Chapter 4
RAW MATERIAL EXPLOITATION

This chapter reviews the raw material source areas situated in different regions of Gujarat. It also makes an attempt to look into the raw material acquisition pattern adapted by the sites selected in this research. A comparison of source areas versus production centres also forms part of this chapter.

Though lithic tools and lithic debitage made out of cryptocrystalline silicates were integral part of all the Mesolithic and Chalcolithic material assemblages, lithic raw material sources situated in Gujarat have not been looked into much detail. Very few works (Biagi and Cremaschi 1991, Law 2008, Sen 2009) have tried to identify the raw material areas from where these lithics were found and exploited.

Raw material procurement is the first step in both craft and tool production and must be understood as intricately connected to tool production and use (Raczek 2007). Odell (2000) has said that "raw material procurement and organization of technology are mutually co-dependent". Binford (1979) provided one of the first models through ethno-archaeological research to explain raw material acquisition amongst mobile groups. He has argued that it is inefficient to make special trips for the sole purpose of procuring raw material. Instead the chore of procurement is most likely to be accomplished in the course of regular movements. Raw material procurement is embedded in the routines of hunter-gatherers such that it is merely one of a number of tasks that will be accomplished in a given time frame.

Raw material properties as well as the acquisition strategies affect lithic production. High quality raw material that is located at far-away sources may be used more intensively or for specific tools. When raw material is plentiful and located nearby it may not be used as intensively. Good cores of hard-to-obtain high quality raw material are often used and rejuvenated until it is no longer possible to retrieve any blades from them. Cores made of locally available material are less likely to be used up entirely and are more likely to be thrown away after fewer removals (Raczek 2007).

Andrefsky in 1994 conducted a study to evaluate the relationship of raw material, mobility and expediency of three regions in North America that had both mobile and settled populations. He finds that there is no association between mobility and expediency or formality in tool manufacture. His results suggest that quantity and quality of locally available raw material greatly influences lithic assemblages. Sites located in regions with low quality raw materials tend to have more informal tools while sites located in regions with high quality raw material usually have more formal tools. When there is an abundance of high quality raw materials, both formal and informal tools will be found.

Brantigham et al. (2000) have also examined the quantity and quality of available raw material. They have suggested that formal technology is commonly found at sites with low abundance of high quality material but that informal technologies are more common at sites with low quality material, whether this material is plentiful or not. Sites with plentiful amounts of high quality material exhibit both formal and informal technologies.

A lot of time archaeologists assume that assemblages will have differences due to varying levels of mobility, subsistence practices, craft production and exchange, though this may not always be the case (Raczek 2007). A study of Santa Ynez valley in California reviewed 23 sites in three ecozones, over the course of three time periods and found no significant difference in the lithic assemblages (Bamforth 1991). This extended time period began prior to the beginning of agriculture and continued into the modern era which means that it included substantial variation in subsistence, site use and cultural context.

The above mentioned studies have to be considered with caution. They most probably accurately reflect strategies for formal technology based on biface reduction but the same may not hold true for blade production (Raczek 2007).

Raczek further mentions that, “Level of mobility also affects distribution of raw material within an assemblage since sedentary people do not always have regular access to quarries. Sometimes sites are located near excellent sources of stone but when this is not

the case, arrangements must be made to acquire stone through other means. In many societies such as Indus, Mesopotamia and the Mississippi, stone was procured though exchange. Procuring stone through trade and exchange certainly affects the way that stone tools are produced since excess weight must be removed prior to transport in order to maximize the usable stone transported. Procurement through trade and exchange also affects the way lithics are utilized since it turns them into commodities and most probably some raw materials were limited to some segments of society".

Raw materials

Raw materials exploited at different sites have been looked into in detail in the previous chapter. But to understand their sources a quick look is presented below of their characteristics.

Chert, flint, jasper, chalcedony, agate, carnelian, bloodstone, heliotrope, chrysophrase, novaculite, radiolite, sard and onyx are all terms for closely related (in many cases mineralogically identical) sedimentary rocks. All are composed principally of microscopic crystals of quartz (either granular or fibrous) that form when silica chemically precipitates out of an aqueous solution (Luedtke 1992: 18).

Chert

Chert fractures in very predictable ways and is an excellent material for blade manufacture (Luedtke 1992). Heat treatment given to chert increases the predictability of its fracture. Chert varies in colour, translucence, luster and inclusions and appears in various qualities. Cherts usually occur in cobble form in limestone formations or in beds. Archaeologists generally visually identify chert sources using the qualities, colour, luster, translucence and inclusions (Raczek 2007).

Chalcedony

Ranges in colour from clear milky to smoky brown and can occur with inclusions or bands (thus commonly known as agate). Chalcedony fractures in very predictable ways and can be heat treated for greater control. Heat treating tends to turn chalcedony orange or red, at which point it is known as carnelian. Chalcedony has been popular as tool

material it is also popular in the form of carnelian as a material for stone beads (Raczek 2007). The Harappans were well known for their extensive production and use of carnelian beads in multiple shapes and sizes (Kenoyer et al 1991, Possehl 1982, Roux and Pelegrin 1988-89).

Agates

Wholly or partially translucent variety of microcrystalline silicates. The use of such broad, encompassing definition means that artifacts in this category vary tremendously in their visual appearances (Law 2008).

Quartz

Quartz crystals form irregularly, fracture unevenly and thus are difficult to control while knapping. The direction of force from a blow is not always predictable because of the interceding fracture planes and as a result, quartz is frequently a material of last resort for knappers who are making prepared tools of specific shapes. Quartz is perfectly sufficient and can provide an acceptable sharp edge if the knapper is making expedient flakes and informal tools. Milky quartz or quartz with larger crystals tends to be more difficult to manipulate than finer grained quartz crystal. The smaller the crystal the more predictable the outcome will be when striking a blow (Raczek 2007).

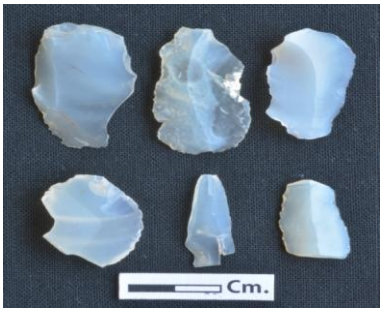
Sandstone and quartzite

Sandstones are part of "siliciclastic" rock. These are composed of *clastic* sediments (materials weathered or broken from pre-existing rocks) primarily derived from silica-rich, non-carbonaceous rocks. Quartzite forms when the clastic sediments composing rocks recrystallize to varying degrees due to heat and/or pressure. Technically it is a metamorphic rock (Law 2008). Grinding stones found from various sites belong to these two raw materials. Though grinding stones do not form part of chipped stone assemblage, small broken fragments were analysed along with the lithic debitage.

