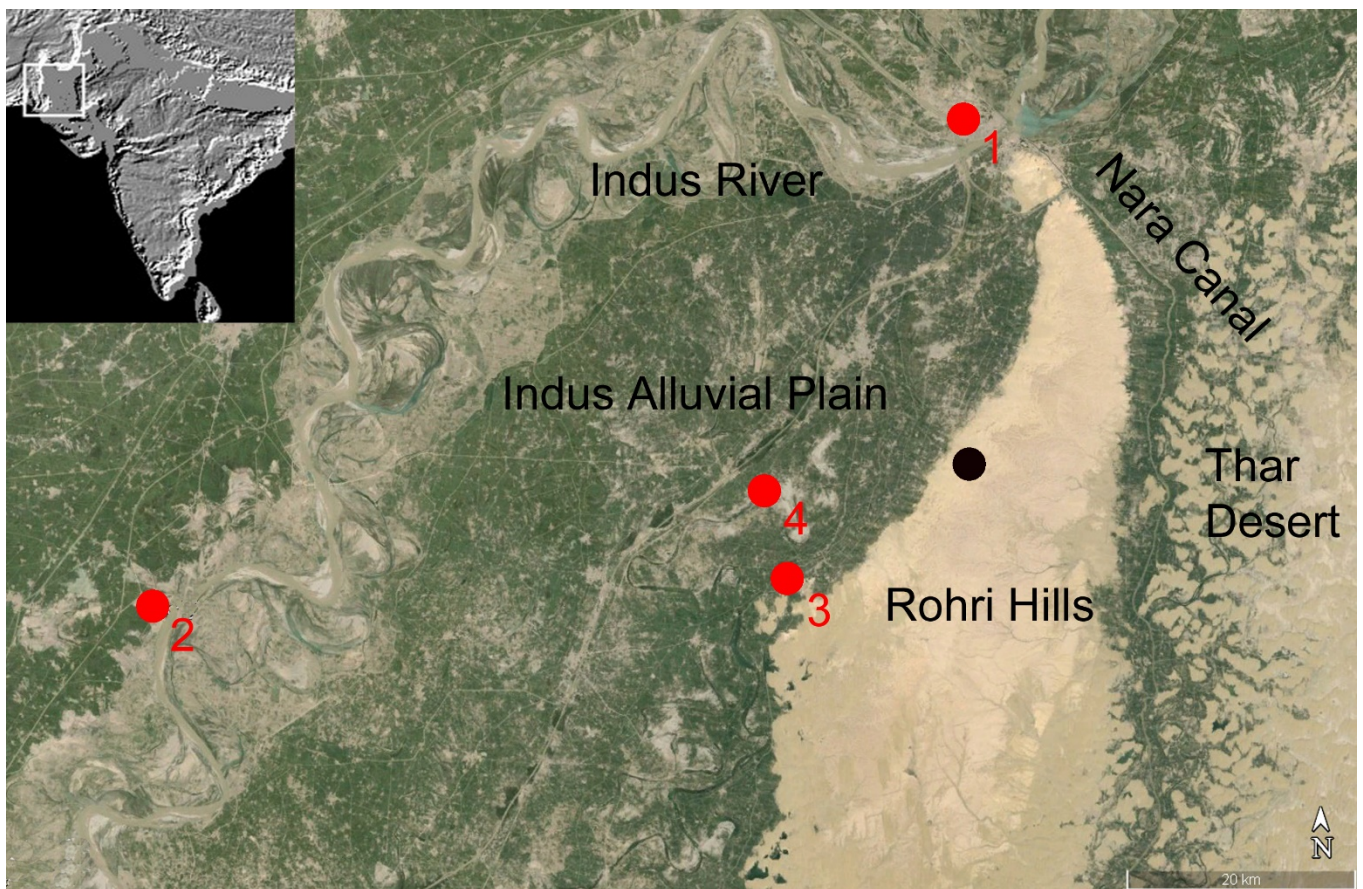


Figure 1. Distribution of the Upper Sindh Indus sites discussed in the text: Lakheen-jo-Daro (1), Mohenjo-Daro (2), Kot Diji (3), and Naru Waro Daro (4) (drawing by P. Biagi).

Blanford reports the presence of “*an escarpment along the western side of the hills*” (ref. [9], p. 102), ca. 35–40 m high, east of the shrine of Shadee Shaheed (Figure 2). The most important groups of chert mines were discovered in 1986 on the top of this terrace (ca. 135–140 m a.s.l.), which gently slopes towards the east down to the Thar Desert dunes and the Nara Canal, which flows partly in an old bed of the Hakra River (ca. 65 m a.s.l.).



Figure 2. Rohri Hills: the steep western fringes of the hills east of the Shrine of Shadee Shaheed (photograph by P. Biagi, 1986).

The satellite and aerial photographs show that the surface of the Rohri Hills is deeply incised by Pleistocene streams that flowed down to the Nara Canal and the westernmost Thar Desert fringes [17]. At least seven superimposed seams of good-quality chert are embedded in the almost vertical nummulitic limestone escarpment of the Shadee Shaheed Hills (Figure 3). However, only the uppermost one has been exploited by the Indus miners to extract nodules.

Today, the Indus River flows ca. 40–50 km west of the westernmost edge of the hills. The alluvial plain consists of deposits at least 6m thick (ref. [5], p. 295), 8–15 m at Mohenjo Daro (ref. [18], p. 376), which accumulated between the end of the Pleistocene and the recent Holocene (ref. [19], p. 257). Its surface is incised by ancient river bends, the chronology of which has never been defined.

The Indus River changes and inundations [20,21] and the location of freshwater resources in relation to ancient settlements (ref. [22], p. 50) have been debated for decades with different results [16,22–25]. The available data show that the territory around the hills was very different from that of the present a few centuries ago (ref. [26], p. 321), and also during the third millennium cal BC [27,28]. They suggest that the plain has never been an easy landscape to cross because of several natural obstacles: “*ease of traversing will depend on topography, on the presence of barriers or impediments, and also on the mode of travel*” (ref. [29], p. 393). We know that when the Mature Indus Civilization flourished, the climate was

slightly more humid than that of the present, and the changes that led to the present arid conditions began to establish around the end of the same millennium [30,31].



Figure 3. Rohri Hills: excavation trench opened in the chert mine RH-862 (photograph by P. Biagi, 1997).

2. Materials and Methods

2.1. The Bronze Age Indus Sites

The distribution of the Indus sites around the Rohri Hills can help us to interpret the way chert was transported and supplied and where lithic tools were manufactured. Four settlements located within a radius of ca. 70 km from the Shadee Shaheed mining area have been considered for this work. Two are located west of the Indus (Lakheen-Jo-Daro and Mohenjo-Daro), and two are east of the river (Kot Diji and Naru Waro Dharo). Unfortunately, our knowledge of the precise quantity and typology of knapped stone artifacts collected from the aforementioned sites is limited by several factors, the most important of which are the retrieving techniques employed during excavation. According to the excavation reports, none of the four Indus sites has been water-sieved to fine mesh, with the exception of the bead manufacturing workshop of the Moneer South East Area (MNSE) at Mohenjo-Daro [32].

The Mature Indus city of Lakheen-Jo-Daro is located in the industrial area in the northwestern suburbs of Sukkur, close to the right (western) bank of the Indus River (Figure 1, n. 1). Lakheen-Jo-Daro is a large urban settlement whose size has been recently compared to those of the Bronze Age cities of the Greater Indus Valley (ref. [33], p. 125). The excavations carried out at Lakheen-Jo-Daro yielded many impressive burnt brick structures, among which is a wide road, a small part of which has been excavated [34]. One ordinary radiocarbon date obtained from charcoal shows that at least part of the settlement flourished during the Mature Indus phase, probably around the middle of the third millennium cal BC or slightly later (3960 ± 140 BP: GrN-23123) [28]. According to the excavators, different areas of the site yielded a few knapped stone artifacts made from Rohri chert. They consist of one subconical blade core, unretouched blade and bladelet fragments, a few flakes, and crested blades [34].

