

Analysis of Transitional Process from Chalcolithic to Bronze Age in Balageriveh, Lorestan, Iran

Mehdi Rezaei¹, Rahmat Abbasnejad Seresti²

Received: 2018/2/25

Accepted: 2018/8/15

Abstract

Lorestan's Balageriveh, is a lowland passage area, located in between two rivers, Dez and Kashkan in South Central Zagros; the area itself is divided into three parts, northern, southern and central. In previous studies in Lorestan, a form of complete shift was depicted from sedentary lifestyle to a mobile one, in transition between the Late Chalcolithic and the Middle Bronze Age. Central Balageriveh is important to be studied on this matter due to its central position among Susiana (Elam), Central Zagros, Bakhtiyari region, Posht Kouh and Mesopotamia, as well as paleoclimatology and archaeological studies conducted over there. Due to the above reasons, the present study has taken into account paleoclimatology and archaeological data, the transition process from Chalcolithic Cultures to the Bronze Age, a change in settlement patterns and the role of socio-economic and environmental changes in this pattern alteration. The findings indicated that long-time climatic change which occurred in the middle of 4th millennium B.C. in the region cannot be regarded as the cause of the complete cultural gap and the change of settlement pattern at the time. Instead, it seems that with the collapse of the Uruk System and its commercial organization, the areas like Balageriveh which were intermediary in this commercial network, lost their charm. When people like Kura-Araxes, on whom some would put the blame of the Uruk collapse as they were mobile pastoralists, settled in some areas which the previous power had lived, the commercial paths withered and Balageriveh's intermediary role diminished and instead due to socio-political reasons, the lowland characteristics of the area became highlighted and the change in settlement pattern occurred.

Keywords: Central Balageriveh, Chalcolithic, Bronze Age, Uruk, Mobile Lifestyle.

¹. Ph.D. Student, Department of Archeology, University of Mazandaran, Mazandaran, Iran.

². Assistant Professor of Archaeology, Department of Archeology, University of Mazandaran, Mazandaran, Iran. r.abbasnejad@umz.ac.ir (Corresponding Author).

Introduction

Lorestan is divided into two parts in terms of historical geography; Lore Kochak (small lore) on the western Dez shore and Lore Bozog (great lore) in Bakhtiari Mountains. Small Lor is also divided into Posht Kouh which is located on the west of Kabir Kouh, and Pish Kouh (Rezaei et al., 2013). Pish Kouh is divided into two parts; first, lands on north-western Kashkan and second, eastern parts of Kashkan River and western parts of Dez River called Balageriveh (Zagarell, 1975). Balageriveh, is stretched on north-western heights, facing Susiana grassland and today is considered as a part of Andimeshk, Pol-e Dokhtar and southern parts of Khorram Abad (Papi Balageriveh, 2008). The Balageriveh area is studied as Pish Kouh's Balageriveh in archaeological and

ethnoarchaeological studies (Mortensen & Nicolaisen, 1993, Goff, 1971); Balageriveh is divided into three parts: northern, central and southern. Central Balageriveh which is the geographical focus in this research is almost identified as current Pol-e Dokhtar and is stretched to the north to Kola in Kabir Kouh. "... Kabir Kouh acted as a barrier against western invasions..." (Zagarll, 2008: 21) and the "Seymareh valley, the natural way from Iraq through central Plateau of Iran is on its northern hillside" (Geographical Handbook, 1945: 59). Central Balageriveh, was a key area, secured by two geographical crescents (Kabir Kouh from south and Kala Kouh from north), therefore it required a powerful government.



Map. 1. Lorestan and its Counties in Western Iran (Bahrami and Abbasnejad Seresti, 2017).

Furthermore, Balageriveh is the main passage through the central Zagros mountain to lowlands of Susiana (Rezaei *et al.*, 2013) is like a bridge between Susiana, Deh Luran, Posht Kouh, Pish Kouh and also Bakhtiari mountains and Mesopotamia, therefore it has a special geographical situation; this has given the area a unique role as a strategic agent forming the interaction between Susiana and Central Zagros inhabitants and also the population in the Plateau of Iran and Mesopotamia. This region had played a significant role during the past times; the Kalmakareh treasure related to the mid first millennium B.C., bridges and structures related to transportation remaining from the Sassanid dynasty such as Pol-e Dokhtar, Pol-e Kalhor and Pol-e Gavmishan, reconstruction of the transit road during Reza Shah Pahlavi which connected north of the country to the south, are some examples of this claim. During the Reza Shah Pahlavi period, Tehran-Ahvaz railroad passed through Balageriveh and "... the transfer of Allied forces in September 1941, through intermountain roads and the railway in this area ..." (Ghanbari *et al.*, 2014: 180) and construction of the Khoram - Zal freeway in 2011 and also the location of the current petrol transit lane, between Iraq and Khuzestan depict the prominent role this area played and the possibility to apply this function to history. Balageriveh has semi-dry climate, with hot summers and almost cold winters (Rezaei Banafsheh & Kakoulvand, 2014); this climate has long transformed Balageriveh into one of the most important camps (gheshlaghgāh) nomads in the central Zagros. Initial evidence showing the presence of mobile pastoralists in Lorestan goes back to Louis Vanden Berghe's excavations in cemeteries related to the middle and late Chalcolithic (4th and 5th B.C.) in Posht Kouh,

Lorestan (Vanden Berghe, 1973). Mobility has a crucial role in southwest Asian cultures and its historical influence was of great debate. Kamyar Abdi (2003) believes that pastoralism has an important effect on Near East civilizations. John Alden has also correlated "the oldness of a mobile lifestyle to domestication of animals and plants" (Alden, 2015: 997). Daniel Potts (2014) believes this lifestyle rooted in Islamic periods. Wright and his colleagues also believe that the organization and formation of a government at the end of prehistory in Khuzestan was because of the pressure of mobile pastoralists in margin heights of Susiana (Wright & Johnson, 1975). Lees and Bates (1974) argue that pastoralism grew as a result of ever-increasing desire of farmers for watering system in Khuzestan. Alizadeh points out that Susiana is close to hillside and this location has always formed a complicated interaction between the land's inhabitants and mountain dwellers; Therefore, understanding social changes in Susiana is not possible if the interaction with other areas is overlooked (Alizadeh, 2013). Zagros' pastoralists during Chalcolithic were used as an intermediary agent between Mesopotamia and Susiana in staple business (Alizadeh, 2008). As mentioned above, studying Balageriveh is crucial in terms of lowland areas that act like a bonding agent.

Our purpose in this research is to determine the influence of socio-political and environmental changes on the alternation of settlement pattern from Chalcolithic to Bronze Age. Environmental capacities and natural resources are among the important criteria grounding the current issue and research. The base of this research is on comparing and combining paleoclimatological and archaeological data in central Balageriveh.