Amazonite

Variety of the feldspar mineral *microcline* (potassium aluminium silicate) is known as

Chert



Chalcedony

Banded agate

Moss agate

Blood Stone

Carnelian

Amazonite

Ernestite

Rohri chert

Calcite

Mica

Quartz

Figure 4.1: Different raw materials

amazonite. These occur in *pegmatites*, zone of usually coarse-grained igneous rocks that are important sources of rare elements and semi-precious minerals (Law 2008).

Calcite

Calcium carbonate. Calcite crystals were found from Pithad and Shikarpur. Most probably they were found at the geological source of other raw materials and got mixed with the assemblage.

Mica

This mineral occurs in a wide range of metamorphic environments but is most common in granite pegmatites (Deer at al. 1992: 469).

Ernestite

Is the name given to an extremely fine-grained khakhi coloured stone that is mottled with dark-brown to black patches and dendritic veins (Kenoyer and Vidale 1992, Law 2008). It is a hard (Mohs hardness of at least 7), very tough and fairly dense stone (Law 2008). Law has further suggested that it is a type of *indurated tonstein flint clay* that has been deliberately heated to produce or enhance properties that made it a highly effective material for drilling hard stone beads.

Before we go into a review of the raw material sources situated in the region of Gujarat, let's refresh a bit about different raw materials exploited at sites which have been selected for this study. The graphs (figures 4.3, 4.4, 4.5, 4.6, 4.7, 4.8, 4.9) below gives the summary of raw materials found from different sites. Similar types of raw materials (cryptocrystalline silicates) have been found from all the sites but they vary in their representation between these sites. Cryptocrystalline silicates are mineralogically alike but exhibit enormous macroscopic variability which could be easily divided into a dozen separate varieties (Law 2008). It was observed that tools were made out of different varieties of cryptocrystalline silicates while the lithic debitage included a few raw materials which do not fall into this category.

The raw materials which were exploited during both the cultural periods (the Mesolithic and the Chalcolithic) at Loteshwar follow a similar pattern (figures 4.3 & 4.4). Chert was

found to have been used most frequently. The only difference between the two cultural periods was the introduction of Rohri chert blades during the Chalcolithic period (figure 4.4). This lack of difference in the raw materials most probably was due to easy access, directly or indirectly, of raw material sources. Introduction of Rohri chert most probably was due to interaction with other communities having access to exotic artefacts such as Rohri chert blades or lapis lazuli beads. This interaction developed during much later periods and thus the presence of these artefacts is mostly due to site formation activity.

Pithad on the other hand shows a different scenario. Chert is the most frequently used raw material during both the cultural periods (figures 4.5 & 4.6). The use of chert, chalcedony and banded agate seem to have increased during the Chalcolithic period. Should this be assigned to a new closer raw material source or just an increase in demand of stone tools? Other raw materials such as moss agate and blood stone in contrast show a decrease during the Chalcolithic period. The question which arises here again is, the raw material source was being exhausted of these raw materials or did the people prefer other raw materials over these particular raw materials? Carnelian tools are totally absent from the Chalcolithic period though a few pieces of lithic debitage of the same were recovered. This lithic debitage most probably was due to bead manufacturing activity.

Chalcedony was the most exploited raw material at Datrana which is seen in the high percentages of both tools as well as lithic debitage (figure 4.7). The negligible presence of lithic debitage belonging to Rohri chert is not surprising since the raw material source area is located very far. The lack of lithic debitage of blood stone and quartz, however, is interesting as it might suggest that the tools made out of these raw materials were either not made locally or that the lithic debitage belonging to them was not discovered during the excavations.

Shikarpur has shown a very high percentage of Rohri chert blades (figure 4.8), clearly imported from the Rohri hill or other quarries located in Sindh (figure 4.2). The non-local manufacturing of these artefacts can also be seen in the negligible presence of lithic debitage of this particular raw material at the site. The chert which is present at the site was a raw material preferred for bead manufacturing and thus the low amount of presence

of tools and high amount of presence of lithic debitage most probably is due of this. The same seems to be the case with banded agates.