Mohenjo-Daro is the largest ever excavated and best-preserved Bronze Age metropolis of the Greater Indus Valley [35]. Its location and existence, along the right (western) bank of

the Indus (Figure 1, n. 2), has been linked with “*new means of transport by ship, necessitating settlements close to the river*” (ref. [36], p. 16). Despite its importance, impressive architecture, and the great variety of brick features, among which are hundreds of habitations with superimposed structures [37,38], the chronology of the site is based on only six radiocarbon dates, marking the “*poor archaeological control over the remains of the Indus Civilization*” in general (ref. [35], p. 36). They were obtained from burnt wood and charred straw sampled from the excavations carried out by G. Dales [39] at the western edge of the HR mound [40]. The dates fall between 3913 ± 64 BP (P-1179) and 3702 ± 63 BP (P-1182A). The results are generally accepted, while the traditional relative chronology based on sequences of structural units is considered inconsistent (ref. [41], p. 68) because “*no more than an approximate stratigraphical interpretation can be attempted on the results to date*” (ref. [42], p. 163).

A generic description of the Mohenjo-Daro chert artifacts has been provided by J. Marshall (ref. [43], p. 458). This author illustrated only 12 typical Indus blades, 4 subconical blade cores, and 3 large retouched chert blocks that he interpreted as agricultural implements (ref. [43], Plate CXXXI: 1–19). G. Dales’s excavations yielded 115 knapped stone artifacts [44]. Thanks to the accurate mapping and water sieving of the deposits [32,45], ca. 4000 lithic artifacts, debitage, and debris flakelets have been recorded from the bead manufacturing workshops of the “*Moneer South East Area (MNSE) of the town, part of a more general surface survey of the craft areas of the ancient urban settlement*” [46].

Kot Diji is a mound with a complex sequence located ca. 15 km southwest of the shrine of Shadee Shaheed (ref. [47], p. 43) (Figure 4). The site has been radiocarbon dated between 4421 ± 141 BP (P-196) and 3925 ± 134 BP (P-195) from charcoal samples collected from four different layers [48]. Kot Diji lies very close to the westernmost fringes of the Rohri Hills in an area of ancient river bends (Figure 1, n. 3). The excavations carried out in the 1950s yielded a few knapped stone artifacts among which are cores, blades, sickles, and leaf-shaped bifacial arrowheads (ref. [49], P-62). The lithic assemblages have never been studied in detail. Consequently, it is not possible to distinguish the artifacts of the Early Bronze Age Kot Diji phase from those of the Mature Indus period.



Figure 4. Kot Diji: The prehistoric site from the Kot Diji fort. The site is located along the central western fringes of the Rohri Hills. The site is surrounded on three sides by an old river band, most probably the Indus (photograph by P. Biagi, 1985).

Naru Waro Dharo is a large site that rises from the alluvial Indus Plain ca. 8 km north of Kot Diji, close to an ancient meander bar of the Indus (Figure 1, n. 4). The excavations carried out in 1955 did not yield structural remains. Though the site is undated, it has been attributed to the Indus Civilization according to the typological characteristics of the pottery assemblage. The excavator has reported the presence of “*chert blades and cores*” [50]. The site has been interpreted as a temporary Indus camp due to the absence of structural remains, a well-defined archaeological horizon, and the presence of ceramic potsherds scattered over a large area (ref. [51], p. 267).

The distribution of the archaeological sites in this region of Upper Sindh shows that the territory that extends between Shikarpur in the north and the Nara Canal in the east and south was almost unsettled during the third millennium BC (ref. [52], p. 179). However, apart from those discussed in this paper, a few more unexcavated and unpublished Indus sites are known in the region (ref. [52], pp. 181–183).

2.2. The Rohri Hills Chert Sources

In December 1975, the Cambridge Archaeological Mission discovered many chert working floors on a few limestone terraces located near Sukkur and Rohri. They were later attributed to the Indus Civilization due to the typological characteristics of the knapped stone artifacts and cores [14,53]. In the spring of 1986, chert mines of the same phase were discovered on the mesas east of the shrine of Shadee Shaheed, on the central-western side of the hills [54]. While the discoveries made by the Cambridge Archaeological Mission consisted of small working floors, those in 1986 revealed the existence of impressive groups of chert mines characterized by different groups of mining pits, heaps of limestone blocks, and chert debitage flakes [55,56]. The investigation of the Shadee Shaheed area started a few years later by the Ca’ Foscari University of Venice (I) and Shah Abdul Latif University, Khairpur (PK) “Italian-Pakistani Joint Rohri Hills Project” [57].

The surveys and excavations carried out in the Shadee Shaheed Hills showed the importance of chert in the economy of the Bronze Age Indus Civilization. Before the 1980s, knappable raw materials had been very rarely considered by most archaeologists working in the Greater Indus Valley [58], with very few exceptions [59,60]. The 1993 surveys led to the discovery of thousands of chert mines, workshops [61,62], and other features [57] (Figure 5), very few of which were partly excavated in the following years [2,63,64]. They showed the importance played by knappable stones in a complex Bronze Age urban civilization and the way chert was extracted from open-air pits to extract good-quality nodules embedded in the uppermost seam of the mesa (Figure 3). Only two Shadee Shaheed mine pits have been radiocarbon dated [15]. The results showed that they were exploited around the middle of the third millennium cal BC when the Mature Indus Civilization flourished in the region. Unfortunately, radiocarbon dates are not available from the working floors discovered near Rohri and Sukkur by the Cambridge Archaeological Mission in the 1970s due to the absence of organogenic material.

Millions of chert artifacts and impressive heaps of limestone blocks, debitage, and waste flakes were visible on the surface of the Shadee Shaheed Hills in the 1990s (Figure 6). The discovery of the Rohri Hills mines has opened many questions regarding the way chert was exploited [56], how raw material and finished and unfinished artifacts (Figure 7) were transported to the Indus centers, the technology and characteristics of the products [65], the relationships between producers and consumers [61], the way they were transported, and “*what were the most frequent activities in which chipped stone tools were used*” (ref. [66], p. 99). The latter point is very important because we still know very little of it due to the absence of finished tools in the Rohri mining areas and workshops, which is another important argument of discussion [67]. In contrast, specific implements, among which are locally made straight perforators and micro-drills [68], have been recovered from the bead manufacturing areas of Mohenjo-Daro [32] and Chanhu Daro [69] in Sindh.