Background of the Study

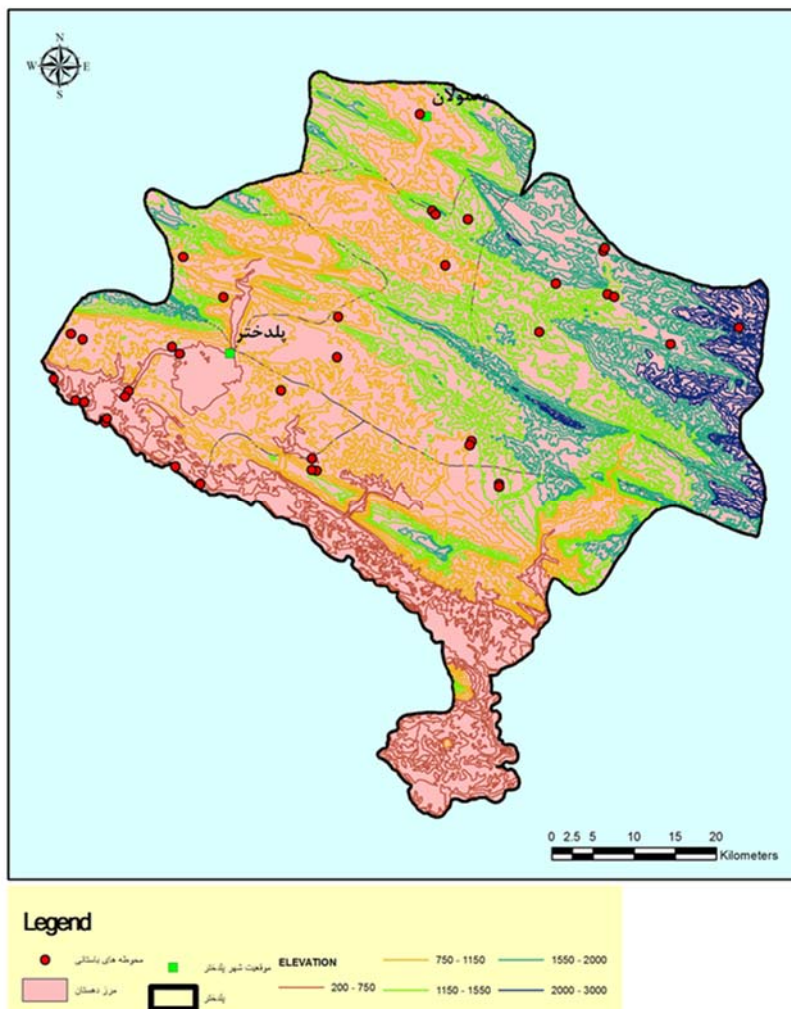
Erich Schmidt's (1940) photography in 1934 of Pol-e Dokhtar and Kor, and Stein's (1940) visit to this area in 1936 was the starting point of archaeological studies. First ethnographic studies were done by Feilberg (1944), Edelberg (1967) and Mortensen & Nicolaisen (1993). Griffith et al. (2001) and Stevens et al. (2006), published what Wright had achieved on paleoclimatological studies in Mirabad lake of Pol-e Dokhtar in 1960s and analyzed about population exchanges and formation of the states in the region (Wright & Johnson, 1975). Geological studies in the region were performed by Oberlander (1965). The first scientific archaeological survey was conducted by Goff (1971) in 1963. Goff chose a path to study which is coincident with present east Miyan Kouh village. He passed this path to get to Pol-e Dokhtar and on his way he visited archaeological evidence of different periods in Rikhan, Cheshmak, Ghale Nasir and Vashian, like two important Tepes, Afrineh (in Ghale Nasir) and Karie (Vashian) and referring to them he studied prehistory in this area. Frank Hole subjected Baharvand tribe in Balageriveh to ethnoarchaeological studies (Hole, 2004, 2009). Studies on western parts of Pol-e Dokhtar were done by Ali Akbar Vahdati (2006), but unfortunately eastern parts which are even more potential are left aside. In 2012, Mehdi Rezaei determined the arena and privacy of Vashian in Pol-e Dokhtar (Rezaei, 2012). In 2014, Atā Hasanpour, excavated the middle Chalcolithic site as Rescue Archaeology.

Chalcolithic and Bronze Age in Central Balageriveh

As a result of the researches, 38 sites related

to Chalcolithic and Bronze ages were identified at Pol-e Dokhtar (Map 2); 30 of these were identified as of Chalcolithic and 18 of the Bronze Age; it should be noted that 10 of these sites are simultaneously related to both periods; therefore we have considered all 38 sites (Table 1).

Oldest Chalcolithic pottery were found in kaleik (PL-01) which are introduced as Sabzevarkar pottery and the special pottery of Vaysian and Shourab in southern Lorestan mountains; the pottery is under the influence of the Middle Susiana phase 1 (MS 1) (personal communication with Abbas Alizadeh); the influence is traceable in Middle Susiana 3 (MS 3) and Early Susiana 1 (ES 1) and shows that Balageriveh had great impact on common cultures in Susiana (Alizadeh, 2003). Cultural exchanges reached their peak during the proto-literate period in the area and different types of pottery like beveled-rim bowl (which is the most common form of Mesopotamian pottery) and red pottery like the one found in Jamdat Nasr were made subsequently; the number of settlements unprecedentedly increased to 19 at Pol-e Dokhtar during the Chalcolithic period. Three peculiar sites of Chalcolithic are Afrineh Tepe (PL-35), Vashian Tepe (PL-19) and Kalateh Tepe (PL-13); in Afrineh Tepe there is a strange variety of pottery belonged to different regions and it seems that this variety can be described and comprehended with a glance to the area's historical background and strategic geographical character (Fig. 1, Table 2); the site was a seat of government and also a home for caravans and mobile pastoralists, as there were structures related to transportation in the area which simplified interaction between the three sites.



Map. 2. Pol-e Dokhtar, Distribution of Chalcolithic and Bronze Age Sites.



Fig. 1. Afrineh, Pottery of Different Phases of Chalcolithic Period.

Table. 1. Pol-e Dokhtar, Information of Chalcolithic and Bronze Age Sites.