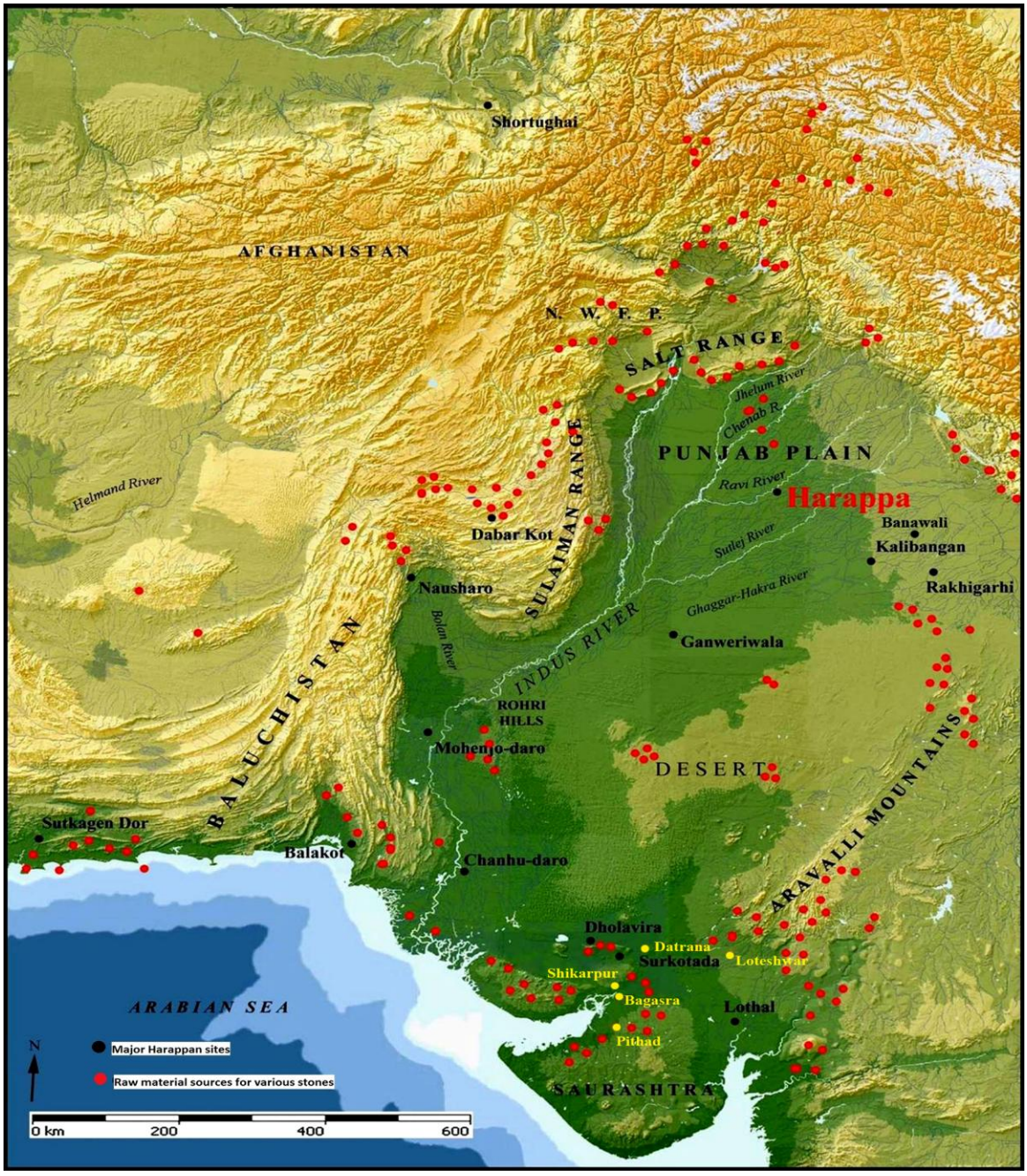


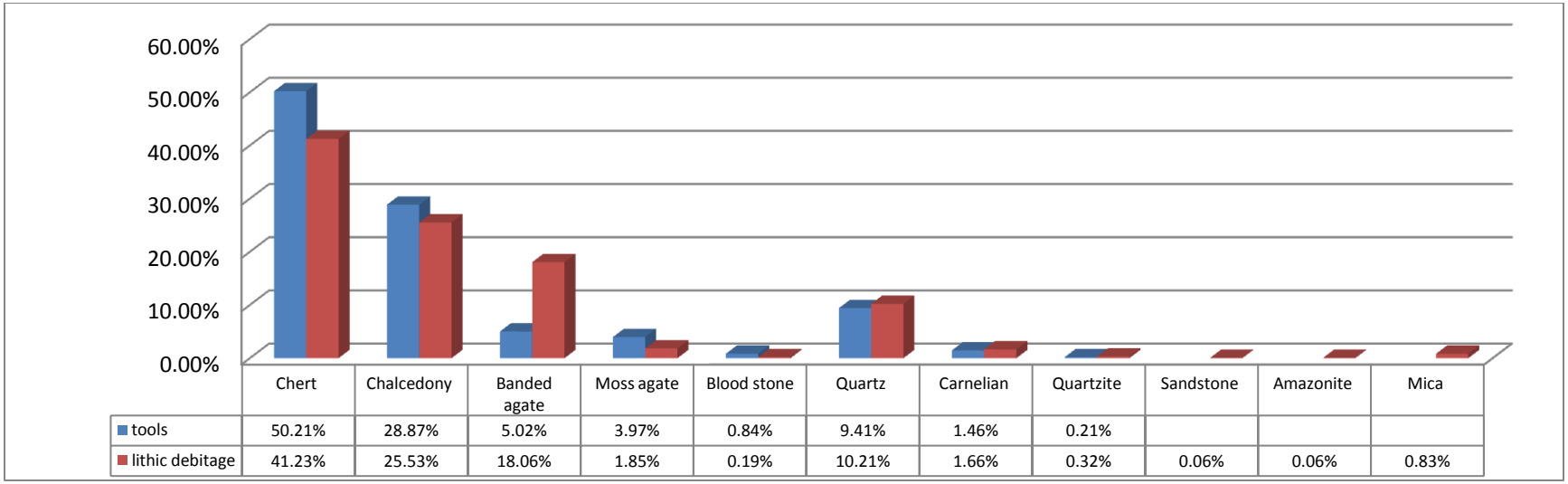
Figure 4.2: Location of Rohri hills and major excavated sites (courtesy: Randall Law)

The site of Bagasra has also produced interesting evidence. Here too chert was exploited the most (figure 4.9). Corresponding amounts of tools and lithic debitage of chert proves local manufacture of these tools. Rohri chert, as expected, was imported. Though, the

presence of a few cores as well as lithic debitage fragments suggests some local production. What is totally unexpected is the lack of lithic debitage of moss agates. It is of course possible that moss agate was not easily available to the people of Bagasra. Law (2008) mentions a raw material source for agates in Rajkot district which is not very far from Bagasra but since the types of agates are not specified one can assume that it most probably does not include moss agates.