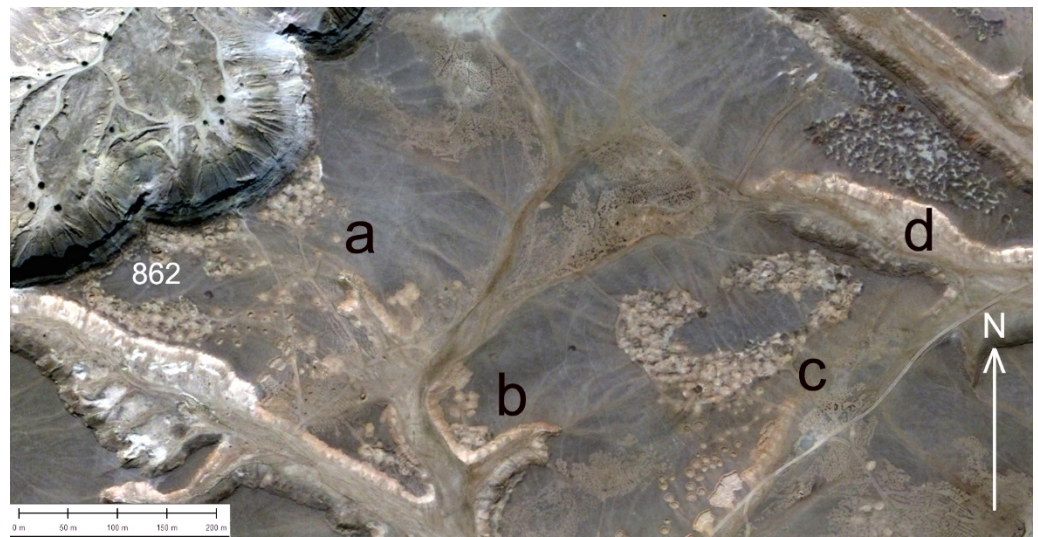


Figure 5. Rohri Hills: The main groups of chert mines (a–d) located on the terraces east of the shrine of Shadee Shaheed, with the location of the excavated mine RH-862. Note the different characteristics of the mining areas and their impressive extension (satellite image taken in 2013).



Figure 6. Rohri Hills: impressive heap of chert debitage flakes and limestone blocks surrounded by chert mine pits (photograph by P. Biagi, 1995).

Other urban centers have yielded different types of chert implements, among which are notched sickles [70], blades used in agricultural activities [71] and pottery manufactured at Nausharo in Balochistan [72], long-end scrapers [46], very few other types of tools [73], and subconical blade cores. Were only finished chert artifacts transported to the Indus centers, or were both finished and unfinished products, as well as cores and nodules, also transported? What was the market demand like [74], and how it “determined the amount of time and energy expended” in the hills “opposed to other economic and noneconomic activities” (ref. [75], p. 65)? Unfortunately, the only available data come from workshop 480 in the Rohri Hills, from which at least 2000 entire blades were manufactured and exported after removing the percussion bulb [76]. This datum is important to have an

idea of the impressive amount of released debitage flakes (Figure 6) and the relationships between production and transportation (ref. [77], p. 7). Was chert mining a seasonal activity due to the severe desert summer heat and the monsoon precipitations that followed? We know that today, limestone mining takes place during the winter months due to harsh climatic conditions.

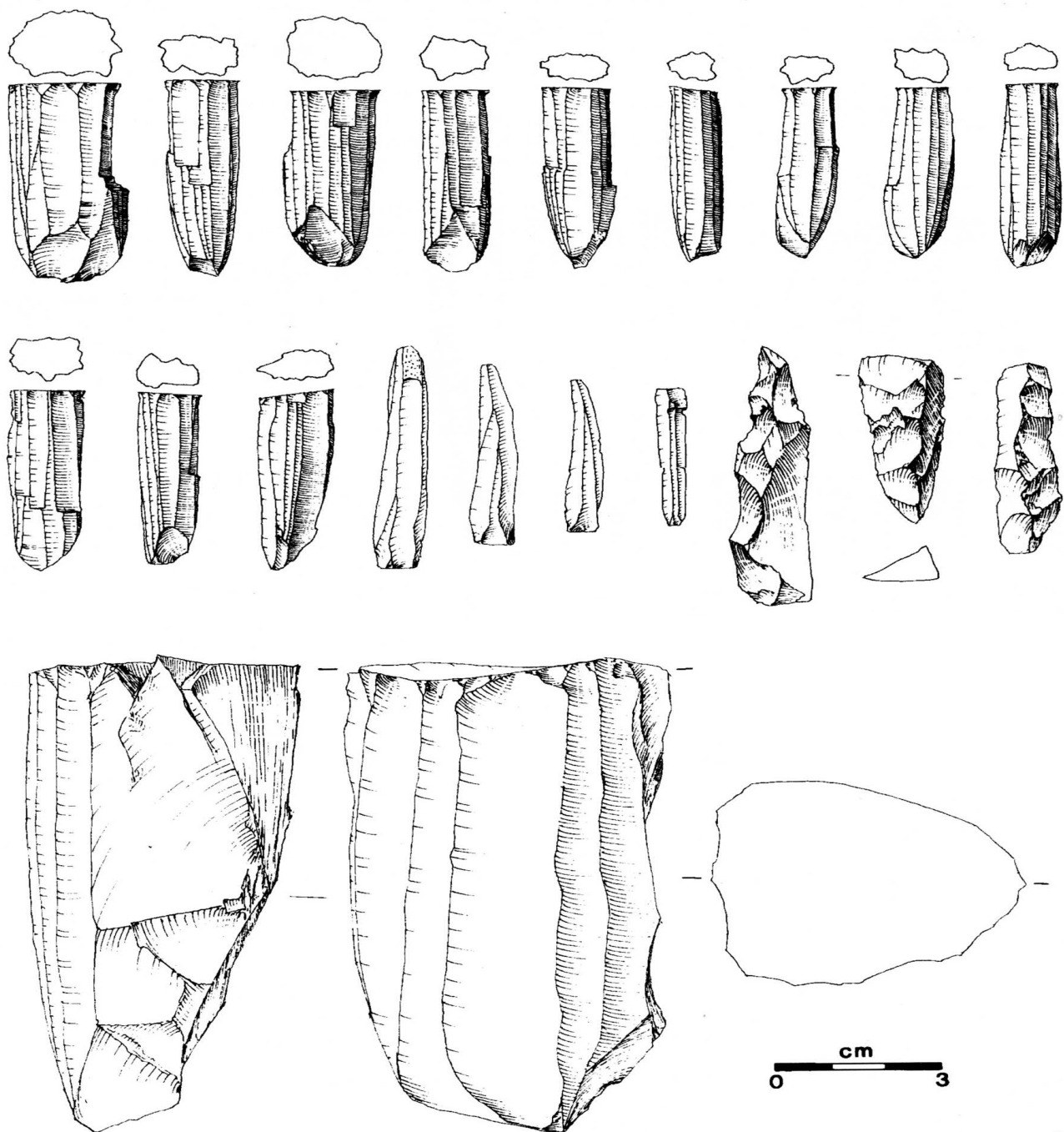


Figure 7. Rohri Hills: Knapped stone artifacts from the excavations carried out at RH-862. Different types of cores, unretouched bladelets, and crested bladelets (drawing by G. Almerigogna).

2.3. Land and Fluvial Transportation

How was chert transported to the Indus sites located around the hills? Some important characteristics of the central-western side of the Rohri Hills, namely the region close to the shrine of Shadee Shaheed, have been provided by W.T. Blanford (ref. [9], p. 102). This part of the hills, where the most impressive groups of chert mines are located, has very

steep sides, and the terrace, which is uneasy to reach on foot, is inaccessible by wheeled wagons or carts. We can suggest that other routes were followed to transport lithic material following different modalities (ref. [77], p. 7).

For sure, the workshops discovered in 1975 by the Cambridge Archaeological Mission in the northernmost part of the hills, where the Indus flows close to the archaeological area, were easier to access. This means that water transport was employed to move chert and limestone blocks to the city of Lakheen-jo-Daro. This is also the case for Mohenjo-Daro, which is located along the right (western) bank of the Indus. In both cases, a large river with unique characteristics and dangerous waters in some periods of the year had to be crossed [36,78]. We can assume that flat-bottomed, sliding boats (Figure 8) similar to those of the Indus fishers or Mohanna [79,80] were used to complete such a difficult task also because we know how versatile they are [81,82]. The way the distribution took place and was regulated is not known. However, a recent analysis of the Indus seals would suggest that these specimens were also utilized to control trade activities that “*would have been in the hands of specialist merchants*” (ref. [83], p. 179), although so far, we do not have direct evidence of signs related to the transport of chert or limestone blocks [84].