Late Bronze Age	Old Elamite Age (Mid Bronze Age)	Mid Bronze Age	Early Bronze Age	Protohistoric Period	Lorestan's Mid to Late Chalcolithic Cemeteries	Period LS1	Period MS2	Period MS1	Visible Height	Visible Area	Altitude	Site Name	column
								•	7	0.9	720	Tepe kaleik	PL-1
				•					15	0.8	800	Mālgah Choobtarāsh	PL-2
				•					7	0.5	760	Gool Rahmati	PL-3
					•				5	0.12	900	Kolein-e-Parooei	PL-4
•									6	8	598	zafarān	PL-5
	•								1	6	550	Dār Khormā	PL-6
				•					1	0.4	608	Hellowsh	PL-7
				•					1	0.35	609	Sangar	PL-8
			•						3	6	755	Rahbande Chol	PL-9
				•					2	4	700	Chāl karreh	PL-10
•						•	•		10	6.1	636	Khezr	PL-11
				•		•	•		1	1.54	634	Mār boureh	PL-12
			•	•		•	•		20	7	646	Kelāteh	PL-13
•						•	•		10	10	780	Dar Marreh	PL-14
•									0	2	828	Choghā Malck	PL-15
•			•	•					1	2	819	kaleik-E-Isa	PL-16
						•	•		4	1.4	669	Boun Darraki	PL-17
				•					2	0.7	710	Cham Gerdelleh	PL-18
•	•			•		•	•		21	16	921	Vāshiyān	PL-19
				•		•	•		2	1.5	710	Doum Jheiloo	PL-20
•	•								10	1.1	960	Māz Choukeleh	PL-21
				•					3	1.2	928	Ghour Gouri	PL-22
		•				•	•		2	3	1475	Chenāreh 1	PL-23
				•		•	•		40	0.35	1444	Chenāreh 2	PL-24
						•			20	0.72	1031	Boo Rāgheh	PL-25
		•		•					0	0.3	1295	Kool Chenar 1	PL-26
		•							30	0.5	1315	Kool Chenar 2	PL-27
				•					2	1.2	1476	Jelāw Rah	PL-28
						•			15	1	1409	Chemeshk 1	PL-29
						•	•		5	0.5	1423	Chemeshk 2	PL-30
				•					1	0.5	1590	Rikhān	PL-31
		•		•		•			10	2.4	1614	Takht-E- Gerd Kooneh	PL-32
		•		•					1.5	0.4	1283	Sar Serāw	PL-33
		•							0	0.4	1529	Khar Galoo	PL-34
		•	•	•		•	•		40	37.5	1336	Afrineh	PL-35
					•				40	0.5	1123	Goor-E-Mālgah Karreh	PL-36
					•				20	0.17	1089	Mālgah Karreh	PL-37
•									0	2.8	897	Meydān-E-Koochak	PL-38
8	3	7	4	19	3	14	11	1	Number Of Sites In Each Period Based On Archaeological Studies				

Table. 2. Afrineh, Technical Characteristics of Chalcolithic Potteries.

Source Of comparison	Period	Decoration	Temper	Production	Heating	External Cover	Internal Cover	Quality	Core	Type Of Object	Number Of Object
Comparative Application	Uruk	No	Mineral Organic	Handmade	Sufficient	Cream	Cream	Coarse	Orange	Rim	PL-35-1
Adams & Nissen,1972,fig.49	Uruk	Cordage Motif	Mineral Organic	Handmade	Insufficient	Buff-colored	Buff-colored	Normal	Smoky	Rim	PL-35-15
Henrickson,1983,SG,fig.67:28.1, 35.2	MS3-LS1	Black Pattern On Outer Layer	Mineral	Handmade	Sufficient	Buff to Cream Colored +Black Pattern	Buff to Cream Colored	Tiny	Buff-colored	Rim	PL-35-20
Young,1969,fig.12	Godin IV	Polished	Mineral	Handmade	Sufficient	Gray-Black	Gray-Black	Coarse	Gray-Black	Rim	PL-35-21
Chogha Mish , Delougaz & Kantor,1996,Plate.173:A	MS3	Geometrical Pattern On Outer Layer	Mineral	Handmade	Insufficient	Buff to Green Colored + Burnt Pattern	Buff to Green Colored	Tiny	Buff to Green Colored	Body	PL-35-32
Delougaz, 1952, Plate.5,8	Old Bronze Age	Red Cover On Outer Layer	Mineral	Handmade	Sufficient	Cream -Red Cover	Buff-colored	Normal	Orange Buff-colored	Body	PL-35-33
Henrickson,1986,fig.10	Godin III5	Brown Pattern On Outer Layer	Mineral	Wheel-made	Sufficient	Red Brick +Brown Pattern	Red Brick	Normal	Red Brick	Body	PL-35-34
Henrickson,1986,fig.4,fig10	Godin III5,6	Red To Brown Pattern On Outer Layer	Mineral Organic	Wheel-made	Sufficient	Buff-colored +Red To Brown Pattern	Buff To Cream colored	Normal	Dark Buff-colored	Body	PL-35-36
Comparative Application	MS3-LS1	Black Pattern On Outer Layer	Mineral	Handmade	Sufficient	Buff-colored + Black Pattern	Buff-colored	Tiny	Buff-colored	Body	PL-35-38
Comparative Application	MS3-LS1	Geometrical Black Pattern On Outer Layer	Mineral	Handmade	Sufficient	Buff-colored + Black Pattern	Buff-colored	Normal	Buff-colored	Body	PL-35-39



Fig. 2. Vashian, View of the Mound and its Pottery Fragments.

Vashian Tepe is one of the sites studied by Claire Goff. She called it Kariéh Tepe in her report and identified Uruk and Elamite pottery among them. Goff knows this place as a part of Elamite Simashki federation. Goff has included in her report that the inhabitants in this area migrated to northern places in summer and she noted that this area and its northern parts like eastern Mian Kouh, were poor in agriculture and animal husbandry and also she guessed that life was not based on agriculture but a form of animal husbandry which was only economical when it was done during migration (Goff, 1971). The potteries collected from the surface of

the mound belong to the Late Susiana phase 1 (LS 1), the Middle Susiana phase 3 (MS 3), Godin V and VI, and old Elamite (Fig. 2, Table 3). The geographical situation of this site, locating on the path connecting north to south, can point out its intermediary function as an economical bond between both Kalateh and Afrineh and also these two to other neighboring areas. The caravanserai of the Islamic period located about 100 meters from the mound, proves the above debate to be true. Therefore, along with animal husbandry and agriculture (on limited scale), the other viable option for the inhabitants was trade and commerce.

Table. 3. Vashian, Technical Characteristics of the Potteries.