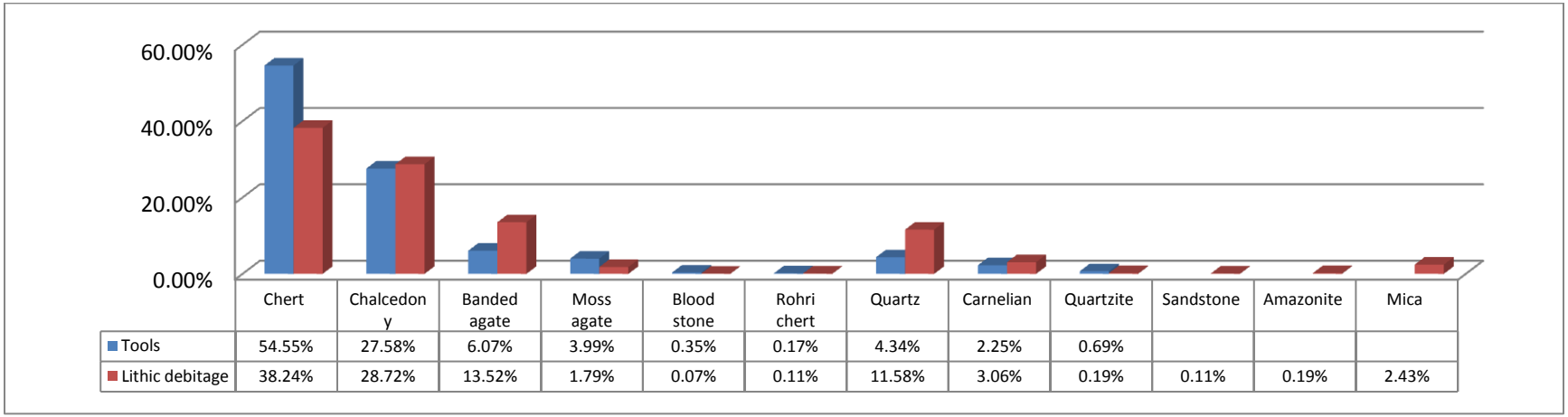
At this point of time it is difficult to make any conclusive remarks about how these stones were procured and brought to the sites. It has been observed that micrycrystalline silicates generally form as nodules (*ibid*). Since most of the sites have produced nodules and primary flakes belonging to these raw materials, one can firmly say that the raw materials were brought to the site as nodules and all the later preparations were carried out at the site itself. A few points which come to mind are about trade or barter of Rohri chert blades. These blades without any doubts were manufactured in the Rohri hills and other quarries located in Sindh by expert craftsmen. Thus their presence at any of the sites situated in Gujarat has to be explained through trade or contact, either directly or indirectly, with the sites situated in Sindh. Their presence at Shikarpur and Bagasra is easy to explain since these sites cover a time span when the trade was at its peak. Moreover, both these sites were actively involved in trade and commerce. Their presence at Datrana can also be explained since the site has shown evidence of Early Harappan Sindh type pottery. Their presence at Loteshwar, however, has to be explained by understanding the site formation activities where materials belonging to a later period have become mixed with the materials belonging to an earlier period. It has to be kept in mind that Loteshwar was occupied seasonally first by the hunter-gatherers and then by pastoral groups from the middle of 4^{th} millennium BCE to almost up to the beginning of 2^{nd} millennium BCE and this seasonal re-occupations at the site have created a few mix-ups of artefacts.

The crypto crystalline raw material sources in Gujarat are extent, diverse and very rich. It is not uncommon to encounter these crypto crystalline silicates when walking across “black cotton soil” fields which form due to the decomposition of the basaltic rock of the Deccan traps (Law 2008).



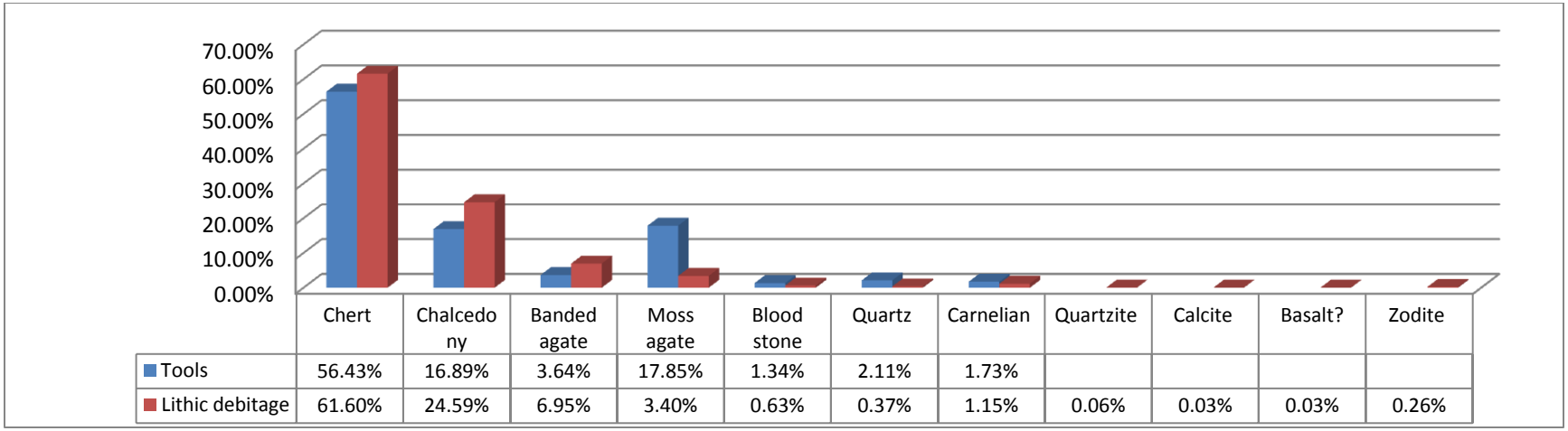
	Chert	Chalcedony	Banded agate	Moss agate	Blood stone	Quartz	Carnelian	Quartzite	Sandstone	Amazonite	Mica
tools	50.21%	28.87%	5.02%	3.97%	0.84%	9.41%	1.46%	0.21%			
lithic debitage	41.23%	25.53%	18.06%	1.85%	0.19%	10.21%	1.66%	0.32%	0.06%	0.06%	0.83%