Figure 8. Different types of flat-bottomed Mohanna boats on the Indus at Rohri (photograph by P. Biagi, 1997).

The sites of Kot Diji, which is located along the western fringes of the hills, and Naru Waro Dharo were probably accessed by land. However, the complex landscape of the Indus Plain [16,30] and the presence of river bends and forests undoubtedly made its crossing an uneasy task [85,86]. We know that during the Indus phase, different types of wheeled transport (carts and chariots) were utilized. This is shown by many complete and fragmented ceramic toys that have been uncovered from the Indus Civilization sites distributed throughout the entire Greater Indus Valley [87].

Following the observations reported above, we can assume that lithic material transportation and distribution towards the Indus centers located around the Rohri Hills was made either by land, water, or both. A more complex system can be suggested for the sites located further away. We do not know the precise radius of distribution of the Rohri chert, although the production system is undoubtedly tied to transportation [77]. For sure, the distribution of some types reached Harappa in the Punjab and Nausharo in Balochistan [88] in the north, Badin and the Hab River mouth in Lower Sindh [89], and some areas of Gujarat (India) in the south [90,91]. When did this happen, given that the lower Indus Valley is inaccessible for land transportation for some five months a year? (ref. [92], p. 124).

3. Results

“The identification of the types and sources of the raw materials is not easily achieved and will always leave scope for some ambiguities unless it is backed by precise and extensive scientific evaluations” (ref. [93], p. 123). This statement is important for the interpretation of mobility and transportation patterns. However, we have to point out that the importance of knappable material, chert in particular, has always been underrated by most archaeologists working in South Asia in the recent past [57]. This observation is important if we consider the way other materials, pottery in particular, but not only pottery, precious and unique items, for example, have always been given a special role not only in constructing cultural and sometimes ephemeral chronological seriations but also in economic strategies and trade patterns. Apart from South Asia, this view has been put forward in other regions of Eurasia, especially regarding the Bronze and other metal ages [15]. Reverting to the Indian Subcontinent in general, and Sindh in particular during the Indus phase, attention has sometimes been turned more towards transoceanic and Central Asian contacts than the problem of internal request, movement, and production of different types of goods [94].

Some of the problems related to lithic mining, transportation, and utilization of knappable material have been recently re-discussed in the wider context of the importance played by different varieties of knappable raw materials in some countries of Eurasia during the Bronze Age, their exploitation, meaning, and social dimension (ref. [15], p. 422). The research underway in the Greater Indus Valley has changed the obsolete idea of the almost irrelevance of the “lithic factor” during the Bronze Age [95,96]. This fact has been given more relevance thanks to the discovery of the Rohri Hills chert mines, which unfortunately have been almost completely destroyed mainly during the last decade, causing irreparable damage to the study of the Indus Civilization and its economic strategy [2,97,98].

Though we still know almost nothing about road systems in the Indus Valley during the Bronze Age, they have been recovered in other countries where the problem of transportation has also been extensively discussed recently [99].

4. Discussion

The difficulty of defining transport methods and routes followed during the third millennium cal BC Indus communities has already been emphasized by R. Law (ref. [88], p. 301), who nevertheless remarked on the *“enormous interaction system—especially in regard to its rock and mineral artefacts”*. However, our knowledge is still very scarce, at least with regard to the movement of chert and limestone blocks all over Sindh. Apart from the exploitation of chert for the activities reported above, we know that this material was also utilized for the manufacture of different types of cubic weights (ref. [100], Plate 113), though so far, we do not have evidence of any chert weight workshop either in the Rohri Hills or in the Indus cities of Sindh. As far as we know, squared limestone blocks were employed to cover one of the curved brick drains of the Great Bath in Mohenjo-Daro [41] and to reinforce the basement of brick wall structures (Figure 9). We can suggest that these blocks were mined from the Rohri Hills, which are located less than 50 km east of the city, as the crow flies.



Figure 9. Mohenjo-Daro: drain canal near the Great Bath covered with squared limestone blocks (photograph by P. Biagi, 1985).

Our knowledge regarding other regions of Pakistan, the Punjab, for example, is even scarcer. We know that the Cholistan Desert around Derawar is very rich in Bronze Age sites [101,102], some of which are urban centers of an impressive dimension, Ganweriwala for example [103], that were built along the banks of the Hakra River which changed its course around the end of the Bronze Age [3]. We can suggest that the Hakra River was also exploited to transport lithic material from the Rohri Hills to the cities of the northern regions. In this respect, it is important to point out once more that the Rohri Hills terraces are inclined to the east, towards the ancient course of the Hakra River, which, in Indus times, lapped the eastern side of the hills.

If our knowledge of the way chert was supplied to the Bronze Age cities of this part of Upper Sindh is still insufficient, we have to admit that we know even less of other regions of the Greater Indus Valley. In her paper on the transportation systems employed during the Indus phase and historical periods, Miller [104] discussed several aspects of land and water transport. Very recently, scientific analyses have shown some evidence of land, bovid-driven, short-, and also long-distance transport [105]. However, to improve our knowledge, the number of isotopic analyses would need to be multiplied.

5. Conclusions

The problems of resources, technology, trade, and transportation have been largely debated by the specialists of the Bronze Age of Europe [106]. The same can be said of the presence of wheeled chariots and carts during the third millennium cal BC and the complex structure of some of these vehicles already when they made their appearance in several countries of Eurasia around the beginning of the Metal Ages [107,108]. This roughly corresponds to the same period when they started to be utilized in the Indian Subcontinent (ref. [87], p. 6).

V.G. Childe was the first to distinguish between two- and four-wheeled wagons to discuss where and when they were in use. Regarding the Indus Civilization, he was also the first to suggest that carts and wagons were utilized “from a considerable distance over land on which carts would easily travel” (ref. [109], p. 178), “played the same role in provisioning the great Harappan cities” (ref. [109], p. 183), “transport was facilitated by wheeled vehicles and boats” (ref. [110], p. 176), and “in Egypt, where all cultivable land lies close to the Nile, boats took the place of carts” (ref. [109], p. 177). All these observations were written more than seventy

years ago and are still actual today. They are part of the debate on the transport of materials within the Greater Indus Valley, which can now be extended to Gujarat, as new important observations would suggest [111].

The transportation problems put forward by the aforementioned authors are basically the same that we are facing today, despite our knowledge has improved, especially with regard to the characteristics of the territory where the Indus Civilization flourished, the chronology of the most important events, raw materials exploitation and trade, and mining activities.

Though this paper has mainly been centered on an underrated problem, chert and its transportation, the general impression is that it can be extended to other aspects of great economic or subsistence importance whose study has not improved during the last decades, among which are plant use and agriculture for example [112,113] because “*surges in agricultural productivity follow the growth of cities*” (ref. [114], p. 7), due to the high level of development in water science shown by study of the Indus Civilization (ref. [115], p. 4703).

It has been observed that over a century since the discovery of the Indus Civilization [116,117], many problems have not been solved [118], one of which is transportation.

Funding: This research received no external funding.

Data Availability Statement: No new data were created or analysed in this study. Data sharing is not applicable to this article.

Acknowledgments: The author is very grateful to all the members of the Italian–Pakistani “Joint Rohri Hills Project” who took part in the research. Special thanks are due to the Italian Ministry of Foreign Affairs and International Cooperation (MAECI), which sponsored and financed the Mission.

Conflicts of Interest: The author declares no conflict of interest.