Source Of comparison	Period	Decoration	Temper	Production	Heating	External Cover	Internal Cover	Quality	Core	Type Of Object	Number Of Object
Comparative Application	Old Elamite	Extra Stripped Pattern	Mineral	Handmade	Sufficient	Buff-colored	Buff-colored	Coarse	Smoky Buff-colored	Rim	PL-19-3
Badler,2002,fig.16	Godin V,VI	No	Mineral	Handmade	Insufficient	Smoky Buff-colored	Buff-colored	Coarse	Smoky	Rim	PL-19-13
Chogha Mish , Delougaz & kantor, 1996,Plate.171:R,Plate163 K,II ; Henrickson,1983,SG,fig.67:32.2,35.2	LS1	Geometrical Black Pattern On Outer Layer	Mineral Organic	Handmade	Sufficient	Cream + Dark Pattern	Cream	Normal	Orange Buff-colored	Rim	PL-19-24
Chogha Mish , Delougaz & kantor,1996,Plate.192:G,H	MS3-LS1	Dark Brown Pattern On Outer Layer	Mineral	Handmade	Sufficient	Cream + Dark Brown Pattern	Cream	Tiny	Orange	Body	PL-19-25
Chogha Mish , Delougaz & kantor,1996,Plate.183:I; Henrickson,1983,SG,fig.66:14.2,14.4	LS1	Geometrical Black Pattern On Outer Layer	Mineral	Handmade	Sufficient	Cream + Black Pattern	Cream	Tiny	Buff-colored	Rim	PL-19-28
Chogha Mish , Delougaz & kantor, 1996,Plate.173:I,J; Henrickson,1983,SG,fig.66:17.1,17.3,21.1	LS1	Geometrical Red Pattern On Outer Layer	Mineral	Handmade	Sufficient	Cream + Red Pattern	Buff-colored	Normal	Buff-colored	Body	PL-19-29

Kalateh Tepe is located on the western fringe of the Cham Mehr meadow in the best zone of the plain. In other words, it has the most rich lands and farm and is on the trade route with Seymareh. This area is facing Seymareh's river and most probably was on the road linking Seymareh, Posht Kouh and Mesopotamia; furthermore the ancient and

current Gavmishan Bridge is located 2 kilometers to the south from this site. The settlement pattern of these three sites shows the importance of commercial and economical interactions in this period between the Central Plateau of Iran and Mesopotamia.



Fig. 3. Kalateh, Pottery Fragments.

Table 4. Kalateh, Technical Characteristics of the Potteries.

Source Of comparison	Period	Decoration	Temper	Production	Heating	External Cover	Internal Cover	Quality	Core	Type Of Object	Number Of Object
Chogha Mish, Delougaz & Kantor, 1996, Plate.28:Q	Advent Of Literature	Cordage Motif	Organic	Handmade	Sufficient	Cream	Buff-colored	Coarse	Buff-colored	Body	PL-13-1
Chogha Mish, Delougaz & Kantor, 1996, Plate.83	Advent Of Literature	No	Mineral Organic	Handmade	Insufficient	Orange Buff-colored	Buff-colored	Coarse	Buff-colored	Rim	PL-13-2
Comparative Application	Old Bronze Age	Dark Red Cover On Outer Layer and Dark Red To Purple Cover On Outer Layer + Dark Pattern On Outer Layer	Mineral	Handmade	Insufficient	Orange Buff-colored + Red Cover + Dark Pattern	Orange Buff-colored + Red Cover	Normal	Red Brick	Rim	PL-13-8
Badler, 2002, fig.16	Godin V, VI	No	Organic Mineral	Handmade	Insufficient	Buff-colored with Cream Cover	Buff-colored	Coarse	Smoky Buff-colored	Rim	PL-13-9
Chogha Mish, Delougaz & Kantor, 1996	MS3-LS1	Brown Pattern On Outer Layer and Dark Pattern On Inside Rim	Mineral	Handmade	Sufficient	Cream + Brown Pattern	Cream + Dark Pattern On The Rim	Tiny	Cream	Rim	PL-13-14
Chogha Mish, Delougaz & Kantor, 1996, Plate.159:D Alizadeh p39, 2006	MS3-LS1	Dark Geometrical Pattern On Outer Layer	Mineral	Handmade	Sufficient	Buff to Green Colored + Dark Pattern	Buff to Green colored	Normal	Buff to Green Colored	Bottom	PL-13-20
Delougaz, 1952, Plate.5,8	Old Bronze Age	Red Cover On Outer Layer	Mineral	Handmade	Sufficient	Cream + Red Cover	Buff-colored	Normal	Orange Buff-Colored	Body	PL-13-24
Chogha Bonut , Alizadeh , 2003 , fig 21 :P	MS3	Light Brown Geometrical Pattern On Outer Layer	Organic Mineral	Handmade	Sufficient	Cream + Light Brown Pattern	Buff Green colored	Normal	Buff to Green Colored	Body	PL-13-31
Alizadeh fig.26 2006	MS3-LS1	Dark Pattern On Inside and Outside Rim	Mineral	Handmade	Insufficient	Cream + Dark Pattern	Cream + Dark Pattern	Normal	Orange Buff-colored	Rim	PL-13-32
Alizadeh fig.65 2006	MS3-LS1	Dark Geometrical Pattern On Both Side	Mineral	Handmade	Sufficient	Cream + Dark Pattern	Buff to Green Colored + Dark Pattern	Normal	Buff-colored	Rim	PL-13-33

On the top of Kalateh Tepe (PL-13), hundreds of beveled-rim bowls are seen. Red pottery of Jamdat Nasr and two colored pottery of the same horizon of Jamdat Nasr which were found from graves of Lorestan pastoralists, are among these potteries (Fig. 3, Table 4). They belong to the Early Bronze

age. Two-colored pottery of Lorestan pastoralists was “found in Mesopotamia in Jemedet Nasr” (Levine, 1987: 114); this kind of pottery was also spotted in Susa and Deh Luran, which “seems that the inhabitants of mountain areas on the north of Deh Luran (Mirvali cemetery, Dartanha, Takhtkhan,

Ghabrenahi and Posht Qaleh) copied them. "These graves that belong to mobile pastoralists settled in Susiana were located along Seymareh River and other migrating paths" (Emberling 1995: 88). Examples of two-colored pattern pottery were excavated in Sehgabi, Godin, Siahbid, Chogha Mish and Farokh Abad, the early Elamite period (Collins, 2000; Rezaei *et al.*, 2013).

After the Uruk period, we witnessed a complete break up in lifestyle in Balageriveh which is coextensive with the results of a series of studies; the one conducted by a Danish group in Lurestan showed a complete breakdown or in other words a new way of pastoralism along with animal husbandry in the area which was being spread during the transition from the Chalcolithic to Bronze age (Motarjem & Niknami, 2011). In Lurestan, from the 3rd millennium B.C. till the end of Bronze Age, most archaeological evidences are cemeteries without connection to site or settlement areas which were superficially reused for living. So, the majority of researchers point out the change of lifestyle from sedentarism to mobility in this area. Transition from mobility to village settlement and returning from the phase two to the one was easier than transition to urbanism (Shishehgar, 2005). Many possible hypotheses were discussed in terms of this change in lifestyle; Mortensen believes that "It is possible that the slight drop in air temperature, with the increasing saltiness of large plains, caused irregularities in agricultural irrigation, on which economies of many of these villages rely" (Mortensen, 1974: 32). Mortensen guesses that the decrease of population in Posht Kouh and Pish Kouh was coincident with the increase of population in Susiana and southern Mesopotamia. Robert McCormick Adams shows that there may be a direct correlation

between watering evolution with canals in Mesopotamia and the origin of mobile pastoralism in the region between Zagros and Mesopotamia which was ecologically unstable (Adams, 1974). Brian Spooner (1973) believes that mobility is a result of mass production of grains and thinks that the mobile pastoralism can be an outcome of irrigational agriculture. In this case, the mountains are left for those who can do animal husbandry all the time and do business with inhabitants from other areas. Some of the researchers such as Lees and Bates, Zagarll and Kharnov have accepted these theories as the origin of mobility in Zagros and considered it in a great interaction with genesis and evolution of city-states in south Mesopotamia and Khuzestan (Mortensen & Nicolaisen, 1993).