Figure 4.3: Lithic assemblage from Mesolithic period at Loteshwar



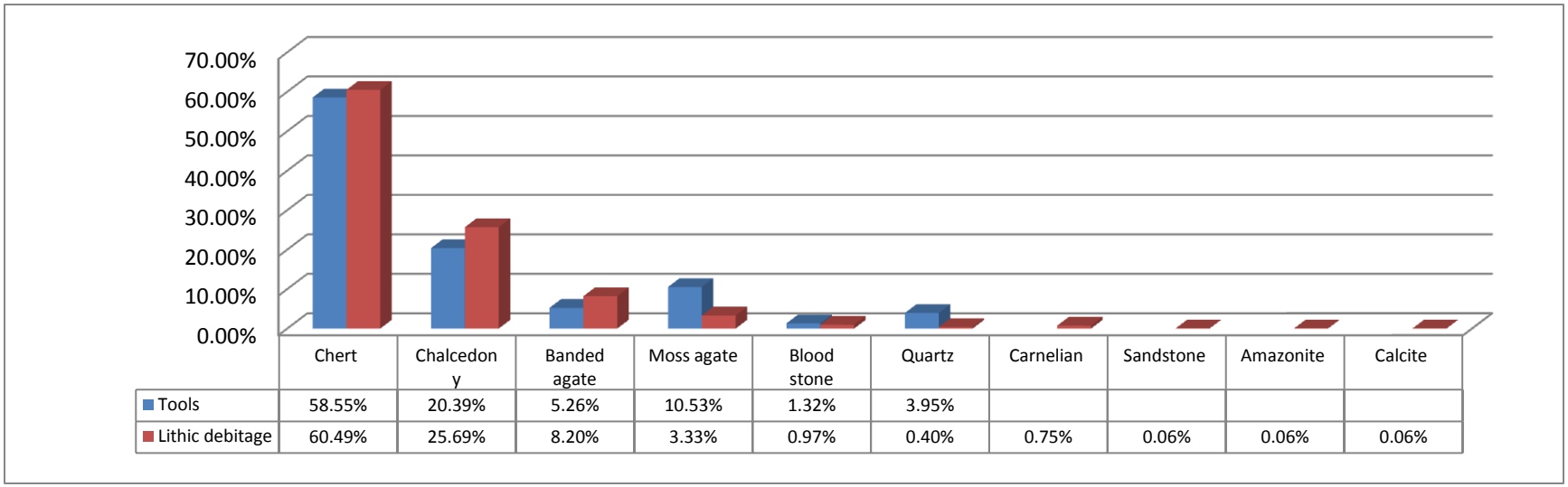
	Chert	Chalcedony	Banded agate	Moss agate	Blood stone	Rohri chert	Quartz	Carnelian	Quartzite	Sandstone	Amazonite	Mica
Tools	54.55%	27.58%	6.07%	3.99%	0.35%	0.17%	4.34%	2.25%	0.69%			
Lithic debitage	38.24%	28.72%	13.52%	1.79%	0.07%	0.11%	11.58%	3.06%	0.19%	0.11%	0.19%	2.43%

Figure 4.4: Lithic assemblage from Chalcolithic period at Loteshwar



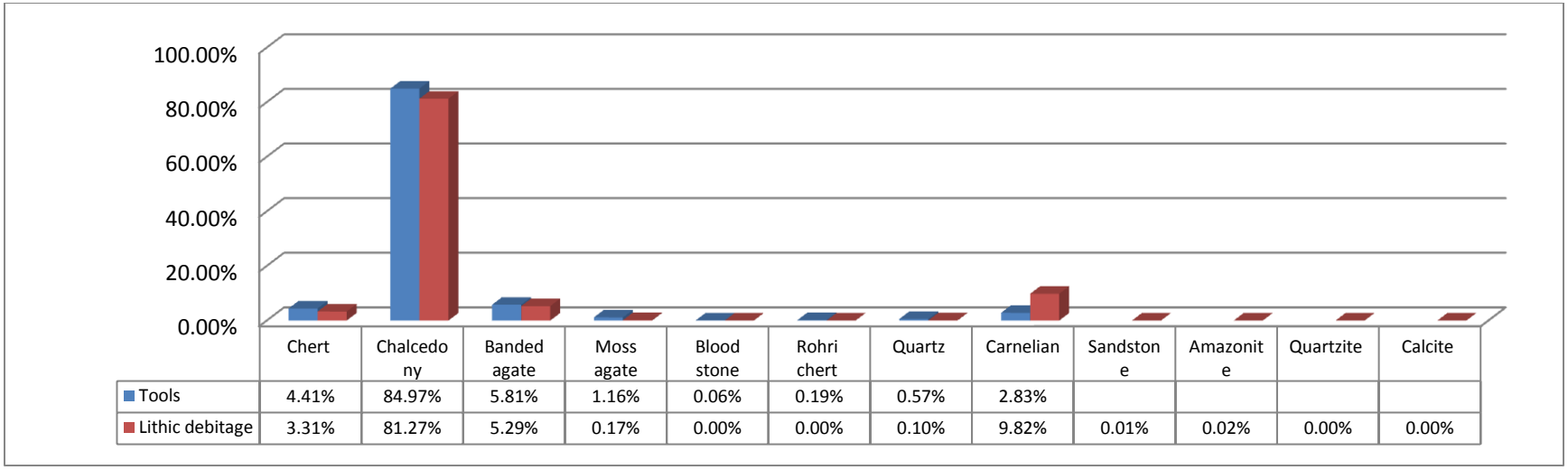
	Chert	Chalcedony	Banded agate	Moss agate	Blood stone	Quartz	Carnelian	Quartzite	Calcite	Basalt?	Zodite
Tools	56.43%	16.89%	3.64%	17.85%	1.34%	2.11%	1.73%				
Lithic debitage	61.60%	24.59%	6.95%	3.40%	0.63%	0.37%	1.15%	0.06%	0.03%	0.03%	0.26%

Figure 4.5: Lithic assemblage from Mesolithic period at Pithad



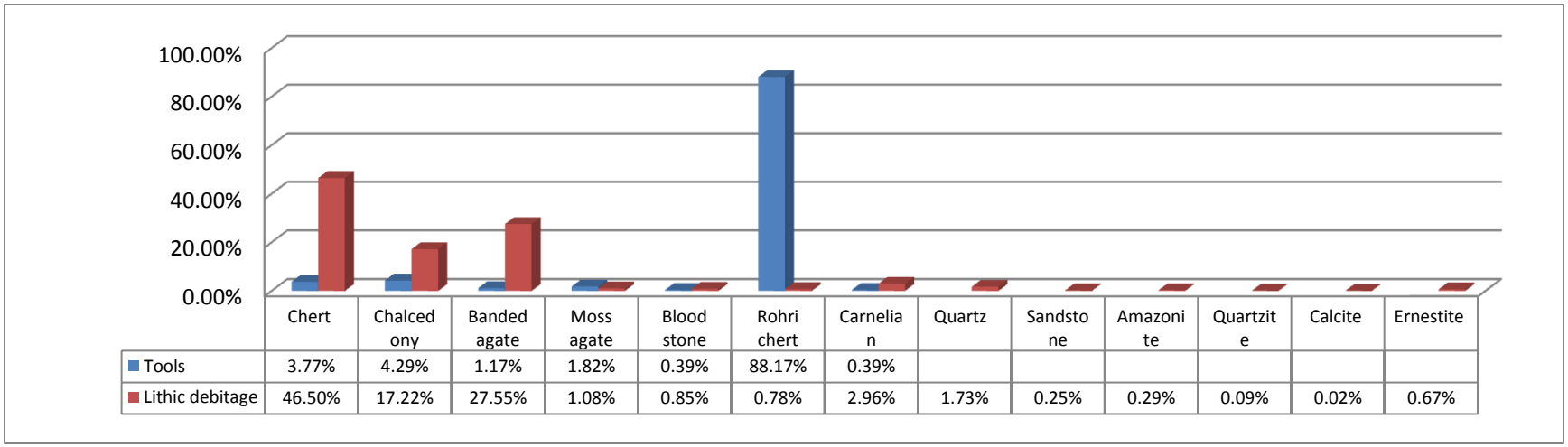
	Chert	Chalcedony	Banded agate	Moss agate	Blood stone	Quartz	Carnelian	Sandstone	Amazonite	Calcite
Tools	58.55%	20.39%	5.26%	10.53%	1.32%	3.95%				
Lithic debitage	60.49%	25.69%	8.20%	3.33%	0.97%	0.40%	0.75%	0.06%	0.06%	0.06%