References

1. Shaffer, J. The Indus Valley, Baluchistan, and Helmand traditions: Neolithic through Bronze Age. In *Chronologies in Old World archaeology*; Ehrich, R.W., Ed.; University of Chicago Press: Chicago, IL, USA, 1992; pp. 441–464.
2. Biagi, P.; Starnini, E.; Michniak, R. Chert mines and chert miners: Material culture and social organization of the Indus Civilization chipped stone workers, artisans and traders in the Indus Valley (Sindh, Pakistan). In *Walking with the Unicorn—Jonathan Mark Kenoyer Felicitation Volume*; Frenez, D., Jamison, G., Law, R., Vidale, M., Meadow, R., Eds.; Archaeopress: Oxford, UK, 2018; pp. 63–84.
3. Wilhelmy, H. The ancient river valley on the eastern border of the Indus Plain and the Saraswati problem. *Z. Geomorphol.* **1969**, *8*, 76–93.
4. Flam, L. Fluvial Geomorphology of the Lower Indus Basin (Sindh, Pakistan) and the Indus Civilization. In *Himalaya to the Sea: Geology, Geomorphology and the Quaternary*; Shroder, J.F., Jr., Ed.; Routledge: London, UK; New York, NY, USA, 1993; pp. 265–287.
5. Jorgensen, D.W.; Harvey, M.D.; Schumm, S.A.; Flam, L. Morphology and Dynamics of the Indus River: Implications for the Mohenjo Daro Site. In *Himalaya to the Sea. Geology, Geomorphology and Quaternary*; Shroder, J.F., Jr., Ed.; Routledge: London, UK; New York, NY, USA, 1993; pp. 288–326.
6. Petrie, C.A.; Singh, R.N.; Bates, J.; Dixit, Y.; French, C.A.I.; Hodell, D.A.; Jones, P.J.; Lancelotti, C.; Lynam, F.; Neogi, S.; et al. Adaptation to Variable Environments, Resilience to Climate Change Investigating Land, Water and Settlement in Indus Northwest India. *Curr. Anthropol.* **2017**, *58*, 1–30. [[CrossRef](#)]
7. Singh, A.; Thomsen, K.J.; Sinha, R.; Buylaert, J.-P.; Carter, A.; Mark, D.F.; Mason, P.J.; Densmore, A.L.; Murray, A.S.; Jain, M.; et al. Counter-intuitive influence of Himalayan river morphodynamics on Indus Civilisation urban settlements. *Nat. Commun.* **2017**, *8*, 1617. [[CrossRef](#)] [[PubMed](#)]
8. Flam, L. The Prehistoric Indus River System and the Indus Civilization in Sindh. *Man. Environ.* **1999**, *XXIV*, 35–69.
9. Blanford, W.T. The Geology of Western Sind. *Mem. Geol. Surv. India* **1880**, *17*, 1–210.
10. Evans, J. On some flint cores from the Indus, Upper Sind. *Geol. Mag.* **1866**, *3*, 433–435. [[CrossRef](#)]
11. Majumdar, N.C. *Explorations in Sind: Being a Report of the Exploratory Survey Carried out During the Years 1927–28, 1929–1930 and 1930*; Indus Publications: Karachi, Pakistan, 1934; reprinted in 1981.
12. Paterson, T.T. The Industries of Sukkur and Rohri. In *The Ice Age in the Indian Subcontinent and Associated Human Cultures with special Reference to Jammu, Kashmir, Ladakh, Sind, Liddar and Central & Peninsular India*; De Terra, H., Paterson, T.T., Eds.; Carnegie Institute: Washington, DC, USA, 1939; pp. 333–336.
13. De Terra, H.; Paterson, T.T. The Late Stone Age Sites at Sukkur and Rohri, on the Lower Indus in Upper Sind. In *The Ice Age in the Indian Subcontinent and Associated Human Cultures with special Reference to Jammu, Kashmir, Ladakh, Sind, Liddar and Central & Peninsular India*; De Terra, H., Paterson, T.T., Eds.; Carnegie Institute: Washington, DC, USA, 1939; pp. 331–333.