In the middle Bronze Age, a part of south Pol-e Dokhtar centered with Vashian Tepe became a part of the Elamite federation. To the north and on the migration route in Lurestan, people with Godin III₆₋₅ culture settled whose relics are found in cemetery sites which has an important indication that these people relied on a mobile lifestyle along with animal husbandry. People with this culture found the best environmental condition for themselves in high jungle areas and poor rangelands, the foothills belt and on the tribes' ways and they seemed to be mobile pastoralists whose migration line was on central Zagros-Susiana and Deh Luran-Posht Kouh main road. This path at the end of Godin III₆₋₅, due to abandonment and being desolated renders not exploited and at the end of Godin III₂, the tribes' way of Lurestan moved to the western part of Pol-e Dokhtar. The new tribes' way in Kouhdasht-Roumshgan and Meydan also was created in southern Pol-e Dokhtar. This can be a sign of a change of tribes' ways and movement

between lowlands and highlands (Qeshlagh and Yeylagh) in Lurestan during the Bronze Age.

The Results of Paleoclimatology Studies on Mirabad Lake

Mirabad lake lies about 5 kilometers south of Pol-e Dokhtar city, with altitude about 800 meters and located near the ending border of current Zagros oak jungle. It covers an area almost two acres (Stevens *et al.*, 2006). The core of the lake has 7.2 lengths and was

gathered by H. E. Wright in 1963. The core was removed from the depth of 1.60 close to the western shore of the lake (Griffith *et al.*, 2001). Palaeoclimatological studies were performed on the sediments. On account of the lake's location (in our area of study) and the fact that the sediments were the reflection of changes and climate conditions, these studies can shed light on what we hope to get about this area. In the tables below (Tables 5 and 6) the results of the lake's Palaeoclimatological studies are stated.

Table. 5. Mirabad Lake, Paleoclimatology Studies (Stevens *et al.*, 2006).

Depth (c. m.)	Age
500-710	7265-4505 B.C.
325-500	4505-2048 B.C.
390-414	1347-1057 B.C.
170-325	2048 B.C.- 360 A.D.
0-170	360 A.D.- Present

Table. 6. Mirabad Lake, Paleontology Studies Results (Stevens *et al.*, 2006).

Period	Indices based on the results of Lake Mirabad
Old Holocene (8000-4500 B.C.)	Changing the weather from continental to Mediterranean: The earliest Holocene era in Mirabad; Reduction of spring rain with the expansion of Mediterranean climate; Overcome the winter rainfall.
Middle Holocene (4500-2500 B.C.)	Changing the weather from Mediterranean to continental: Significant increase in spring-summer rainfall in 3800 B.C.; Changes in plant composition of forests; Rapeseed oak rising; Increase humidity; The occurrence of pure and long dryness in 3400 BC At the regional level.
Late Holocene (2500 B.C. - Present)	Changing the weather from continental to Mediterranean: Continuity of moisture reduction in Mirabad from 2200 to 1400 AD; Sudden rise in pollen of <i>Lanceolata</i> ; The increase of this plant indicates the successive use of the lake area; Repetition cessation in the course of humidity and spring precipitation Coincidence with the abandonment of agricultural settlements in northern Mesopotamia during the Akkad period.

The surveys of western archaeological campaign in neighboring regions, including

Khoramabad, mostly show a 600–700 gap from the middle Uruk onwards, in other words from

3500 B.C; some of these researchers like Frank Hole (2007) pointed out the environmental changes as the cause for this long interruption. However, Karamian and his colleagues' excavations (2010) in Masoor Tepe in Khoramabad and Parviz's studies in west Koregah in Khoramabad (Parviz, 2009) show that the Khoramabad valley was always residential from 3600 to 3000 B.C and there was no break up in settlement (Bahrami and Fazeli 2016). The present archaeological surveys at Pol-e Dokhtar in which the lake is located, not only the settlements were not vanished at the beginning of the second half of the 4th millennium which coincided with the onset of climate change, but also the number of Uruk, Jemdet Nasr and Proto-Elamites sites were increased in comparison to previous periods and we witness continuous settlements in the area. In addition to that the rainfalls during summer and spring between 4500-2500 B.C rendered the area a prosperous one for settlement. Low humidity continued in Mirabad from 2200 to 1400 B.C (coincident with Godin III₄₋₁) doubled with the sudden increase of lanceolata's pollen which is always a sign of human interference (Stevens *et al.*, 2006) is consistent. The increase of this plant can indicate continuous use of the lake. Archaeological surveys show that the area has been residential at the end of Godin III especially during Phase 2; which is the result of the use of nomads and mobile pastoralists in this field.

Discussion and Analysis

The environmental and geographical differences between Balageriveh's neighbors (Susiana, Central Zagros, Bakhtiari, Posht Kouh and Mesopotamia), had always enabled the area to interact socially and economically and form a deep inter-cultural interaction; these functions illuminate the intermediary role

of Balageriveh through history. Geographical and environmental situation of the region and the relics remained from caravanserai and between-way booths, current roads and migration routes for low-landings are among indications that show these ways and roads were present during the past times. Roads and rivers are the two most important agents to form a populated spot. Added that the main roads in this area located in river valleys.

During the first Pahlavi dynasty, Reza Shah, changed the connecting road between Khorram Abad-Andimeshk, in order to develop commercial relations and gain availability and security, and he reconstructed a road remained from Sassanid-Islamic periods which is located on the border of river valley of Khorram Abad and Kashkan. The outcome of the opening of this road was to wither the villages on the same road's path; as in 1991 most of the villages in this area became desolated. On the other hand, around police stations and watchtowers in this new road, many populations settled and formed villages and cities; they are 90 percent of population density in the area. In 2011, the construction of Khorram-Zal freeway which goes exactly the path that the road before Pahlavi followed (in this area, we witness many constructions related to way and transportation) the Khorram Abad- Pol-e Dokhtar- Andimeshk road stopped booming and resulted in closing most of services related to that road. Two recent cases are simple examples of the role of socio-political parameters in changing settlement patterns in our area of study. Therefore, this pattern can be applied to previous periods.