Figure 4.6: Lithic assemblage from Chalcolithic period at Pithad



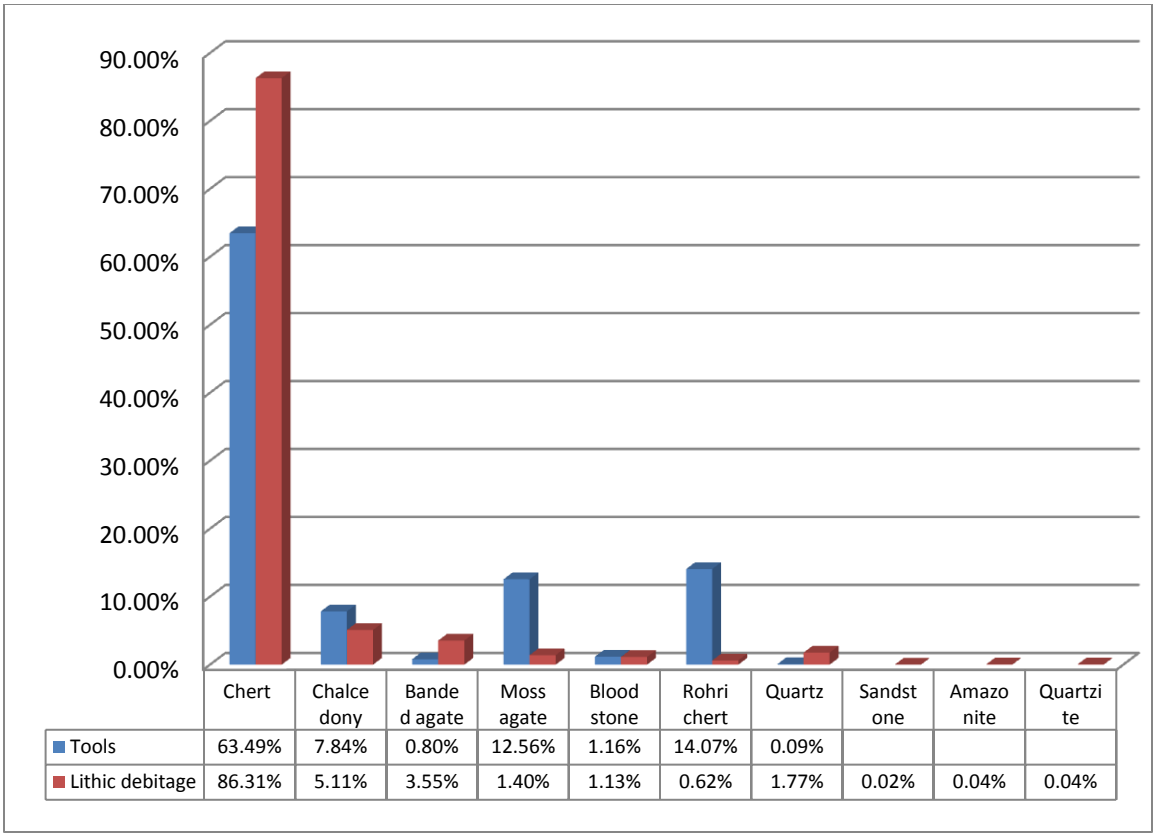
	Chert	Chalcedony	Banded agate	Moss agate	Blood stone	Rohri chert	Quartz	Carnelian	Sandstone	Amazonite	Quartzite	Calcite
Tools	4.41%	84.97%	5.81%	1.16%	0.06%	0.19%	0.57%	2.83%				
Lithic debitage	3.31%	81.27%	5.29%	0.17%	0.00%	0.00%	0.10%	9.82%	0.01%	0.02%	0.00%	0.00%

Figure 4.7: Lithic assemblage from Datrana



	Chert	Chalcedony	Banded agate	Moss agate	Blood stone	Rohri chert	Carnelian	Quartz	Sandstone	Amazonite	Quartzite	Calcite	Ernestite
Tools	3.77%	4.29%	1.17%	1.82%	0.39%	88.17%	0.39%						
Lithic debitage	46.50%	17.22%	27.55%	1.08%	0.85%	0.78%	2.96%	1.73%	0.25%	0.29%	0.09%	0.02%	0.67%

Figure 4.8: Lithic assemblage from Shikarpur



	Chert	Chalcedony	Banded agate	Moss agate	Blood stone	Rohri chert	Quartz	Sandstone	Amazonite	Quartzite
Tools	63.49%	7.84%	0.80%	12.56%	1.16%	14.07%	0.09%			
Lithic debitage	86.31%	5.11%	3.55%	1.40%	1.13%	0.62%	1.77%	0.02%	0.04%	0.04%

Figure 4.9: Lithic assemblage from Bagasra

Southern Gujarat

Babaguru formation or Ratanpur deposits/mines (figure 4.10). Among the low hills around the village of Ratanpur, Narmada district, Gujarat, hundreds of agate mining pits and shafts are sunk into the Miocene conglomerate of the Babaguru formation. Khambhat bead industry is depended on these mines even today. Agates could also be obtained from the beds of several small rivers southwest of the Ratapur area as well as to the east along the banks of the Narmada river near Rajpipla town. The sources near Rajpipla tend to be composed of clear chalcedony (Law 2008). It is unclear if Harappans did have direct access to Ratanpur raw material source. The nearest inarguably Indus Civilization settlement, Lothal, is located around 130km to the northwest of Ratanpur. Rao (1963: 188) was one of the first archaeologists to explore this area of Gujarat between the years 1954-1958 and identified a few “Late Harappan sites” situated in the Narmada and Kim river estuaries. Possehl (1999: Appendix A) has identified a handful prehistoric sites west of Ratanpur as Sorath Harappan settlements in his Gazetteer of the Indus Age Sites. If the

people of Indus civilization did acquire Ratanpur agate then doing so likely entailed interaction with the residents of these sites (or of other similar sites in the area) regardless of whether or not they were fellow Harappans or members of a separate, locally distinct cultural phase (Law 2008).