14. Allchin, B. Palaeolithic Sites in the Plain of Sind and their Geographical Implication. *Geogr. J.* **1976**, *142*, 471–489. [[CrossRef](#)]
15. Biagi, P.; Nisbet, R. Mining Bronze Age Stone Resources: Some examples from the Caucasus (Georgia) and Sindh (Pakistan). In *Aere Perennius: More Lasting than Bronze—Essays in Honour of Valentin Dergachev on the Occasion of His 80th Birthday*; Dergacheva, L., Ed.; Stratum Library: Kishinev, Moldova, 2023; pp. 413–431.
16. Pithawalla, M. *A Physical and Economic Geography of Sind*; Sindhi Adabi Board: Hyderabad, Pakistan; Karachi, Pakistan, 1959.
17. Usman, M.; Clift, P.D.; Pastore, G.; Vezzoli, G.; Andò, S.; Barbarano, M.; Vermeesch, P.; Garzanti, E. Climatic influence on sediments distribution and transport in the Thar Desert (Sindh and Cholistan, Pakistan). *Earth-Sci. Rev.* **2024**, *249*, 104674. [[CrossRef](#)]
18. Jansen, M.R.N. Mohenjo Daro and the River Indus. In *The Indus River: Biodiversity, Resources, Humankind*; Meadow, A., Meadow, P., Eds.; Oxford University Press: Karachi, Pakistan, 1999; pp. 349–383.
19. Beg, M.A.A. Surface Soils and Indus River Sediments. In *Himalaya to the Sea. Geology, Geomorphology and the Quaternary*; Shroder, J.F., Jr., Ed.; Routledge: London, UK; New York, NY, USA, 1993; pp. 251–264.
20. Carless, T.G. Report upon Portions of the River Indus: Surveyed in the Years 1836–37 Accompanied by a Journal kept by that Officer during that Period. In *Memoirs on Sind: Selections from the Records of the Bombay Government*; Hughes, T.R., Ed.; B. R. Publishing Corporation: Delhi, India, 1855; Volume XVII, pp. 500–588, reprinted in 1989.
21. Weil, B. The Rivers Come: Colonial Flood Control and Knowledge Systems in the Indus Basin, 1840s–1930s. *Environ. Hist.* **2006**, *12*, 3–29. Available online: <http://www.environmentandsociety.org/node/3253> (accessed on 22 July 2024). [[CrossRef](#)]
22. Panhwar, M.N. *Ground Water in Hyderabad and Khairpur Divisions*; G. Shariff at Capital Press: Hyderabad, Pakistan, 1964.
23. Pithawalla, M. Settlements in the Lower Indus Basin (Sind). *J. Madras Geogr. Assoc.* **1938**, *XIII*, 323–357.
24. Wilhelmy, H. Der “wandernde” Strom: Studien zur Talgeschichte des Indus. *Erdkunde* **1969**, *20*, 265–276. [[CrossRef](#)]
25. Flam, L. Ecology and Population Mobility in the Prehistoric Settlement of the Lower Indus Valley, Sindh, Pakistan. In *The Indus River: Biodiversity, Resources, Humankind*; Meadow, A., Meadow, P., Eds.; Oxford University Press: Karachi, Pakistan, 1999; pp. 313–323.
26. Raverty, H.G. *The Mihrán of Sind and Its Tributaries*; Baptist Mission Press: Calcutta, India, 1895; reprinted in 1979.
27. Flam, L. Recent Explorations in Sind: Paleogeography, Regional Ecology, and Prehistoric Settlement Patterns (ca. 4000–2000 B.C.). In *Studies in the Archaeology of India and Pakistan*; Jacobson, J., Ed.; Aris & Phillips: Warminster, UK, 1987; pp. 65–90.
28. Biagi, P.; Vidale, M. Lakheen-Jo-Daro, an Indus Civilization Settlement at Sukkur in Upper Sindh (Pakistan): A Scrap Copper Hoard and Human Figurine from a Dated Context. *Asian Perspect.* **2022**, *61*, 2–27. [[CrossRef](#)]
29. Wilson, L. Understanding Lithic Raw Material Selection: Application of a Gravity Model. *J. Archaeol. Method. Theory* **2007**, *14*, 388–411. [[CrossRef](#)]
30. Staubwasser, M.; Sirocko, F.; Grootes, M.; Segl, M. Climate change at the 4.2 ka BP termination of the Indus valley civilization and Holocene South Asian monsoon variability. *Geophys. Res. Lett.* **2003**, *30*, 1425. [[CrossRef](#)]
31. Wright, R.P.; Bryson, R.A.; Schuldenrein, J. Water supply and history: Harappa and the Beas regional survey. *Antiquity* **2008**, *82*, 37–48. [[CrossRef](#)]
32. Vidale, M. Some Aspects of Lapidary Craft at Moenjodaro in the Light of the Surface Record of the Moneer South East Area. In *Reports on Field Work Carried out at Mohenjo-Daro Interim Reports Vol. 2: Pakistan 1983–84*; Jansen, M., Urban, G., Eds.; IsMEO-Aachen University Mission: Aachen, Germany; Rome, Italy, 1987; pp. 113–149.
33. Prabhakar, V.N. Symbols of Elite and Interregional Ideological Transmissions During Harappan Phase as Gleaned from Dholavira. In *Research on Indus Civilization in the Wake of Hundred Years of Excavation at Harappa*; Rajesh, S.V., Abhayan, G.S., Nayar, P., Eds.; Department of Archaeology, University of Kerala: Thiruvananthapuram, India, 2023; pp. 123–159.
34. Shaikh, N.; Veesar, G.M.; Mallah, Q.H. Excavations of Indus period site Lakhah-Jo-Daro 2006. *Anc. Sindh* **2004**, *8*, 7–196.
35. Possehl, G.L. *The Indus Civilization: A Contemporary Perspective*; Vistaar Publications: New Delhi, India, 2002.
36. Jansen, M. Preliminary Results of the “forma Urbis” Research at Mohenjo-Daro. In *Reports on Field Work Carried out at Mohenjo-Daro Interim Reports Vol. 2: Pakistan 1983–84*; Jansen, M., Urban, G., Eds.; IsMEO-Aachen University Mission: Aachen, Germany; Rome, Italy, 1987; pp. 9–22.
37. Jansen, M. Theoretical Aspects of Structural Analyses for Mohenjo-Daro. In *Reports on Field Work Carried out at Mohenjo-Daro Interim Reports Vol. 2: Pakistan 1983–84*; Jansen, M., Urban, G., Eds.; IsMEO-Aachen University Mission: Aachen, Germany; Rome, Italy, 1987; pp. 39–62.
38. Eltsov, P. Power circumscribed by space: Attempting a new model of the ancient South Asian city. In *Current Studies on the Indus Civilization*; Osada, T., Uesugi, A., Eds.; Manohar Publishers: Delhi, India, 2016; Volume VI, pp. 35–72.
39. Dales, G.F. New excavations at Mohenjo-daro. *Archaeology* **1965**, *18*, 145–150.
40. Stuckenrath, R., Jr. University of Pennsylvania Radiocarbon Dates X. *Radiocarbon* **1967**, *9*, 333–345. [[CrossRef](#)]
41. Jansen, M. Mohenjo-Daro, Indus Valley Civilization: Water Supply and Water Use in One of the Largest Bronze Age Cities of the Third Millennium bc. In *A History of Water: Series III, Volume 1. Water and Urbanization*; Tvedt, T., Oestigaard, T., Eds.; Bloomsbury: London, UK, 2014; pp. 52–70. [[CrossRef](#)]
42. Jansen, M. Mohenjo-Daro—A City on the Indus. In *Forgotten Cities on the Indus. Early Civilization in Pakistan from the 8th to the 2nd Millennium BC*; Jansen, M., Mulloy, M., Urban, G., Eds.; Phillip von Zabern: Mainz, Germany, 1991; pp. 145–166.
43. Marshall, J. *Mohenjo-Daro and the Indus Civilization: Being an Official Account of Archaeological Excavations at Mohenjo-Daro Carried Out by the Government of India between the Years 1922 and 1927*; Arthur Probsthain: London, UK, 1931; Volume 3.