By studying architecture and the urban history of Iran, the role of political parameters in changing settlement patterns becomes more intense. Inscriptions of Islamic period structures show that the majority of governmental buildings, charity ones and cities

were built under the order of government. In the pre-Islamic period, there are traces of kings' power in building cities and structures and in some cases construction of a city meant disobedience and claim for independence (Mehrafarin, 2014). When governments acting for war and expansion of countries (mostly in Mesopotamia) we come across the role of the Assyrian, Babylonian and Akkadian kings in population movements. On this ground, the role of socio-political factors in changing settlement pattern can be traced to the period of the formation of hierarchical societies.

In the 4th millennium B.C., we observe the prominent presence of the Uruk culture in western Zagros borders in comparison to other regions in the area (Rothman and Badler, 2011). The major materialistic characteristic of development of the Uruk culture in Balageriveh is beveled-rim bowls. Lots of beveled-rim bowls on important sites related to the late Chalcolithic in Balageriveh, show the formation of inter-regional interactions and the role of the area in the commercial system of the Uruk period. Researchers like Algaze, refer the strength of southern inhabitants in Mesopotamia to products like precious stones and wood of Anatolia and the Iranian Plateau (Algaze, 1993). Even though Balageriveh was not rich enough for Urukians, it was an intermediary path that could simplify transportation.

Uruk sites in this region and in commercial paths of the previous cultures or even at some points locating in the exact location of previous sites, proves that how these sites were used and reused during middle Susiana and before that and after the Uruk period these commercial systems continued to exist until now. "Peaceful commercial relations and ideological systems of the Ubaid period which influenced the Iranian Plateau were replaced by colonies in the Uruk period" (Stein

& Özbal, 2007: 399). Some of these sites changed to colonies and economic places for people whose center of power was in southern Mesopotamia with Uruk in center (Algaze, 1993). The increase of Uruk sites in this region and the formation of them in passage areas indicate that Balageriveh was a main route, passage and the place for interaction of different cultures.

With the diminishing of the Uruk system, its commercial system also withered. "Entering of Kura-Araxes people from south Caucasia to Anatolia and the Plateau of Iran was the reason of the Uruk system collapse" (Sherratt, 1997: 468). Focusing on this area, older roads between the Plateau of Iran and Mesopotamia and Susiana declined completely and this road faced south of the Plateau of Iran and ended up marine business (Motarjem and Niknami, 2011; Alden, 1982). As a result of the collapse, intermediary sites related to this system lost function, became obsolete or started trading with other areas. Balageriveh is not a region capable of being inhabited by a great population (Goff, 1971), quite the opposite it has always been an intermediary agent, therefore by the destruction of commercial centers and the change in trading routes in the 3rd millennium B.C. (Alizadeh, 2008; Alden, 1982), the area stopped booming and thus became desolated or entered less powerful business markets or became the center of lowland interactions. "The archaeological studies revealed that inhabitants of these mountains selected spots to rest and trade on their migrant route and these spots were the place to gather, trade, do business and solve tribal problems and decide on crucial matters" (Shishehgar, 2005: 9). It seems that the reasons of the alteration in subsistence strategy from sedentarism to mobility in this area are lied beneath the collapse of Uruk economical system which was crucial to keep a population

focalized and secure the routes, not climate changes that occurred hundreds of years earlier. Naturally climate changes are not that influential on passage areas which act as a bonding agent.

In most of western parts of the Iranian Plateau, Kura-Araxes pottery replaced Uruk pottery with a long interruption, however in central Balageriveh like other parts of Lurestan, the Kura-Araxes evidence are not visible. Balageriveh's inhabitant, after Uruk, were mobile pastoralists who had multi-colored and red pottery like Jemedet Nasr pottery. Apparently, this pastoralist population kept Kura-Araxes people from entering Lurestan. Entering pastoralists from Caucasia to south of Zagros was a great danger for inhabitants. In western areas, there was the same danger; as according to the model coming from mythology and history of Sumer, the origin of political power and the appearance of small rulers in Mesopotamia rooted in war and military violence (Alizadeh, 2006). In Mesopotamia, the regional violence caused people to gather in safe zones covered with defensive walls and these places gradually became city-states during Early Dynasties Periods. So, it seems that the subsistence strategy of mobility is not just a way to confront the environmental conditions; mobility can be an outcome of socio-political problems. Plains were on the way of strangers, while mountainous residential areas were impassable and could protect the inhabitants from foreign invasions (Shishehgar, 2005). During the first Pahlavi period, to unify the country and its political power, Reza Shah settled powerful pastoralists in this area and of course this aim was not accomplished without military power and air force and weaponry (Alizadeh, 2006) and the conspiracy to murder heads of Lor tribes was not provided. Mortensen notes that the invasion of Timor Lang caused lots of

villages and cities to destroy and a great number of populations in these areas were forced to change their way of life. Many researchers believe that choosing a mobile life from the medieval Islamic period onward, as a result of the pressure imposed by Turks in 10 A.D., following by the invasion of Moguls during 13 and 14 A.D., reached its utmost and this lifestyle was dominant till the first Pahlavi period and the only structures remained from this period are charity buildings, governmental ones, road-oriented structures and cemeteries.

Balageriveh, besides being the winter quarters for mobile pastoralists, was the settlement site for its own inhabitants. The tribe that lived there had their temporary houses; therefore not all shallow and seasonal settlement belongs to pastoralists and it could relate to cattle-breeding people, without permanent buildings. These sedentary pastoralists did not bury their corpses near their living area; in some archaeological studies it was elaborated that during the first Pahlavi period, majority of the inhabitants buried their dead up to almost 30 kilometers farther, in the cemeteries that their ancestors were also buried, this study can be conducted in cemeteries without connection to settlement areas which examines mobile pastoralists.

Conclusion

In Balageriveh, after the Uruk culture, we observe lifestyle changes from sedentarism to mobile pastoralism. Some of the researchers noted the environmental changes as the cause, however; we are witnessing a great sedentarism since 3400 B.C. after the climate alterations. Therefore, it comes to mind that the crisis resulting in from desolating of the areas, which were Uruk settlement zones in Balageriveh, rooted in the collapse of the Uruk economical system and not climate changes. Furthermore, the change in settlement pattern after the late

Chalcolithic period was most probably caused by something rather than environmental matters. Three scenarios can be taken into account: First, can be the same reason that made populations to migrate during Turks' and Moguls' invasions, the insecurity of a sedentary life forced people to move and profit from the security of a mobile life. Second, Balageriveh had always been both a lowland for mobile pastoralists and a house for sedentarism; as the economic capabilities of the area diminished, the settled inhabitants whose life depended on commercial interaction, withered in terms of function and number and on the contrary number of mobile pastoralists boomed. Third,

the presence of population such as Kura-Araxes whose life depended on semi nomadic style.

The collapse of Uruk cannot be certainly considered the result of Kura-Araxes, however the collapsing Uruk commercial system was definitely the reason which rendered the area desolated. In some intermediary areas like Balageriveh, in majority of cases, the parameters to desolate the area did not appear within the area itself but were formed kilometers away in (social, political, and economical) centers of power and in excavations of these intermediary sites, there are still evidence of peaceful abandonment.