Northern Gujarat and Kachchh

Geological Survey of India (2001) mentions places Antarjal, Bhuvad, Dagala, Khera and Khergarpur situated in central Kachchh (figure 4.10) as sources for microcrystalline silicates. Harappan settlements such as Jhangar (Joshi 1990: 418) and Khedoi (IAR 1976-77) are situated in close proximity of these sources. Law (2008) has observed milky white agate-chalcedony from these sources which he thinks were used for the blade production at Dholavira. Adesar, northwest of Rapar on the eastern shore of the Great Rann and Khandek village has shown agate bearing laterites (Merh 1995). Law (2008), during his explorations visited both the places and has noted that "a pavement like layer of loose agates (natural carnelian, yellow-brown agate, clear chalcedony, moss agate) and other microcrystalline silicates (red, green, brown and variegated jaspers/cherts) covers an area of perhaps four hectares just east of the village". Surkotda, a small fortified Indus Civilization settlement is located about 5km from Adesar.

Mardek Bet situated in the Little Rann (figure 4.10), is associated with trap rock (Satyanarayana and Rao 1955). Mardek bet is a thinly shaped east-west oriented island around 12 km in length with a maximum width of about 1.25km. The agate beds are found in two main areas. The most extensive is located near the island's constricted mid-section. Another occurs 3km to the east, around the base of its highest hill. A wide range of microcrystalline silicates are found at both locations (Law 2008). Law further observed that, 'brownish-grey agate is by far the most abundant type but nodules of natural carnelian, clear chalcedony, moss agate as well as red, green, yellow-brown and variegated jaspers/cherts and blood stone were found from these areas. Mardak Bet is the only source for a distinct type of brown and white parallel-banded agate, jasper/chert which has been used by bead-makers of Dholavira and Harappa". Agate and jasper artefacts visually identical to the material occurring at Mardek Bet are evident at the Harappan site of Khandaria, located less than 10km away near village of Varanu on the

northern shore of the Little Rann (Law 2008). Recently scholars (Ratnagar 2012) have objected about this place being a raw material source area for the Harappans stating that there were higher sea levels during Harappan times and the Harappans would have had to use boats to ferry quarries. Further work is required at this raw material source to decide about its Harappan association.

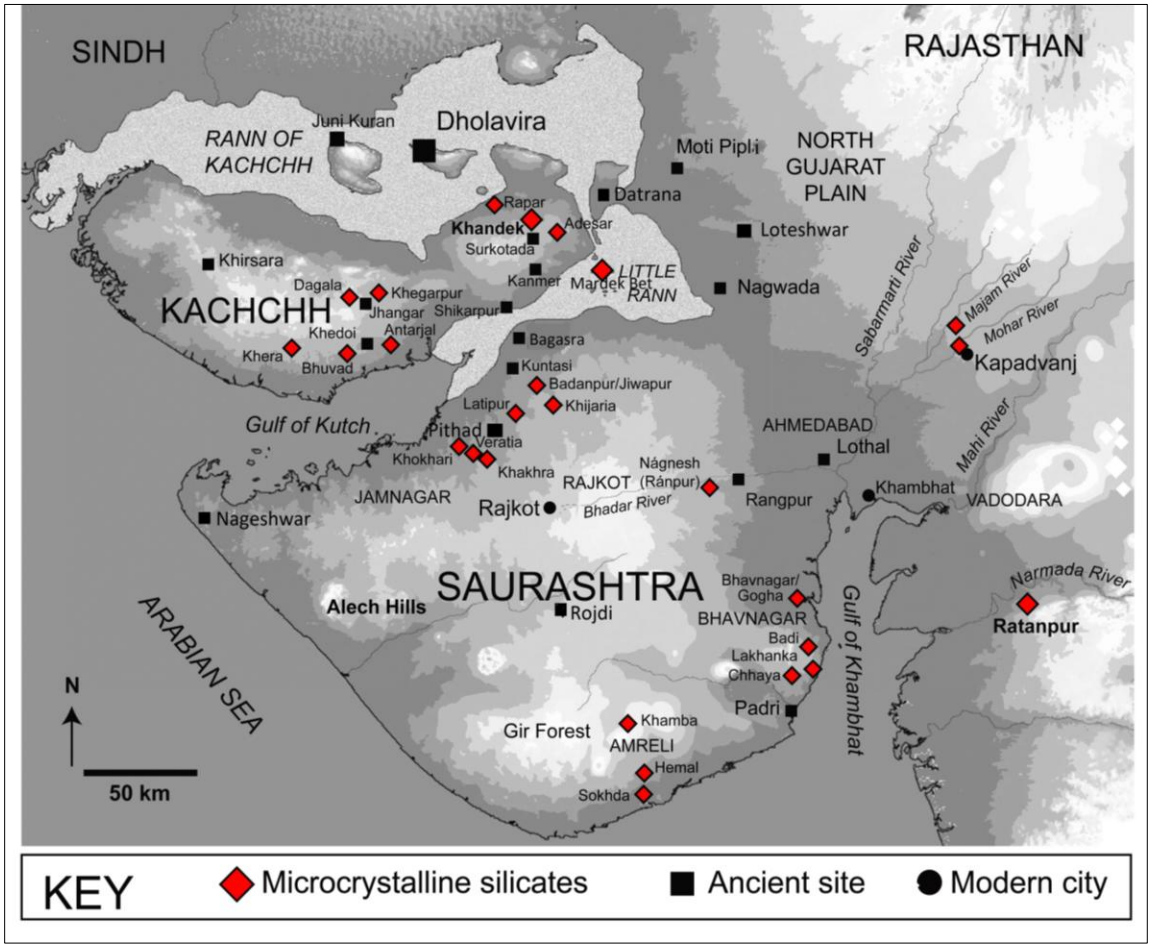


Figure 4.10: Crypto crystalline raw material sources of Gujarat
(Courtesy: Randall Law)

Explorations conducted under the North Gujarat Archaeology Project (NoGAP) during 2010 revealed that Dokawada near Eival in Santalpur Taluka, Patan district is also a source especially for chert, chalcedony and other cryptocrystalline silicates (Ajithprasad *et al* 2010). The site of Datrana is situated about 20km southeast of this raw material source.