44. Kenoyer, J.M. Chipped Stone Tools from Mohenjodaro. In *Frontiers of the Indus Civilization*; Lal, B.B., Gupta, S.P., Eds.; Books and Books: New Delhi, India, 1984; pp. 117–132.
45. Tosi, M.; Bondioli, L.; Vidale, M. Craft Activity Areas and Surface Survey at Moenjodaro: Complementary Procedures for the Reevaluation of a Restricted Site. In *Reports on Field Work Carried out at Mohenjo-Daro Interim Reports Vol. 1: Pakistan 1983–84*; Jansen, M., Urban, G., Eds.; IsMEO-Aachen University Mission: Aachen, Germany; Rome, Italy, 1987; pp. 9–37.
46. Vidale, M.; Siviero, A.; Sidoti, G.; Guida, G.; Priori, G. Three end-scrapers from Mohenjo-Daro (Pakistan). In *Unconformist Archaeology: Papers in Honour of Paolo Biagi*; Starnini, E., Ed.; Archaeopress: Oxford, UK, 2013; pp. 119–129.
47. Khan, F.A. Excavations at Kot Diji. *Pak. Archaeol.* **1964**, *1*, 39–43.
48. Ralph, E.K. University of Pennsylvania Radiocarbon Dates III. *Radiocarbon* **1959**, *1*, 45–58. [[CrossRef](#)]
49. Khan, F.A. *The Glory that was Kot Diji Culture of Pakistan: An Archaeology Outline*; Shah Abdul Latif University: Khairpur, Pakistan, 2002.
50. Khan, F.A. Excavations at Naru Waro Dharo. *Pak. Archaeol.* **1964**, *1*, 43–44.
51. Fairervis, W.A., Jr. *The Roots of Ancient India. The Archaeology of Early Indian Civilization*; The University of Chicago Press: Chicago, IL, USA; London, UK, 1975.
52. Cousens, H. *The Antiquities of Sind*; Department of Culture, Government of Sindh: Karachi, Pakistan, 1929; reprinted in 1998.
53. Allchin, B. Some Questions of Environment and Prehistory in the Indus Valley from Palaeolithic to Urban Indus Times. In *The Indus River: Biodiversity, Resources, Humankind*; Meadow, A., Meadow, P., Eds.; Oxford University Press: Karachi, Pakistan, 1999; pp. 284–299.
54. Biagi, P.; Cremaschi, M. The Harappan Flint Quarries of the Rohri Hills (Sindh–Pakistan). *Antiquity* **1991**, *65*, 97–102. [[CrossRef](#)]
55. Biagi, P.; Ottomano, C.; Pessina, A.; Shaikh, N. The 1994 Campaign on the Rohri Hills (Sindh–Pakistan): A Preliminary Report. *Anc. Sindh* **1995**, *2*, 13–40.
56. Starnini, E.; Biagi, P. Excavations at the Harappan Flint Quarry 862 on the Rohri Hills (Sindh, Pakistan). *Anschnitt* **2006**, *19*, 195–202.
57. Biagi, P.; Pessina, A. Surveys and Excavations in the Rohri Hills (Sindh–Pakistan): A Preliminary Report of the 1993 Campaign. *Anc. Sindh* **1994**, *1*, 13–76.
58. Lahiri, N. *The Archaeology of Indian Trade Routes (upto c. 200 BC). Resource Use, Resource Access and Lines of Communication*; Oxford University Press: Delhi, India, 1992.
59. Hoffman, M.A.; Cleland, J.H. Excavations at the Harappan Site of Allahdino. The Lithic Industry at Allahdino: A Metric and Quantitative Analysis of an Harappan Activity System. *Pap. Allahdino Exped.* **1977**, *2*, 1–150.
60. Cleland, J.H. Lithic Analysis and Cultural Process in the Indus Region. In *Studies in the Archaeology of India and Pakistan*; Jacobson, J., Ed.; Aris & Phillips: Warminster, UK, 1987; pp. 91–116.
61. Costin, C.L. Craft Production. In *Handbook of Methods in Archaeology*; Maschner, H., Ed.; AltaMira Press: Lanham, MD, USA, 2005; pp. 1032–1105.
62. Costin, C.L. What is a Workshop? In *Approaches to the Analysis of Production Activity at Archaeological Sites*; Hodgkinson, A.K., Tvetmarken, C.L., Eds.; Archaeopress Archaeology: Oxford, UK, 2020; pp. 177–197.
63. Negrino, F.; Ottomano, C.; Starnini, E.; Veesar, G.M. Excavations at Site 862 (Rohri Hills, Sindh, Pakistan): A Preliminary Report of the 1995 and 1997 Campaigns. *Anc. Sindh* **1996**, *3*, 67–104.
64. Starnini, E.; Biagi, P. The Archaeological Record of the Indus (Harappan) Lithic Production: The Excavation of RH862 Flint Mine and Flint Working Workshops on the Rohri Hills (Upper Sindh, Pakistan). *J. Asian Civiliz.* **2011**, *34*, 1–62.
65. Briois, F.; Negrino, F.; Pelegrin, J.; Starnini, E. Flint exploitation and blade production during the Harappan period (Bronze Age): Testing the evidence from the Rohri Hills flint mines (Sindh, Pakistan) throughout an experimental approach. *Anschnitt* **2006**, *19*, 307–313.
66. Schiffer, M.B. *Behavioral Archaeology*; Academic Press: New York, NY, USA, 1976.
67. Saville, A. Prehistoric Quarrying of a Secondary Flint Source: Evidence from North-East Scotland. In *The Cultural Landscapes of Prehistoric Mines*; Topping, P., Lynott, M., Eds.; Oxbow Books: Oxford, UK, 2005; pp. 1–13.
68. Tosi, M.; Piperno, M. Lithic technology behind the ancient lapis lazuli trade. *Expedition* **1973**, *16*, 15–23.
69. Didier, A. Nouvelles recherches sur les débuts de la civilisation de l’Indus au Pakistan. Les fouilles de Chanhu-Daro (Sindh). *Comptes Rendus Séances L’académie Inscr. Belles-Lett.* **2017**, *161*, 969–1002. [[CrossRef](#)]
70. Voytek, B.A. Notes on a Flint Sickle from Kot Diji. *Anc. Sindh* **1994**, *1*, 77–79.
71. Gadekar, C.; García-Granero, J.J.; Madella, M.; Lancelotti, C.; Veesar, G.M.; Tasleem, T.A.; Chandio, M.A.; Zurro, D. Phytoliths and lithics: An alliance of convenience? Performing first comprehensive residue analysis for the artefacts of the Indus Civilisation. *J. Archaeol. Sci. Rep.* **2023**, *52*, 104254. [[CrossRef](#)]
72. Méry, S.; Anderson, P.; Inizan, M.-L.; Lechevallier, M.; Pelegrin, J. A pottery workshop with flint tools on blades knapped with copper at Nausharo (Indus civilisation, ca. 2500 BC). *J. Archaeol. Sci.* **2007**, *34*, 1098–1116. [[CrossRef](#)]
73. Davis, M. Stone tools as Indicators of Socio-Economic Variability at Harappa, Pakistan. In *Contextualizing Material Culture in South and Central Asia in Pre-Modern Times, Proceedings of the 20th Conference of the European Association for South Asian Archaeology and Art, Vienna, Austria, 4–9 July 2010*; Widorn, V., Franke, U., Latschenberger, P., Eds.; Brepols: Turnhout, Belgium, 2016; pp. 51–65.
74. Neale, W.C. The Market in Theory and History. In *Trade and Market in the Early Empires. Economics in History and Theory*; Polanyi, K., Arensberg, C.M., Pearson, H.W., Eds.; The Free Press: Glencoe, IL, USA, 1957; pp. 357–372.