References

- [1] Abdi, K., (2003). "The early Development of Pastoralism in the Central Zagros Mountains", *Journal of World Prehistory* 17 (4): 398-448.
- [2] Adams, R. McC. (1974). "Anthropological Perspectives on Ancient Trade", *Current Anthropology* 15 (3): 239-258.
- [3] Alden, J. R., (1982). "Marketplace Exchange as Indirect Distribution: An Iranian Example", in *J. Ericson & T. Earle* (eds.), *Contexts for Prehistoric Exchange*, Academic, New York: 83-101.
- [4] Alden, J. R., (2015). "Book Review", D. T. Potts (ed.), *Nomadism in Iran: From Antiquity to The Modern Era*: 996-997, Antiquity Publications Ltd., New York: Oxford University Press.
- [5] Algaze, G., (1993). *The Uruk World System: The Dynamics of Expansion of Early Mesopotamia Civilization*, Chicago: University of Chicago press.
- [6] Alizadeh, A., (2003). *Prehistoric Settlement Patterns and Cultures in Susiana, Southwestern Iran: The Analysis of the F. G. L. Gremliza Survey Collection*, Museum of Anthropology Technical Report 24, University of Michigan.
- [7] Alizadeh, A., (2006). "Problems in Understanding the Origins of the State and Urbanism in Susiana" (in Persian), *Persian Journal of Archaeological Studies* (Bâtānpajhohi), New Series 1 (2): 22-25.
- [8] Alizadeh, A., (2008). *Formation of the Nomadic Rule of Elamite, Chaharmahal va Bakhtiari*: Cultural Heritage Publishing House.
- [9] Alizadeh, A., (2013). *The Convergence of Oppositional and Complementary Subsistence Strategies in Prehistoric Southwestern Iran*, To be published in the Special Publications, Oriental Institute of the University of Chicago in the Spring of 2013.
- [10] Bahrami, M. & H. Fazeli Nashli (2016). "An Overview of the Archaeological Condition of the Khorramabad Valley during the Neolithic and Chalcolithic Periods", *Archaeological Research of Iran* (Pajooresh-ha-ye Bastanshenasye Iran) 10: 27-46 (in Persian).
- [11] Bahrami, M. & R. Abbasnejhad Seresti (2017). "The Role of Environmental Factors in Settling Neolithic Sites in Luristan, Iran", *Humanities* 24 (1): (1-17).
- [12] Collins, P., (2000). *The Uruk Phenomenon: The Role of Social Ideology in the Expansion of the Uruk Culture during the Fourth Millennium B.C.*, Oxford: BAR International Series 900.
- [13] Edelberg, L., (1966-67). "Seasonal Dwellings of Farmers in Northwestern Luristan", *Folk* 8-9: 373-401.
- [14] Emberling, G., (1995). "Ethnicity and the State in Early Third Millennium Mesopotamia", Doctoral dissertation combined degree in Anthropology and Near Eastern Studies, University of Michigan.
- [15] Feilberg, G. G., (1944). *La Tente Noire. Contribution Ethnographique á L'histoire Culturelle des Nomades*, Nationalmuseets Skrifter. Ethnografisk Rakke II. Kebenhavn.
- [16] *Geographical Handbook: Persia*, (1945). British Admiralty, Naval Intelligence Division.

- [17] Ghanbari, Y., H. Barghi & A. Hajjarian (2014). "Analysis and Prioritization of development in Lorestan Province Cities Using Topsis Method", *Journal of Urban and Regional Studies and Researches* 6 (21): 169-180 (in Persian).
- [18] Goff, C., (1971). "Luristan before the Iron age", *Iran* IX: 131-152.
- [19] Griffiths, H. I., A. Schwalb & L. R. Stevens, (2001). "Environmental Change in southwestern Iran: the Holocene Ostracod Fauna of Lake Mirabad", *The Holocene* 11 (6): 757-764.
- [20] Hole, F., (2004). "Campsites of the Seasonally Mobile in Western Iran", in K. von Folsach, H. Thrane and I. Thuesen (eds.), *from Hand-axe to Khan*, Essay Presented to Peder Mortensen on the Occasion of his 70th Birthday, Aarhus University Press, Aarhus: 105-123.
- [21] Hole, F., (2007). "Cycles of Settlement in the Khorramabad Valley in Luristan, Iran", in: Elizabeth C. Stone (ed.), *Settlement and Society*, Essays Dedicated to Robert McCormick Adams, Cotsen Institute of Archaeology, University of California, Los Angeles and The Oriental Institute of the University of Chicago: 63-82.
- [22] Hole, F., (2009). "Pastoral Mobility as an Adaptation, in Nomads", in: Jeffrey Szuchman (ed.), *Tribes and the State in the Ancient Near East*, the Oriental Institute of the University of Chicago Seminar, No.5, Oriental Institute Seminar: 261-283.
- [23] Karamian, G., M. Beiranvand & A. Sajjadi, (2010). Report on the Determining the Arena and Privacy of the Masoor Tepe, Center for the Documentation of the Cultural Heritage of Lorestan (in Persian).
- [24] Lees, S. H. & D. G. Bates (1974). "The Origins of Specialized Nomadic Pastoralism: A Systemic Model", *American Antiquity* 39 (2): 187-193.
- [25] Levine, L. D., (1987), "The Iron Age", in F. Hole (ed.), *Archaeological Perspectives on Western Iran*: 229-250, Washington D. C., Smithsonian Institution.
- [26] Mehrafarin, R., (2014). *Sassanid Cities*, Tehran: Samt (in Persian).
- [27] Mortensen, P., (1974). "A survey of Prehistoric Settlements in Northern Luristan", *Acta Archaeologica* 45: 1-47.
- [28] Mortensen, I. D. & I. Nicolaisen (1993). *Nomads of Loristan: History, Material Culture & Pastoralism in Western Iran*, Thames & Hudson, London.
- [29] Motarjem, A. & K. Niknami (2011). "Early Bronze Age at Central Zagros, Iran", *Journal of Archaeological Studies* (Motāleāte Bāstānshenāsi) 3 (2): 35-54 (in Persian).
- [30] Oberlander, T., (1965). *The Zagros Streams: A New Interpretation of Transverse Drainage in an Orogenic Zone*, Syracuse Geographical Series No. 1, Syracuse University Press, New York.
- [31] Papi Balagrive, M., (2008). *Achaemenid Generation: Balagriveh Region*, Khorramabad: Aflak Publish (in Persian).
- [32] Parviz, A., (2009). *Archaeological Survey of West Coregāh of Khorramabad, Luristan Province*, Cultural Heritage and Tourism General Office of Luristan Province, Center of Documentation (in Persian).
- [33] Potts, D. T., (2014). *Nomadism in Iran: From Antiquity to the Modern Era*, New York: Oxford University Press.
- [34] Rezaei, M., (2012). *Determination of the Arena and Privacy of the Vashian Tepe (Lorestān)*, Archive of Cultural Heritage of Lorestān Province, (in Persian).
- [35] Rezaei, M., N. Joudy, H. Khosravi & N. Nemdianpour (2013). "Surface survey Bronze Age in Pol-e- Dokhtar (Lorestān) and Analysis of Ceramic Data", Presented in the Conference on Archeology of Western Iran, Islamic Azad University of Hamedān (in Persian).
- [36] Rezaei Banafsheh, M. & Y. Kakolvand (2014). "Regionalization of Lorestan Province Using Cluster Method Analysis", *Journal of Natural Geography* 26: 41-50 (in Persian).
- [37] Rothman, M. S. & V. R. Badler (2011). "Contact and Development in Godin Period VI". in: H. Gopnik and M. S. Rothman (eds.), *on the High Road: The History of Godin Tepe Iran*, Bibliotheca Iranica, Archaeology, Art and Architecture Series 1: 67-139.
- [38] Schmidt, E., (1940). *Flights over Ancient Iran*, Chicago: University of Chicago.
- [39] Sherratt, A., (1997). "Troy, Maikop, Altyn Depe: Early Bronze Age Urbanism and its Periphery", in A. Sherratt (ed.), *Economy and Society in Prehistoric Europe*, Changing Perspectives, Princeton, N.J., Princeton University Press.
- [40] Shisheghar, A., (2005). Report on Excavation of the Sorkh Dom Laki Area, Kohdasht Lorestan: 2-6 Seasons, Archaeological Reports Series 9, Archaeological Research Institute of the Iranian Cultural Heritage Organization, Tehran (in Persian).
- [41] Spooner, B., (1973). *The Cultural Ecology of Pastoral Nomads*, An Addison-Wesley Publication, *Module in Anthropology*, No. 45.
- [42] Stevens, L. R., E. Ito, A. Schwalb & H. E. Wright, (2006). "Timing of Atmospheric Precipitation in the Zagros Mountains Inferred from a Multi-proxy