Near the village of Derol, southeast of Palanpur, green microcline occurs in granite pegmatites and amazonite pebbles originating from these rocks can be found in the bed of adjacent Sabarmati river (Foote 1898: 22). 125km southwest of this source lays the Harappan site of Nagwada, excavations at the site have revealed chert drill and abundant remains of amazonite beads in different stages of manufacture (Hegde et al. 1988). Amazonite beads and nodules have also been found from Datrana (Ajithprasad et al 2010).

Eastern Gujarat and Saurashtra

Microcrystalline silicates occur around Kapadvanj city (Campbell 1879: 15). Kapadvanj has been mentioned especially for chalcedony and Kapadvanj agate (Campbell 1880: 199-200; Trivedi 1964: 9-11). Agate is also found in the beds of the river Mohar (Campbell 1880: 199-200) and Mazum between the villages of Amliayara and Manda, about 24.30km from Kapadvanj. Lothal is situated around 100-110km northeast of this place (figure 4.1).

Ranpur village in Ahmedabad district is known for black and white veined agates (Mackay 1937, Chatterjee and Basu 1961, Trivedi 1964: 10). This place is situated about 50km west-southwest of Lothal (Law 2008) and 22km east of the site of Rangpur.

Lakhanka and places between Badi and Chhaya have shown existence of conglomerates containing agate, chalcedony, flint, jasper/chert etc (Gujarat State Gazetteers 1961b: 22).

Southern part of Amreli district has shown milky white chalcedony and agate from geodes in the traps near Khamba. Pebbles of agate and chalcedony can be found loose in the nala between Hemal and Sokhda (Gujarat State Gazetteers 1961a: 17).

Jamnagar and Rajkot districts: Khijaria, Latipur, Jiwapur, Badanpur, Khakhra, Varatia (figure 4.10). Agates, moss agate and chalcedony as loose nodules and in amygdaloidal trap rock are found from afore mentioned places. Khokhari village in Rajkot district is another place mentioned for agates. This place is situated near the Harappan sites of Kuntasi and Bagasra (Law 2008).

Morvi has been mentioned for raw materials such as common agate, moss agate and jasper/chert. (Bombay Gazetter 1880, Trivedi 1964: 10). Mahedpur and Bud kotra villages of Morbi taluka have also shown evidences of agate.

Sen carried out site catchment analysis around the site of Pithad/Jaidak no timbo during 2008. She surveyed area within 20km radius from the site which falls within 22^0-23^0N latitude and 70^0-71^0 E longitude. She notes that the gravel conglomerate exposed in the sections of the Aji river and its streams have several nodules and large chunks of agate, chert and chalcedony which might have been used at the site for production of microliths. She further states that chalcedony outcrops were observed along the banks of the streams and were also found as nodules and pebbles. Agate, moss agate and chalcedony have their resources in the trap rock outcrops at several places near the villages of Khijadiya, Latipar, Jivapar, Badanpur, Khakhra, Veratia etc. (Sen 2009).

Summary

Law (2008) has termed Gujarat as the "Saudi Arabia" of agate. By looking at the above mentioned sources of cryptocrystalline silicates situated in Gujarat it does appear to be factual. It is clear that the raw material required for the lithic tool production was directly or indirectly easily accessible to the people during both the Mesolithic and Chalcolithic periods.

Chert was found in both tools and debitage from the Mesolithic period belonging to Loteshwar and Pithad. Loteshwar is situated in North Gujarat and as mentioned above the region has given evidence of raw material sources, though they are not very close to the site under study. Most probably since this site was occupied seasonally by the hunter-gathering communities they had access to raw material sources situated away from the site. It has been hypothesised by Ratnagar (2012) that "seasonally migrating pastoralists were instrumental in the movement or dispersal of a particular kind of stone or craft item". The site of Pithad, situated in Saurashtra, on the other hand has given evidence of raw material sources within 20km radius of the site. It should be noted here that the raw materials found from Loteshwar appear to be a better quality of cryptocrystalline silicas than the raw materials recovered from Pithad.

The Chalcolithic site of Datrana has given evidence of chalcedony as being the most exploited raw material. A source has also been identified close to the site. The Rohri chert blades recovered from the site have given indication of contact with the Sindh region. Thus from this site we have one of the earliest evidence of imported raw materials, in this particular case, imported tools. The access to imported tools and raw materials increase as the Chalcolithic period reaches its peak, as in the case of sites such as Shikarpur and Bagasra. The site of Shikarpur has shown a very high percentage of Rohri chert blades, clearly imported from the Rohri hill or other quarries located in Sindh. The other chert and banded agate found from the site most probably were locally available. The site of Bagasra has produced interesting evidence of a stockpile of raw material. Though this particular raw material was utilized for bead making one can but assume that similar type of hoarding of different raw materials might have been carried out at the sites situated closest to raw material sources. Here Ratnagar's (2012) statement about "an organized state society may itself need to set-up an extractive 'industry': acquiring a product by recruiting and directing the necessary personnel and fitting out small or large expeditions for one visit or sustained extraction" appears to be fitting. At Bagasra chert was found to have been exploited the most. Rohri chert blades, as expected, were imported at the site. Though, the presence of a few cores as well as lithic debitage fragments belonging to Rohri chert from both Shikarpur and Bagasra suggest negligible amount of local production. Access to this particular chert was definitely through trade and long distance contact and also shows the place these sites had in this inter-regional communication. It is very clear that the people of Shikarpur had better access to imported raw materials than the people of Bagasra.

Chalcolithic period at Pithad shows an increase in the use of chert, chalcedony and banded agate; decrease in the use of moss agate and blood stone and a total lack of Rohri chert. Can this increase and decrease of particular raw materials which were most probably found close to the site be assigned to a new raw material source where certain silicates were unavailable? Or did the people prefer particular raw materials during this period? An in depth analysis about particular cryptocrystalline silica is needed to further understand the raw material exploitation found from the site.