75. Luedtke, B.E. Lithic material demand and quarry production. In *Prehistoric Quarries and Lithic Production*; Ericson, J.E., Purdy, B.A., Eds.; Cambridge University Press: Cambridge, UK, 1984; pp. 65–76.
76. Negrino, F.; Starnini, E. A Preliminary Report of the 1994 Excavations on the Rohri Hills (Sindh—Pakistan). *Anc. Sindh* **1995**, *2*, 55–80.
77. Gazzán, N.; Chiglino, L.; Gianotti, C. Late Holocene raw material procurement and mobility patterns in northeast Uruguay (Pago Lindo site, Tacuarembó). *J. Archaeol. Sci. Rep.* **2019**, *25*, 548–560. [[CrossRef](#)]
78. Giosan, L.; Constantinescu, S.; Clift, P.D.; Tabrez, A.R.; Danish, M.; Inam, A. Recent morphodynamics of the Indus delta shore and shelf. *Cont. Shelf Res.* **2006**, *26*, 1668–1684. [[CrossRef](#)]
79. Shar, G.M. The Mohanna—An Unknown Life in the Indus River. In *Reports on Field Work Carried out at Mohenjo-Daro Interim Reports Vol. 2: Pakistan 1983–84*; Jansen, M., Urban, G., Eds.; IsMEO-Aachen University Mission: Aachen, Germany; Rome, Italy, 1987; pp. 169–181.
80. Baloch, N.A. In Search of the Indus Culture Sites in Sind. *Bull. Inst. Sindh.* **1973**, *III*, 11–32.
81. Greenhill, B. *Archaeology of the Boat: A New Introductory Study*; Adam and Charles Black: London, UK, 1976.
82. Greenhill, B. *Boats and Boatmen of Pakistan*; David & Charles: Newton Abbot, UK, 1971.
83. Uesugi, A.; Jamison, G.; Yamaguchi, Y. Diversity, Complexity and Standardisation: The Significance of Seals in the Indus Archaeology. In *Research on Indus Civilization in the Wake of Hundred Years of Excavation at Harappa*; Rajesh, S.V., Abhayan, G.S., Nayar, P., Eds.; Department of Archaeology, University of Kerala: Thiruvananthapuram, India, 2023; pp. 22–72.
84. Ansumali Mukhopadhyay, B. Semantic scope of Indus inscriptions comprising taxation, trade and craft licensing, commodity control and access control: Archaeological and script-internal evidence. *Humanit. Social. Sci. Commun.* **2023**, *10*, 1–38. [[CrossRef](#)]
85. Raikes, R. *Water, Weather and Prehistory*; John Baker: London, UK, 1967.
86. Mears, P.; Wilson, L. A game of two halves: Looking for evidence for both embedded and direct procurement in a simulated dataset. *J. Lithic Stud.* **2023**, *10*, 1–19. [[CrossRef](#)]
87. Kenoyer, J.M. Carts and wheeled vehicles of the Indus Civilization: New evidence from Harappa, Pakistan. *Curr. Stud. Indus Civilization* **2011**, *VI*, 1–34.
88. Law, R. Moving Mountains: The Trade and Transport of Rocks and Minerals Within the Greater Indus Valley Region. In *Space and Spatial Analysis in Archaeology*; Robertson, E.C., Seibert, J.D., Fernandez, D.C., Zender, M.U., Eds.; University of Calgary Press: Calgary, AL, Canada, 2006; pp. 301–313.
89. Biagi, P. New Radiocarbon Dates for the Prehistory of the Arabian Sea Coast of Lower Sindh and Las Bela in Balochistan (Pakistan). *Riv. Archeol.* **2004**, *XXVIII*, 5–16.
90. Gadekar, C.; Rajesh, S.V.; Ajithprasad, P. Shikarpur lithic assemblage: New questions regarding Rohri chert blade production. *J. Lithic Stud.* **2014**, *1*, 137–149. [[CrossRef](#)]
91. Banerjee, R.; Prabhakar, V.N.; Bisht, R.S. Harappa Blade Implements: A Literature Review and Future Perspectives. *Herit. J. Multidiscip. Stud. Archaeol.* **2018**, *6*, 276–298.
92. Jansen, M. Settlement Networks of the Indus Civilization. In *Indian Archaeology in Retrospect—Protohistory—Archaeology of the Harappan Civilization: Volume II*; Settar, S., Korisetar, R., Eds.; Indian Council of Historical Research: Delhi, India, 2002; pp. 105–128.
93. Chakrabarti, D.K. *The External Trade of the Indus Civilization*; Munshiran Manoharlal: New Delhi, India, 1990.
94. Chakrabarti, D.K. *Theoretical Issues in Indian Archaeology*; Munshiran Manoharlal: New Delhi, India, 1988.
95. Rosen, S.A. *Lithics after the Stone Age. A Handbook of Stone Tools from the Levant*; Altamira Press: Walnut Creek, CA, USA, 1997.
96. Müller-Neuhof, B. Southwest Asian Late Chalcolithic/Early Bronze Age Demand for “Big-Tools”: Specialized Flint Exploitation Beyond the Fringes of Settled Regions. *Lithic Technol.* **2013**, *38*, 220–236. [[CrossRef](#)]
97. Biagi, P. Quarries in Harappa. In *Encyclopaedia of the History of Science, Technology, and Medicine in Non-Western Cultures*; Selin, H., Ed.; Springer: Dordrecht, The Netherlands, 2014; pp. 1–17. [[CrossRef](#)]
98. Law, R.W. Chert Acquisition Network. In *Inter-Regional Interaction and Urbanism in the Ancient Indus Valley: A Geologic Provenience Study of Harappa’s Rock and Mineral Assemblage*; Law, R.W., Ed.; Research Institute for Humanity and Nature: Kyoto, Japan, 2011; pp. 144–177.
99. Nessel, B.; Uhnér, C. Transportation in Bronze Age Europe. In *Digging in the Past of Old Europe: Studies in Honor of Cristian Schuster at His 60th Anniversary*; Sirbu, V., Comşa, A., Hortopan, D., Eds.; Editura Istros a Muzeului Brăilei Carol I: Brăila, Romania, 2019; pp. 255–275.
100. Dales, G.F. The Phenomenon of the Indus Civilization. In *Forgotten Cities on the Indus. Early Civilization in Pakistan from the 8th to the 2nd Millennium BC*; Jansen, M., Mulloy, M., Urban, G., Eds.; Phillip von Zabern: Mainz, Austria, 1991; pp. 129–144.
101. Stein, A. Survey of Old Sites Along the Hakra Bed in Bahawalpur. In *The ‘Lost’ Sarasvati and the Indus Civilization*; Gupta, S.P., Ed.; Kusumanjali Prakashan: Jodhpur, India, 1995; pp. 57–97.
102. Mughal, M.R. *Ancient Cholistan: Archaeology and Architecture*; Ferozsons (Pvt.) Ltd.: Lahore, Pakistan, 1997.
103. Masih, F.; Tofique, A. Harappan Site of Sidduwala in Cholistan: An Introduction. *Herit. J. Multidiscip. Stud. Archaeol.* **2014**, *2*, 844–853.

104. Miller, H.M.-L. Comparing Landscapes of Transportation: Riverine-Oriented and Land-Oriented Systems in the Indus Civilization and the Mughal Empire. In *Space and Spatial Analysis in Archaeology*; Robertson, E.C., Seibert, J.D., Fernandez, D.C., Zender, M.U., Eds.; University of Calgary Press: Calgary, AL, Canada; University of New Mexico Press: Albuquerque, NM, USA, 2006; pp. 281–292.
105. Petrie, C.A.; Lightfoot, E.; Jones, P.J.; Walker, J.R.; Valentine, B.T.; Krigbaum, J.; le Roux, P.; Joglekar, P.P.; Shinde, V.; Singh, R.N.; et al. Animal movement on the hoof and on the cart and its implications for understanding exchange within the Indus Civilisation. *Sci. Rep.* **2024**, *14*, 158. [[CrossRef](#)] [[PubMed](#)]
106. Sherratt, A. Resources, Technology and Trade: An Essay on Early European Metallurgy. In *Problems in Social and Economic Archaeology*; Longworth, I., de Sieveking, G.G., Wilson, K., Eds.; Duckworth: London, UK, 1976; pp. 557–581. [[CrossRef](#)]
107. Piggott, S. The Earliest Wheeled Vehicles and the Caucasian Evidence. *Proc. Prehist. Soc.* **1968**, *XXXIV*, 266–318. [[CrossRef](#)]
108. Sherratt, A. The Secondary Exploitation of Animals in the Old World. *World Archaeol.* **1983**, *15*, 90–104. [[CrossRef](#)]
109. Childe, V.G. The First Waggon and Carts—From the Tigris to the Severn. *Proc. Prehist. Soc.* **1951**, *XVII*, 177–194. [[CrossRef](#)]
110. Childe, V.G. *New Light on the Most Ancient East*; Grove Press: New York, NY, USA, 1957.
111. Gupta, E.; Prabhakar, V.N. A Bronze Age Inland Water Network and Its Role in the Maritime Trade Network of the Harappan (Indus) Civilization. *J. Marit. Archaeol.* **2024**. [[CrossRef](#)]
112. Weber, S.A. *Plants and Harappan Subsistence*; Oxford & IBH: New Delhi, India, 1991.
113. Fuller, D.; Madella, M. Issues in Harappan Archaeobotany: Retrospect and Prospect. In *Indian Archaeology in Retrospect—Protohistory—Archaeology of the Harappan Civilization: Volume II*; Settar, S., Korisettar, R., Eds.; Indian Council of Historical Research: Delhi, India, 2002; pp. 316–390.
114. Jacobs, J. *The Economy of Cities*; Vintage Books: New York, NY, USA, 1968.
115. Singh, P.K.; Dey, P.; Jaina, S.K.; Mujumdar, P.P. Hydrology and water resources management in ancient India. *Hydrol. Earth Syst. Sci.* **2020**, *24*, 4691–4707. [[CrossRef](#)]
116. Possehl, G.L. A Short History of Archaeological Discovery at Harappa. In *Harappa Excavations 1989–1990: A Multidisciplinary Approach to Third Millennium Urbanism, Monographs in World Archaeology*; Meadow, R.H., Ed.; Prehistory Press: Madison, WI, USA, 1991; Volume 3, pp. 5–11.
117. Lahiri, N. *Finding Forgotten Cities. How the Indus Civilization was Discovered*; Permanent Black: New Delhi, India, 2005.
118. Baloch, N.A. *Boats in the Indus Delta and the Coastline of Sindh: Development in Historical Perspective*; Department of Culture & Tourism, Government of Sindh: Karachi, Pakistan, 1990.

Disclaimer/Publisher’s Note: The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.