Record from Lake Mirabad, Iran”, *Quaternary Research* 66 (3): 494-500.

[43] Stein, S. M. A., (1940). *Old Routes of Western Iran*, London.

[44] Stein G. & R. Özbal (2007). “A Tale of Two Oikumenai: Variation in the Expansionary Dynamics of Ubaid and Uruk Mesopotamia”, in E. C. Stone, *Settlement and Society, Essays Dedicated to Robert McCormick Adams*, Cotsen Institute of Archaeology, Los Angeles 2007: 329-342.

[45] Vahdati, A. A., (2006). Preliminary Report on Archaeological Studies in Pol-e-Dokhtar, Season 1,

Archive of the Iranian Institute for Archaeological Research (in Persian).

[46] Vanden Berghe, L., (1973). Excavation in Lorestan, Kaleh Nisar, *Bulletin of Asia Institute* (III): 25-26.

[47] Wright, H. T. & G. A. Johnson (1975). “Population, Exchange and Early State Formation in Southwestern Iran”, *American Anthropology* 77 (2): 267 –289.

[48] Zagarell, A., (1975). “Nomad and Settled in the Bakhtiari Mountains”, *Sociologus* 25 (2): 127-138.

تجزیه و تحلیل گذار از دوره مس سنگی به دوره مفرغ در بالاگریوه لرستان

مهدی رضایی^۱، رحمت عباس نژاد سرستی^۲

تاریخ پذیرش: ۱۳۹۷/۵/۲۴

تاریخ دریافت: ۱۳۹۶/۱۲/۶

چکیده

بالاگریوه لرستان ناحیه‌ای است گذرگاهی و قشلاق‌گاهی در بین دو رود دز و کشکان در جنوب زاگرس مرکزی است که خود به سه بخش شمالی، مرکزی و جنوبی تقسیم می‌شود. در پژوهش‌های پیشین صورت‌گرفته در لرستان، در فرایند گذار از دوره مس سنگی جدید به دوره مفرغ نوعی گسست کامل شیوه معیشتی از یکجانشینی به کوچ‌نشینی گزارش شده است. بالاگریوه مرکزی علاوه بر قابلیت‌های قشلاق‌گاهی، به مثابه پلی همواره موجب ارتباط اقتصادی-اجتماعی مناطق همجوار (شوشان، زاگرس مرکزی، منطقه بختیاری، پشت‌کوه و بین‌النهرین) شده و مطالعات دیرین‌اقلیم‌شناسی و بررسی‌های باستان‌شناسی در آن صورت گرفته، برای بررسی این فرآیند حائز اهمیت است. بر این اساس با هدف مطالعه فرایند گذار از فرهنگ‌های مس سنگی به مفرغ و تغییر الگوی استقرار و نقش تحولات زیست‌محیطی و اجتماعی-اقتصادی در این تغییر الگو، به تطبیق داده‌های دیرین‌اقلیم‌شناسی با بررسی‌های باستان‌شناختی این ناحیه پرداختیم؛ نتایج حاصل از پژوهش نشان داد که تغییرات اقلیمی بلندمدتی که در نیمه دوم هزاره چهارم پم در منطقه آغاز شده، نمی‌تواند به‌عنوان عامل گسست فرهنگی و تغییر الگوی معیشت از یکجانشینی به کوچ‌نشینی در مرحله گذار از دوره مس سنگی به دوره مفرغ مطرح شود. در عوض به نظر می‌رسد با فروپاشی نظام اروکی و شبکه تجاری آن، نواحی واسطه‌ای چون بالاگریوه که در چرخه این ارتباطات تجاری بودند، کارکرد خود را از دست دادند. اقوام دامدار نیمه‌کوچ‌نشینی چون اقوام کورا-ارس، که برخی فروپاشی اروک را ناشی از ورود آنان می‌دانند، در برخی از کانون‌های قدرت گذشته مستقر شده، در نتیجه راه‌های تجاری از رونق افتاد و از نقش واسطه‌ای ناحیه بالاگریوه کاسته شده و در عوض قابلیت قشلاق‌گاهی و مراتع این ناحیه مورد استفاده اقوامی قرار گرفت که شاید به دلایل امنیت اجتماعی-سیاسی معیشت کوچ‌نشینی، این شیوه زیستی را برگزیده بودند.

واژه‌های کلیدی: بالاگریوه مرکزی، مس سنگی، مفرغ، اروک، کوچ‌نشینی.

^۱. دانشجوی دکتری باستان‌شناسی، دانشکده هنر و معماری، دانشگاه مازندران، مازندران، ایران.

^۲. استادیار باستان‌شناسی، دانشکده هنر و معماری، دانشگاه مازندران، مازندران، ایران. r.abbasnejad@umz.ac.ir (نویسنده مسئول).